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POVERTY IN INDIA: MEASUREMENT, TRENDS AND OTHER ISSUES

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Abstract

Eradication of poverty is an important objective of economic policy. Therefore, measurement of poverty has to be sound as it has significant policy implications. This paper presents the methodology followed by the Expert Group (Rangarajan) and explains some of the issues that were raised after the publication of the Report. Apart from the methodology, some of the issues discussed in the paper are: use of calories, multi-dimensional poverty, urban poverty, NAS (National Accounts Statistics)-NSS (National Sample Survey) consumption differences, poverty measures in other countries, public expenditure and poverty, NSS and SECC (socio-economic caste census), headcount and depth of poverty, inequality and poverty and, criteria for eligibility under programmes.

The methodology adopted by the new group on poverty is based on sound principles. However, as the group has clearly indicated, this measure is not considered as an appropriate basis for determining entitlements under various programmes. But to obtain a general picture of the progress of the country, a suitable measure on poverty is useful. It represents absolute minimum. Obviously, policy should work towards not only to reduce the number of people below that line but also ensure that people in general enjoy a much higher standard of living. Policy makers must continue to follow the two-fold strategy of letting the economy grow fast and attacking poverty directly through poverty alleviation programmes.

Keywords: poverty line; poverty ratio; multi-dimensional poverty; poverty alleviation programmes; measurement of poverty.

JEL Code: I31; I32, I38

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1. Introduction

Growth is not the sole objective of economic policy. It is necessary to ensure that the benefits of growth accrue to all sections of the society. Eradication of poverty is thus an important objective. Human beings need a certain minimum consumption of food and non-food items to survive. However, the perception regarding what constitutes poverty varies over time and across countries. Nevertheless, there is need for a measure of poverty. Only then, it will be possible to evaluate how the economy is performing in terms of providing a certain minimum standard of living to all its citizens. Measurement of poverty has, therefore, important policy implications.

This paper presents the methodology followed by the Expert Group (Rangarajan) and explains some of the issues that were raised after the publication of the Report.

There are in fact many approaches for measuring poverty. Some analysts focus on deprivations of people in terms of health, education, sanitation or housing. There are, however, many problems associated with this approach including difficulties in aggregating deprivations on several scores derived from different sources. Perhaps the best approach is look at it in terms of certain minimum consumption expenditure per person or preferably per household. Any household failing to meet this level of consumption expenditure can be treated as a poor household. This minimum level of consumption expenditure can be derived, in turn, in terms of minimum expenditure on food and non-food items. The poverty ratio, which is the ratio of number of poor to the total population is expressed as percentage. It is also known as HCR (head-count ratio). The poverty ratio is measured from an exogenously determined poverty line quantified in terms of per capita consumption expenditure over a month and the class distribution of persons obtained from the large sample survey of consumer expenditure data of the National Sample Survey Office (NSSO).

In India, we have had a long history of studies on measurement of poverty[1]. The methodology for estimation of poverty used by the Planning Commission has been based on the recommendations made by Working Group/Task Force/Expert Groups consisting of eminent experts in the field. The Planning Commission has constituted these Groups from time to time to revisit the methodological issues related to the measurement of poverty so as to make the estimates more relevant to the contemporary economic situation. After the Working Group of the Planning Commission delineated the methodology of poverty estimation in 1962, it has been intensely debated by the academicians, experts, policy planners, etc., over the years. In response, the Planning Commission has constituted Task Force/ Expert Group from time to time to review the methodology. These include the Task Force under the chairmanship of Y.K. Alagh in 1977; the Expert Groups under the chairmanship of D.T. Lakdawala in 1989 and S.D. Tendulkar in 2005.

In June 2012, the Government of India (GoI) appointed an Expert Group (C. Rangarajan as Chairman) to take a fresh look at the methodology for the measurement of poverty. The Committee submitted its report towards the end of June 2014.

2. Approaches of the Earlier Committees

The Planning Commission is the nodal agency in the GoI for estimation of poverty and these estimates are based on the recommendations of the committees appointed by it. Before going to the Expert Group (Rangarajan), the approaches of earlier committees on estimation of poverty are described below.

The Working Group 1962 recommended that the national minimum consumption expenditure for a household of five persons (four adult consumption units) should not be less than `100 per month or `20 per capita per month in terms of 1960-61 prices. For urban areas, this figure was `125 per month or `25 per capita per month to cover the higher prices there. The poverty line excluded expenditure on health and

[1] Srinivasan (2007) reviews the evolution of poverty lines in India from a historical perspective and critically discusses some issues relating to official poverty lines. Srinivasan (2013), among other things, discusses about poverty lines in India in the recent past.

education, both of which, it was assumed, were to be provided by the State. The Working Group (1962) appeared to have taken into account the recommendation of balanced diet made by the Nutrition Advisory Group of the Indian Council of Medical Research (ICMR) in 1958. This poverty line was widely used in the 1960s and 1970s to estimate the poverty ratio at national and state level.

Task Force 1979 (Alagh) (GoI, 1979) estimated average calorie requirements and the poverty line corresponding to the calorie requirement. The estimated calorie norm was 2400 kcal per capita per day in rural areas and 2100 kcal per capita per day in urban areas. To work out the monetary equivalent of these norms, 28th Round (1973- 74) NSS data relating to household consumption both in quantitative and value terms were used. Based on the observed consumer behaviour in 1973-74 it was estimated that, on an average, consumer expenditure (food and non-food) of `49.09 per capita per month was associated with a calorie intake of 2400 per capita per day in rural areas and `56.64 per capita per month with a calorie intake of 2100 per day in urban areas. The NSS distribution of private consumption was adjusted pro-rata to correspond to the consumption estimates of National Accounts Statistics (NAS) made by the Central Statistical Office (CSO). Using the poverty line and the adjusted distribution of persons by expenditure classes for the reference year the percentage of persons below the poverty line was estimated. The poverty line defined by the Task Force at 1973-74 prices was updated by the Planning Commission (to estimate poverty for a later year) using the implicit Central Statistical Office (CSO) private consumption expenditure deflator.

Planning Commission appointed Expert Group (Lakdawala) in 1989 which submitted its report in 1993 (GoI, 1993). The Expert Group (Lakdawala) did not redefine the poverty line. It retained the one defined by the Task Force (Alagh) which was at national level in rural and urban areas. It disaggregated these national poverty lines into state-specific poverty lines in order to reflect the inter-state price differentials measured by Fisher's index. These state-specific poverty lines of base year (1973-74) were updated for subsequent years by using Consumer Price Index for Agricultural Labourers (CPIAL) for rural areas and Consumer Price Index for Industrial Workers (CPIIW) for urban areas. Two factors largely distinguish the

Expert Group (Lakdawala) methodology of poverty estimation from those of the Task Force (Alagh). First, the Expert Group (Lakdawala) method uses state-specific poverty lines as against national poverty line for estimation of poverty in the state; it thereby captures the cost of living in the states more accurately (as compared to the Task Force method). Second, the Expert Group (Lakdawala) uses the state- wise consumption distribution of the NSS without any adjustment to the NAS consumption. This is a major departure from the Task Force method, which did this adjustment on a pro-rata basis.

