ESTIMATION OF DEMOGRAPHIC LAIDS ON INDIAN BUDGET DATA

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The usefulness of empirical demand analysis, yielding estimates of expenditure and price elasticity, in government policy formulation is widely accepted. Also well-taken is the use and importance of demographic variables in household expenditure studies. This paper estimates the demographics incorporated linearised version of 'An Almost Ideal Demand Stystem' (LAIDS), the latest of the kind in 'Complete Demand System' literature. This paper also tries to discuss the recent issue raised vis-a-vis elasticities formulae specificially with respect to the model under consideration.

I. INTRODUCTION

Demographic variables are major determinants of household consumption patterns and, hence, any empirical demand analysis sans demographic variables is incomplete. In fact, there are only a few empirical studies that have considered the simultaneous impact of total expenditure, price and family size on household demand using time series of budget data and within a framework that is consistent with economic theory. The principal objective of this paper is to estimate family-size incorporating LAIDS (Linearised AIDS), a variant of the celebrated model "An Almost Ideal Demand System" (AIDS) on Indian budget data as an extension to the study by Ray (1980), who for the first time introduced demographic variables into the AIDS model based on a pooling of N.S.S. Rounds 4 to 23 covering the period April 1952 to June 1969. Our study is an extension in the sense that it uses N.S.S. data from the early seventies (1973-74) to the late eighties (1988-89). The choice of this model for our purpose is motivated by the fact that the AIDS model is superior to its predecessors because it "has a functional form which is consistent with known household budget data; it is simple to estimate, largely avoiding the need for non-linear estimation; and it can be used to test the restrictions of homogeneity and symmetry through linear restriction on fixed parameters" (Deaton and Muellbauer, 1980).

The notable point of this paper is that it uses both the conventional and theoretically correct elasticities formulae both for AIDS as well as LAIDS with a view to check whether they lead to "essentially identical elasticities estimates" as maintained by Alston and Green (1990) in their empirical study on U.S. consumption data.

Thus, the *main objectives* are : (a) estimation of demographic LAIDS on the Indian budget data to estimate expenditure, price and size elasticities using all sets of elasticities formulae; (b) testing the hypotheses of (i) no economies of household size; (ii) no price effect; and (iii) no money illusion; (c) comparison of our results with

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those of Ray (1980); and (d) investigation of the view of Alston and Green (1990) relating to elasticities estimates.

The D. LAIDS (Demographic LAIDS) model is discussed and derived in Section II. Section III deals with the recent issue raised by Buse (1994), and Alston and Green (1990; 1991) vis-a-vis the elasticities formulae. The data are described in Section IV and Section V presents the results. We sum up our study in Section VI.

II. THE MODEL

Genesis of AIDS

Taking cue from Working's (1943) exploration of one extremely useful functional form, consistent with adding-up restriction for Engel curve that relates budget share of the i^{th} item (W_i) linearly to the logarithm of aggregate household expenditure (X),

$$W_i = \alpha_i + \beta_i \text{ Log } X \quad (1)$$

Deaton and Muellbauer (1980) introduced the AIDS model. AIDS can be considered as the time series counterpart of Engel function (1), propounded by Working (1943) and used successfully by Leser (1963) (Deaton and Muellbauer, 1981). However, the origin of AIDS lies in the definition of consistent aggregation across consumers (Ray, 1982). The derivation of AIDS is not reported in this paper.

Specification of AIDS

The AIDS model is usually specified as

$$W_i = \alpha_i + \beta_i \text{ Ln } (X/P) + \sum_j \gamma_{ij} \text{ Ln } P_j \quad (2)$$

Where X is total expenditure on the group of goods being analysed, P is the price index for the group, P_j is the price of the j^{th} group within the group, W_i is the share of the total expenditure allocated to the i^{th} group $\left(W_i = \frac{P_i q_i}{X} = \frac{E_i}{X} \right)$, and the overall price index P is defined in terms of individual prices as

$$\text{Ln } P = \alpha_0 + \sum_i \alpha_i \text{ Ln } P_i + \frac{1}{2} \sum_i \sum_j \gamma_{ij} \text{ Ln } P_i \text{ Ln } P_j \quad (3)$$

Where α_i, β_i, γ_{ij} (i, j = 1, ..., n) are parameters.

