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Commodity-specific consumer expenditure in India: pro-poor or pro-rich

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Almost all the developing countries in the world witnessed enormous economic growth accompanied by rising inequality in the era of globalization. Indian economy has also experienced high momentum in growth after economic reforms which results in per capita income/expenditure to increase. Patterns of consumer expenditure on different food and non-food commodities/ items have undergone substantial changes. Our interest is to judge whether expenditure patterns of different commodities/items have truly followed the pattern of aggregate expenditure. An attempt has been made in this paper to examine whether and to what extent household consumer expenditure at the commodity level has been pro-poor (in favour of poorer section) in India after economic reforms. A Structural Identification Index (SII) has been formulated in order to identify the expenditure pattern and to estimate the degree of pro-poorness or pro-richness quantitatively. National Sample Survey data on consumer expenditure (Uniform Recall Period) for three time periods- 1993-94, 2004-05 and 2009-10 are used in estimation.

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Abstract

Almost all the developing countries in the world witnessed enormous economic growth accompanied by rising inequality in the era of globalization. Indian economy has also experienced high momentum in growth after economic reforms which results in per capita income/ expenditure to increase. Pattern of consumer expenditure on different food and non-food commodities/ items has undergone through substantial changes. Our interest is to judge whether expenditure pattern of different commodities/ items has truly followed the pattern of aggregate expenditure. An attempt has been made in this paper to examine whether and to what extent household consumer expenditure at the commodity level has been pro-poor (in favor of poorer section) in India after economic reforms. A Structural Identification Index (SII) has been formulated in order to identify the expenditure pattern and to estimate the degree of pro-poorness or pro-richness quantitatively. National Sample Survey data on consumer expenditure (Uniform Recall Period) for three time periods- 1993-94, 2004-05 and 2009-10 are considered.

1. Introduction

The issue of economic growth with rising inequality in almost all the developing economies in the world has been of concern to researchers and policymakers in the era of globalization. Increasing per capita income (expenditure) though indicative of rising welfare, does not necessarily imply rising real wellbeing of the people in the economy unless the distribution of the income becomes less skewed. More the poor and vulnerable section of people is included in the process of economic development, the more the income (expenditure) distribution becomes equal, the more the purchasing power and in turn the more the welfare of the people. But things get really bad when the opposite happens.

Almost all the developing countries in the world have experienced economic growth in the era of globalisation. But, the new wave of globalisation has increased inequality in almost all over the globe. The scenario of Indian economy is no less different. The economy has experienced tremendous growth after economic reforms adopted in the year 1991. Per capita income (expenditure) has increased. But despite higher economic growth, the distribution of income (expenditure) has become more skewed. Benefits of economic growth have flown more to the richer sections of the society, throwing the poorer sections in the more miserable situation. In the post reform period the ultra-rich section has appeared to grab the maximum benefits of economic growth.

During the reform period, the economy has become more liberalised. All the sectors of the economy have undergone substantial changes. The pattern of consumption across different income classes has also undergone substantial changes. Question arises on the nature of consumer expenditure on different commodities/items. That is, whether consumer expenditure at the commodity level has been pro-poor or pro-rich in India during the reform period is of research interest to us.

Household consumer expenditure reflects individual's level of wellbeing (money metric measurement). Aggregate consumption expenditure comprises of expenditure on food and non-food commodities/items. Proper food consumption supports better and healthy life of an individual and raises productive capacity. As income rises, expenditure on non-food items rise more than on food items (Engel's Law). Increase in the non-food consumption indicates improvement in the standard of living. The richer section of the society always has the capability to spend more on non-food and conspicuous consumption, whereas, the poorer section has no such capability and hence spends more on food items. Consequently the distribution of consumer expenditure among individuals/groups in the economy varies for each consumption item. Therefore, the question arises whether the pattern of expenditure on a particular item truly follows the pattern of aggregate expenditure. If expenditure on a particular item increases more than proportionately with the rise in aggregate expenditure, then the expenditure distribution of that item is progressive in nature. When commodity-specific expenditure increases less than proportionately, the specific expenditure pattern is regressive. The progressive pattern of consumer expenditure distribution for a particular consumption item indicates that the richer section of the society is spending proportionally more on that item and in effect the expenditure pattern of a specific consumption item becomes pro-rich. On the other way, the regressive pattern of consumer expenditure favours the poorer section (pro-poor) since the poorer section proportionally spends more. During the period of economic reforms in India, the consumption pattern has undergone variations both commodity-wise and consumer-wise. Such structural changes in the pattern of consumption expenditure have not yet been evaluated in the light of progressivity and/or regressivity in the