The Expert Group under the chairmanship of Suresh D. Tendulkar was constituted by the Planning Commission in December 2005. This group submitted its report in November 2009 (GoI, 2009). The Expert Group (Tendulkar) did not construct a poverty line. It adopted the officially measured urban poverty line of 2004-05 based on Expert Group (Lakdawala) methodology and converted this poverty line (which is URP-consumption based) into MRP-consumption[2]. The Expert Group (Tendulkar) method of estimation of poverty is described in the following three steps:
Step 1: Convert the URP-consumption based urban poverty line into MRP-consumption based poverty line. Here, the MRP- consumption based urban poverty line is worked out as the level of per capita consumption expenditure in the MRP consumption distribution that corresponds to the bottom 25.7 per cent of the population.
Step 2: State-specific urban poverty lines are derived from the (MRP-consumption based) national urban poverty line using urban state-relative-to-all-India Fisher indices[3].

[2] URP-consumption=consumption data are collected from the households using 30 day recall period for all the items. MRP-consumption=consumption data for five non-food items viz., clothing, footwear, durable goods, education, and institutional medical expenses are collected using 365-day recall period and 30-day recall period for the remaining items.

[3] This national level urban poverty line is disaggregated into state-specific poverty lines using "urban state-relative-to-all-India" price differentials. The prices differentials are constructed from a variety of price data most of which are implicit. For 15 commodity groups namely, cereals, pulses, milk, oil, egg-fish-meat, vegetables, fresh fruit, dry-fruit, sugar, salt-spices, other-food, intoxicants, fuel-light, clothing & bedding and footwear, the Fisher indices are computed using implicit prices obtained from the NSS consumer expenditure data of 61st Round (2004-05); for five item groups namely entertainment, personal care items, miscellaneous goods, miscellaneous services and durables, Labour Bureau price data underlying CPIAL and CPIIW is used. The pricing of educational services are constructed from the employment- unemployment survey of the NSS 61st Round (2004-05) and

Step 3: The state-specific rural poverty lines are worked out from the state-specific urban poverty lines by applying within-state rural-relative-to-urban Fisher indices[4].

Here, the state index numbers relative to the all-India numbers and the state-specific rural prices relative to the state-specific urban prices are computed from the implicit price indices derived from the quantity and value of different items of consumer expenditure gathered in the NSS consumption expenditure.

Urban poverty is same for both expert groups (Lakdawala and Tendulkar) at 25.7 per cent in 2004-05. However, the all-India rural poverty ratio at 41.8 per cent is one and a half times the estimate of Expert Group (Lakdawala) which was 28.3 per cent in the same year as Expert Group (Tendulkar) uses urban basket for rural areas.

3. Suggested Methodology by Expert Group (Rangarajan)

The high rate of increase in per capita income and consumption in the first decade of this century and the consequential changes in the structure of the economy as well as in people's perspectives on poverty was viewed as requiring a fresh look at the poverty line. and its composition. Along-side, significant changes have occurred in the composition of private consumption expenditure: a reduction in the share of food, of foodgrains within food and of cereals within foodgrains.

It is against this background that the Expert Group (Rangarajan) has to define its methodology for drawing up the poverty line and the measurement of poverty[5]. In the

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of health services are constructed from the health and morbidity survey of NSS 60th Round (January-June 2004).

[4] The state-specific rural poverty lines (of 2004-05) are worked out by adjusting the state- specific urban poverty lines (of 2004-05) with the "within-state-rural-relative-to-urban"price differentials computed from the similar price statistics as in the case of disaggregating the national poverty line into state-specific poverty lines in urban areas.

[5] The Expert Group (Rangarajan) has the following terms of reference:

(a) "To comprehensively review the existing methodology of estimation of poverty and examine whether the poverty line should be fixed solely in terms of a consumption basket or whether other criteria are also relevant, and if so, whether the two can be effectively combined to evolve a basis for estimation of poverty in rural and urban areas.

(b) "To examine the issue of divergence between consumption estimates based on the NSSO methodology and those emerging from the National Accounts aggregates; and to suggest a methodology for updating consumption poverty lines using the new consumer price indices launched by the CSO for rural and urban areas state-wise.

past, the Planning Commission had constituted Expert Groups after a gap of about 12 to 15 years. However, Expert Group (Rangarajan) has been constituted less than three years after the submission of its recommendations of Expert Group (Tendulkar) and only one and a half years after the acceptance of its recommendations by the Planning Commission. The apparent urgency with which the Expert Group (Rangarajan) has been formed reflects a need to examine the estimation of poverty in India keeping in mind the changed aspirations regarding the minimally acceptable standards of living in the country.

The first step in measurement of poverty involves determining the PLB (poverty line basket) of goods and services and the associated level of monthly per capita (total) private consumption expenditure as captured by the NSS Consumer Expenditure Surveys. The Expert Group opted for Modified Mixed Recall Period (MMRP) reference period while Expert Group (Tendulkar) considered Mixed Recall Period (MRP) reference period consumption expenditure for estimation of poverty[6]. Experts of Rangarajan group are of the view that the mix of reference periods for different items underlying the MMRP-estimates may be expected to yield estimates that are closer to their true value. Further, in all future NSS Consumer Expenditure Surveys only the MMRP estimates will be available. It automatically implies that deriving poverty estimates using MMRP distribution is not possible for all years prior to 2009-10.

In defining the new consumption basket separating the poor from the rest, the Expert Group (Rangarajan) is of the considered view that it should contain a food component that addresses the capability to be adequately nourished as well as

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(c) "To review alternative methods of estimation of poverty which may be in use in other countries, including their procedural aspects; and indicate whether on this basis, a particular method can be evolved for empirical estimation of poverty in India, including procedures for updating it over time and across states.
(d) "To recommend how the estimates of poverty, as evolved above, should be linked to eligibility and entitlements for schemes and programmes under the Government of India".

[6] In the MMRP, the consumer expenditure data is gathered from the households using the recall period of: (a) 365-days for clothing, footwear, education, institutional medical care, and durable goods, (b) 7-days for edible oil, egg, fish and meat, vegetables, fruits, spices, beverages, refreshments, processed food, *pan*, tobacco and intoxicants, and (c) 30-days for the remaining food items, fuel and light, miscellaneous goods and services including non- institutional medical, rents and taxes.

some normative level of consumption expenditure for essential non-food item groups (education, clothing, conveyance and house rent) besides a residual set of behaviourally determined non-food expenditure.

As a first step towards defining the food component of the poverty line basket, the Expert Group (Rangarajan) has recomputed the average requirements of calories, proteins and fats, per-capita per-day at the all-India level for 2011-12, separately for the rural and the urban populations. This is based on ICMR norms differentiated by age, gender and activity for all-India rural and urban regions to derive the normative levels of nourishment. Accordingly, the energy requirement works out to 2,155 kcal per person per day in rural areas and 2,090 kcal per person per day in urban areas. Based on some studies, it is, however, more appropriate to treat the normal calorie requirements to be within a range of +/- 10 per cent of these values and the lower level of such a range to be adequate enough to not adversely affect health[7]. The protein and fat requirements have been estimated on the same lines as for energy. These requirements are 48 gms and 28 gms per capita per day, respectively, in rural areas; and 50 gms and 26 gms per capita per day in urban areas.

