Bangladesh J. Agric. Econ., X, 1(June 1987) 51-62

*FACTORS AFFECTING STOCKING DECISIONS OF RICE TRADERS IN DHAKA CITY-FINDINGS OF A SAMPLE SURVEY**

Quazi Shahabuddin**

ABSTRACT

This paper analyses rice traders' behaviour pattern in general, and their stocking decisions in particular, based on information collected through a field survey in and around Dhaka city. It was observed that traders' (both wholesalers and retailers) stocking decisions were influenced by prices expected in the future, but the time frame of such expectation was confined to one week. Among the set of factors specifically related to operation of Public Food Distribution System, it was observed that most of the traders both in the wholesaler sad retailer groups, considered open market sale (OMS) of foodgrains by the Government as an important factor influencing their stocking decisions. This, therefore, underscores the need to devise appropriate measues in arresting price hike during the lean season, for greater involvement of private grain dealers in the public foodgrain distribution system.

1. INTRODUCTION

Stocking of foodgrains by private traders constitute an essential economic activity. This happens because of the need to maintain an even flow of foodgrain consumption throughout the year in the face of seasonal nature of agricultural production. However, not enough information is available about the behaviour pattern and operation of these private grain traders in the country. An attempt has been made in this paper to analyse rice traders' behaviour pattern in general and the factors influencing their

*The paper is based on chapter 5 of the report on "The Existing System of Public Foodgrain Distribution in Bangladesh and Proposal for Re-structuring (1986)', which the author prepared for FPMS, Ministry of Food, Govt. of Bangladesh.

**The author is currently associated with the Master Plan Organization, Govt. of Bangladesh. He is indebted to Dr. Nuimuddin Chowhdury and to an anonymous referee of this journal for their valuable comments on an earlier draft of this paper. However, he alone is responsible for any errors that remain.

stocking decisions in particular, based on information collected through a field survey among a sample of rice traders in and around Dhaka city. In the process, some insight have also been developed into the perceptions of grain dealers as to the actual and potential role that various Public Food Distribution System (PFDS) offtake can play in dampening their speculative behaviour, particularly in the lean season.

In Section II, we discuss the size, composition and major data characteristics in the sample. This is followed, in Section III, by an analysis of the factors influencing stocking decisions of rice traders, and also what significance they attach to various PFDS operations in Bangladesh. The main findings are summarised and some concluding observations are made in Section IV.

II. MAIN CHARACTERISTICS OF THE SAMPLE

As mentioned above the main source of information of this study is a field survey conducted among a sample of rice traders in and around Dhaka city. The survey was so designed as to elicit information pertaining to rice traders' behaviour particularly with respect to their stocking decisions and how those decisions were affected by various PFDS operations in Bangladesh. Table 1 shows what categories of traders were interviewed, their size and the locations in which the survey was carried out.

TABLE 1. SIZE AND COMPOSITION OF THE SAMPLE TRADERS

Category	Location	Sample size
Wholesalers		42
Bepari		11
Aratdar	Badamtali (9), Baburbazar (4)	13
General	Mirpur (7), Kowranbazar (2)	9
Miller	Mirkadim (4), Firingibazar (2), Others (3)	9
Retailers	Malibaghbazar (3), Thataribazar (3) Kowranbazar (4), Fakirapulbazar (2)	12

It is quite evident from Table 1 that in total fiftyfour (54) traders were interviewed, of which fortytwo (42) were wholesalers and the rest, twelve (12) were retailers. Four categories of wholesalers were identified for the survey namely bepari, aratdar, general wholesaler and miller whole saler. The field survey was carried out in various markets in Dhaka city and its surrounding areas during the third and fourth week of November (Nov. 16-Nov. 24), 1985.

Tables 2 to 5 present information with respect to some socio-demographic and functional characteristics of various categories of rice traders in the sample.

Average age and education level of different categories of traders in the sample are presented in Table 2. It is observed that there is virtually no difference in the average age (and also its variability) between the two major groups of traders-wholesalers and retailers—with an average age of about 38 years showing about 30% variability in the sample. The level of education as measured by the number of school years attained by the wholesalers is somewhat higher than that of the retailers - 6.9 school years among the former as compared to 5.6 school years among the latter. Both the groups display similar variability in the sample. Within the wholesalers group, however, one observes considerable differences in the level of education, with *aratdar* attaining the highest level (8.9 school years) and general wholesalers the lowest level (4.2 school years). It is also observed that the traders with the highest education level show lowest variability in the sample and vice versa.

