REAL CONSUMPTION LEVELS AND THE PUBLIC DISTRIBUTION SYSTEM IN INDIA

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ABSTRACT

The policy of allocation of foodgrains under rationing has been very *ad hoc* in India with allocation being fixed on a 'historical basis'. This paper uses four sets of pooled equations for predicting stable levels of per capita consumption of rice and wheat in physical terms in rural and urban India. Foodgrain demand is estimated for all the States in India. The own-price, cross price and income elasticities of demand are estimated. The model shows a high level of predictive efficiency. Currently, wide variations exist in consumption pattern which, then, cause a variety of mismatches in the allocation and lifting patterns. A formula that is based on the concept of subsidizing real consumption through rationing is proposed.

I. INTRODUCTION

The policy of allocation under the public distribution system (henceforth PDS) in India has been the subject of intense debate among economists as well as in policy circles. For instance, Parikh (1994) emphasized the implicit subsidy through rationing. So far, the basis of allocation has been somewhat *ad hoc*. It has been done on some `historical basis' and is incremented, subject to availability, as per demands from states. The revamped PDS, that has been targeted toward the poor, is based on the notion of providing some quantity of cereal so as to provide at least a part of the minimum calorific requirement(20 kg/head/mensem). This forms the conceptual basis for rationing. In this sense, the role of rationing is really one of subsidizing real consumption. In the present paper we evaluate the current policy of allocation on the basis of this notion of providing a real consumption subsidy.

STATE LEVEL CEREAL DEMAND- RURAL AND URBAN

The National Sample Survey (henceforth NSS) 45TH Round (July 1989-June 1990), 47TH Round (July 1991- December 1991) and 48TH Round (January 1992-December 1992) contain data on average monthly per capita expenditure (weighted average that accounts for the distribution of expenditure amongst different MPCE classes), quantity and value of rice and wheat consumed per person in 30 days. We first estimated the own price elasticity of demand, the cross elasticity and the income elasticity non-parametrically. However, the data points were very few (three) so that the results were inefficient. Hence, we pooled the data and used appropriate dummies to capture state level differences.

NSS give data for 15 states and 3 regions that combine smaller states and Union Territories. Thus, the sample size is 18x3. The implicit price is obtained by dividing the value of expenditure by the quantity of rice or wheat purchased. The average monthly per capita expenditure (MPCE) is deflated by the consumer price index (CPI) and taken to be an indicator of real income.

II. THE MODEL

The demand model used is a double-log function so that estimation of elasticities becomes straightforward.

$$\text{Log } Q^{U}_{X} = b_1 \text{LogP}_X + b_2 \text{LogP}_Y + b_3 \text{LogI} + V_1 D_C \text{LogP}_X + V_2 D_C \text{LogP}_Y + V_3 D_C \text{LogI} + wT + \text{state level intercept and trend dummies} + \epsilon_t \quad \ldots.(1)$$

where

Q^{U}_{X} = per capita consumption of X (rice/wheat) in a month,

A_0 = minimum consumption level,

b_1 = partial own price elasticity,

b_2 = partial cross elasticity (w.r.t. substitute cereal Y),

b_3 = partial income elasticity (w.r.t. (I) money income),

D_C = dummy for major consuming States of the cereal,

V_1 = difference in B_1 for major consuming States (compared to the national average),

V_2 = difference in B_2 for major consuming States (compared to national average),

V_3 = difference in B_3 for major consuming States (compared to national average),

w = growth in minimum consumption level of rice or wheat,

T = time trend, e_t = error term.

and

$$Q^{N}_{X} = (\text{Anti}(\text{Log } Q_X) * P^{R} + \text{Anti}(\text{Log } Q_X) * P^{U}) * 12 \ldots\ldots(2)$$

U = (superscript) urban, V = (superscript) rural,

N = (superscript) national and P = population.

The predicted value of Log Q can be had from equation (1). Its antilog gives the estimate of per capita per mensem demand for the particular cereal, rice or wheat, which when multiplied by either rural or urban population of India, gives the demand for the particular region. Equation (2) gives the total demand at the national level. Consumption in each state can be obtained by constructing individual equations from the aggregate equation since the difference in intercept as well as the difference in slope for major consuming states are known. Four equations, pooling all

states, were estimated: one each for each cereal and one each for each sector- rural and urban.

III. STABLE LEVELS OF CONSUMPTION

To return to the theme of state level estimates, it would be appropriate to recapitulate the basic issue. At the state level, NSS data reflect the monthly per capita expenditure on cereals, amongst other things. We have used this rich source to estimate the true levels of consumption in different states. The methodology is to estimate demand equations of the type given by (1). The main interest here lies, however, in estimating the levels of consumption per capita per month on the hypothetical basis that real income remains constant. To this end, the basic relationship between demand, income and prices is used.

In general, the demand function is defined as

$$D_x = f(P_x, P_s, P_c, I)$$

D_x = demand for commodity x

P_x = price of commodity x

P_s = price of substitutes

P_c = price of complements

I = money income

The demand function is homogeneous of degree zero if the following relation holds:

$$(\partial D_x/\partial P_x)*P_x + (\partial D_s/\partial P_s)*P_s + (\partial D_x/\partial P_c)*P_c + \partial D_x/\partial I*I = 0$$

Dividing throughout by D_x, this relationship gets converted into an additive function between all the elasticities of demand, namely, the own price elasticity, elasticity with respect to price of substitutes and/or price of complements. This implies:

$$\eta_x + \eta_s + \eta_c + \eta_I = 0$$

where η_i are the respective elasticities. This can be tested with the usual *F* test. Such a test would reveal whether the assumption of the degree of homogeneity being zero is true. If the test validates the restriction of the degree of homogeneity being zero, then the implication is that the levels of consumption remain

constant if all prices increase along with an increase in the money income, such that real income remains constant. This is in keeping with Engel's law where the levels and patterns of real consumption depend upon real income. The advantage with verifying such a hypothesis of zero degree homogeneity is that stable levels of consumption can be predicted. In the subsequent analysis of allocation and lifting from PDS, these stable levels of consumption have been used as a basis for making comparisons. The basic assumption in this study is that in the given three years the average real income is constant. Therefore, stable levels of consumption can be estimated and can be compared with the actual levels of allocation and lifting.

IV. CONSUMPTION LEVEL ESTIMATION - METHODOLOGY

Regression equations for the four data series relating to demand for superior cereals were estimated by using slope, intercept and trend dummies. One (intercept) dummy each for 18 major consuming states were used to pick up inter-state differences. Similarly, in the initial estimates, 18 trend dummies were also included. Apart from this, a dummy each for major wheat consuming and major rice consuming states was formed. This serves the purpose of identifying the difference between the coefficients at the all-India level and the coefficients for major consuming states of either rice or wheat. For a rigorous testing of the zero degree homogeneity condition, own price, price of substitutes, price of complements and income need to be included as explanatory variables.

Some of the trend variables were found to be insignificant in the initial estimation and were dropped. We also tried to incorporate income inequalities. This was done in the light of the argument of Kumar, Rosegrant and Boulis (1994), who emphasized the significance of income inequalities in the determination of consumer demand. Dummies were created for groups of states amongst the sample 18, which happened to fall in the same quartile range of monthly per capita consumption expenditure. These dummies were used to determine the differences in the coefficients for these four groups in respect of the income variable. Once again, the results were not

significantly different from the initial estimates, which took income as a gross variable. Neither were they illuminating in terms of different signs for high as opposed to low income/expenditure classes. The final estimates therefore, were based on the original model in which consumption expenditure was taken in money terms and as a single variable.

DEGREE OF HOMOGENEITY

For verifying the hypothesis of the degree of homogeneity being zero, two tests were conducted. The first was a single linear restriction on all the six coefficients of own price, price of substitutes and income, that is,

Test 1. (Major consuming states)

b1 + b2 + b3 + b1* Dw + b2* Dw + b3* Dr = 0 ..... (i)

with dummy Dr for rice (rural and urban) equations
and dummy Dw for wheat (rural and urban) equations.

The second test was a single linear restriction on only three of the six coefficients of own price, price of substitute and income, that is

Test 2.

(All India)

b1 + b2 + b3 = 0 .....(ii)

VI. RESULTS

All pooled equations have a high explanatory power. The minimum R^2 is 0.98 which is in the case of rural wheat consumption. In all other cases, it exceeds 0.99. (Tables 2.1 to 2.4).

Urban Rice:

The own elasticity bears the right sign at the all India level and is large (-1.81 in Table 2.1). For the major rice consuming states, The interaction dummy is significant and positive at 1.48. For them then, the own price elasticity is -.33 (given by -1.81 +1.48). This is expected behavior. The price of the substitute cereal, wheat, bears the right sign at the all India level and is highly elastic at +1.66. For the country as a whole, income elasticity is -0.40, but for the major consuming states, it is + 0.49 (given by .89 - .40).