A food basket that simultaneously meets all the norms for the three nutrients, with the calorie-norm being satisfied at least at the lower level of the range defines the food component of the poverty line basket proposed by the Expert Group (Rangarajan). The latest information on class distribution of nutrient-intake, based on estimates of food consumption on MMRP, is available for the year 2011-12 (NSS 68th Round). It is seen that the nutrient-intake norms, including the calorie–norms at the lower end of the range, are met for the persons located in the sixth fractile (25-30%) in rural areas and for those in the fourth fractile (15-20%) in urban areas. The average monthly per capita consumption expenditure on food in these fractile classes is `554 in rural areas and `656 in urban areas.

The non-food component of the PLB has both a normative component and, a component given by the observed consumption pattern of households in the fractile-group in which the food– component of the PLB is located. The normative

[7] see Sukhatme (1981), Meenakshi and Viswanathan (2013).

component relates to the private consumption expenditure aimed at capabilities in respect of education, clothing, shelter (rent) and mobility (conveyance). Since it is difficult to set minimum norms for these essential non-food items, the Expert Group (Rangarajan) recommends that observed expenditures on these items by households located in the median fractile (45-50 percentile) be treated as the normative minimum private consumption expenditure on these items. For all other non- food goods and services, the observed expenditure of that fractile- class which meets the nutrient-norms (the 25^{th}-30^{th} percentile in rural India and the 15^{th}-20^{th} percentile in urban India) is taken to define the PLB in respect of these items.

The MPCE (monthly per capita consumption expenditure) which constitutes new poverty line basket, separately in rural and urban areas, is given in Table 1.

The MPCE of `972 (554+141+277) in rural areas and `1,407 (656+407+344) in urban areas constitute the new poverty lines at the all-India level as per the recommendation of the Expert Group (Rangarajan). They translate to a monthly per household expenditure of `4,860 in rural India and of `7,035 for urban India—assuming a family of 5-members in each case.

Table 1: Consumption expenditure of PLB in Rural Areas and Urban Areas-2011-12 (MPCE in Rs.)

Items	Rural		Urban	
	Sixth fractile (25-30%)	Median class (45-50%)	fourth fractile (15-20%)	Median class (45-50%)
Food	**554**	678	**656**	977
Four essential non-food items	102	**141**	181	**407**
Other non-food items	**277**	347	**344**	571
Total MPCE	933	1166	1181	1955
MPCE-Poverty Line	**972**		**1407**	

Source: Derived from NSS Consumer Expenditure Survey 2011-12, 68^{th} Round

Estimations of poverty line made for the Expert Group (Rangarajan) based on independent large survey of households by CMIE and using a different methodology wherein a household is considered poor if it is unable to save, yield results that are remarkably close to those derived using the NSSO data. This provides additional evidence to the poverty line derived by the Expert Group. However, the alternative approach can be established only when NSSO initiates surveys on income and

expenditure as recommended by the Committee to Review the Methodology for the Estimation of Savings and Investment.

We can look at the proposed poverty line level in terms of PPP dollars per capita per day. As per the most recent (World Bank, 2014) PPP–values, the poverty line translates to $2.14 per capita per day for rural India, $3.10 per capita per day for urban India and $2.44 per capita per day for the country as a whole. (In PPP conversion US $1= `15.11.)

Compared to the poverty lines based on the methodology of the Expert Group (Tendulkar), the poverty lines estimated by the Expert Group (Rangarajan) are 19 per cent and 41 per cent higher in rural and urban areas, respectively. The Expert Group (Rangarajan) uses the Modified Mixed Recall Period consumption expenditure data of the NSSO as these are considered to be more precise compared to the MRP, which was used by the Expert Group (Tendulkar) and the URP, which was used by earlier estimations. 67 per cent of the increase in the rural poverty line and 28 per cent of the increase in the urban poverty line is because of the shift from MRP to MMRP.

The national level poverty lines are disaggregated into state- specific poverty lines in order to reflect the inter-state price differential. The method of constructing the state-wise poverty lines from the national level poverty line in 2011-12 is broadly similar to that outlined by the Expert Group (Tendulkar). Implicit prices are calculated from the quantity and value of consumption gathered in NSS consumer expenditure data of the 68th Round (2011-12). From these, state relative to all-India Fisher price index has been computed, separately in rural and urban areas. Using the Fisher Index, the inter- state price differential is calculated separately in rural and urban areas and from these the national poverty lines (separately in rural and urban areas) in 2011-12 are disaggregated into state-specific poverty lines.

Using these and the state-specific distribution of persons by expenditure groups (NSS), state-specific ratios of rural and urban poverty were estimated. State-level poverty ratio was estimated as weighted average of the rural and urban poverty

ratios and the national poverty ratio was computed again as the population- weighted average of state-wise poverty ratios.

The Expert Group (Rangarajan) estimates that the 30.9 per cent of the rural population and 26.4 per cent of the urban population was below the poverty line in 2011-12. The all-India ratio was 29.5 per cent. In rural India, 260.5 million individuals were below poverty and in urban India 102.5 million were under poverty. Totally, 363 million were below poverty in 2011-12. The state-specific poverty ratio and number of poor estimated for the year 2011-12 is given in the expert group (Rangarajan) report (GoI, 2014)

Expert Group (Rangarajan) also estimated poverty ratios for the year 2009-10. The price inflation during the period 2009-10 to 2011-12, at the state level (separately in rural and urban areas), has been calculated from the increase in the cost of the consumption basket of the poor, that is the poverty line as estimated by the Planning Commission for these two years using the Expert Group (Tendulkar) methodology.
The estimate of poverty ratio for the years 2009-10 and 2011-12 derived from the Expert Group (Rangarajan) methodology and Tendulkar methodology are summarised in Table 2.

A comparison of the poverty ratio for the two years 2009-10 and 2011-12 derived from the Expert Group (Rangarajan) method and the Expert Group (Tendulkar) method shows that the average level of poverty ratio derived from the Expert Group (Rangarajan) method is higher than that derived from the Expert Group (Tendulkar) method. The all-India poverty ratio derived from the Expert Group (Rangarajan) method is 8.4 percentage points higher in 2009-10 and 7.6 percentage points higher in 2011-12 than that derived by the Planning Commission using the Expert Group (Tendulkar) method. The all-India poverty ratio in Expert Group (Rangarajan) fell from 38.2 per cent to 29.5 per cent. Totally, 91.6 million individuals were lifted out of poverty during this period. Though Rangarajan Committee methodology gives higher level of absolute poverty ratio, the reduction in poverty ratio from Rangarajan method is not very different than that of Tendulkar method.