economy of India during the period of economic reforms. In this paper an attempt has been made to examine this issue. Specifically, following Kakwani *(1977)* a Structural Identification Index (SII) is formulated, which is subsequently used to identify and characterise the expenditure patterns of consumption items as pro-poor or pro-rich. Such an exercise is of necessity to assess the implications in respect of household consumption in the economy.

2. Literature Review

Studies on the pattern of consumption expenditure and its over time changes in the Indian economy are available *(Rao, 2000; Roy 2011; Sharma, 2011; Sethia, 2013; Patel and Gourang, 2015)*. Rao (2000) found a declining trend in consumption demand for food grains (cereals) during the period 1971-72 to 1993-94 in both rural and urban India. During the post reform period (1993-2011), real monthly per capita food consumption expenditure in India has declined from 49.9 percent to 35.4 percent (*Sethia, 2013*). Sharma (2011) has interestingly noted that during the reform period, consumption of cereals and pulses has declined more in rural India than in urban India. Roy *(2011)* in his study highlighted on widening disparity of food and non-food consumption between the top and the bottom income classes. His findings revealed that expenditure on durable goods, education and medical items (institutional and non-institutional) exhibited a steeper rising trend for the richer income classes relative to the bottom classes after economic reforms in India.

Several research works on the issue of inequality in consumer expenditure in India have been performed (*Mishra and Parikh, 1992; Deaton and Dreze 2002; Sundaram and Tendulkar, 2003; Jha, 2004; Sen and Himanshu, 2005*; *Young and Kathuria, 2009; Lakshmanaswamy, 2010; Chandrshekhar and Mukhopadhyay, 2012; Ghosal, 2014; Sen, 2016; Sen and Das, 2017*). Dreze and Deaton (2002), on the basis of their empirical study, pointed out that the regional inequality within the states of India has increased, particularly within the urban areas. Ghosal (*2014*), however, observed a declining trend in consumption expenditure inequality in rural India during the pre-reform period though the post reform period exhibited an increasing trend. In case of urban India, he found a rising trend during the period 1972-2010, although the pace of increase in inequality has been more during the post reform period. Studies so far made put stress on dramatic changes taken place in the pattern of household consumer expenditure in India after the adoption of economic reform policies. But closer look has not yet been given so that one can identify the nature of expenditure on specific commodities/items as pro-poor or pro-rich in India. In this connection, quantitative estimates of the degree of pro-poorness or pro-richness and its overtime changes are not hitherto performed. We in this paper have tried to explore such issues. Attempt has been made in this paper to examine whether and to what extent the nature of consumer expenditure (commodity/item specific) has been pro-poor or pro-rich in India during the reform period. Degree of pro-poorness or pro-richness and its overtime changes have been quantitatively examined in terms of Structural Identification Index (SII) which was formulated by following Kakwani progressivity approach. Rural urban differentials are made explicitly.