Table 3 shows the relative importance of different types of rice traded by various category of traders in the sample. The wholesalers as a group traded more coarse rice than medium variety. This is particularly observed in case of *aratdars*. Retailers, on the other had, traded more in the medium quality rice. For both the groups, fine variety of rice featured rather insignificantly, accounting for about 20% of their total volume of transactions. *Bepari* would apear to be the sole exception—fine rice claiming about 33% of the share in their total trade as recorded in the survey.

Regarding the tye of market information required by the traders, it is observed (Table 4) that price of rice featured rather prominently in the sample. This remains true for the respondents engaged in both wholesale and retail trade. About half of the respondents in the wholesalers group (but none among the retailers) also indicated crop condition as an additional factor entering their information package.

Among the means through which information are collected (Table 5), the exchange of information with other dealers, market visits and telephone, in that order, were cited more frequently in the sample particularly for the wholesalers, though some variations were observed within the group. Telephone as a means through which information were collected did not feature at all among the retailers while neither radio nor newspaper were cited as a means through which market information was collected by either of the two groups.

TABLE 2. AGE AND EDUCATIONAL LEVEL OF DIFFERENT CATEGORIES OF TRADERS

Category	Age		Education	
	Mean (Years)	Coefficient of variation (Percentage)	Mean (School years)	Coefficient of Variation (Percentage)
Wholesalers[a]	38.3	31.2	6.9	45.7
Bepari	34.4	26.9	6.8	49.7
Aratdar	42.2	27.7	8.9	29.7
General	34.0	10.5	4.2	71.3
Miller	42.9	36.9	7.4	50.5
Retailers	37.8	32.4	5.6	45.3

a. Generally, the *bepari* wholesalers buy rice or paddy from the primary markets and sell them to retailers either directly or through agents. The *aratdar* wholesalers procure rice from the primary markets through *farias* and salaried agents and sell them direct to the retailers. The general wholesalers buy either from the primary markets or from the millers or even the growers through *farias* and sell them to the retailers. The miller wholesalers purchase paddy through intermediaries and mill themselves into rice before selling it to the retail traders. For an elaborate discussion of various functions performed by different agents involved in the marketing and distribution of rice/paddy in Bangladesh, see (Rahman *et al.* 1984).

Source : Traders' Survey, 1985.

TABLE 3. TYPES OF RICE TRADED BY DIFFERENT CATEGORIES OF TRADERS

Category	Coarse		Medium		Fine	
	Mean (md.)	C.V. (%)	Mean (md.)	C.V. (%)	Mean (md.)	C. V. (%)
Wholesalers	**43.3**	**29.4**	**38.2**	**30.5**	**18.5**	**85.9**
Bepari	28.8	53.5	38.7	35.1	32.5	90.4
Aratdar	53.8	21.0	32.7	26.7	13.5	58.5
General	43.3	28.8	40.0	22.8	16.7	46.9
Miller	46.7	26.4	42.9	32.1	10.4	40.2
Retailers	**33.5**	**24.3**	**49.2**	**13.3**	**17.3**	**44.4**

Source : Traders Survey, 1985.

TABLE 4. TYPE OF MARKET INFORMATION NEEDED BY DIFFERENT CATEGORIES OF TRADERS

Category	Crop Condition	Rice Price	Market Arrival	Market Stock
Wholesalers	**47.6**	**88.8**	**95.2**	—
Bepari	45.4	100.0	100.0	—
Aratdar	46.2	69.2	100.0	—
General	—	100.00	100.0	—
Miller	100.0	88.8	77.8	—
Retailers	—	**91.7**	**100.0**	**8.3**

Note : The figures indicate the percentage of respondents with positive responses in total sample in that category. Evidently, the factors are not mutually exclusive.

Source : Traders' Survey, 1985.

