



RELATIONSHIP BETWEEN ARRIVALS AND PRICES OF WHEAT IN DIFFERENT REGULATED MARKETS OF MADHYA PRADESH

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ABSTRACT

The study has been under take in different grade regulated markets to analysing the pattern of market arrivals and prices in Madhya Pradesh for wheat as it is the main crop of the state. The present investigation is restricted to the four different grade of regulated markets (Krishi UpajMandi) of wheat i.e. Sehore, Mhow, Kalapipal and Katangi, which have been selected randomly from each grade (A, B, C and D Grade) regulated markets in Madhya Pradesh. The arrivals and prices in different grade of regulated markets exposed that there was found weak correlation between arrivals and price in wheat in different months of the year. Whereas the prices increases the arrivals also increases in the market. But it's not true in the in the case of D grade regulated market, which is might be due to lack of facilities in this particular grade of regulated market. Therefore, the policy implication lies in encouraging the farmers to dispose their produce at the opportune time to get good remunerative prices. It requires providing finance to farmers and better storage facilities either at village level or at market level to be created so as to spread the arrivals reasonably in the lean months of the year. Marketers need to design creative solutions like e-marketing to overcome challenges typical of the rural environment such as physical distribution, channel management promotion and communication. The "anytime-anywhere" advantage of e-marketing leads to efficient price discovery, offers economy of transaction for trading and more transparent and competitive setting.

Key words : *Arrivals and prices, wheat, regulated markets and Madhya Pradesh.*

Madhya Pradesh has emerged as one of the leading wheat production states in the country in the last five years. (1). The State has also improved its position as the third largest wheat producing state in the country after UP and Punjab with a record-break production of 13.13 million tonnes of wheat in the fiscal year 2012-13 and 13.93 million tonnes in 2013-14. (2) Madhya Pradesh contributes 18.57% of the total wheat produced in the country. Sharbati and Durum Wheat have given an international identity to Madhya Pradesh. (3).

The price and arrivals of any commodity are useful in understanding the present scenario and to forecast the future. This instability in prices of agriculture commodities is influenced by number of factors such as annual variation in production, low prices, elasticity of demand and seasonality of agriculture production. (4) The information about behaviour of the prices in terms of price level, trend and fluctuation is the most important factor in determining competitiveness of commodity in the domestic and international level and do draw inferences for future prices and formulate the long term strategy on trade. (5) The price variations are common in agricultural commodity mainly because of seasonality in production and inter market arrivals and forced to sale cause decline in price and the intermediate functionaries reap the benefit of such large income (6). Hence, it is essential to understand the fluctuation in prices and arrivals of each commodity in given market so as to decide the period to maximize the net returns.

The M.P. State Agricultural Marketing Board i.e. MPSAMB (also known as Mandi Board) has come into existence w.e.f 1973 under the provisions of M.P. Krishi Upaj Mandi Adhiniyam 1972. The mandi board is a three tier organisation. First tier consist of M.P. State Agricultural Marketing Board (MPSAMB) with the office at the state capital Bhopal. The second tier of the MPSAMB structural channel is the Regional office, which have their demarcated area of operation and the Mandies situated in the said area of operation are affiliated to the Division office for administrative control.

There are 7 Division Offices in the State individually having 18 to 45 Mandi Committees under its jurisdiction. Third tier consists of regulated markets. These are in the nature of physical and institutional infrastructure at the first contact point for farmers to en-cash their farm marketable surpluses Mandies in the state were of A, B, C and D grade. These grades are assign to the mandies on the basis of their turn over. Out of this mandies only A grade mandis, 51 in number regularly upgraded by the organization and provide the daily rate and arrivals to the farmers through the internet. In Madhya Pradesh the 258 main wholesale markets were categorised into A (51), B (40), C (58) and D (109) grade on the basis of annual revenue collected through the payment of mandi tax by buyers. The A grade mandies are largest with a gross annual income of over Rs. 40 Lakh, B grade mandies have a gross annual income between Rs. 20 to 40 Lakh,

C grade mandies annual revenue between Rs. 6 to 20 Lakh and D grade have a gross annual income lower than Rs. 6 Lakh. (3)

Supply and demand are the two main variables which dictate the development process of any industry or enterprise. In a market economy, the increase in agricultural production and transfer of surpluses from one sector to other are to be brought about by the price signals. The prices of most agricultural commodities are inherently susceptible to violent fluctuations, the economic consequences of which are dire. The great depression of the thirties was attributed to the cyclical fluctuations of primary product prices (7).