LA/AIDS

Using the above overall price index often raises empirical difficulties. However, according to Deaton and Muellbauer, if the individual prices Ln P_i were highly collinear, then Ln P could be taken proportional to the known and observable Stone price index (Ln P*). That is,

$$\text{Ln } P \simeq \text{Ln } P^* = \sum_j W_j \text{ Ln } P_j \quad (4)$$

Thus, we get the Linearised AIDS (LAIDS) or Linear Approximate AIDS (LA/AIDS) as:

$$W_i = \alpha_i + \beta_i \left[\text{Ln } X - \sum_j W_j \text{ Ln } P_j \right] + \sum_j \gamma_{ij} \text{ Ln } P_j \quad (5)$$

D. LAIDS: Ray's Extended LAIDS

To incorporate family size (M) explicitly in (5), Ray (1980) used the Barten (1964) type household utility function and replaced P in (5) by a "normalised" price vector MP (for scalar M) where M denotes family size. Thus, D. LAIDS model is given by

$$W_i = \alpha_i + \beta_i \text{ Ln } \left(\frac{x}{p^*} \right) + \sum_j \gamma_{ij} \text{ Ln } P_j + \theta_i \text{ Ln } M \quad (6)$$

Where $x = \frac{X}{M}$ is per capita household expenditure, x/P* is per capita real household expenditure, $\theta_i = \sum_j \gamma_{ij}$ and, γ_{ij} and θ_i

denote the effect of prices and family size, respectively, on budget share other than through (x/P*).

The linear equation system (6) with the adding-up restrictions given by (A) below constitute the unrestricted system. For it to be consistent with utility theory, the following additional restrictions must hold:

A. Adding up : $\sum_i \alpha_i = 1$, $\sum_i \beta_i = 0$, $\sum_i \gamma_{ij} = 0$, $\sum_i \theta_i = 0$

B. Homogeneity : $\sum_j \gamma_{ij} = 0$, $\theta_i = 0$

C. Symmetry : $\gamma_{ij} = \gamma_{ji}$

D. Concavity of the expenditure function — a restriction which has no obvious parametric representation.

Estimable D.LAIDS Model

The estimable model is

$$W_i = \alpha_i + \beta_i \operatorname{Ln}\left(\frac{x}{p^*}\right) + \sum_j \gamma_{ij} \operatorname{Ln} P_j + \theta_i \operatorname{Ln} M + \varepsilon_i \quad (7)$$

where α_i, β_i and γ_{ij} and θ_i are parameters, ε_i = random disturbance term and i, j = 1, 2,....n.

We estimate (I) and (II) below as follows:

(I) ; Unrestricted D.LAIDS, i.e. equation (7) with conditions (A), imposed by data.

(II) : Homogeneity constrained D.LAIDS, i.e. equation (7) with conditions (B), which is a within equation restriction. This (II) can be written as:

$$W_i = \alpha_i + \beta_i \operatorname{Ln}\left(\frac{x}{p^*}\right) + \sum_{j=1}^{n-1} \gamma_{ij} \operatorname{Ln}\left(\frac{P_j}{P_n}\right) + \theta_i \operatorname{Ln} M + \varepsilon_i \quad (8)$$

We use single equation OLS, making usual mean variance assumptions about the stochastic error term. We carry out t and F-tests to test the hypotheses.

III. THE ELASTICITIES FORMULAE

Two points are noteworthy with respect to the derivation and use of elasticities formulae. Firstly, as per the suggestion of Alston and Green, if researchers make use of parameter estimates recovered from LAIDS, then they should use the elasticities formulae appropriate for LAIDS only. Secondly, even if we use elasticities formulae true for LAIDS, it would be atleast theoretically correct to account for the endogeneous nature of expenditure or budget shares, i.e. their role as variables in the Stone price index. We, therefore, obtain three sets of formulae (for derivation, see Pollak and Wales, 1981; 1992) for real expenditure elasticity e_i, gross or uncompensated price elasticity e_{ij} and size elasticity Ω_i as follows.

The *first set* (theoretically correct for AIDS) is obtained using the true definition of the price index Ln P:

$$e_i = 1 + \frac{\beta_i}{W_i}$$

$$e_{ij} = \frac{-\beta_i(\alpha_j + \sum_j \gamma_{ij} \operatorname{Ln} P_j) + \gamma_{ij}}{W_i} - \delta_{ij}$$

where δ_{ij} is Kronecker delta,

i.e. $\delta_{ij} = 0,\ i \neq j$

$= 1,\ i = j$

$$\Omega_i = \frac{\theta_i}{W_i}$$

The *second set* (conventional for LAIDS) is obtained using the Stone price approximation and considering W_j in Ln P* to be fixed.