TABLE 5. MEANS THROUGH WHICH MARKET INFORMATION IS COLLECTED BY DIFFERENT CATEGORIES OF TRADERS

Category	Radio	Telephone	Newspaper	Market Visit	Other Dealers	Transport Agents
Wholesalers	—	**68.0**	—	**78.6**	**88.1**	**4.8**
Bepari	—	72.7	—	54.5	72.7	9.1
Aratdar	—	100.0	—	23.1	46.2	7.7
General	—	33.3	—	100.0	66.7	—
Miller	—	22.2	—	77.8	88.9	—
Retailers	—	—	—	66.7	75.0	16.7

Note : Same as in Table 3.

Source : Traders Survey, 1985

III. FACTORS AFFECTING STOCKING DECISIONS

As mentioned earlier, an important objective of our traders' survey was to generate information that would facilitate our understanding of the decision making process of rice traders specially with respect to their stocking of foodgrains. In particular, attempts were made to identify the factors - both general factors as well as factors specific to the operation of PFDS-that affect their stocking decisions. The results of the field survey pertaining to such behaviour are presentd in Tables 6 through 10.

Table 6 shows that there is an overwhelming tendency on the part of the traders, particularly among the wholesalers, to resort to stocking of foodgrains. Within the wholesalers group, this tendency is observed to be more pronounced among *beparies* and general wholesalers. Surprisingly though, the average period of stocking is observed to be greater for t he retail traders (6.5 days) as compared to the wholesalers (4.9 days). Tne difference, however, may not be statistically significant, particularly for general wholesalers and millers. As expected, the averge amount of stock held by traders as recorded in the survey, is considerably greater (about fifteen times) for the wholesalers as compared to the retail traders. There are, however, noticeable variations within the wholesalers group, with *aratdar* recording the largest (315 maunds) and *bepari* the smallest (69 maunds).

The impact of expected future prices on stocking decisions of different category of traders are shown in Table 7. It is readily observed that the traders' (both wholesalers and

TABLE 6. AVERAGE PERIOD AND AMOUNT OF STOCK HELD BY DIFFERENT CATEGORY OF TRADERS

Category	Buy More and Sell Less Now (%)	Average Period of Stock		Average Amount of Stock	
		Mean (days)	C.V. (%)	Mean (maund)	C. V. (%)
Wholesalers	**86.7**	**4.9**	**43.9**	**202.8**	**76.2**
Bepari	90.9	3.6	22.2	69.2	77.2
Aratdar	76.9	4.0	33.5	315.0	81.5
General	100.0	6.0	60.0	168.0	75.8
Miller	77.8	6.6	28.9	258.6	67.2
Retailers	**66.7**	**6.5**	**15.4**	**12.5**	**134.6**

Source : Traders Survey, 1985.

TABLE 7. IMPACT OF EXPECTED FUTURE PRICES ON STOCKING DECISIONS OF DIFFERENT CATEGORY OF TRADERS

Category	Tomorrow's Price	Price Expected After 3 days	Price Expected Next Week	Price Expected Next Month
Wholesalers	**40.5**	**21.4**	**28.6**	—
Bepari	45.4	45.4	9.1	—
Aratdar	61.5	—	15.4	—
General	44.4	22.2	33.3	—
Miller	11.1	22.2	66.7	—
Retailers	**25.0**	**66.7**	**8.3**	—

Note : The figures indicate the percentage of respondents with positive responsses in that category in the sample.

Source : Traders Survey, 1985.

retailers) stocking decisions are influenced by prices expected in the future but that the time frame of such price expectations is confined to only seven days. This is also confirmed by responses to "Others" category (referring to future prices for the periods not specified) which represented only 5% of total sample among the wholesalers and none among the retailers. Within this one-week time frame, however, there is considerable variation in price expectations affecting stocking decisions between the wholesalers and the retailers, and among four category of wholesalers. About two-fifth of the wholesale traders are observed to be influenced in their stocking decisions by one-day-ahead (tomorrow's price) price expectation, about one-third by one-week ahead price expectation and only about one-fifth by three-day-ahead price expectations. More retail traders, on the other hand are motivated in thier stocking decisions, by three-day-ahead price expectations (about two-third of them) than by one-day-ahead (about one-fourth) or by one-week-ahead (only 8%) price expectations. Among the wholesalers, *aratdars* are influenced by tomorrow's price most (about 60% of them) and the miller wholesalers least (only 11% of them), while the miller wholesalers are motivated in their stocking decisions by one-week-ahead price expectations most (about two-third of them) and the *beparis* least (only about one-tenth of them).