In other words, the mobilization and allocation of productive resources takes place through the marketing system. Efficient pricing of agricultural commodities, therefore, assumes a crucial role in initiating and maintaining the development process. A system of efficient pricing is *sine-quo-non* to maximize agricultural production. It also leads to maximum social welfare from the given output. The objectives can be achieved only if the marketing system ensures prices, which are stable and remunerative to producers. The prices must be reasonable to consumers as well as meet the demand for the increased production. (8) Keeping these reviews in mind the present study has been under take in different grade regulated markets to analysing the relationship between arrivals and prices and pattern of market arrivals and prices in different grade regulated markets in Madhya Pradesh for wheat as it is the main crop of the state.

RESEARCH METHODOLOGY

One Regulated Market (Krishi Upaj Mandi) i.e. Sehore, MHOW, Kalapipal and Katangi have been selected randomly from each grade (A, B, C and D Grade) Regulated Markets in Madhya Pradesh. The study is based on time series data related to market arrivals and prices of wheat. These data were collected from online and offline records of M.P. State Agricultural Marketing Board i.e. (commonly known as Mandi Board) Bhopal for the period of last 11 years (2001-02 to 2011-12). The data were analysed with mean, Standard Deviation, Coefficient of Variance, Correlation Coefficient, and Regression Coefficient to draw conclusions.

RESULTS AND DISCUSSION

The relationship of market arrivals and prices and pattern of arrivals and price of wheat in different grade of regulated markets have been analysed for the study.

Relationship of market arrivals and prices : An average arrival (27217 tons) of wheat has been arrived in the regulated market in Madhya Pradesh. Amongst in different grade of regulated markets maximum arrivals

was found to be arrived in A grade regulated market (74382 tons) followed by B grade (21962 tons), C grade (11471 tons) and D grade (1053 tons) regulated market. (Table-1).

The annual arrivals of wheat was found to be increased by 436 percent from 8557 tons (2001-02) to 45890 tons (2011-12) with the fluctuation of 10189 tons per annum (37.43%), Amongst different grade of regulated markets the maximum percentage increase in 2011-12 over 2001-02 was found to be in D grade regulated market (4271%) followed by C grade (2199%), B grade (1287%) and A grade (254%) respectively.

An annual average prices of wheat (Rs. 986/q) in different grade of regulated markets was also found maximum in A grade regulated market (Rs. 1195/q) followed by C grade (Rs. 985/q), B grade (Rs. 980/q) and D grade (Rs. 783/q) regulated market. The annual prices of wheat were found to be increased 75 percent from Rs. 723 per quintal (2001-02) to Rs. 1265 per quintal (2011-12)) with the fluctuation of Rs. 264 per quintal per annum (26.79%), which was found maximum in D grade regulated market (124%) followed by B grade (86%), C grade (56%) and A grade (55%) respectively. The fluctuation of arrivals and prices were found to be more in D grade regulated market (105.97%, 35.20%) as compared to C grade (85.77%, 28.03%), B grade (59.59%, 25.53%) and A grade (28.87%, 24.19%) regulated market.