$$e_i = 1 + \frac{\beta_i}{W_i}$$

$$e_{ij} = \frac{\gamma_{ij}}{W_i} - \delta_{ij}$$

where δ_{ij} is Kronecker delta.

$$\Omega_i = \frac{\theta_i}{W_i}$$

The *third set* (theoretically correct for LAIDS) is obtained using the Stone price approximation and considering W_j in Ln P* to be not fixed.

$$e_i = 1 + \frac{\beta_i}{W_i}\{1 - \sum_j W_j \text{ Ln } P_j (e_j - 1)\}$$

$$e_{ij} = \frac{-\beta_i\left[W_j + \sum_j W_j \text{ Ln } P_j (\delta_{ij} + e_{ij})\right] + \gamma_{ij}}{W_i} - \delta_{ij}$$

where δ_{ij} is Kronecker delta.

$$\Omega_i = \frac{\theta_i}{W_i}$$

IV. DATA

We undertook estimation on a four-equation system 1, 2, 3, and 4; each denoting commodity groups namely Food, Fuel & Light, Clothing & Footwear and Other Non-Food respectively. We lumped all food items such as Cereal & Products, Milk & Products, Edible Oil, Meat. Fish & Egg and Other Food together as "Food" with the assumption that "the intra-food allocation mechanism of the household is independent of its consumption decision on the non-food items". This is a convention commonly maintained in most of the empirical studies on consumer behaviour in developing countries(Lluch et. al., 1977).

The data base is provided by the annual and quinquennial surveys on consumer expenditure conducted in rural and urban areas by the National Sample Survey Organisation (NSSO). The database spans from 1973-74 to 1988-89 comprising six NSS Rounds. 1973-74, our base year, refers to the 28th NSS Round (Annual Survey). We made use of 2nd, 3rd and 4th quinquennial survey Rounds referring to years 1977-78, 1983 and 1987-88 respectively. The other two Rounds use are 42nd (1986-87) and 44th (1988-89) annual ones. it is to be noted that there were no NSS surveys in 1984-86. These data are collected from different issues of *Sarvekshana*.

We used consumer indices till the year 1983 from the *Sarvekshana*, July-September 1991 and prices for other years from the *Journal of Indian school of Political Economy* (1993).

Owing to lack of published data on family composition, we used data on family size only, from different issues of *Sarvekshana* with a view that "it is better than ignoring size effects altogether" (Ray, 1980).

V. DISCUSSION OF MAIN RESULTS

Expenditure, Price and Size Responsiveness

Tables 1 and 2 present the estimates of the unrestricted model for rural and urban areas, respectively. As can be seen from the estimates of R^2, the variation in expenditure share as explained by the regression is quite high. The AIDS fits the rural data better than the urban because the rural values of R^2 are larger than the urban values for all commodity groups. The difference in R^2 is the largest for Fuel & Light and the least for Other Non-Food, like in Ray's study, and as expected, Food, Fuel & Light are found to be 'necessities' while Clothing & Footwear and Other Non-Food, 'luxury' items. This is because a negative value of β_i implies a necessity and vice-versa. This result is true for both rural and urban sectors. In relatively affluent countries, Clothing & Footwear may fall under the category of 'necessities' while in India they appear to belong to the class of luxuries. All β, in rural as well as urban areas, are very much significant, indicated by the high 't' values in absolute terms.

Incorporation of Demographics

Besides other variables, the family size has also a considerable influence on budget share, specifically, for Food. The notable point is that while in Ray's exercise, in the 4-equation system, 'none of the price-size responsiveness indicators individually exhibits significance', the present study records the size-responsiveness indicators for all commodity groups to be statistically significant. That is, as shown in Table 3, all θ in our study, both in rural and urban areas, are found to be statistically significant.

(The ✓ mark, in any table in this paper indicates significance at the 5 per cent and the 'x' mark otherwise). This is reflected by the high 't' values reported in Table 3. However, t-values calculated in Ray's study reported in parentheses show that none of θ are significant. This is a remarkable contrast. Our result, thus, justifies the incorporation of demographics into the 'An Almost Ideal Demand System'.