Most of the intercepts are significant, with the sign varying in different cases. The only states whose intercepts are not significant are Kerala and Tamilnadu. The noticeable factor is that there is a definite negative trend which is both statistically significant and numerically weighty. This points to a decline in rice consumption in Haryana, Orissa and Rajasthan, at the rate of 19.9%, 16.4% and 14.3% per annum respectively. The reverse trend can be seen in urban rice consumption. However, interestingly, these are independent trends, because the states in which the decline is apparent, do not match the states in which wheat consumption has been rising. A more detailed analysis of the changes in the real income levels and a sub-state level study for regional patterns may reveal a shift towards superior cereal substitutes. Of the two tests, the null hypothesis of zero degree homogeneity is accepted only for the major consuming states (Table 2.1).

Urban Wheat:

Results for this are reported in Table 2.2. Wheat consumption in urban areas has an overall own price elasticity of -0.65. The corresponding elasticity for major consuming areas is less but nevertheless, bears the right sign, and stands at -0.27 (given by -.65 + .38). The difference, however, is significant only at the 10% level. At the national level, the price of rice as a substitute bears a negative sign and is significant, with its value being -0.93. The corresponding elasticity is 0.16 for the major consuming states (given by 1.09 - .93). This means that rice is definitely a substitute in wheat consuming areas and, significantly, its price elasticity is low. The income elasticity is positive, weighty and significant for the all India level, and stands at around 0.6. On the other hand, it is positive, significant but small for major consuming states at 0.15 (given by 0.59 - 0.44). The states that have an intercept insignificantly different from zero are Gujarat, Madhya Pradesh, Maharashtra, Orissa and Punjab. The upward trend in urban wheat consumption is apparent from the three significant trend variables relating to Tamilnadu, North East and Southern states. This is direct evidence of change in consumption patterns in

major rice consuming states. The growth rates are also fairly high. It may be expected that the total cereal intake in these states has increased since none amongst them figure in the declining trend of rice consumption. The F-test for verifying the restriction regarding degree of homogeneity follows the same pattern of being accepted for the major consuming states and rejected at the all India level (Table 2.2).

Rural Rice:

Own price elasticity at the all-India level is -0.54 and is significant. There is no effective difference between the elasticity of major consuming states and the all-India magnitude. Wheat price elasticity is positive and almost equal to unity. It is significant at both levels, but is marginally negative for the major consuming states. The income elasticity of demand in general is insignificant, but bears a negative sign. This virtually means that rural rice consumption in major consuming states has an income elasticity of demand which is around 0.75, and is highly significant. The intercepts of Bihar, Kerala, Punjab West Bengal and the North-East are not significant. There is an unmistakable trend of decline in rural rice consumption. Significant falling trend rates are observed in Gujarat, Haryana, Kerala, Madhya Pradesh, Maharashtra, Uttar Pradesh Rajasthan and the north-west. However, unlike the consumption of urban rice, there is a noticeable substitution towards wheat consumption at least in states like Orissa, Rajasthan and the North-West. Degree of homogeneity is zero at the all-India level (Table 2.3).

Rural Wheat:

Rural wheat consumption is negatively related to own price at both levels but is significant only for major consuming states. Its value is -1.06. Rice as a substitute bears a negative sign and is not significant at the all India level but is positive and stands at 0.9 (given by 0.0 +0.9) for the major consuming states. Income in this case, is not significant at the 5% level but is significant at the 10% level for both the all India and the major consuming states. The elasticities are respectively 0.17 and 0.42 (given by 0.17 + 0.25).

The intercepts are highly significant for all except Madhya Pradesh and West Bengal. As pointed out, Orissa, Rajasthan and the North West, show significant growth rates which are respectively, 0.3, 0.25 and 0.24. It must be kept in mind that these consumption levels are per capita measures. It is significant that, like rural rice, rural wheat also displays zero degree of homogeneity at both levels. This implies that in general the consumption of cereals in rural areas conforms to real income levels (see Table 2.4).

These demand equations were used for predicting the stable consumption levels generated on the hypothetical basis that if real income remains constant the levels of demand too remain constant. This is an outcome of the degree of homogeneity being zero, which has been verified almost universally at all levels, and for both rural and urban areas. The predictive efficiency of the model and the specific equations has been tested on the basis of the ratio of actual levels of consumption to such predicted levels of hypothetical consumption. The results of this test show that the maximum deviation is in the case of rural wheat consumption in Haryana, in 1991, where actual consumption is 42% above hypothetical consumption. This however appears to be an outlier. In most cases, the ratio is very close to unity. On the lower side, the variation does not exceed 20%, which once again, is for rural wheat in Punjab in 1990. It must be pointed out that in the other three series, generated by the model, other than rural wheat, the variation is much less. In general, it does not exceed 6% on either side. The deviations in general do not follow any pattern, neither in favor nor against the major consuming states. They can well be taken to be normally distributed (Table 1).

VII. EVALUATION OF PDS: ALLOCATION AND LIFTING

Data for allocation and lifting was available for a fairly long period. However, the limitation of demand data restricts the study of such an evaluation to the three years 1990, 1991 and 1992. The earlier exercise, apart from illuminating questions relating to

consumption, serves the purpose of providing a basis for evaluating the PDS.

Monthly allocation and lifting data was averaged over the 36 months relating to these three years. The data was available consistently for 25 states and 6 union territories. The following indices were developed for purposes of comparison and evaluation.

1. $MPCC_i$ = Monthly per capita consumption (in tonnes) of ith State.
2. $R_mC = MPCC_i / \mu_c$ = Ratio of consumption of ith State to average consumption per capita.
3. $R_aC_i = A_i / MPCC_i$ = Ratio of allocation of ith State to its monthly consumption per capita.
4. $R_lC_i = L_i / MPCC_i$ = Ratio of lifting of the ith State to its monthly consumption per capita.
5. $R_aA = R_aC_i / \mu_a$ = Ratio of R_aC_i to its own average.
6. $R_lA = R_lC_i / \mu_l$ = Ratio of R_lC_i to its own average.
7. $D_iAC = R_aA / R_mC$ = Distortion index of allocation of ith State with respect to monthly consumption pattern.
8. DiLC = R_lA / RmC = Distortion index of lifting of ith State with respect to monthly consumption pattern.

While we admit that PDS has a rationale for subsidizing consumption, in its functioning, it should complement the consumption needs and patterns. The above predicted levels of per capita consumption represent stable levels based on tastes and socio-cultural needs. The data on which the above estimates were made pertain to total expenditure on food grains, irrespective of whether they are purchased from the open market or rationing. Therefore, both allocation and lifting would form a certain proportion of this level of consumption. Conclusions drawn from implicit subsidies in money terms, in other studies, do not clarify the basic role of PDS in respect of real consumption. The quantity data of allocation and off-take can conveniently be juxtaposed with the quantitative estimates of per capita consumption. A rational policy of allocation needs to be geared to these fundamental consumption patterns Any amount of subsidy in money

terms cannot serve the purpose if the outcome of rationing does not complement these basic consumption patterns. The above specified indices seek to delve into the crucial question of whether allocation and lifting from PDS serve this purpose. In this sense, any deviation from the patterns of consumption and demand are distortions and need corrections (Tables 3 & 4).

Urban Rice:

The third and fourth indices simply provide an insight into the extent of dependence of the consumer on the PDS. The second index is a measure of the deviation from the average pattern of consumption. For instance, this index varies from a low of 33% to a high of 180% in the case of urban rice demand. The proportion of allocation is extremely low in the case of Bihar and happens to be only 2.2% of the consumption level, although its consumption is very near to the average. In terms of lifting the ratio is around 1.1%. On the other hand, Jammu and Kashmir receives 87% in excess of the average consumption, while the lifting is almost equal to its per capita consumption. This deviation is further exaggerated when the percentage of allocation and lifting are seen as a ratio to their own average. In terms of allocation, then, J&K receives four times the average and the lifting is three times the average. Many other states also display such proportions. The situation of Bihar does not change significantly even if such a measure is adopted. The average per capita consumption is 4.28 kg. The average ratios of allocation and lifting are 40 and 29% respectively. There is a remarkable equivalence if the coefficients of variation of these two ratios are observed. Yet, the CV of per capita consumption is lower. This, in itself, implies that PDS quantities deviate to a greater extent. The equivalence however breaks down when the seventh and eighth indices are observed. Allocation has a coefficient of variation of 1.38 while that of lifting is only 1.22, which is still greater twice that of the per capita consumption (Table 8.1 & 8.2).