Table 8 shows the relative importance of different factors affecting stocking decisions of various category of rice traders in the sample. It is observed that for most of the wholesalers, present market condition seems to be an important factor affecting their stocking decisions. Also, about half of the wholesalers take into consideration other traders' behaviour and about one-third of them the condition of rice harvest in making their stocking decisions. Retailers, on the other hand, cite both present market condition and other traders' behaviour as almost equally frequently as factors affecting their stocking decisions. Very few consider the condition of rice harvest as a relevant factor. It is significant to note that none in the sample consider future scarcity as a factor influencing his stocking decision. In our context this makes sense only when the future refers to a time period exceeding one week, as we observed earlier while discussing the role of price expectations in traders' stocking decisions.

Next, we attempt to analyse the set of factors specifically related to the operation of PFDS that affect traders' stocking decisions. This is done on the basis of information presented in Table 9. It is readily observed that none of the ration variables, such as ration price, ration quota and/or ration off-take entered into the stocking decisions of rice traders in our sample. This is true for both wholesale and retail traders. On the other hand, more than 90% of traders in both the wholesale and retail groups consider open market sales (OMS) of foodgrains by the government as a factor affecting their rice stocking decisions. This remain true for almost every category of traders among the wholesalers as well. Import of foodgrains by the government also feature rather prominently as a factor affecting traders' stocking decisions. This behavour is more pronounced among the wholesalers (almost each category) as compared to the retailers in our sample.

TABLE 8. GENERAL FACTORS AFFECTING STOCKING DECISIONS OF DIFFERENT CATEGORY OF TRADERS

Category	Present Market Conditions	Rice Harvest	Other Traders Behaviour	Future Scarcity
Wholesalers	**69.0**	**30.9**	**47.6**	—
Bepari	54.5	18.2	63.6	—
Aratdar	61.6	23.1	46.1	—
General	100.0	33.3	11.1	—
Miller	66.7	44.4	66.7	
Retailers	**66.7**	**8.3**	**75.0**	—

Note : The figures indicate the percentage of respondents with positive responses in that category, in the sample.

Source : Traders Survey, 1985.

TABLE 9. PFDS FACTORS AFFECTING STOCKING DECISIONS OF DIFFERENT CATEGORY OF TRADERS

Category	Open Market Sale	Import of Foodgrains	Govt. Stock of Foodgrains
Wholesalers	**95.2**	**90.4**	**4.8**
Bepari	100.0	100.0	—
Aratdar	84.6	69.2	7.7
General	100.0	100.0	11.1
Miller	100.0	100.0	—
Retailers	**91.7**	**58.3**	**16.7**

Note : The figures indicate the percentage of respondents with positive responses in that category in the sample. None mentioned ration price, ration quota, and ration off-take.

Source : Traders Survey, 1985.

Very few in the sample, however, consider government stock of foodgrains as a factor affecting their stocking decisions. Thus traders' stocking decisions would seem to be influenced by the expected build up of government stock through import of foodgrains rather than by its existing stock.

We have already observed that government OMS operations seem to play an important role in traders' stocking decisios. This happens because most of the traders (all wholesalers and more than 80% of retailers) are aware of such an opeation and also believe that it is effective in arresting the price hike during the lean season. It is also observed that the impact of OMS on traders' stocking decisios is cofined to the period in which such operation is actually carried out. Such conclusions emerge from the results shown in Table 10. It is also observed that more then 90% of whole salers and 75% of retailers consider the government OMS operation as an important factor influencing the amount of rice they decide to stock but that the impact is likely to be quantitatively insignificant-only 11% for wholesalers and 18% for retailers in the sample. Also, not much variation is observed among different categories of wholesalers in this respect.

Attempts were also made to ascertain whether the existing restrictions on foodgrain storage adversely affect the traders in their business transactions, in particular whether

TABLE 10. IMPACT OF OPEN MARKET SALE (OMS) ON STOCKING DECISIONS OF DIFFERENT CATEGORY OF TRADERS

Category	Awareness of OMS	Effectiveness in Checking Price Rise	Affecting Traders Stocking Decisions	Amount of Stock Likely to be Affected
Wholesalers	**100.0**	**100.0**	95.2	**92.8 (11.1)**
Bepari	100.0	100.0	84.6	100.0 (14.0)
Aratdar	100.0	100.0	100.0	76.9 (9.5)
General	100.0	100.0	100.0	100.0 (11.1)
Miller	100.0	100.0	100.0	1000.0 (9.4)
Retailers	**83.3**	**100.0**	91.7	**75.0 (18.3)**

Note : Figures in parenthesis indicate the quantitative impact of OMS on traders' stocking decisions ; in particular, what proportion of traders' total amount of stock is likely to be affected by OMS.