Table 2: Poverty Estimates in 2009-10 and 2011-12

Year	Poverty Ratio			No. of poor (million)		
	Rural	Urban	Total	Rural	Urban	Total
Expert Group (Rangarajan)						
1. 2009-10	39.6	35.1	38.2	325.9	128.7	454.6
2. 2011-12	30.9	26.4	29.5	260.5	102.5	363.0
3. Reduction (%age points)	8.7	8.7	8.7	65.4	26.2	91.6
Expert Group (Tendulkar)						
1. 2009-10	33.8	20.9	29.8	278.2	76.5	354.7
2. 2011-12	25.7	13.7	21.9	216.7	53.1	269.8
3. Reduction (%age points)	8.1	7.2	7.9	61.5	23.4	84.9

Source: GOI (2014)

The Expert Group (Rangarajan) recommends the updation of the poverty line in the future using the Fisher Index. The weighting diagram for this effort can be drawn from the NSSO's Consumer Expenditure Survey. For the food group, it recommends that the current practice of relying on the unit values derivable from the NSSO consumer expenditure surveys should continue till such time a new CPI (consumer price index) of CSO with a weighting diagram based on the 2011-12 pattern of consumption becomes available. In respect of non-food items, the price indices available in the existing CSO Consumer Price Indices can be used in the construction of requisite Fisher indices. Once the new series of CPI numbers (with 2011-12 as the base year) becomes available, it may be used for updating the future poverty line.

4. Clarifications on the Issues Raised by Others

Since the submission of the report of Expert Group (Rangarajan), there have been few comments on the report published particularly in The *Economic and Political Weekly* (Ray and Sinha, 2014; Mishra, 2014; Subramanian, 2014) and *The Hindu* Newspaper (Deaton and Dreze, 2014). Of course they also indicated the positive aspects of the report. We provide clarifications below on various issues raised by them and also discuss some additional conceptual and empirical issues on poverty measurement and trends.

4.1. What is New in the Approach for Poverty Line?

It may be noted that poverty line computed by Rangarajan group has three components: (a) food component, (b) normative level of expenditure for essential non-food items such as education, clothing, conveyence and house rent, and (c) behaviourally determined expenditure for other non-food items. The Group has gone back to the idea of separate poverty line baskets for rural and urban areas. This stands to reason. This is also consistent with the way we have derived the poverty line. The introduction of norms for certain kinds of non-food expenditures is an innovation. It is a simple recognition of the fact that these expenditures constituted a significant part of total consumption. In the absence of any other normative criteria, the median fractile class expenditures were treated as the norm. In fact, non-food consumption as a proportion of total consumption has been steadily rising. That is why the Group decided to take a fresh look at the basket rather than only updating the old basket for price changes.

Mishra (2014) says that the expert group takes commodity basket from two fractile groups and it poses a behavioural dilemma. It may be noted that when we adopt two norms one for food and the other for certain non-food expenditures, obviously the emerging basket will not correspond to the behavioural pattern of a particular expenditure class. Our attempt has been to estimate the level of private consumption expenditure which will meet certain minimum requirements.

Srinivasan (2007) calls for a new approach to poverty measurement. He says that, “Useful starting points for a new approach lie in anchoring poverty lines in social

norms and in the distinction made by PPD[8] between goods and services to be bought by households from their own resources and those to be supplied by the state, thus providing a meaningful way of distinguishing the responsibilities of households (i.e., the private sphere) and those of the state (i.e., the public sphere)." In a personal correspondence with one of the authors of this paper he elaborates his idea as follows.

"I have suggested an alternative, namely to start from a socially defined poverty bundle of goods and define as those who do not consume that bundle. In valuing the bundle and updating it requires the use of prices actually paid by the poor and also excluding that part of the bundle whose cost is in part met by subsidies".

The suggestion of Srinivasan that we should start from a 'socially defined poverty bundle of goods', is a good idea. But, the problem is how to arrive at such a socially defined poverty bundle. In some ways, this is precisely what we have done regarding private expenditure. We have arrived at a minimum level of private consumption expenditure both in relation to food and non-food items. Unless, a method is specified to arrive at socially defined poverty bundle of goods, it may be difficult to measure poverty. We have discussed below on the contribution of public expenditures.

Among other things, Subramanian (2014) provides a critique of the expert group's methodology for identifying the poverty line particularly unvarying "poverty line basket". It may be noted that the report of the expert group chaired by Lakdawala discussed the issues of fixed commodity basket and varying commodity basket and opted for the fixed one for comparability. It may, however, be noted that while the basket may remain the same in terms of composition, weights for price indices could change since the updation of the poverty line is to be done using the Fisher Index. As the Expert Group (Tendulkar) says, "the proposed price indices (Fisher Ideal indices in technical terms) incorporate both the observed all-India and the state level consumption patterns in the weighting structure of the price indices" (GoI, 2009: 2).

[8] PPD refers to Perspective Planning Division of the Planning Commission

4.2. Use of Calories

Deaton and Drèze (2014) criticise the group for going back to calorie norms. Ray and Sinha (2014) appreciate the use of calories but they do not agree with sharp reduction in rural daily calorie requirements. They also mention Amrtya Sen who said that there was no decline of calories for the population around the poverty line. Apart from taking the recent ICMR norms, the revised calorie norm is also justified on the following grounds:

i. First, as a recent study by Meenakshi and Viswanathan (2013) shows, the average calorie norms could be significantly lower if we replace the 95th percentile heights and a BMI of 21 that underline the ICMR norms for adults by a possibly more appropriate (for the current adult population whose height is given) median (or mean) heights and a BMI of 19 that is still higher than the lower limit of 18.5 that defines a healthy adult.

ii. Secondly, we have the idea (Sukhatme, 1981) of a margin of homeostatic adaptation within which individuals can adapt,

without adverse impact on health and activity status, to variation in intakes around the norms. These two factors would suggest that the calorie norms be treated as lying in range of say, ±10 per cent, where intakes at the lower level need not compromise an adult's health and activity status.

The new poverty line is not limited only to calorie intake but also extends to fats and proteins. As mentioned above, calories, fats and proteins are used mainly for locating food component. It is true that there is no direct correlation between calorie and nutrition. Some use calorie norm directly as cut off for measuring poverty. This method may give implausible results (see Dev, 2005). There are many other factors which contribute to nutrition. But taken in conjunction with other factors mentioned in the Report, relating minimum food consumption to calorie, fat and protein requirements appears to be a reasonable approach. The Expert Group (Rangarajan) takes the considered position that, taken in conjunction with public provisioning of a range of public goods and services (sanitation, drinking water, immunisation and vaccination etc.) on a universal basis, the access to the food component of the PLB will have a favourable impact on the nutrition-status outcomes for the population. Without such norms, the minimum level may turn out to be arbitrary. Tendulkar

Group itself did not abandon calorie norms. They took the urban poverty basket as given. They also claimed that ultimately the poverty line they recommended satisfied FAO norms.

Ray and Sinha (2014) rightly points out the importance of micronutrients for nutrition. We recognise the need for micronutrients but data on this are not readily available to include it in the food component of poverty line. They also mention that variations in dietary habits vary across regions and poverty line should be based on state variations in consumption. This is not a new thing and these issues were discussed in Lakdawala expert group report. In fact, there was a note of dissent by S. Guhan highlighting the need for separate poverty lines based on variation in consumption of different states. But, all the expert groups (Lakdawala and subsequent reports) decided to have all India consumption basket only.