Urban Wheat:

The average wheat consumption is 4.25 kg. In spite of excluding Pondicherry, which is an outlier, the average ratio of allocation is

5.86. This is mostly on account of small states and union territories. Here again, Bihar receives only 6.3% and lifts only 5.3% of its per capita consumption. Once again, the coefficients of variation are similar for both the allocation and lifting ratios and are much higher than the CV of per capita consumption. Bihar gets only 1%, while its allocation and lifting are considered with respect to the average. Nagaland and Goa recieve almost twice the average, even if Daman and Diu, which is an outlier, is ignored. Surprisingly, lifting in Goa even exceeds this high ratio and so is the case with Nagaland. The CV of the distortion index of allocation exceeds that of the index of lifting (see Table 6.1 & 6.2).

Rural Rice:

The average per capita consumption is 4.5kg., while the average allocation and lifting ratios are 31% and 25% respectively. The deviation between the CVs of allocation and lifting as compared to per capita consumption is less than that in the case of urban rice and wheat. The CV of the allocation ratio is less than that of the lifting ratio, but when they are considered with respect to the consumption pattern, the converse occurs. Uniformly, Bihar appears at the lowest end. Lakshadweep and Jammu & Kashmir receive more than the per capita consumption and the lifting is much less. With respect to the average, Jammu & Kashmir, Goa, Nagaland, Daman and Diu,Delhi and Meghalaya receive a higher allocation. Rajasthan receives allocation equal to the average, but in terms of the distortion indices, the two indices are 41 and 25 respectively. A similar switching of CVs as in the previous case, is noticeable as between the ordinary ratios and the distortion indices of allocation and lifting (Table 7.1 & 7.2).

Rural Wheat:

The average consumption is 3.3kg. The CV of the allocation ratio is higher than that of lifting and the same pattern is seen as for the distortion indices. In spite of eliminating outliers, the average allocation and lifting ratios are abnormally high. This is due to the small states. Bihar continues to trail behind with

5.5 and 7.3% allocation and lifting, compared to the average. The CV of allocation and lifting is more than two times that of the per capita consumption (Table 5.1 & 5.2).

VIII. POLICY IMPLICATIONS

The following varieties of mismatches are illustrative of the irrationalities in the PDS system.

1. Allocation in many cases is in excess of the absolute level of per capita real consumption per month (PCC).
2. Allocation as a ratio of the PCC, in certain states goes down to 2.2%.
3. Similar incongruencies exist in respect of lifting.
4. Also, the gap between allocation and lifting is glaring in many cases. This also points out towards misallocation.
5. There are differences between the allocation to consumption ratio as between urban to rural areas.

There is no doubt that the quantitative interventions in the real consumption and demand patterns caused due to allocation and lifting are significant. To say the least, a thorough look into the pattern of allocation is a must. Even though there may be instances where lifting appears to be a greater source of distortion, it cannot be forgotten that lifting is circumscribed by allocation. A correction in the policy of allocation is imperative and lifting would follow suit. A study towards this end would be worthwhile and is capable of yielding concrete criteria for overhauling the allocation pattern so as to make PDS rational and viable complement of market demand, while retaining the variations in tastes and socio-cultural patterns in consumption.

The following formula can form the basis for allocation:

F_s^t = Food surplus (less emergency stock, wastage and open sale stock)

$$F_d^t = \sum_{s=1}^{N} F_d^s$$ = Total food demand over N States.

F_d^s = Pop(s) * PCC (s)= Food demand in s th State Pop(s) = Population of s th StatePCC (s) = Per capita real consumption of s th State in physical units.

F_s^t / F_d^t = ARAR = Adjustable Rationing Allocation Ratio

Allocation to each State = ARAR* F_d^s

The ARAR can be adjusted according to the food surplus every cropping season. The sub-allocation can be done at the State level on a pro-rata basis.

IX. CONCLUSIONS

In this paper we have examined the rationale for the current allocation pattern of rice and wheat through the PDS in India and found it to be wanting in at least one important respect - the allocation pattern appears to ignore the structure of consumption demand in the country. An alternative formulation is also suggested in the paper.

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TABLES

TABLE 1: RATIO OF ACTUAL LEVELS OF CONSUMPTION TO PREDICTED LEVELS

STATE	URBAN RICE	URBAN WHEAT	RURAL RICE	RURAL WHEAT
ANDHRA PRADESH				
1990	.942901	1.02834	1.05107	1.06210
1991	1.03408	.945637	.925379	.986149
1992	1.02561	1.02834	1.02812	.954754
ASSAM				
1990	1.05893	.977547	1.03004	.834275
1991	.998471	1.04646	.973630	1.11431
1992	.945795	.977546	.997135	1.07569
BIHAR				
1990	.974420	.971906	.949811	.950054
1991	.960797	1.05865	1.03549	.976398
1992	1.06812	.971908	1.01676	1.07802
GUJARAT				
1990	.924869	1.04698	.967438	.695494
1991	.971262	1.02255	1.06845	.760171
1992	1.11323	.934063	.967439	.753291
HARYANA				
1990	.974459	1.00054	.967767	1.28893
1991	1.05311	.991070	1.06772	1.42805
1992	.974457	1.00846	.967766	1.23419
KARNATAKA				
1990	.984333	1.03016	1.02375	.837542
1991	1.01150	.942314	.943506	1.12240
1992	1.00437	1.03015	1.03529	1.06377
KERALA				
1990	1.04016	1.03108	1.01666	.857468
1991	.929573	.940622	.967486	1.07264
1992	1.03423	1.03108	1.01666	1.08724
MADHYA PRADESH				
1990	.999228	1.02280	.964852	.904532
1991	.978452	.945979	1.07418	.971916
1992	1.02281	1.03354	.964852	1.13749
MAHARASHTRA				
1990	1.05798	.992515	.987120	.923531
1991	.951487	1.00459	1.02627	1.02409
1992	.993387	1.00294	.987118	1.05732
ORISSA				
1990	.983694	.999046	1.04087	.961591
1991	1.03343	1.02648	.923012	1.08148
1992	.983695	.975134	1.04087	.961591
PUNJAB				
1990	1.09482	.993625	.992210	.795706
1991	.915945	1.04293	1.00057	.969423

1992	.997221	.964985	1.00727	1.29638
RAJASTHAN				
1990	.953958	.973456	.991628	1.05593
1991	1.09886	1.00253	1.01695	.896865
1992	.953958	1.02467	.991631	1.05593
TAMILNADU				
1990	1.09100	1.00407	1.07961	.877765
1991	.972043	.991910	.926004	1.24578
1992	.942950	1.00407	1.00028	.914495
UTTAR PRADESH				
1990	1.01485	.961584	1.01600	.950297
1991	1.01119	.994402	.968747	1.02142
1992	.974464	1.04581	1.01600	1.03023
WEST BENGAL				
1990	1.02677	1.04988	.996916	1.06356
1991	1.00681	.978828	1.00722	1.03222
1992	.985780	.977759	1.01945	.879013
NORTH EASTERN [1]				
1990	1.00756	1.04487	.973882	1.10213
1991	.998467	.915964	.960169	1.00114
1992	.994020	1.04487	1.06941	.906302
NORTH WESTERN [2]				
1990	1.06062	.922578	1.02571	.953138
1991	.926846	1.11089	.950490	1.10075
1992	1.01726	.975720	1.02571	.953139
SOUTHERN [3]				
1990	.952417	.989558	1.07044	.890141
1991	.980364	1.02121	.938158	1.13748
1992	1.07099	.989559	.995775	.987637

Notes:

1 Arunachal, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura.

2 Jammu & Kashmir, Himachal Pradesh, Chandigarh and Delhi.

3 Andaman & Nicobar, Dadra & Nagar Haveli, Goa, Lakshdweep, Daman & Diu and Pondicherry.

TABLE 2.1: EQUATION FOR CEREAL DEMAND AT STATE LEVEL (URBAN -RICE)

DEPENDENT VARIABLE LOG (Qd) (URBAN -RICE)