Sources : Traders' Survey, 1985.

such restrictions force them to incur losses. The results are shown in Table 11. It is readily observed that most of the respondents replied negatively to such a query, both among the wholesalers and retailers. Similar responses were obtained when asked whether various govt. regulations in rice trade increased their cost of operating business. Again, most of the traders in different category replied negatively excepting *beparis*, most of whom felt that their cost increased due to the existence of various rules regulating rice trade in Bangladesh. The amount of such cost increase, however, is not significant - only 6% of their total cost of business operation.

TABLE 11. IMPACT OF GOVERNMENT REGULATIONS ON RICE TRADE

Category	Does restriction on storage of food grains force you to sell at a loss?		Does existing Govt. regulatins on rice trade increase your cost of operation ?		Proportion of such increased cost of operation
	Yes	No	Yes	No	(%)
Wholesalers	**4.8.**	**69.0**	**21.4**	**61.9**	**6.0**
Bepari	9.1	63.6	63.6	27.3	6.0
Aratdar	7.7	46.2	—	61.5	—
General	—	100.0	22.2	66.7	6.0
Miller	—	77.8	—	100.0	—
Retailers	—	**66.7**	**8.3**	**58.3**	**5.0**

Note : The figures, excepting those in the last column, indicate the percentage of respondents in total sample in that category. The figures in the last column indicate the average value of such increased cost in tehir total cost of operation in the sample.

Source, Traders' Survey, 1985.

IV. SUMMARY AND CONCLUSIONS

Attempts were made in this paper to analyse the behaviour of ric traders in general, and the factors influencing their stocking decisions in particular based on the information collected from a sample of wholesale and retail traders in different rice markets in and around Dhaka city. Following major conclusions emerge from the evidence presented in this study.

Traders', both wholesalers' and retailers', stocking decisions are influenced by prices expected in the future but the time frame of such price expectations is confined to only one week. Within this one-week time frame, however, considerble variations were observed between the wholesalers and retailers, and among four categories of wholesalers.

Among different factors influencing stocking decisions of various category of traders, it was observed that for most of the wholesalers present market condition appeared to be an important factor influencing their stocking decisions. Retailers, on the other hand, cited both present market condition and other traders' behaviour as almost equally frequently as factors influencing their stocking decisions.

Among the set of factors specifically related to the operation of PFDS, it was observed that none of the ration variables such as ration prices, ration quota and/or ration offtake influenced the stocking decisions of rice traders in the sample. On the other hand, 90% of traders in both the wholesaler and retailer groups considered open market sale (OMS) of foodgrains by the government as a factor influencing their rice stocking decisions. This happens because most of the traders are aware of such an operation, and also because they consider it effective in arresting the price hike in the lean season. This underscores the need to devise appropriate measures for greater involvement of private rice traders in the public foodgrian distribution system of Bangladesh.

In conclusion, it must be emphasized here that the coverage of our sample was very limited since the survey was confined to a few rice markets in and around Dhaka city, and it was conducted in a particular season. A more comprehensive survey covering rice markets located in other parts of the country, and in different seasons of the year need to be carried out in order to check the robustness of our findings and to permit generalisation of our results if they are to form the basis of sound policy recommendations in these areas.

REFERENCES

Faruk, M.O. (1972) : *Structure and Performance of the Rice Marketing System in East Pakistan.* Cornell International Agricultural Development Bulletin 23. Ithaca, New York : Cornell University,

Revallion, M. (1985) : "The Informational Efficiency of Traders' Price Expectations in a Bangladesh Rice Market". *Oxford Bulletin of Economics and Statistics.*

Revallion, M. (1985) : "The Performance of Rice Markets During the 1974 Famine". *The Economic Journal*, 92.

Rahman, A.,M.S. Haque, and M. Ahmad, (1984) : *Production, Procurement and Agricultural Price Policy in Bangladesh.* Dhaka : CIRDAP and IBA,