4.3. Non-Food Criteria

One of the novel features of the Rangarajan Committee Report is that for the first time it incorporates a normative component for four essentials of non-food items. The Committee recommended that the observed expenditures on these four items by households located in the median fractile (45-50 fractile) be treated as the normative minimum private consumption expenditure on these items. Some observers have commented that both selection of items as essentials and locating households in the median fractile are arbitrary. It may be noted that the Committee had to use some judgement in selecting items and fractile group. One can use different judgement and change the items to be included in normative component and also locate different fractile groups. Any normative criterion can be subject to such a criticism of arbitrariness.

4.4. Poverty Estimation: Headcount and Depth

A World Bank report (2015) on poverty brings out poverty ratios across countries including India. According to these estimates, India's poverty ratio based on 'uniform reference period'(URP) in which recall period was 30 days for all items was 21.2 per cent in 2011-12. The poverty line is $1.90 per capita per day. The report says that poverty in India could be even lower if we use 'modified mixed reference period'(MMRP) in which recall period is 7 days for some food items, one year recall

for low frequency non-food items and 30 days for rest of the items. World Bank poverty report indicates that use of MMRP estimates leads to a significantly lower poverty rate of 12.4 per cent in 2011-12.

Differing Estimates

The Rangarajan Committee on poverty estimates that 29.5% of India's population was below poverty line in 2011-12. The poverty line for all India is around Rs.1105 per capita per month. In terms of latest purchasing power parity terms this comes to around $2.44 per capita per day. The World Bank's poverty line of $1.90 per capita per day is about 78% of Rangarajan's committee's poverty line. Thus, low poverty line was the reason for low poverty ratio of 12.4 per cent in World Bank estimates as compared to Rangarajan Committee's estimate of 29.5% in 2011-12. The poverty problem looks much more manageable if we take World Bank's poverty line. But, Rangarajan Committee's estimates show that poverty was still substantial at nearly 30% based on MMRP in 2011-12.

World Bank report also talks about depth of poverty. It examines the trends in new poverty measure called person-equivalent headcounts. According to the report, the depth elasticity at the global level between 1990 and 2012 was 1.18 indicating that the reductions in traditional head count ratios were accompanied by even-larger reductions in person-equivalent poverty ratios. This is true for the regions such as Sub-Saharan Africa, South Asia region and East Asia and Pacific where bulk of the poor reside.

Depth of Poverty

We examine here the depth of poverty for India in a different way by looking at the poverty ratios using different cut-offs of poverty line (PL). The first issue is whether the poverty ratios with lowered poverty line cut-offs are declining as fast as those with poverty line or the raised poverty line cut-offs. The second one is about the location of the poor i.e. whether the poor are located much below the poverty line or around the poverty line. This is done for total, rural and urban areas for all India and total for few states. Poverty ratios for different cut-offs are given in Table 3. The major conclusions are the following.

Table 3: Poverty Ratios using different cut-offs: Rural and Urban Areas, All India

Poverty Line (PL) cut-offs	Rural		Urban		Total	
	2009-10	2011-12	2009-10	2011-12	2009-10	2011-12
125% of PL	60.0	51.3	49.8	40.1	57.1	48.1
115% of PL	53.0	43.5	44.0	34.7	50.4	41.0
100% of PL	39.6	30.9	35.2	26.8	38.2	29.5
85% of PL	25.6	18.3	25.4	18.1	25.5	18.3
75% of PL	16.7	11.1	18.5	12.4	17.2	11.5
50% of PL	2.0	1.4	4.4	2.2	2.7	1.7

Note: 100% refers to Rangarajan committee's poverty line
Source: NSS Household Level data

One conclusion is that even if we raise the poverty line to 125%, the reduction in poverty ratio was 9 percentage points between 2009-10 and 2011-12. This is also true for poverty ratio based on 115% of poverty line. In the case of 85% and 75% of poverty lines, the percentage points decline was lower than those of raised poverty line. But, if we account for base poverty ratio, the decline of poverty ratio was faster for 85% and 75% poverty lines compared to those of 100% to 125% poverty lines.

Head count ratio is criticized on the ground that it does not measure the 'depth' of poverty. It is seen, however, that more than 50 per cent of the poor lies between 75 per cent of the poverty line and the poverty line (PL). This is true both in 2009-10 and 2011-12. In fact, 65 per cent of rural poor and 61% total poor lie between 75% of PL and PL in 2011-12. It may also be noted that many of the non-poor also live just above the poverty line between 115% of PL and PL or between 125% of PL and PL. Another point is that there is negligible population below 50% of PL – less than 2% in 2011-12. In fact, below 50% of PL, urban poverty ratio was higher than that of rural areas.

Comparison among States

We also looked at the poverty ratios with different cut-offs of poverty lines for two relatively poorer states Bihar and Orissa and two developed states Tamil Nadu and

Gujarat (Table 2). It provides interesting results. In the case of Bihar and Orissa, the rate of decline in poverty is lower for raised poverty lines of 125% and 115% as compared to poverty line and the lower cut-offs of 85% and 75% PL. The decline is even much faster for these two states at lower cut-offs if we take into account the base poverty ratio. The raised poverty lines for Orissa reveal only marginal decline for both 125% and 115% of PL. In the case of Gujarat, the decline in percentage points is more or less similar across the raised and lowered cut-offs. If we take into account the base effect, the rate of decline is higher for the lowered cut-offs. As far as Tamil Nadu is concerned, it shows a slightly different pattern. The decline in percentage points in poverty were higher for raised poverty line compared to those of lowered poverty lines. However, if we take the base effect, the rate of change is more or less similar.

Table 4: Poverty Ratios using Different Cut-offs: Total (rural+Urban) for Four States

Poverty Line (PL) cut-offs	Bihar		Orisaa		Gujarat		Tamil Nadu	
	2009-10	2011-12	2009-10	2011-12	2009-10	2011-12	2009-10	2011-12
125% of PL	82.1	69.3	67.5	67.4	53.7	46.1	47.1	38.6
115% of PL	76.6	60.0	60.7	59.9	47.7	39.0	39.9	32.6
100% of PL	63.9	41.3	48.5	45.9	36.4	27.4	27.7	22.4
85% of PL	46.2	24.3	33.7	28.9	22.7	14.5	17.3	14.0
75% of PL	34.2	15.3	22.7	20.3	14.1	7.8	11.2	8.3
50% of PL	4.4	1.6	4.3	2.5	1.4	1.1	1.3	1.0

Source: Same as Table 3

As far as a concentration of poverty is concerned, it is clear that in all the four states bulk of the poor is between the poverty line and 75 per cent of the poverty line. In the case of two advanced states Gujarat and Tamil Nadu, the concentration is even higher. In 2011-12, in Gujarat 71.5 per cent of the poor were within these limits. For the same year, in the case of Tamil Nadu, the percentage of the poor falling within these limits is 63 per cent. The proportions are however much lower in the case of Bihar and Orissa. In Bihar, it is 40.9 per cent and in Orissa it is 45.4 per cent. Unlike in the case of Bihar and Orissa, both in Gujarat and in Tamil Nadu the percentage of

the poor falling between these limits has increased between 2009-10 and 2011-12 indicating a faster decline in the depth of poverty.