RBAR**2 .99525534 DURBIN-WATSON 2.89635936

NO.	LABEL	LAG	COEFFICIENT	STAND.ERROR	T-STATISTIC
1	LPUR	0	-1.818346	.2254321	-8.066048
2	DPUR	0	1.486862	.3469340	4.285719
3	LPUW	0	1.667045	.2855751	5.837500
4	DPURW	0	-1.757236	.3453680	-5.088012
5	LMCPU	0	-.4066365	.2446763	-1.661937
6	DMCPUR	0	.8992904	.2489522	3.612301
7	D1	0	.1669916	.1013193	1.648172
8	D2	0	.2383134	.9429860E-01	2.528608
9	D3	0	-.1198631	.6645213E-01	-1.803751
10	D4	0	4.140785	1.173220	3.529419
11	D5	0	6.426024	1.750725	3.670494
12	D6	0	-.3132478	.8683011E-01	-3.607594
13	D7	0	-.8084648E-01	.1059533	-.7630391
14	D8	0	4.533984	1.175784	3.856137
15	D9	0	4.322934	1.197395	3.610284
16	D10	0	4.992824	1.785621	2.796128
17	D11	0	3.549187	1.253424	2.831594
18	D12	0	8.393379	2.697835	3.111154
19	D13	0	.1821569E-01	.8062248E-01	.2259380
20	D14	0	4.210286	1.166490	3.609362
21	D15	0	-.2466610E-01	.6362470E-01	-.3876811
22	D16	0	.4092938	.9429086E-01	4.340758
23	D17	0	4.202691	1.219089	3.447403
24	D18	0	-.2081525	.1144936	-1.818026
25	D5T	0	-.1996336	.5972839E-01	-3.342357
26	D10T	0	-.1639756	.6268314E-01	-2.615945
27	D12T	0	-.1432150	.5620439E-01	-2.548110

* ZERO DEGREE OF HOMOGENIETY: 1. MAJOR CONSUMING STATES

F(1 27) = .6933950 SIGNIFICANCE LEVEL .4123174

2. ALL INDIA:

F(1,28) = 25.22332 SIGNIFICANCE LEVEL .2609414E-04

where LPUW= log of price of urban wheat, Dpuw = Log of price of urban wheat*Dummy for major wheat consuming states, LPUR = Log of price of of urban rice (substitute grain), DPUWR = Log of price of urban rice*Dummy for for major wheat consuming states, LMCPU =Log of monthly per capita expenditure (urban)*Dummy for major wheat consuming states, D1,…,D18 = state intercept dummies, D1T,…,D18T = State trend dummies

TABLE 2.2: EQUATION FOR CEREAL DEMAND AT STATE LEVEL (URBAN -WHEAT)

DEPENDENT VARIABLE LOG (Qd) (URBAN -WHEAT)

RBAR**2 .99561760 DURBIN-WATSON 3.03310633

NO.	LABEL	LAG	COEFFICIENT	STAND.ERROR	T-STATISTIC
1	LPUW	0	-.6510694	.2047921	-3.179172
2	DPUW	0	.3810027	.2767251	1.376827
3	LPUR	0	-.9318726	.3479890	-2.677880
4	DPUWR	0	1.094992	.3961780	2.763889
5	LMCPU	0	.5903437	.1007577	5.859046
6	DMCPUW	0	-.4391455	.2198285	-1.997673
7	D1	0	-1.24107		
16	D10	0	.1487939E-01	.8175530E-01	.1819991
17	D11	0	1.248762	.9869326	1.265
18	D12	0	1.429722	.9707075	1.472866
19	D13	0	-7.304711	2.097234	-3.483021
20	D14	0	1.349886	.9326095	1.447429
21	D15	0	.2771742	.9776661E-01	2.835060
22	D16	0	-17.49890	4.291542	-4.077533
23	D17	0	1.120960	.9770887	1.147245
24	D18	0	-19.37951	4.380118	-4.424427
25	D1T	0	.1448980	.7889854E-01	1.836510
26	D2T	0	.1591778	.5828867E-01	2.730854
27	D3T	0	.2951175	.7241454E-01	4.075390
28	D6T	0	.2385882	.6314825E-01	3.778224
29	D7T	0	.1502193	.6053471E-01	2.481539
30	D13T	0	.1629864	.5597724E-01	2.911655
31	D16T	0	.3509034	.9180936E-01	3.822088
32	D18T	0	.3613406	.8355039E-01	4.324823

* ZERO DEGREE OF HOMOGENIETY TEST: 1. MAJOR CONSUMING STATES

F(1,22) = .1887880 SIGNIFICANCE LEVEL .6681592

2.ALL INDIA F(1,23) = 13.59030 SIGNIFICANCE LEVEL .1221219E-02

where LPUW = Log of price of urban wheat, DPUW = Log of price of Urban wheat*Dummy for major wheat consuming states, LPUR = Log of price of urban rice (substitute grain), DPUWR = Log of price

of urban rice*Dummy for major wheat consuming states, LMCPU = Log of monthly per capita expenditure (urban)*Dummy for major wheat consuming states, D1,…,D18 = state intercept dummies, D1T,…, D18T = State trend dummies.

Table 2.3: EQUATION FOR CEREAL DEMAND AT STATE LEVEL (RURAL -RICE)

DEPENDENT VARIABLE LOG (Qd) (RURAL -RICE)

RBAR**2 .99727615 DURBIN-WATSON 2.96715258

NO.	LABEL	LAG	COEFFICIENT	STAND. ERROR	T-STATISTIC
1	LPRR	0	-.5403501	.2134593	-2.531396
2	DPRR	0	.1762175	.2470313	.7133406
3	LPRW	0	1.021419	.2207203	4.627663
4	DPRRW	0	-1.129530	.2359691	-4.786770
5	LMCPR	0	-.1237082	.1878845	-.6584269
6	DMCPRR	0	.7487157	.1924624	3.890193
7	D1	0	-.1593109	.6937245E-01	-2.296457
8	D2	0	-.1652318E-01	.6055217E-01	-.2728752
9	D3	0	-.3086767	.6034357E-01	-5.115321
10	D4	0	2.352933	1.042137	2.257797
11	D5	0	4.068329	1.071041	3.798482
12	D6	0	-.9464693	.6054012E-01	-15.63375
13	D7	0	.3960253	.9200284	.4304490
14	D8	0	4.764389	1.517449	3.139736
15	D9	0	4.713486	1.685534	2.796434
16	D10	0	1.473588	1.322708	1.114069
17	D11	0	.3254105	1.138745	.2857623
18	D12	0	5.382233	2.297166	2.342989
19	D13	0	-.3070860	.6187693E-01	-4.962851
20	D14	0	6.681980	2.922762	2.286187
21	D15	0	-.1313062E-01	.5359597E-01	-.2449927
22	D16	0	-.7742549E-01	.6009192E-01	-1.288451
23	D17	0	9.677025	2.390235	4.048567
24	D18	0	-.6760951	.7009091E-01	-9.645973
25	D4T	0	-.1234694	.7417411E-01	-1.664589
26	D5T	0	-.2559189	.8052051E-01	-3.178306
27	D7T	0	-.4882721E-01	.4593834E-01	-1.062886
28	D8T	0	-.1196444	.6956478E-01	-1.719899
29	D9T	0	-.1359840	.7211612E-01	-1.885625

30	D10T	0	-.4616920E-01	.4553586E-01	-1.013909
31	D12T	0	-.1867223	.6487494E-01	-2.878189
32	D14T	0	-.1201689	.7516136E-01	-1.598813
33	D17T	0	-.1557205	.5440112E-01	-2.862450

* ZERO DEGREE HOMOGENIETY TEST: 1. MAJOR CONSUMING STATES

F(1,21) = 2.372100 SIGNIFICANCE LEVEL .1384548

2. ALL INDIA

F(1,22) = 1.126846 SIGNIFICANCE LEVEL .2999639

where LPRR = Log of price of rural rice, DPRR = Log of price of rural rice*Dummy for major rice consuming states, LPRW = Log of price of rural wheat (substitute grain), DPRRW = Log of price of rural wheat*Dummy for major rice consuming states, D1 - D18 - State intercept dummies, D17T - [illegible] Dummies.

TABLE 2.4: EQUATION FOR CEREAL DEMAND AT STATE LEVEL (RURAL - WHEAT)

DEPENDENT VARIABLE LOG (Qd) (RURAL - WHEAT)

RBAR**2 .98112923 DURBIN-WATSON 1.86065420

NO.	LABEL	LAG	COEFFICIENT	STAND. ERROR	T-STATISTIC
1	LPRW	0	-.1533865	.2431563	-.6308146
2	DPRW	0	-1.062605	.3647601	-2.913161
3	LPRR	0	-.3168371	.3742343	-.8466277
4	DPRWR	0	.9064231	.5309067	1.707312
5	LMCPR	0	.1759491	.1222791	1.438914
6	DMCPRW	0	.2531634	.1573396	1.609026
7	D1	0	-1.774171	.2108778	-8.413263
8	D2	0	-.7647052	.1840630	-4.154585
9	D3	0	1.543654	.1830061	8.434989
10	D6	0	-.3048400	.1837375	-1.659106
11	D7	0	-.3985479	.1978089	-2.014812
12	D8	0	.1310726	.1424001	.9204526
13	D9	0	-.6894751	.1501874	-4.590765
14	D10	0	-9.451778	4.001858	-2.361847
15	D11	0	.2375507	.1459446	1.627677
16	D12	0	-8.746721	4.884085	-1.790862
17	D13	0	-1.294744	.1878064	-6.894035
18	D14	0	.3561427	.1377201	2.585989
19	D15	0	-.3427966E-01	.1625815	-.2108460
20	D16	0	-1.626255	.1808463	-8.992468
21	D17	0	-12.14158	6.773541	-1.792502
22	D18	0	.2925177	.2132038	1.372010
23	D10T	0	.3065489	.1377353	2.225637
24	D12T	0	.2576188	.1395737	1.845755
25	D17T	0	.2395180	.1355442	1.767084

*ZERO DEGREE OF HOMOGENIETY TEST: 1. MAJOR CONSUMING STATES

F(1,29) = .6364540 SIGNIFICANCE LEVEL .4314822

2. ALL INDIA

F(1,30) = 1.065424 SIGNIFICANCE LEVEL .3102313

where LPRW = Log of price of rural wheat, DPRW = Log of price of rural wheat, LPRR = Log of price of rural rice (substitute grain), DPRWR = Log of price of rural rice*Dummy for major wheat consuming states, LMCPR = Log of monthly per capita expenditure (rural)*Dummy for major wheat consuming states, D1,…,D18 = State intercept dummies, D1T,…,D18T = State trend dummies.