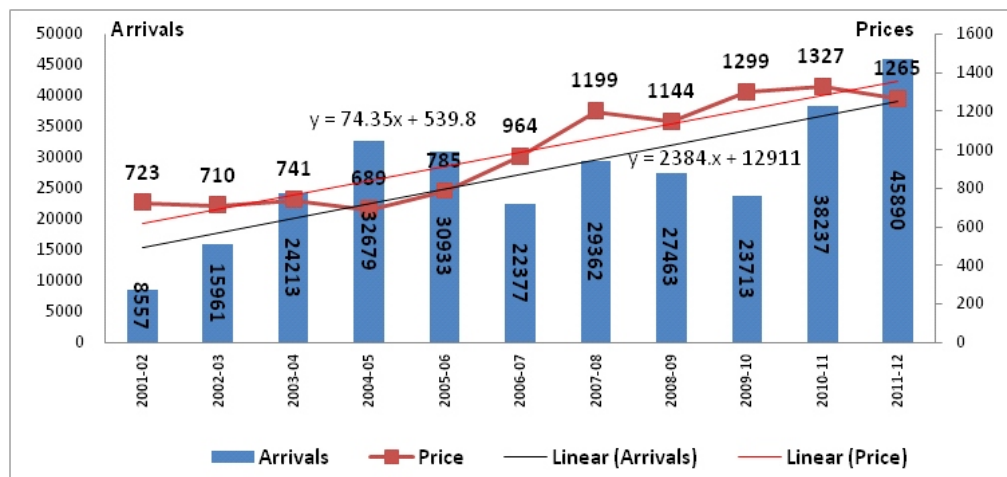
The arrivals in the regulated market were found to be increase significantly with the magnitude of 2384.25 tons per annum (Figure 12) and was found maximum in B grade (3690.98 t/annum) followed by A grade (3681.40 t/annum), C grade (2249.63 t/annum) and D grade (-85.02 t/annum) regulated market during the period under study, while the prices were found to be increased with the magnitude of Rs. 74.35 per quintal per annum and was found maximum in D grade (Rs.79.74/q/annum) followed by A grade (Rs.76.80/q/annum), B grade (Rs.71.55/q/annum) and C grade (Rs.69.33/q/annum) regulated markets.

The overall annual simple growth of arrivals in different grade of regulated markets was found to be 39.66 per cent per annum, which found maximum in D grade (402.76% / annum), C grade (199.94% / annum), B grade (117.04% / annum) and found lowest in the case of A grade regulated market (23.10% / annum), Whereas, the annual simple growth of price was found 6.81 percent per annum and found maximum in D grade (11.30% / annum), B grade (7.83% / annum), C grade (5.07% / annum) and A grade regulated market (5.04% / annum) respectively in the area under study. The arrivals and

Table-1 : Overall annual arrivals (tons) and prices (Rs./q) of wheat in different grade of regulated markets in Madhya Pradesh.

Years	A (Sehore)		B (MHOW)		C (Kalapipal)		D (Katangi)		Overall	
	Arrivals	Price	Arrivals	Price	Arrivals	Price	Arrivals	Price	Arrivals	Price
2001-02	29541	965	3192	716	1481	718	14	495	8557	723
2002-03	53813	928	5598	727	2972	703	1462	480	15961	710
2003-04	80895	960	9516	751	5186	741	1255	510	24213	741
2004-05	91975	806	19708	711	15061	698	3973	542	32679	689
2005-06	90168	978	20799	776	11429	770	1338	614	30933	785
2006-07	69689	1097	15552	1097	3573	970	694	690	22377	964
2007-08	78025	1500	29555	1007	9805	1397	65	892	29362	1199
2008-09	67709	1322	33783	1134	8023	1074	339	1044	27463	1144
2009-10	58897	1558	23808	1257	10645	1281	1503	1101	23713	1299
2010-11	92885	1535	35784	1276	23954	1360	325	1139	38237	1327
2011-12	104608	1500	44288	1332	34053	1119	612	1111	45890	1265
Mean	74382	1195	21962	980	11471	985	1053	783	27217	986
% Increase in 2011-12 over 2001-02	254	55	1287	86	2199	56	4430	124	436	75
SD	21472	289	13087	250	9838	276	1115	276	10189	264
CV %	28.87	24.19	59.59	25.53	85.77	28.03	105.97	35.20	37.43	26.79
b	3681**	76*	3690*	71*	2249**	69*	-85.02	79*	2384**	74*
Growth	23.10	5.04	117.04	7.83	199.94	5.07	402.76	11.30	39.66	6.81