3. Methodological Framework

The aggregate household consumer expenditure may be disaggregated into expenditures on different consumption items. In this paper, the major task is to identify whether expenditures on different consumption items are pro-poor or pro-rich. Suppose, there are n individuals in

an economy and k consumption items. Overall consumption structure, E, a k×n matrix comprises of elements representing expenditure on the ith item incurred by the jth individual:

$$E = \begin{bmatrix} c_{11} & c_{12} & c_{13} & \cdots & c_{1n} \\ c_{21} & c_{22} & c_{23} & \cdots & c_{2n} \\ c_{31} & c_{32} & c_{33} & \cdots & c_{3n} \\ \vdots & \vdots & \vdots & \ddots & \vdots \\ c_{k1} & c_{k2} & c_{k3} & \cdots & c_{kn} \end{bmatrix}$$

c_{ij} represents expenditure on the ith consumption item by the jth consumer. The jth column of E describes the consumption pattern of the jth consumer and the column sum exhibits aggregate expenditure of the jth consumer. Let E$_j$ denotes aggregate expenditures incurred by the jth consumer i.e.,

$$E_j = \sum_{i=1}^{k} c_{ij}.$$

Let *(E₁, E₂, E₃ . . . . Eₙ)* denotes the distribution of aggregate expenditure among the consumers in the economy (arranged in non-decreasing order). Thus for k number of consumption items, we will be having k number of consumer expenditure structures. Now question arises whether the consumer expenditure structure of a particular commodity (kth commodity) truly corresponds to the structure of aggregate expenditure. In other words, does the expenditure pattern of a particular item follow the overall expenditure pattern? When the expenditure on an item increases (decreases) as a proportion of total expenditure with the rise in aggregate expenses, the nature of expenditure on that item is pro-rich (pro-poor). A pro-rich structure is thus reveals proportionately more spending of the richer section of the society. The pro-poor expenditure structure is on the other hand in favour of the poorer section. In order to identify whether the pattern of consumer expenditure on an item is pro-poor or pro-rich, we have formulated an index termed as Structural Identification Index (SII) based on Kakwani's tax progressivity approach (*Kakwani, 1977*). Structural Identification Index (θ) is defined as:

$$\theta_i = 2 \int_0^1 (L_{TE}(p) - L_{ith\,Exp}(p))dp \tag{1}$$

$$= [1 - 2\int_0^1 (L_{ith\,Exp}(p)dp)] - [1 - 2\int_0^1 (L_{TE}(p)dp)] \tag{2}$$

where
θ_i : Structural Identification Index (SII) for the ith expenditure item,
$L_{TE}(p)$: Lorenz Curve for the total expenditure with respect to population's rank (p) in the total expenditure distribution and
$L_{ith\,Exp}(p)$: Concentration Curve for the ith commodity expenditure with respect to population's rank (p) in the total expenditure distribution.

θ is defined as twice the difference of the area between the Lorenz curve of total expenditure (TE) and the concentration curve of the ith commodity expenditure (Equation (1)). In other words, it is the difference between the concentration index (CI) and the overall Gini-coefficient. Concentration index (CI) is calculated in a way similar to Gini coefficient but the only difference is that in case of CI, ranking of the ith expenditure item is based on ranking of the total expenditure. The value of the concentration index varies from -1 to +1, whereas the value of the Gini-coefficient varies from 0 to +1. Consequently, θ varies from -2 to +1. θ may be positive or negative or zero for a particular expenditure structure. A positive (negative)

value of the index (θ) indicates an increase in the ith commodity expenditure more than (less than) proportionately with total expenditure. When the value of the index is zero, expenditure on i^{th} item follows the pattern of total expenditure. So for $\theta_i > 0$, the nature of the distribution of consumer expenditure on the ith item is pro-rich. Negative value of the index ($\theta_i < 0$) reflects the pro-poor nature of expenditure structure on the ith commodity (Table I).

Table I. Structural Identification Index (θ_i) and Nature of Expenditure Distribution

SII Value	Nature of Distribution	Implications
$\theta_i > 0$	Pro-Rich	Favours the richer section of the society
$\theta_i < 0$	Pro-Poor	Favours the poorer section of the society
$\theta_i = 0$	Identical	Favours neither the richer nor the poorer section

4. Estimates

Estimates are based on the National Sample Survey Organisation (NSSO, India) data on consumer expenditure (Uniform Reference Period or URP) for 50th (1993-94), 61st (2004-05) and 66th (2009-10) Rounds. Food and non-food items are grouped into thirteen major items/group of items shown in Table II.