TABLE 3: STABLE PREDICTED DEMAND FOR CEREAL AT STATE LEVEL

(Per Capita/ Month)

(in kilograms.)

	URBAN		RURAL	
ANDHRA PRADESH				
	RICE	WHEAT	RICE	WHEAT
1990	10.8495	1.07941	11.9687	.225967
1991	10.2410	.941165	13.2162	.223090
1992	10.0038	.865470	11.9636	.209478
ASSAM				
1990	10.4256	1.32986	13.0481	.587336
1991	11.1871	[illegible]	[illegible]	[illegible]
1992	10.7740	1.37078	12.6362	.557782
BIHAR				
1990	7.50190	6.22488	9.03338	5.97861
1991	7.06705	5.71485	8.75914	5.46908
1992	6.62844	6.66730	8.55662	5.28749
GUJRAT				
1990	2.31384	5.47289	2.08799	6.31206
1991	2.04888	5.54495	2.06842	5.89341
1992	2.20081	5.40649	2.17068	5.17728
HARYANA				
1990	1.02621	9.02509	1.04364	9.58162
1991	.949566	8.78848	.974034	8.45907
1992	.995426	8.44851	.723315	9.56094
KARNATKA				
1990	6.08534	1.56287	4.81564	.931297
1991	6.34703	1.80407	5.23579	.899859
1992	5.89425	1.75702	4.82956	.846050
KERALA				
1990	8.46982	1.03775	8.83281	.897993
1991	9.34838	1.18007	9.76758	.885663
1992	8.41209	.989255	8.95084	.827781

MADHYA PRADESH				
1990	3.79293	7.30345	6.11493	6.50060
1991	3.68950	7.20946	6.02318	6.11164
1992	3.85213	7.09215	6.32221	5.36269
MAHARASHTRA				
1990	3.63901	4.61454	2.94797	2.60955
1991	3.16347	4.61878	2.76731	2.72436
1992	3.31190	4.50677	2.83654	2.26988
ORISSA				
1990	11.9651	2.45234	14.9875	.551170
1991	10.9151	2.28938	17.0637	.748972
1992	10.7757	2.58426	14.8914	.935949
PUNJAB				
1990	.858592	8.40357	.645025	14.2515
1991	1.32104	8.05420	.839518	11.3057
1992	.782174	8.31101	1.09206	8.17662
RAJASTHAN				
1990	.587028	10.3035	.211773	8.52328
1991	.591523	10.0246	.196666	10.2914
1992	.524132	9.77875	.201688	10.1332
TAMILNADU				
1990	8.52427	.766879	9.35523	.341777
1991	9.28971	.816606	10.7127	345166
1992	9.50209	.836595	9.99721	.328050
UTTAR PRADESH				
1990	2.58165	8.68359	3.86810	10.3757
1991	2.68002	8.44729	4.18066	9.20283
1992	2.50394	8.43369	3.83857	8.93006
WEST BENGAL				
1990	8.75560	2.98130	14.0734	1.32573
1991	8.52193	3.03424	13.4727	1.16254
1992	8.73420	2.75119	13.3405	1.13764
NORTH EASTERN				
1990	13.3094	.727366	13.9750	.235907
1991	13.5007	.753305	14.0392	.239727

1992	12.9273	.957060	12.7173	.220677
NORTH WESTERN				
1990	3.25282	6.86121	4.73816	5.13042
1991	2.08233	7.10240	4.75544	5.85057
1992	2.15284	6.92822	4.28970	7.13432
SOUTHERN				
1990	8.00070	1.64720	7.43619	1.77500
1991	8.05823	2.07597	9.27349	1.85497
1992	6.72275	1.77857	9.13861	1.72128

TABLE 4: STABLE PREDICTED DEMAND FOR CEREAL AT STATE LEVEL

(Per Month in Tonnes)

	URBAN		RURAL	
ANDHRA PRADESH				
	RICE	WHEAT	RICE	WHEAT
1990	194066.	19307.5	214086.	4041.90
1991	183182.	16834.7	236400.	3990.44
1992	178939.	15480.8	213994.	3746.96
ASSAM				
1990	25936.8	3308.42	32461.0	1461.17
1991	27831.2	3613.55	33038.4	1428.86
1992	26803.5	3410.22	31436.3	1387.65
BIHAR				
1990	85169.2	70671.1	102556.	67875.2
1991	80232.3	64880.8	99442.6	62090.5
1992	75252.8	75693.9	97143.4	60028.9
GUJRAT				
1990	32963.1	77967.1	29745.6	89922.0
1991	29188.5	78993.7	29466.8	83957.9
1992	31352.9	77021.2	30923.6	73755.8
HARYANA				
1990	4161.02	36594.4	4231.69	38851.0
1991	3850.25	35635.0	3949.46	34299.4
1992	4036.20	34256.5	2932.86	38767.2
KARNATKA				
1990	84633.6	21736.1	66974.9	12952.3
1991	88273.1	25090.6	72818.3	12515.0
1992	81976.0	24436.3	67168.5	11766.7
KERALA				
1990	65050.7	7970.23	67838.6	6896.85
1991	71798.3	9063.28	75017.9	6802.15
1992	64607.3	7597.77	68745.1	6357.60
MADHYA PRADESH				
1990	58179.1	112026.	93795.9	99711.6

1991	56592.6	110585.	92388.6	93745.4
1992	59087.2	108785.	96975.3	82257.4
MAHARASHTRA				
1990	128879.	163428.	104405.	92419.5
1991	112037.	163578.	98006.7	96485.6
1992	117294.	159611.	100459.	80389.8
ORISSA				
1990	50672.0	10385.6	63471.8	2334.20
1991	46225.3	9695.49	72264.5	3171.88
1992	45634.9	10944.3	63064.8	3963.73
PUNJAB				
1990	5145.74	50364.5	3865.78	85412.4
1991	7917.29	48270.6	5031.42	67757.6
1992	4687.74	49809.8	6544.96	49004.3
RAJASTHAN				
1990	5909.68	103726.	2131.94	85804.8
1991	5954.93	100919.	1979.86	103605.
1992	5276.50	98443.8	2030.42	102012.
TAMILNADU				
1990	162623.	14630.2	178475.	6520.28
1991	177225.	15578.9	204373.	6584.94
1992	181277.	15960.2	190723.	6258.40
UTTAR PRADESH				
1990	71268.8	239718.	106782.	286431.
1991	73984.4	233195.	115411.	254053.
1992	69123.6	232820.	105967.	246522.
WEST BENGAL				
1990	163796.	55773.0	263280.	24801.2
1991	159425.	56763.4	252042.	21748.3
1992	163396.	51468.2	249569.	21282.5
NORTH EASTERN				
1990	25703.2	1404.70	26988.7	455.586
1991	26072.7	1454.79	27112.6	462.963
1992	24965.3	1848.28	24559.8	426.174
NORTH WESTERN				

1990	35244.9	74342.4	51338.8	55589.0
1991	22562.4	76955.8	51526.0	63392.0
1992	23326.4	75068.5	46479.7	77301.6
SOUTHERN				
1990	9281.4	1910.87	8626.53	2059.13
1991	9348.14	2408.28	10757.9	2151.90
1992	7798.89	2063.27	10601.5	1996.81