*Significant at 1% level and **Significant at 5% level

**Fig.-1** : Trend of market arrivals and prices of wheat in different regulated market.

prices in different grade of regulated markets exposed that as the prices increases the arrivals also increases in the market. But it's not true in the in the case of D grade regulated market, which is might be due to lack of facilities in this particular grade of regulated market.

Pattern of arrivals and prices : The maximum arrivals of wheat (70.87%) were found to be arrived just after the harvest of the crop i.e. the month of March (21.65%), April (26.26%), May (16.14%) and June (6.46%) in the regulated market of Madhya Pradesh and rest of the arrivals were found to be distributed in the remaining 8 months of the year. (Table-2)

The prices of wheat were found to be more in the month of December (Rs. 91.73/q), January (Rs. 58.80/q),

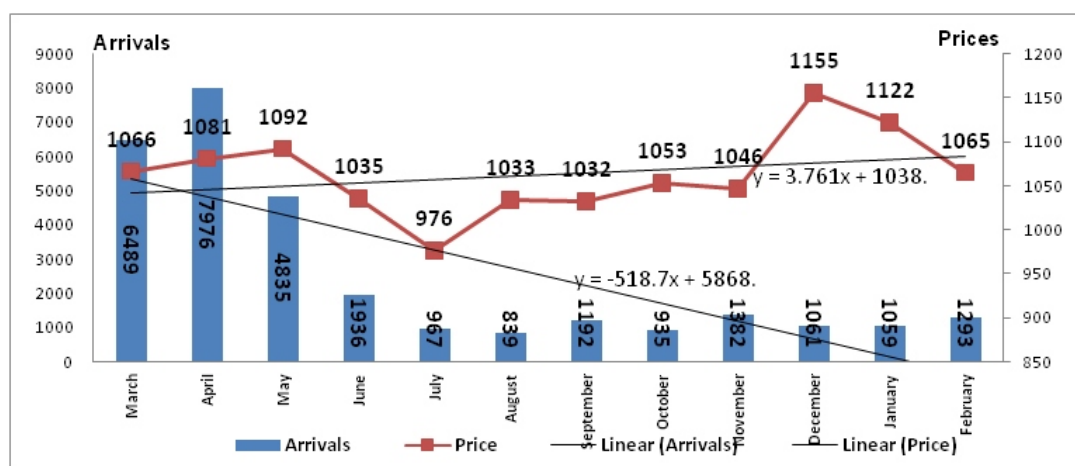
February (Rs. 1.69/q), March (Rs. 3.29/q), April (Rs. 17.67/q) and May (Rs. 28.73/q) as compare to the average annual price of the wheat (Rs. 1063.0/q) while, the prices of wheat were found less from average price of wheat in the month of June (Rs. -27.89/q), July (Rs. -86.49/q), August (Rs. -29.69/q), September, (Rs. -30.66/q), October (Rs. -10.06/q), and November (Rs. -17.11/q) with the average price of wheat in Madhya Pradesh. (Fig.-2)

There was found weak correlation between arrivals and price in wheat in different months of the year, which was found, might be due to the government purchase the wheat of the farmers on Minimum Support Price (MSP) with extra bonus.

Table-2 : Monthly average arrivals (tons) and prices (Rs./q) of wheat in different grade of regulated markets in Madhya Pradesh.