As evident from the signs of t-values in Table 3, 'Food' shows economies of household size whereas all other commodity groups (except Fuel & Light for urban India) show diseconomies of household size both for rural and urban India. For careful interpretation, which these results demand, we bring in Table 4 containing estimates of family size elasticities (Ω_i), i.e. elasticities of expenditure shares on specific commodities with respect to household size (Iyengar et. al. 1968). Ray's Ω_i, which are all insignificant, are kept in parentheses in Table 4. All the eight family size elasticities, four for each rural and urban sector, in our study are found to be significant. Now let us consider the case of a significant positive elasticity with respect to family size, such as for instance, the elasticity relating to 'Food' which is a 'necessity' item. One might end up with the conclusion that an increase in family size, at any given level of total expenditure and prices, results in an increase in food expenditure share. Though the conclusion is correct as it stands, one must go a little further. The reason for the increase is that the expenditure shares of other commodities are being decreased at the same time, as is implied by the negative family size elasticities estimates in respect of those commodities. Given total outlay, decrease in expenditure on one commodity will definitely lead to an increase in expenditure on another. Realising this substitution aspect, it is not fifficult to appreciate the fact that significant positive elasticities occur in respect of 'necessities', viz., 'Food' and 'Fuel & Light' (the latter only in urban areas). Negative elasticities occurring in the case of relatively luxury items, viz., 'Clothing & Footwear' and 'Other Non-Food' can be interpreted in a similar manner.

Price Effects

Table 5 presents the results of the tests for signficance of price effects on budget share using the F-statistic. Price effects (as a whole) are found signficant on all items in the rural as well as urban areas. However, in Ray's study, price effects (as a whole) are significant for Food and Clothing in the rural areas and for Fuel & Light in the urban areas. It is to be noted that the principal consumer items like Food and Clothing failed to register significant price effects in the urban sector in Ray's study. However, we can, given our results, safely say that the finding challenges the suppression of the price variable in planning formulations.

Homogeneity

For the testing of homogeneity, F-values are calculated using the estimates of the homogeneity-imposed model (not reported here) both for rural and urban India. Table 6 reports the results of the tests for homogeneity based on F-statistic. Because of high F-values calculated, we reject the null hypothesis of 'homogeneity, not acceptable'. Like Ray, we therefore, infer that homogeneity is an acceptable restriction for all items and reject the presence of money illusion — a result which is consistent with theory. The acceptance of homogeneity implies absence of economies of household size (θ_i=0) which seems to contradict, but in fact does not, our earlier result relating to testing for economies of household size. This is because, even if our data satisfy homogeneity, the presence of family-composition effects (which our data do not take into account) justifies a non-zero coefficient of our family-size explanatory variaable (Log M). Moreover, acceptance of homogeneity does not mean that there are, then, no family-size effects; for they still operate through per capita household expenditure variable. For clarification, it is pertinent to mention that, this apparent confusion might have crept in via the Barten's technique of 'Scaling' to incorporate demographics, a la Ray, into our system in equation (6). What happens to this problem if we use other methods of introducing demographics, namely, 'Translating' and its other variants (Pollak and Wales, 1981), needs further research and we intend to look into this issue in a future exercise.

The Elasticity Estimates

The real expenditure elasticities (e_i) calculated at base year mean budget share and using estimates of the unrestricted system, and all the three sets of formulae are presented in Table 7. Note that we have only two real expenditure elasticity formulae since they coincide for the first two sets; true for AIDS and conventional for LAIDS. Ray's real expenditure elasticities are also reported in parentheses in Table 7 to bring out a clear comparison.

All the commodity groups could be categorised as 'normal' because each has a positive expenditure or income elasticity. As should be expected, the expenditure elasticities differ between urban and rural India. Further, Food and Fuel & Light turn out to be necessities with expenditure elasticity less than unity. In other words, Food and Fuel & Light are income inelastic whereas Clothing & Footwear and Other Non-Food are income elastic, for rural as well as urban areas. This result is the same both in this and Ray's papers. However, the real expenditure elasticity for Food is very high both in rural and urban sectors. (We do not report e_i for homogeneity-imposed system because Ray's paper does not record this.) Given a 74 per cent and 67 per cent food share in rural and urban India respectively, the higher income elasticity for food can be attributed to very small β in absolute value for Food. (In this paper, β_1 = -0.043 for rural sector and β_1 = -0.056 for urban sector (Tables 1 and 2). In Ray's paper, β_1 = - 0.188 for rural and β_1 = - 0.395 for urban; which gave him expenditure elasticity for Food for rural and urban India as 0.727 and 0.342 respectively (Table 7).

The real expenditure elasticities estimates computed, using the theoretically correct formula, are found to be almost the same with the estimates of conventional formula, for all commodity groups both for rural and urban India. They only differ after the third digit from the decimal point (Table 7).