Where Do We Stand?

There are three conclusions from the all India and state-wise analysis. First, the rate of decline in poverty ratios for lowered cut-off is similar or more than those for PL or raised PL. Second, poverty is concentrated around the poverty line. Third, the percentage of population for 50% of PL is negligible at all India and state level.

There is a considerable amount of debate on how to measure poverty. Prescribing a minimum level of income or consumption expenditure for defining poverty appears to be the most appropriate method. Obviously even with reference to the prescription of a minimum, there can be considerable differences of opinion. There is bound to be a range of poverty lines. Our Committee in 2014 had set out a methodology for prescribing the minimum level of consumption expenditure of food and non-food items. The World Bank uses a single poverty line defined in terms of dollar and uses purchasing power parity exchange rate to determine each country's poverty line. This becomes inevitable when comparisons across countries have to be made. We must however recognise the limitations of such an exercise.

Head count ratio is a reasonable indicator of poverty measurement, although we may need to supplement it with some measures of depth. Bunching of poverty around the poverty line in our country gives us hope that the problem of reducing poverty is more manageable. On the other hand, had the poor been concentrated at the lower level, the task could have been more arduous. The yardstick that we have chosen to measure poverty is more stringent than the one used by World Bank.

4.5. Multi-dimensional Poverty

Ray and Sinha (2014) are critical of the report saying that the group did not widen the concept of poverty in terms of multidimensional poverty as mentioned in the terms of reference. They use NSS and NFHS data to highlight multidimensionality. Subramanian (2014) also says that the expert group has "forfeited an opportunity to press the case for a multidimensional assessment of poverty". It may be noted that the group discussed these issues and has given the reasons in the report why it has

not attempted estimating multidimensional poverty. The search for non-income dimensions of poverty possibly stems from a view that, in terms of the capabilities approach to the concept and measurement of poverty, some of these 'capabilities', may not be tightly linked to the privately purchased consumption basket in terms of which the poverty lines are currently drawn. Therefore, poverty based on income or consumption is different from deprivations based on education or health.

Even the trends given by multi-dimensional poverty are similar to that of estimates of consumption based poverty. Amidst the din caused by the story of rising billionaires, the message on India's poverty decline in a report of the Oxford Poverty and Human Development Initiative has been lost. UNDP and Oxford University released the report on Global Multidimensional Poverty Index (MPI) 2018. This report covers 105 countries. The MPI is based on 10 indicators: Health, child mortality, years of schooling, school attendance, cooking fuel, sanitation, drinking water, electricity, housing and assets. This report has specifically discussed the case of India. It is well worth quoting the opening paragraph on India: "India has made momentous progress in reducing multidimensional poverty. The incidence of multidimensional poverty was almost halved between 2005/6 and 2015/16, climbing down to 27.5 per cent. The global Multidimensional Poverty Index (MPI) was cut by half due to deeper progress among the poorest. Thus within ten years, the number of poor people in India fell by more than 271 million — a truly massive gain". This is indeed high praise. The report also says that the poorest groups had the biggest reduction in MPI during the period 2005/6 to 2015/16, indicating they have been "catching up".

Is the conclusion of global MPI a new revelation? No. The estimates of poverty-based on consumer expenditure and using the Tendulkar committee methodology show over a seven-year period between 2004-05 and 2011-12, the number of poor came down by 137 million despite an increase in population. According to the Rangarajan Committee methodology, the decline between 2009-10 and 2011-12 is 92 million, which is 46 million per annum. For a decade, it will be larger than that of global MPI.

The poverty ratios based on Tendulkar and Rangarajan Committee methodologies are lower than as estimated by global MPI. We have reservations on using multiple indicators as these multidimensional indicators/measures raise several issues

regarding their measurability, aggregation across indicators, and, crucially, of databases that provide the requisite information at reasonably short intervals. These need to be considered and evaluated carefully. Aggregation is another problem. In principle, they should be independent. Access to safe drinking water, for example, cannot be aggregated with indicators like child mortality. Even in respect of independent indicators, analytically appropriate rules of aggregation require that all of them relate to the same household. More generally, this requirement poses several data constraints.

It may be noted that we are not against multidimensional poverty or deprivations. One can analyse the progress of non-income indicators like education, health, sanitation, drinking water, child mortality etc. over time with income or consumption poverty. But, converting all of them into an index poses several problems. Deaton and Dreze (2014) also indicate that “it is important to supplement expenditure-based poverty estimates with other indicators of living standards, relating for instance to nutrition, health, education and the quality of the environment”.

On multidimensional issues Srinivasan (2007) says viewing the public services as another dimension besides consumption in a multidimensional conceptualisation of poverty is more fruitful. However, he is critical of multidimensional indices. He says that “collapsing many relevant but not necessarily commensurate dimensions into a single index defined as an arbitrarily weighted sum of disparate indexes makes little sense. The Hurman Development Index pioneered by the United Nations Development Programme is an example of an arbitrarily weighted sum of non-commensurate indexes. It certainly is not a multidimensional conceptualisation in any meaningful sense but simply yet another arbitrary unidimensional index” (Srinivasan, 2007: 4162).

In the minds of most people, being rich or poor is associated with levels of income. The various non-income indicators of poverty are in fact reflections of inadequate income. Defining poverty in terms of income or in the absence of such data in terms of expenditure seems most appropriate and it is this method which is followed in most countries.

4.6. Higher Urban Poverty in Many States

Deaton and Dreze (2014) and EPW (2014) say that in Rangarajan group method urban poverty ratio is higher than rural poverty in many states. Based on Tendulkar expert group methodology, urban poverty is lower than rural poverty (except for Punjab) in 2011- 2012. In fact, there was severe criticism of Tendulkar expert group methodology for urban basket for rural areas and underestimating urban poverty. Their report has also been criticised for not taking into account the aspirations of people. Therefore, Rangarajan group tried to correct this problem by including median fractile expenditures for four essential non-food items.

It is true that based on Ragarajan expert group methodology, 13 out of 28 states showed higher urban poverty than rural poverty. These states are: Andhra Pradesh, Bihar, Goa, Haryana, Jammu & Kashmir, Karnataka, Kerala, Manipur, Nagaland, Punjab, Rajastan, Tripura, Uttar Pradesh and Uttarakhand.

What are the possible explanations for higher urban poverty in some states? One can give the following explanations.

It may be noted that Lakdawala committee based estimates for 2004-05 show that 10 out of 28 states showed higher urban poverty than rural poverty. Lakdawala group and Rangarajan group have consumption baskets separately for rural and urban areas. On the other hand, Tendulkar group had only one consumption basket for urban areas which is used for rural areas. Obviously, in Tendulkar group methodology, rural poverty would be higher than urban poverty because getting urban basket in rural areas is costly. In contrast, there are two baskets (rural and urban baskets) separately in Lakdwala group and Tendulkar group.