Table II. Thirteen Major Consumption Items/Group of Items

Groups	Commodities/Consumption Items
Group 1	Cereals and Pulses
Group 2	Milk and Milk Products
Group 3	Egg, Fish and Meat
Group 4	Vegetables and Fruits
Group 5	Miscellaneous Food Expenses (Spices, Beverages, Edible Oil, Salt and Sugar)
Group 6	Pan, Tobacco and Intoxicants
Group 7	Clothing and Footwear
Group 8	Fuel and Light
Group 9	Miscellaneous Consumer Goods (Entertainment, Toilet and Laundry articles, and Other Household Consumables)
Group 10	Miscellaneous Consumer Services (Transport/ Conveyance, Consumer Services and Rent)
Group 11	Durable Goods
Group 12	Education Expenses
Group 13	Healthcare Expenses

4.1 Item-Specific Consumer Expenditure in Rural India: Pro-poor or Pro-rich

In rural India, the value of the SII (θ) is positive in cases of milk and milk products, clothing and footwear, miscellaneous consumer services, durable goods, education and healthcare (Table III). It indicates that the patterns of expenditure on these items are pro-rich in nature i.e., spending of the richer section has been more than proportionate on these specific commodity items. The pro-poor pattern is observed in cases of cereals and pulses, vegetables and fruits, miscellaneous food expenses, pan, tobacco and intoxicants, fuel and light, in all the periods under consideration.

The degree of pro-richness (as indicated by the value of θ) is highest in case of durable goods. Expenditure pattern of cereals and pulses shows highest pro-poorness, followed by fuel and light throughout the post-reform period. In 1993-94, the degree of pro-richness in the

distribution of clothing and footwear expenditure was at higher level but it has substantially declined in 2009-10.

Table III. Commodity-Specific Consumer Expenditure in Rural India: SII, 1993-2010

Commodities/Consumption Items	SII (θ)		
	1993-94	2004-05	2009-10
Cereals and Pulses	-0.188	-0.209	-0.188
Milk and Milk Products	0.143	0.033	0.078
Egg, Fish and Meat	0.018	-0.057	-0.013
Vegetables and Fruits	-0.051	-0.038	-0.096
Miscellaneous Food expenses	-0.026	-0.012	-0.082
Pan, Tobacco and Intoxicants	-0.059	-0.069	-0.062
Clothing and Footwear	0.277	0.209	0.138
Fuel and Light	-0.069	-0.109	-0.122
Miscellaneous Consumer Goods	0.005	-0.036	-0.029
Miscellaneous Consumer Services	0.178	0.176	0.149
Durable Goods	0.451	0.512	0.446
Education Expenses	0.207	0.215	0.228
Healthcare expenses	0.188	0.254	0.224

Source: Computed from NSSO Data

So far as the value of θ is concerned, a declining trend is observed in case of almost all the items of consumer expenditure except healthcare and education over the period 1993-2010. After economic reforms expenditure on healthcare and education has became more biased towards the rich in rural India. Expenditure pattern of animal protein (meat, fish & egg) and Misc. consumer goods have changed from pro-rich to pro-poor during the first phase of reform period. These commodities have become necessary though these were luxury commodities earlier (1993-94). During the first phase of reform (1993-94 to 2004-05), expenditures on cereals and pulses, pan, tobacco and intoxicants and fuel and light have been more supportive to the lower expenditure class. In the later phase of reform (2004-05 to 2009-10), the expenditure distribution pattern of milk and milk products and education has been more biased towards the affluent sections of the rural economy. Healthcare expenditure distribution shows the highest increase in the degree of pro-richness during the first phase of the reform era.