Table 8 records the *own price (uncompensated) elasticities* (e_{ii}) calculated at base year mean budget share and using estimates of the homogeneity-constrained system (homogeneity is taken as an acceptable restriction) and all the three sets of formulae. In the table, e_{ij} in parentheses refer to Ray's homogeneity-imposed gross own price elasticities.

As per the second formula (conventional for LAIDS) the own price elasticity for Fuel & Light in rural areas is found to be positive which seems awkward. Otherwise, the results are most sensible. Clothing & Footwear is found to be the most sensitive commodity group to its own price, *ceteris paribus*.

Calculating e_{ii}, using the formula true for AIDS, which is the only set of formula that Ray used, we get positive own price elasticity for Fuel & Light (e_{22}) both for rural and urban India whereas in Ray's study, own price elasticity for other Non-Food (e_{44}) for rural India only, reported to be positive. These are counter-intutive and may be because of the inferior nature of price data as reported by Ray.

Calculating own price elasticities using theoretically correct formula for LAIDS, we find, unlike real expenditure elasticities, altogether different results compared to those given by conventional LAIDS formula (Table 8). As obvious from Table 8, the own price elasticities for all commodity groups both for rural and urban India, calculated using the theoretically correct formula both for AIDS and LAIDS, are not very much different. However, compared to the theoretically correct formula, the conventional formula for own price elasticity gives significantly different results.

VI. SUMMARY AND CONCLUSION

One of the important and significant results arrived at in the present study is that it finds all of the family size parameters to be statistically significant. In contrast, Ray's study does not find any statistically significant family size parameters both for rural and urban India. Thus, the present exercise reinforces the argument supporting incorporation of demographics into a complete demand system. However, our real expenditure and own price elasticities estimates more or less conform to those of Ray's exercise. Like Ray's study, this paper does not reject 'homogeneity' and, thus, rejects the presence of money illusion, a result consistent with economic theory. Also, the presence of significant price effects (as a whole) indicates that the price variable is an effective policy instrument for the government and hence challenges its suppression in planning formulations.

Investigating the view of Alston and Green, this study reports that both the conventional and theoretically correct elasticities formulae do not lead to essentially identical elasticities estimates for own price elasticities. We, thus, hesitate to say that both theoretically correct and conventional formula give essentially identical own price elasticities estimates for the Indian budget data. Therefore, the inference reached by Alston and Green in this regard might have been an artifact of the particular data set they analysed; which they have maintained in their conclusion itself. However, their contention is vindicated as far as the real expenditure elasticities estimates are concerned.

The present model also performs reasonably well vis-a-vis forecasting (not reported here). The forecasting capability of the model for rural areas is found to be higher than that for urban areas. Thus, we conclude that the AIDS model not only fits the rural data better than the urban data but also predicts more precisely for rural areas than for urban areas, the Indian budget data.

Table 1 : The Unrestricted Parameter Estimates for Rural India (t-value in parentheses, d.f.= 71)

i	Commodity	α_i	β_i	γ_{i1}	γ_{i2}	γ_{i3}	γ_{i4}	θ_i	R^2
1.	Food	0.528 (0.772)	-0.043 (-5.42)	0.149 (0.921)	-0.017 (-0.196)	-0.521 (-1.417)	0.249 (0.713)	0.513 (12.85)	0.885
2.	Fuel & Light	0.309 (3.617)	-0.032 (-32.04)	-0.017 (-5.333)	0.030 (2.771)	-0.019 (-2.594)	0.151 (3.472)	-0.038 (-7.766)	0.969
3.	Clothing & Footwear	-0.345 (-1.275)	0.035 (11.18)	0.121 (1.899)	0.050 (1.451)	0.428 (2.949)	-0.454 (-3.288)	-0.147 (-9.322)	0.919
4.	Other Non-Food	0.508 (0.716)	0.040 (4.823)	-0.163 (-0.971)	-0.063 (-0.697)	0.212 (0.556)	0.053 (0.147)	-0.327 (-7.913)	0.777