In Rangarajan group, the median fractile (45-50%) values of clothing expenses, rent, conveyance and education expenses are treated as the normative requirements of the basic non-food expenses of clothing, housing, mobility and education of a poverty line basket. This works out to `141 per capita per month in rural areas and `407 in urban areas. The basic non-food expenses constitute 14.5 per cent of total poverty line in rural areas and 29.1 per cent in urban areas. It shows that the share of these items in urban areas is twice to that of rural areas. It is known that

particularly house rents and conveyance charges are much higher in urban areas than rural areas. As a result of this higher share of basic non-foods, the share of total non-foods in total poverty line in urban areas is 53 per cent as compared to 43 per cent in rural areas.

One may ask the question: why only 13 states have higher urban poverty? What about other 15 states which have higher rural poverty than urban poverty? It is possible in these 15 states, in spite of inclusion of normative expenses on basic non-foods and higher expenses on housing and conveyance, the purchasing power of more number of people in rural areas are not matching with those of urban population. This needs a detailed study.

It is also possible that in spite of MGNREGA and other schemes, significant number of rural poor may be migrating to urban areas in search of employment. In other words, poverty is being exported from rural areas to urban areas. Studies have shown that seasonal migration is quite high from rural to urban areas. This also needs investigation.

4.7. NSS and SECC

When the government released the Socio-Economic Caste Census (SECC) 2011 data, there have been views in the media that hereafter we need not have consumption based poverty estimates using National Sample Surveys (NSS) data. It is viewed that SECC data would alone be enough to estimate poverty and deprivation. The purpose of this section is to briefly examine the differences between the two and clarify that NSS consumption based poverty estimates are still relevant. SECC based estimates are important, but it does not substitutes for NSS based poverty ratios.

Measurement of Poverty Based on NSS Estimates

Based on the analysis presented in the Expert Group Report (Rangarajan), MPCE (monthly per capita consumption expenditure) of `972 in rural areas and `1,407 in urban areas is treated as the poverty line at the all India level. Assuming five members for a family, this will imply a monthly per household expenditure of `4,860

in rural areas and `7,035 in urban areas. The Expert Group estimates that the 30.9 per cent of the rural population and 26.4 per cent of the urban population was below the poverty line in 2011-12. The all-India ratio was 29.5 per cent.

The estimates of poverty provide the proportion and size of the poor population and their spread across states and broad regions. But, they can't be used for identification of the individual poor which is necessary to ensure that the benefits of these programmes and schemes reach only the deserved and the target group.

SECC, Deprivation and Identification of the Poor

After the release of SECC estimates, some commented that earlier targeted programmes were designed based on sample surveys and SECC was an innovation for the first time. This is not true. Even previously for identification of poor, BPL (below poverty line) censuses were conducted. The first two BPL censuses (conducted in 1992 and 1997) yielded the estimate of percentage and number of poor households at village, block, district and state level, and the beneficiaries in these programmes were chosen by the State governments depending upon their location/position in the BPL list. The third BPL Census was conducted in 2002. It did not identify the number of poor households straightaway or estimate their numbers as in the previous two Censuses. Instead, it ranked the households within the village in terms of their socio-economic status, based on 13 indicators reflecting the levels of living and quality of life. SECC

2011 is thus part of this continuing process of conducting BPL Censuses in rural areas.

According to SECC data 8.69 crore out of 17.91 all rural households have one of the 7 deprivations. In other words, 48.5 per cent of all rural households suffer from at least on 1 of 7 deprivations. 30 per cent of households suffer from 2 deprivations, while 13 per cent have 3 deprivations. Only 0.01 per cent households suffer from all deprivations. The automatically included contributed 0.92 per cent of the total rural households. Information on urban households are not yet available.

The rural poverty ratio estimated by the expert group based on NSS data was around 30.9 per cent in 2011-12. This is almost equal to households with two deprivations plus automatically included. However, NSS based estimates are per capita based while SECC data refer to households. A look at 7 deprivations shows that they are not deprivations in the conventional sense of deprived of income, health and education etc. Therefore, the question is whether SECC data is appropriate to estimate poverty ratios. For example, it is true that landless households deriving a major part of their income from manual labour constitute the largest number under deprivation households. It is not clear whether landlessness (or manual labour) can be sufficient to conclude that they are suffering from poverty. Over time landlessness will increase and people will diversify their income with rise in non-agricultural activities and migration. In the same way, some of the other criteria are not clear indicators of poverty.

Lastly, what is the rationale for having poverty estimates based on consumption estimates?

First, in the minds of most people, being rich or poor is associated with levels of income. The various non-income indicators of poverty are in fact reflections of inadequate income.

Second, historically, the number of identified poor based on the successive BPL Censuses in rural areas has differed widely from the measured poverty. For example, the percentage of households identified as poor in the first BPL Census in 1992 was nearly twice the poverty ratio estimated by the Planning Commission. Usually the identified poor households through these Censuses contain a mix of poor and non-poor for which there could be several reasons. One of the main reasons behind such mix-up could be due to the fact that people know beforehand that the Census was going to decide the status of the household as poor or non-poor and therefore its entitlement.

Third, the deprivation criteria by themselves do not indicate the level of poverty. A judgement has to be made as to the number of deprivations taken together constitute a measure of poverty. This can turn out to be highly subjective.

What is the purpose of NSS consumption based estimates if they are not used for allocation of funds and capping beneficiaries under government programmes? These poverty ratios would be used basically for assessing the changes in poverty at national and state levels or district level. This will be useful for making appropriate policies. For example, one can examine changes in poverty in different phases of post-reform period to understand what impact anti-poverty programmes in conjunction with growth have had on poverty.

To conclude, SECC and NSS data based estimates have different purposes. SECC would be important for identification of beneficiaries of programmes while NSS based estimates would be useful to assess changes in levels of living at the macro level over time.

4.8. Poverty and Inequality in India

In recent years, there has been lot of discussion on increasing inequality within several countries of the world including India particularly after the publication of Piketty's book on inequality. It is true that rising inequality has adverse economic and social consequences. Gini coefficient or other measures of inequality are being used to examine trends in inequality. In this paper, we examine the trends in inequality and show that poverty ratio is equally important as Gini Coefficient in analysing the issues relating to growth and distribution.

Trends in Inequality

Inequality represented by Gini Coefficient for rural areas declined marginally during 1983-84 to 1993-94 while it recorded marginal rise during the high growth period of 2004-05 and 2011-12 (Table 5). In the case of urban areas, Gini Coefficient stayed the same during 1983-84 to 1993-94 while it increased during 2004-05 and 2011-12.