TABLE 5.1 RURAL WHEAT DEMAND AND PDS - ALLOCATION/ LIFTING

S.NO.	STATE/U.T.	PER CAPITA CONSUMPTION (in tonnes) (1)	RATIO OF (1) TO AVERAGE = (2)	RATIO OF ALLOCATION TO (1) = (3)	RATIO OF LIFTING TO (1) = (4)
1.	ANDHRA PRADESH	0.00021	0.06630671	1.56145229	0.78062670
2.	ARUNACHAL PRADESH	0.00023	0.07262164	30.5565091	30.1178721
3.	ASSAM	0.00056	0.17681790	2.50291712	2.01716088
4.	BIHAR	0.00557	1.75870670	0.07073750	0.06418085
5.	GOA	0.00178	0.56202835	10.7903732	8.14964336
6.	GUJRAT	0.00579	1.82817088	0.21422509	0.17802539
7.	HARYANA	0.00991	3.12904549	0.09802384	0.06515627
8.	HIMACHAL PRADESH	0.00603	1.90394998	0.44276406	0.27189455
9.	JAMMU & KASHMIR	0.00603	1.90394998	0.47506068	0.32967779
10.	KARNATAKA	0.00088	0.27785671	0.74532711	0.71128910
11.	KERALA	0.00086	0.27154178	1.55972616	1.32376759
12.	MADHYA PRADESH	0.00599	1.89132013	0.15047675	0.13482296
13.	MAHARASHTRA	0.00252	0.79562059	0.36870388	0.36070862
14.	MANIPUR	0.00023	0.07262164	6.29782794	5.54182563
15.	MEGHALAYA	0.00023	0.07262164	4.79749735	4.49807907
16.	MIZORAM	0.00023	0.07262164	18.5390770	17.2293651
17.	NAGALAND	0.00023	0.07262164	39.7951446	34.8775411
18.	ORISSA	0.00074	0.23365223	0.76474774	0.65045056
19.	PUNJAB	0.01124	3.54898803	0.14135673	0.08865714
20.	RAJASTHAN	0.00964	3.04379400	0.13403101	0.11857773
21.	SIKKIM	0.00023	0.07262164	111.212006	56.9015155
22.	TAMILNADU	0.00033	0.10419626	1.01566554	0.64646961
23.	TRIPURA	0.00023	0.07262164	28.6469476	13.2327872
24.	UTTAR PRADESH	0.0095	2.99958952	0.05420145	0.04699178
25.	WEST BENGAL	0.0012	0.37889551	0.72098708	0.58116917
26.	ANDAMAN &NICOBAR	0.00178	0.56202835	2.87188758	2.51290164
27.	CHANDIGARH	0.00603	1.90394998	0.14227040	0.11904258
28.	DADRA & N.HAVELI	0.00178	0.56202835	0.73927103	0.10142437
29.	DAMAN & DIU	0.00178	0.56202835	129.578775	87.3167788
30.	DELHI	0.00603	1.90394998	0.84384929	0.74746945
31.	LAKSHADWEEP	0.00178	0.56202835	1.78065657	0.60361239
32.	PONDICHERRY	0.00178	0.56202835	167.502134	121.393981
AVERAGE		0.00316718		12.8262125	8.71998340
STD.DEV.		0.00336481		30.0252161	19.0359944
C.V.		1.06239766		2.34092614	2.18303103

TABLE 5.2: MONTHLY RURAL WHEAT DEMAND AND PDS - ALLOCATION/ LIFTING

S.NO.	STATE/U.T.	RATIO OF (3) TO AVERAGE = (5)	RATIO OF (4) TO AVERAGE = (6)	RATIO OF (5) TO (2) = (7)	RATIO OF (6) TO (2) = (8)
1.	ANDHRA PRADESH	0.12179815	0.08952141	1.83689010	1.35011076
2.	ARUNACHAL PRADESH	2.38350305	3.45388442	32.8208369	47.5599885
3.	ASSAM	0.19523534	0.23132578	1.10416046	1.30827126
4.	BIHAR	0.00551774	0.00736018	0.00313738	0.00418500
5.	GOA	0.84168278	0.93459212	1.49758064	1.66289142
6.	GUJRAT	0.01671022	0.02041575	0.00914040	0.01116731
7.	HARYANA	0.00764616	0.00747204	0.00244360	0.00238796
8.	HIMACHAL PRADESH	0.03453697	0.03118056	0.01813964	0.01637677
9.	JAMMU & KASHMIR	0.03705621	0.03780708	0.01946280	0.01985718
10.	KARNATAKA	0.05813784	0.08156985	0.20923676	0.29356804
11.	KERALA	0.12166350	0.15180821	0.44804708	0.55906021
12.	MADHYA PRADESH	0.01173765	0.01546134	0.00620606	0.00817489
13.	MAHARASHTRA	0.02876707	0.04136566	0.03615404	0.05198778
14.	MANIPUR	0.49125022	0.63553046	6.76451566	8.75125446
15.	MEGHALAYA	0.37421976	0.51583475	5.15300612	7.10304459
16.	MIZORAM	1.44610585	1.97584462	19.9128775	27.2073804
17.	NAGALAND	3.10414544	3.99971801	42.7440827	55.0761170
18.	ORISSA	0.05965271	0.07459295	0.25530553	0.31924776
19.	PUNJAB	0.01102626	0.01016710	0.00310687	0.00286478
20.	RAJASTHAN	0.01045483	0.01359836	0.00343480	0.00446757
21.	SIKKIM	8.67488350	6.52540316	119.453145	89.8548015
22.	TAMILNADU	0.07922508	0.07413642	0.76034471	0.71150747
23.	TRIPURA	2.23455129	1.51752147	30.7697713	20.8962707
24.	UTTAR PRADESH	0.00422788	0.00538896	0.00140948	0.00179656
25.	WEST BENGAL	0.05623924	0.06664784	0.14842941	0.17590031
26.	ANDAMAN &NICOBAR	0.22401619	0.28817679	0.39858521	0.51274422
27.	CHANDIGARH	0.01109753	0.01365167	0.00582869	0.00717018
28.	DADRA & N.HAVELI	0.05766544	0.01163123	0.10260238	0.02069510
29.	DAMAN & DIU	10.1075488	10.0133920	17.9840549	17.8165247
30.	DELHI	0.06582287	0.08571897	0.03457174	0.04502165
31.	LAKSHADWEEP	0.13889676	0.06922160	0.24713480	0.12316390
32.	PONDICHERRY				
AVERAGE				9.12108529	9.07993549
STD.DEV.				22.9595139	20.0341627
C.V.				2.51719101	2.20642126

TABLE 6.1: MONTHLY URBAN WHEAT DEMAND AND PDS -ALLOCATION/LIFTING

S.NO.	STATE/U.T.	PER CAPITA CONSUMPTION (in tonnes) (1)	RATIO OF (1) TO AVERAGE = (2)	RATIO OF ALLOCATION TO (1) = (3)	RATIO OF LIFTING TO (1) = (4)
1.	ANDHRA PRADESH	0.00096	0.22561692	0.34156768	0.17076209
2.	ARUNACHAL PRADESH	0.0008	0.18801410	8.78499636	8.65888825
3.	ASSAM	0.00138	0.32432432	1.01567651	0.81855804
4.	BIHAR	0.00619	1.45475910	0.06365232	0.05775239
5.	GOA	0.00182	0.42773207	10.5532222	7.97053031
6.	GUJRAT	0.00547	1.28554641	0.22675745	0.18844004
7.	HARYANA	0.00874	2.05405405	0.11114602	0.07387856
8.	HIMACHAL PRADESH	0.00696	1.63572267	0.38360162	0.23556381
9.	JAMMU & KASHMIR	0.00696	1.63572267	0.41158275	0.28562601
10.	KARNATAKA	0.0017	0.39952996	0.38581638	0.36819671
11.	KERALA	0.00106	0.24911868	1.26543821	1.07400012
12.	MADHYA PRADESH	0.00719	1.68977673	0.12536241	0.11232121
13.	MAHARASHTRA	0.00457	1.07403055	0.20336118	0.19890278
14.	MANIPUR	0.0008	0.18801410	1.81062553	1.59327486
15.	MEGHALAYA	0.0008	0.18801410	1.37928048	1.29319773
16.	MIZORAM	0.0008	0.18801410	5.32998464	4.95344247
17.	NAGALAND	0.0008	0.18801410	11.4411040	10.0272930
18.	ORISSA	0.00243	0.57109283	0.23288614	0.19807959
19.	PUNJAB	0.00825	1.93889541	0.19258784	0.12078864
20.	RAJASTHAN	0.01003	2.35722679	0.12881943	0.11396703
21.	SIKKIM	0.008	1.88014101	3.19734518	1.63591857
22.	TAMILNADU	0.008	1.88014101	0.04189620	0.02666687
23.	TRIPURA	0.008	1.88014101	0.82359974	0.38044263
24.	UTTAR PRADESH	0.00851	2	0.06050690	0.05245851
25.	WEST BENGAL	0.00292	0.68625146	0.29629606	0.23883664
26.	ANDAMAN &NICOBAR	0.00182	0.42773207	2.80876918	2.45767303
27.	CHANDIGARH	0.00696	1.63572267	0.12326013	0.10313603
28.	DADRA & N.HAVELI	0.00182	0.42773207	0.72302331	0.09919527
29.	DAMAN & DIU	0.00182	0.42773207	126.730890	85.3977287
30.	DELHI	0.00696	1.63572267	0.73109357	0.64759207
31.	LAKSHADWEEP	0.00182	0.42773207	1.74152126	0.59034619
32.	PONDICHERRY	0.00182	0.42773207	163.820768	118.725981
AVERAGE		0.004255		5.86018295	4.19817607
STD.DEV.		0.00310765		35.1547504	24.8325197
C.V.		0.73035296		5.99891688	5.91507343