S. No	Months	Grade A		Grade B		Grade C		Grade D		Overall Average	
		Arrivals	Price	Arrivals	Price	Arrivals	Price	Arrivals	Price	Arrivals	Price
1	March	15959 (20.04)	1296 (26.56)	6342 (26.42)	1039 (-13.36)	3540 (23.22)	1079 (21.59)	115 (11.59)	850 (-21.63)	6489 (21.65)	1066 (3.29)
2	April	19601 (24.62)	1264 (-5.85)	5925 (24.68)	968 (-84.91)	6331 (41.52)	1123 (65.89)	48 (4.82)	967 (95.53)	7976 (26.62)	1081 (17.67)
3	May	12901 (16.20)	1296 (26.28)	3821 (15.92)	1078 (25.30)	2403 (15.76)	993 (-64.11)	217 (21.92)	999 (127.44)	4835 (16.14)	1092 (28.73)
4	June	5627 (7.07)	1218 (-51.44)	1503 (6.26)	994 (-58.52)	578 (3.79)	975 (-82.83)	36 (3.66)	953 (81.22)	1936 (6.46)	1035 (-27.89)
5	July	2766 (3.47)	1120 (-149.90)	813 (3.39)	1002 (-50.65)	249 (1.63)	1032 (-25.78)	42 (4.23)	752 (-119.63)	967 (3.23)	976 (-86.49)
6	August	2511 (3.15)	1158 (-112.21)	602 (2.51)	1037 (-15.65)	234 (1.53)	1013 (-44.27)	10 (0.99)	925 (53.37)	839 (2.80)	1033 (-29.69)
7	September	3509 (4.41)	1216 (-53.49)	781 (3.25)	1118 (65.66)	289 (1.89)	1009 (-48.18)	191 (19.35)	785 (-86.63)	1192 (3.98)	1032 (-30.66)
8	October	2713 (3.41)	1343 (73.54)	697 (2.90)	1035 (-17.55)	262 (1.72)	989 (-68.78)	67 (6.76)	844 (-27.47)	935 (3.12)	1053 (-10.06)
9	November	3905 (4.90)	1315 (45.43)	1108 (4.62)	1066 (13.63)	415 (2.72)	1027 (-30.88)	101 (10.26)	775 (-96.63)	1382 (4.61)	1046 (-17.11)
10	December	3071 (3.86)	1364 (93.92)	800 (3.33)	1090 (37.25)	353 (2.31)	1192 (134.07)	20 (2.02)	973 (101.70)	1061 (3.54)	1155 (91.73)
11	January	3428 (4.31)	1341 (71.07)	487 (2.03)	1132 (79.38)	264 (1.73)	1206 (148.38)	56 (5.68)	808 (-63.63)	1059 (3.53)	1122 (58.80)
12	February	3624 (4.55)	1306 (36.07)	1129 (4.70)	1072 (19.43)	332 (2.18)	1052 (-5.11)	86 (8.72)	828 (-43.63)	1293 (4.31)	1065 (1.69)
13	Total	79614 100	1270 (0.00)	24005 100	1053 (0.00)	15249 100	1058 (0.00)	989 100	872 (0.00)	29964 100	1063 (0.00)
14	Mean	6635	1270	2000	1053	1271	1058	82	872	2497	1063
15	SD	5969.4	76.7	2124.5	49.7	1909.0	77.7	65.0	87.1	2482.5	46.2
16	CV %	90.0	6.0	106.2	4.7	150.2	7.3	78.8	10.0	99.4	4.3
17	r	0.1		-0.4		0.2		-0.1		0.2	

Figure in the parenthesis shows percent to total arrivals and difference from average price.

**Fig-2** : Trend of Market arrivals and prices of wheat in different grade of regulated markets.

CONCLUSION

It is essential to understand the fluctuation in prices and arrivals of each commodity in the regulated market so as to decide the period to maximize the net returns. The arrivals and prices in different grade of regulated markets

exposed that there was found weak correlation between arrivals and price in wheat in different months of the year. Where as the prices increases the arrivals also increases in the market. But it's not true in the in the case of D grade regulated market, which is might be due to lack of facilities in this particular grade of regulated market. Therefore, the

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