Table 2 : The Unrestricted Parameter Estimates for Urban India (t-value in parentheses, d.f.= 67)

i	Commodity	α_i	β_i	γ_{i1}	γ_{i2}	γ_{i3}	γ_{i4}	θ_i	R^2
1.	Food	2.037 (6.266)	-0.056 (-5.08)	-0.499 (-3.302)	0.401 (2.894)	-0.471 (-3.208)	0.223 (1.067)	0.139 (4.831)	0.712
2.	Fuel & Light	0.018 (0.293)	-0.016 (-7.355)	-0.034 (-1.162)	0.096 (3.556)	-0.005 (-0.177)	-0.056 (-1.384)	0.024 (4.222)	0.739
3.	Clothing & Footwear	-0.294 (--3.378)	0.029 (10.02)	0.137 (3.392)	-0.082 (-2.199)	0.149 (3.797)	-0.116 (-2.06)	-0.035 (-4.548)	0.824
4.	Other Non-Food	-0.761 (-3.16)	0.042 (5.165)	0.396 (3.535)	-0.415 (-4.045)	0.327 (3.002)	-0.051 (-0.33)	-0.128 (-5.985)	0.751

Table 3 : Testing for Economies of Household Size, [Ho : No Economies of Household Size ($\theta i = 0$)]

i	Commodity	Rural			Urban		
		t-values	Significance	RR	t-values	Significance	RR
1.	Food	12.85 (1.273)	✓	×	4.831 (-1.212)	✓	×
2.	Fuel & Light	-7.766 (-0.611)	✓	×	4.222 (-1.644)	✓	×
3.	Clothing & Footwear	-9.322 (-1.220	✓	×	-4.548 (0.011)	✓	×
4.	Other Non-Food	-7.913 (-0.234)	✓	×	-5.985 (1.819)	✓	×

Note : * t-values found in Ranjan's study are in parentheses.
* RR refers to significance in Ranjan Ray's study.
* A "✓" mark indicates significance at the 5% level and an 'X" mark otherwise.

Table 4 : Family Size Elasticities (Ω_i)

i	Commodity	Rural	Urban
1.	Food	0.685 (0.006)	0.206 (-0.014)
2.	Fuel & Light	-0.692 (-0.034)	0.396 (-0.029)
3.	Clothing & Footwear	-2.029 (-0.007)	-0.686 (0.021)
4.	Other Non-Food	-2.665 (-0.015)	-0.605 (0.029)

Note : Ray's Ω_i in parentheses.

Table 5 : Testing for Price Effects on Budget Shares [Ho : No Price effects Size (γ_{ij} = 0, θi = 0)].

i	Commodity	Rural			Urban		
		F-values	Significance	RR	F-values	Significance	RR
1.	Food	92.187	✓	✓	27.647	✓	×
2.	Fuel & Light	403.75	✓	×	31.645	✓	✓
3.	Clothing & Footwear	139.273	✓	✓	52.807	✓	×
4.	Other Non-Food	41.774	✓	×	33.81	✓	×

Note : * RR refers to significance in Ray's study.
* A "✓" mark indicates significance at the 5% level and an 'X" mark otherwise.

Table 6 : Testing for Homogeneity [Ho : Homogeneity, not acceptable Size ($\Sigma_j \gamma_{ij} \neq 0$, θi ≠ 0)].

i	Commodity	Rural		Urban	
		F-values	Homogeneity	F-values	Homogeneity
1.	Food	102.941	✓	20.237	✓
2.	Fuel & Light	484.400	✓	66.320	✓
3.	Clothing & Footwear	139.692	✓	42.056	✓

Table 7 : Real Expenditure Elasticities (e_i)

i	Commodity	Conventional		Theoretically Correct	
		Rural	Urban	Rural	Urban
1.	Food	0.942 (0.727)	0.917 (0.342)	0.942	0.917
2.	Fuel & Light	0.428 (0.935	0.737 (0.574)	0.428	0.737
3.	Clothing & Footwear	1.488 1.071)	1.576 (2.141)	1.487	1.576
4.	Other Non-Food	1.325 (2.321)	1.199 (2.269)	1.325	1.199

Note : Ray's e_i in parentheses.

Table 8 : Homogeneity Imposed Own Price (Uncompensated) Elasticities (e_{ii})

i	Commodity	AIDS		LAIDS, fixed w_j		LAIDS, w_j not fixed	
		Rural	Urban	Rural	Urban	Rural	Urban
1.	Food	-0.698 (-0.716)	-0.324 (-0.416)	-0.740	-0.571	-0.648	-0.299
2.	Fuel & Light	0.631 (-0.815)	0.277 (-0.692)	0.046	-0.058	0.606	0.281
3.	Clothing & Footwear	-2.122 (-0.682)	-2.700 (-1.779)	-1.530	-1.700	-1.995	-1.266
4.	Other Non-Food	-1688 (1.453)	-1.606 (-0.953)	-1.138	-1.033	-1.475	-1.558

Note : Ray's e_{ii} in parentheses.

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