TABLE 6.2: URBAN WHEAT DEMAND AND PDS - ALLOCATION/LIFTING

S.NO.	STATE/U.T.	RATIO OF (3) TO AVERAGE = (5)	RATIO OF (4) TO AVERAGE = (6)	RATIO OF (5) TO (2) = (7)	RATIO OF (6) TO (2) = (8)
1.	ANDHRA PRADESH	0.05828618	0.04067535	0.25834135	0.18028504
2.	ARUNACHAL PRADESH	1.49909934	2.06253844	7.97333465	10.9701263
3.	ASSAM	0.17331822	0.19497969	0.53439786	0.60118740
4.	BIHAR	0.01086183	0.01375656	0.00746641	0.00945624
5.	GOA	1.80083495	1.89857227	4.21019381	4.43869507
6.	GUJRAT	0.03869460	0.04488622	0.03009973	0.03491606
7.	HARYANA	0.01896630	0.01759779	0.00923359	0.00856734
8.	HIMACHAL PRADESH	0.06545898	0.05611106	0.04001838	0.03430353
9.	JAMMU & KASHMIR	0.07023377	0.06803582	0.04293745	0.04159374
10.	KARNATAKA	0.06583691	0.08770408	0.16478593	0.21951816
11.	KERALA	0.21593834	0.25582574	0.86680912	1.02692315
12.	MADHYA PRADESH	0.02139223	0.02675480	0.0126598	0.01583333
13.	MAHARASHTRA	0.03470219	0.04737844	0.03231024	0.04411275
14.	MANIPUR	0.30897082	0.37951646	1.64333856	2.01855320
15.	MEGHALAYA	0.23536475	0.30803839	1.25184626	1.63837921
16.	MIZORAM	0.90952530	1.17990499	4.83753772	6.27561970
17.	NAGALAND	1.95234590	2.38849108	10.3840397	12.7037869
18.	ORISSA	0.03974042	0.04718235	0.06958662	0.08261767
19.	PUNJAB	0.03286379	0.02877173	0.01694975	0.01483924
20.	RAJASTHAN	0.02198215	0.02714683	0.00932542	0.01151642
21.	SIKKIM	0.54560501	0.38967415	0.29019366	0.20725794
22.	TAMILNADU	0.00714929	0.00635202	0.00380253	0.00337848
23.	TRIPURA	0.14054164	0.09062105	0.07475058	0.04819907
24.	UTTAR PRADESH	0.01032508	0.01249556	0.00516254	0.00624778
25.	WEST BENGAL	0.05056088	0.05689064	0.07367691	0.08290058
26.	ANDAMAN &NICOBAR	0.47929718	0.58541523	1.12055468	1.36864935
27.	CHANDIGARH	0.02103349	0.02456689	0.01285884	0.01501898
28.	DADRA & N.HAVELI	0.12337896	0.02362821	0.28844918	0.05524068
29.	DAMAN & DIU	21.6257568	20.3416528	50.5591183	47.5569959
30.	DELHI	0.12475610	0.15425577	0.07626971	0.09430435
31.	LAKSHADWEEP	0.29717865	0.14061986	0.69477756	0.32875688
32.	PONDICHERRY	NA	NA		
AVERAGE				2.76112345	2.90767034
STD.DEV.				9.05137426	8.70799976
C.V.				3.27814906	2.99483735

TABLE 7.1: RURAL RICE DEMAND AND PDS - ALLOCATION/LIFTING

S.NO.	STATE/U.T.	PER CAPITA CONSUMPTION (in tonnes) (1)	RATIO OF (1) TO AVERAGE = (2)	RATIO OF ALLOCATION TO (1) = (3)	RATIO OF LIFTING TO (1) = (4)
1.	ANDHRA PRADESH	0.01237	1.47158543	0.18557514	0.16632506
2.	ARUNACHAL PRADESH	0.01357	1.61434230	0.73137721	0.63690667
3.	ASSAM	0.01248	1.48467148	0.13478636	0.12801993
4.	BIHAR	0.00877	1.04331481	0.01815391	0.00883750
5.	GOA	0.00861	1.02428056	0.44480109	0.40293551
6.	GUJRAT	0.0021	0.24982452	0.31520929	0.27709182
7.	HARYANA	0.00091	0.10825729	0.20543280	0.09915470
8.	HIMACHAL PRADESH	0.00458	0.54485539	0.27751250	0.23646856
9.	JAMMU & KASHMIR	0.00458	0.54485539	1.01927518	0.53777159
10.	KARNATAKA	0.00495	0.58887210	0.24441863	0.22562597
11.	KERALA	0.00918	1.09209007	0.73880442	0.72659909
12.	MADHYA PRADESH	0.00615	0.73162897	0.06984741	0.05063295
13.	MAHARASHTRA	0.00284	0.33785793	0.27040	0.23242564
14.	MANIPUR	0.01357	1.61434230	0.30439538	0.22262234
15.	MEGHALAYA	0.01357	1.61434230	0.42721313	0.40253073
16.	MIZORAM	0.01357	1.61434230	0.89031444	0.81730865
17.	NAGALAND	0.01357	1.61434230	0.60163745	0.56322066
18.	ORISSA	0.01564	1.86059791	0.05653355	0.03938134
19.	PUNJAB	0.00085	0.10111945	0.08926438	0.02433018
20.	RAJASTHAN	0.0002	0.02379281	0.40019804	0.17705922
21.	SIKKIM	0.01357	1.61434230	0.83600934	0.52577937
22.	TAMILNADU	0.01001	1.19083025	0.12469814	0.12070943
23.	TRIPURA	0.01357	1.61434230	0.42930330	0.33000487
24.	UTTAR PRADESH	0.00395	0.46990804	0.05964128	0.04833238
25.	WEST BENGAL	0.01362	1.62029051	0.07807252	0.05145298
26.	ANDAMAN &NICOBAR	0.00861	1.02428056	0.87357764	0.73906214
27.	CHANDIGARH	0.00458	0.54485539	0.07584238	0.04625468
28.	DADRA & N.HAVELI	0.00861	1.02428056	0.46362812	0.08620221
29.	DAMAN & DIU	0.00861	1.02428056	0.60182427	0.15879268
30.	DELHI	0.00458	0.54485539	0.47898770	0.33162172
31.	LAKSHADWEEP	0.00861	1.02428056	1.12933706	0.86104151
32.	PONDICHERRY	0.00861	1.02428056	0.30193979	0.05990868
AVERAGE		0.00840593		0.40142038	0.29170034
STD.DEV.		0.00457488		0.31083304	0.25222510
C.V.		0.54424448		0.77433297	0.86467194