4.2 Item-specific Consumer Expenditure in Urban India: Pro-poor or Pro-rich

Table IV depicts the degree of pro-richness or pro-poorness in the consumer expenditure on different consumption items in urban India during the period of economic reforms. The pro-rich nature is observed in cases of clothing and footwear, miscellaneous consumer services, durable goods, education and healthcare. In the post reform period, the expenditure patterns of cereals and pulses, egg, fish and meat, vegetables and fruits, miscellaneous food expenses, pan, tobacco and intoxicants, fuel and light and miscellaneous consumer goods are found to be pro-poor in the urban economy of India. Expenditure on milk and milk products was in favor of the richer sections in the 1990s, however it has become pro-poor in the later periods of post-reform era. Urban India also experienced the highest pro-richness in the expenditure distribution of durable goods. Expenditure pattern of cereals and pulses is highly pro-poor in all the periods. High degree of pro-richness is observed in the distribution of education expenditure in 2009-10.

Table IV. Commodity Specific Consumer Expenditure in Urban India: SII, 1993-2010

Commodities/Consumption Items	SII (θ)		
	1993-94	2004-05	2009-10
Cereals and Pulses	-0.257	-0.280	-0.263
Milk and Milk Products	0.022	-0.038	-0.071
Egg, Fish and Meat	-0.067	-0.128	-0.153
Vegetables and Fruits	-0.044	-0.109	-0.119
Miscellaneous Food expenses	-0.047	-0.083	-0.083
Pan, Tobacco and Intoxicants	-0.103	-0.174	-0.191
Clothing and Footwear	0.262	0.126	0.089
Fuel and Light	-0.159	-0.116	-0.146
Miscellaneous Consumer Goods	-0.030	-0.036	-0.056
Miscellaneous Consumer Services	0.197	0.191	0.155
Durable Goods	0.445	0.442	0.267
Education Expenses	0.222	0.163	0.195
Healthcare expenses	0.109	0.122	0.078

Source: Computed from NSSO Data

The value of SII (θ) has declined in cases of almost all the expenditure items/ groups of items, except fuel and light in all over the post reform years. A substantial decline in the degree of pro-richness is observed in case of durable goods during the second phase of economic reform although it was highly pro-rich in the 1990s. Milk and milk products has become more pro-poor in urban India. Degree of pro-richness in case of clothing and footwear has declined remarkably in urban India. Expenditure pattern of education has turned out to be more pro-rich during the later phase of the reform era.

5. Conclusions

The consumption pattern of cereals and pulses, miscellaneous food expenses, pan, tobacco and intoxicants and fuel and light is relatively more pro-poor in urban regions compared to rural parts of India. Highest degree of pro-richness is observed in case of expenditure on durable goods irrespective of rural and urban areas of the economy. Expenditure on clothing and footwear, durable goods, and healthcare services exhibit pro-rich nature in the post reform period in both rural and urban areas. Expenditure patterns of animal protein (meat, fish & egg) and Misc. consumer goods have changed from pro-rich to pro-poor in rural India during the first phase of reform period though these were luxury commodities earlier (1993-94). Richer section spends proportionately more on miscellaneous consumer services in urban areas. This may be due to higher cost of transportation backed by infrastructural facilities available in urban areas relative to rural counterparts. Expenditure on education has become more pro-rich in urban India during the reform era and it has turned out to be more supportive towards the affluent sections.

Thus in the light of the above issues, intervention from the part of the state through proper redistributive policies is needed to facilitate the lower section of the society to revise their expenditure pattern so that this section would be able to spend more than proportionately with respect to the aggregate expenditure. Govt. should ensure access to education and healthcare facilities to the poorer section at a very low cost. Public distribution system should be reformulated in order to make smooth availability of food as well as non-food items to the poor and vulnerable sections of the economy. Special attention should be made to the rural poor in respect of education and healthcare expenditure where they are mostly lagging behind.

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