TABLE 7.2: RURAL RICE DEMAND AND PDS - ALLOCATION/LIFTING

S.NO.	STATE/U.T.	RATIO OF (3) TO AVERAGE = (5)	RATIO OF (4) TO AVERAGE = (6)	RATIO OF (5) TO (2) = (7)	RATIO OF (6) TO (2) = (8)
1.	ANDHRA PRADESH	0.46229637	0.57019162	0.31414850	0.38746756
2.	ARUNACHAL PRADESH	1.82197366	2.18342823	1.12861668	1.35251874
3.	ASSAM	0.33577365	0.43887488	0.22616024	0.29560403
4.	BIHAR	0.04522421	0.03029651	0.04334666	0.02903871
5.	GOA	1.10806825	1.38133389	1.08180150	1.34858938
6.	GUJRAT	0.78523505	0.94991958	3.14314634	3.80234717
7.	HARYANA	0.51176486	0.33991977	4.72730138	3.13992492
8.	HIMACHAL PRADESH	0.69132652	0.81065589	1.26882569	1.48783676
9.	JAMMU & KASHMIR	2.53917200	1.84357574	4.66026766	3.38360552
10.	KARNATAKA	0.60888458	0.77348556	1.03398443	1.31350350
11.	KERALA	1.84047600	2.49090966	1.68527856	2.28086466
12.	MADHYA PRADESH	0.17400070	0.17357870	0.23782642	0.23724962
13.	MAHARASHTRA	0.59249719	0.79679604	1.75368738	2.35837600
14.	MANIPUR	0.75829595	0.76318860	0.46972438	0.47275513
15.	MEGHALAYA	1.06425392	1.37994623	0.65924923	0.85480398
16.	MIZORAM	2.21791086	2.80187802	1.37387891	1.73561580
17.	NAGALAND	1.49877187	1.93081962	0.92841020	1.19604102
18.	ORISSA	0.14083381	0.13500619	0.07569277	0.07256065
19.	PUNJAB	0.22237138	0.08340815	2.19909598	0.82484780
20.	RAJASTHAN	0.99695517	0.60699021	41.9015273	25.5114954
21.	SIKKIM	2.08262847	1.80246428	1.29007860	1.11653165
22.	TAMILNADU	0.31064233	0.41381319	0.26086198	0.34749973
23.	TRIPURA	1.06946088	1.13131483	0.66247466	0.70078993
24.	UTTAR PRADESH	0.14857565	0.16569192	0.31618027	0.35260501
25.	WEST BENGAL	0.19449072	0.17638989	0.12003448	0.10886312
26.	ANDAMAN &NICOBAR	2.17621690	2.53363520	2.12462969	2.47357539
27.	CHANDIGARH	0.18893510	0.15856919	0.34676191	0.29102986
28.	DADRA & N.HAVELI	1.15496931	0.29551637	1.12759077	0.28851116
29.	DAMAN & DIU	1.49923727	0.54436928	1.46369786	0.53146501
30.	DELHI	1.19323238	1.13685768	2.18999828	2.08653101
31.	LAKSHADWEEP	2.81335314	2.95180196	2.74666262	2.88182951
32.	PONDICHERRY	0.75217869	0.20537753	0.73434830	0.20050906
AVERAGE				2.57172780	1.98327459
STD.DEV.				7.16054402	4.35432632
C.V.				2.78433199	2.19552367

TABLE 8.1: URBAN RICE DEMAND AND PDS - ALLOCATION / LIFTING

S.NO.	STATE/U.T.	PER CAPITA CONSUMPTION (in tonnes) (1)	RATIO OF (1) TO AVERAGE = (2)	RATIO OF ALLOCATION TO (1) = (3)	RATIO OF LIFTING TO (1) = (4)
1.	ANDHRA PRADESH	0.01036	1.41302272	0.22157959	0.19859469
2.	ARUNACHAL PRADESH	0.01324	1.80583212	0.74960640	0.65278123
3.	ASSAM	0.01079	1.47167134	0.15589748	0.14807125
4.	BIHAR	0.00706	0.96292861	0.02255097	0.01097803
5.	GOA	0.00759	1.03521645	0.50457673	0.45708494
6.	GUJRAT	0.00218	0.29733489	0.30364197	0.26692332
7.	HARYANA	0.00098	0.13366431	0.19075903	0.09207222
8.	HIMACHAL PRADESH	0.00249	0.33961646	0.51044468	0.43495021
9.	JAMMU & KASHMIR	0.00249	0.33961646	1.87481138	0.98915418
10.	KARNATAKA	0.00611	0.83335606	0.19801509	0.18279027
11.	KERALA	0.00873	1.19070351	0.77688713	0.76405265
12.	MADHYA PRADESH	0.00377	0.51419842	0.13394206	0.08259753
13.	MAHARASHTRA	0.00336	0.45827763	0.20103176	0.19645500
14.	MANIPUR	0.01324	1.80583212	0.31198228	0.22817109
15.	MEGHALAYA	0.01324	1.80583212	0.43786119	0.41256359
16.	MIZORAM	0.01324	1.80583212	0.91250506	0.83767964
17.	NAGALAND	0.01324	1.80583212	0.61663295	0.57725864
18.	ORISSA	0.01121	1.52895605	0.07887464	0.05494418
19.	PUNJAB	0.00098	0.13366431	0.07742319	0.02110271
20.	RAJASTHAN	0.00056	0.07637960	0.14292787	0.06323543
21.	SIKKIM	0.01324	1.80583212	0.85684643	0.53888414
22.	TAMILNADU	0.00911	1.24253252	0.13701738	0.13263462
23.	TRIPURA	0.01324	1.80583212	0.44000346	0.33823007
24.	UTTAR PRADESH	0.00258	0.35189175	0.09131126	0.07399725
25.	WEST BENGAL	0.00866	1.18115605	0.12278843	0.08092259
26.	ANDAMAN &NICOBAR	0.00759	1.03521645	0.99097542	0.83838275
27.	CHANDIGARH	0.00249	0.33961646	0.13950125	0.08507889
28.	DADRA & N.HAVELI	0.00759	1.03521645	0.52593388	0.09778670
29.	DAMAN & DIU	0.00759	1.03521645	0.68270184	0.18013241
30.	DELHI	0.00249	0.33961646	0.88102959	0.60997089
31.	LAKSHADWEEP	0.00759	1.03521645	1.28110568	0.97675460
32.	PONDICHERRY	0.00759	1.03521645	0.34251668	0.06795966
AVERAGE		0.00733187		0.46542759	0.33413110
STD.DEV.		0.00428393		0.40858857	0.29663875
C.V.		0.58428930		0.87787784	0.88779149

TABLE 8.2: URBAN RICE DEMAND AND PDS - ALLOCATION / LIFTING

S.NO.	STATE/U.T.	RATIO OF (3) TO AVERAGE = (5)	RATIO OF (4) TO AVERAGE = (6)	RATIO OF (5) TO (2) = (7)	RATIO OF (6) TO (2) = (8)
1.	ANDHRA PRADESH	0.47587308	0.59436161	0.33677666	0.42063131
2.	ARUNACHAL PRADESH	1.60988430	1.95366798	0.89149167	1.08186578
3.	ASSAM	0.33481158	0.44315315	0.22750431	0.30112236
4.	BIHAR	0.04843135	0.03285546	0.05029589	0.03412035
5.	GOA	1.08364890	1.36798085	1.04678485	1.32144427
6.	GUJRAT	0.65211349	0.79885805	2.19319528	2.68672821
7.	HARYANA	0.40968162	0.27555717	3.06500384	2.06156134
8.	HIMACHAL PRADESH	1.09625115	1.30173520	3.22790931	3.83295670
9.	JAMMU & KASHMIR	4.02641894	2.96037747	11.8557824	8.71682552
10.	KARNATAKA	0.42526503	0.54706153	0.51030412	0.65645593
11.	KERALA	1.66847247	2.28668525	1.40125015	1.92044890
12.	MADHYA PRADESH	0.24470648	0.24720097	0.47589893	0.48075016
13.	MAHARASHTRA	0.43174376	0.58795786	0.94210086	1.28297306
14.	MANIPUR	0.67002546	0.68287893	0.37103419	0.37815194
15.	MEGHALAYA	0.94036798	1.23473569	0.52073942	0.68374888
16.	MIZORAM	1.95973189	2.50703884	1.08522373	1.38830116
17.	NAGALAND	1.32430527	1.72764115	0.73334904	0.95670086
18.	ORISSA	0.16939429	0.16443899	0.11079082	0.10754984
19.	PUNJAB	0.16627710	0.06315698	1.24399027	0.47250443
20.	RAJASTHAN	0.30695754	0.18925337	4.01884161	2.47779983
21.	SIKKIM	1.84019723	1.61279253	1.01903006	0.89310213
22.	TAMILNADU	0.29426394	0.39695384	0.23682595	0.31947159
23.	TRIPURA	0.94496881	1.01226756	0.52328718	0.56055463
24.	UTTAR PRADESH	0.19610368	0.22146174	0.55728410	0.62934621
25.	WEST BENGAL	0.26370528	0.24218814	0.22326032	0.20504331
26.	ANDAMAN &NICOBAR	2.12825795	2.50914312	2.05585792	2.42378597
27.	CHANDIGARH	0.29959840	0.25462727	0.88216690	0.74974949
28.	DADRA & N.HAVELI	1.12951637	0.29265968	1.09109198	0.28270385
29.	DAMAN & DIU	1.46619743	0.53910699	1.41631967	0.52076741
30.	DELHI	1.89213392	1.82554359	5.57138455	5.37530945
31.	LAKSHADWEEP	2.75135313	2.92326756	2.65775637	2.82382254
32.	PONDICHERRY	0.73560235	0.20339220	0.71057830	0.19647311
AVERAGE				1.60165971	1.44508658
STD.DEV.				2.21404294	1.76488305
C.V.				1.38234290	1.22129917