Table 5. Inequality (Gini Coefficient) of consumption Expenditure: All India

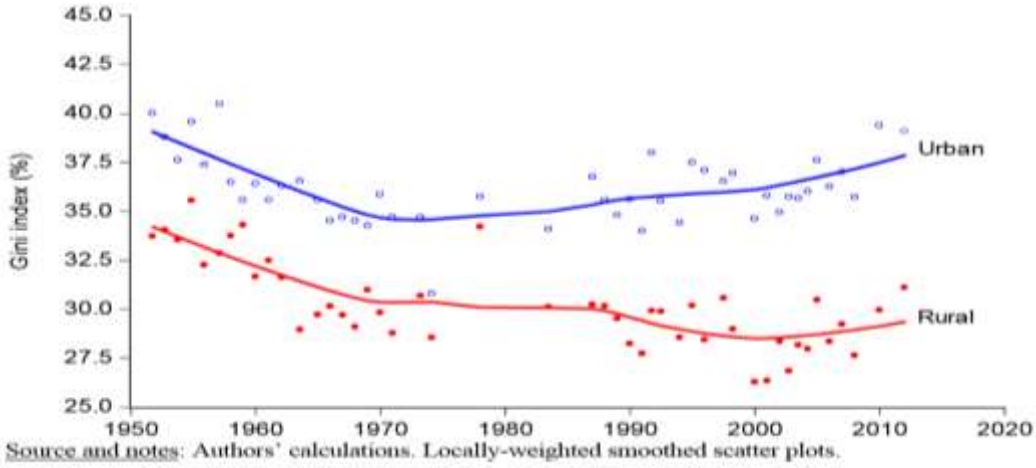
Sector	1983-84	1987-88	1993-94	2004-05	2011-12
Rural	0.304	0.299	0.286	0.304	0.311
Urban	0.342	0.350	0.344	0.376	0.390

Source: Singh et al (2015)

Using long time series since 1951, a study by Dutt et al (2016) show that inequality in rural areas declined while it increased in urban areas in the post-reform period particularly in the high growth period (Fig 1).

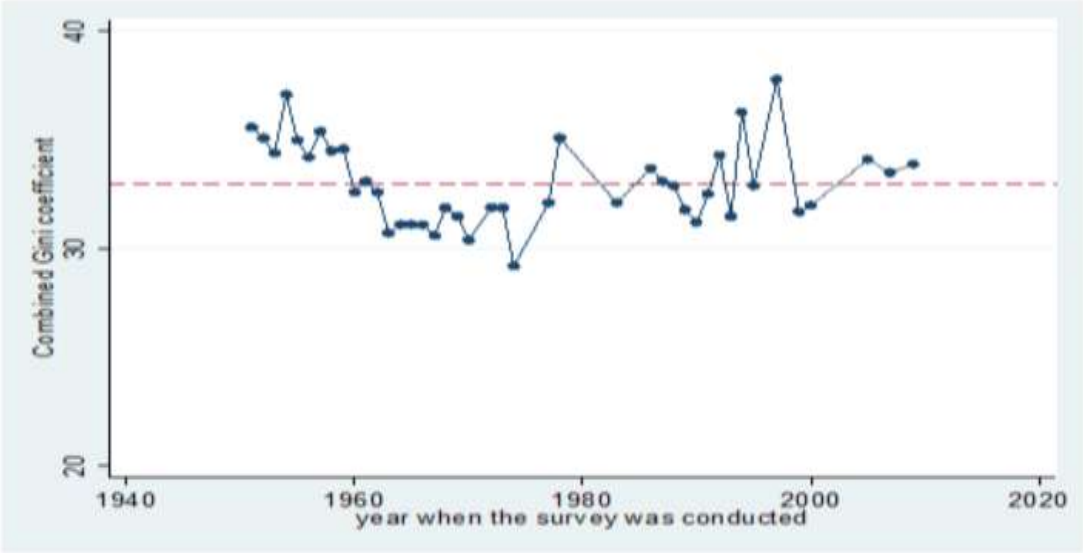
The overall inequality for longer period shows fluctuations without any trend. It declined significantly in the late 1950s to mid-1970s when growth was low (Fig. 2). The Gini Coefficient rose in the post-reformed period.

Fig. 1. **Trends in Urban and Rural Inequality**



Source: Datt, G. Ravallion and Rinku Murugan (2016)

Fig 2. Gini Coefficient in Consumption: 1951-2011-12 (Rural+Urban)



Source: Milanovic (2016), "The Question of India's Inequality", http://glineq.blogspot.in/2016/05/the-question-of-indias-inequality.html

One view is that inequality in consumption may be an under estimate as NSS data may not be capturing the consumption of the rich adequately. Difference between the consumption expenditure according NSSO and national income could be partly due to this factor. However, there is no evidence that underestimation in NSSO is only relating to the upper-income groups. In fact, Rangarajan Committee examined

the issue of differences in consumption between NSSO and NSS. According to the Committee, these two estimates of consumption (NAS and household survey based) do not match in any country and India is no exception. What is alarming in India is that the difference between NAS and NSS is widening over time. For example, the difference was less than 10 per cent in the late 1970s; it rose to 50 per cent in 2009-10. The differences are much higher for non-food (46%) as compared to food. Some adjustments made in the report reduced the differences from 45.8 per cent to 32.5 per cent. But still the differences are high. Apart from problems in NAS, the fatigue of the respondents in NSS might not be able to capture some of the non-food items.

Income and wealth inequalities are much higher than consumption inequality. As shown in Table 5, consumption Gini coefficient is 0.36 in 2011-12 (Fig 3). On the other hand, inequality in income is high with a Gini coefficient of 0.55 while wealth gini coefficient is 0.74 in 2011-12 (Table 6). Income Gini is 20 points higher than consumption Gini while wealth Gini is nearly 40 points higher than consumption Gini. Thus, inequality in income and wealth is much higher than that of consumption[9]. Inequality in consumption and wealth is lower in rural areas as compared to urban areas. However, inequality in income is higher in rural than urban areas.

Table 6. Consumption, Income and Wealth Inequality in India: Rural, Urban and Total, 2011-12

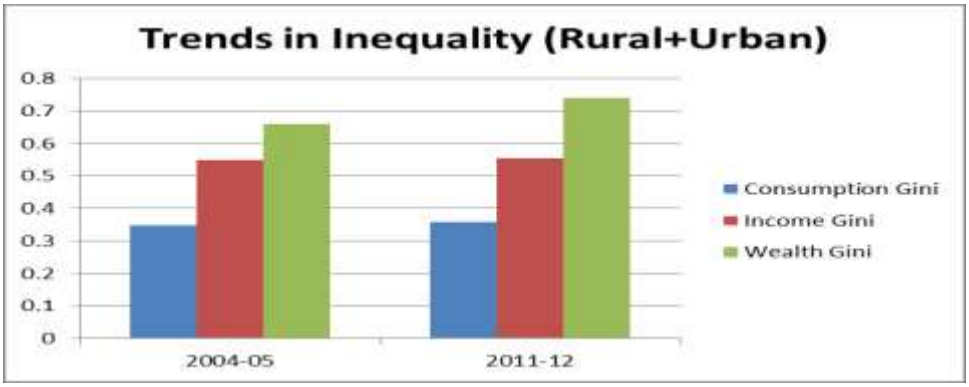
Sector	Total	Rural	Urban
Consumption Gini	0.359	0.287	0.377
Income Gini	0.553	0.541	0.506
Wealth Gini *	0.740	0.670	0.770

*Refers to 2012

Sources: Himanshu (2015) for Consumption Gini; Income gini coefficients are Estimated from the data of Indian Human Development Survey (IHDS); Anand and Thanpi (2016) for wealth gini coefficients

[9] India has made tax data public recently by releasing it for the year 2011-12 (assessment year 2012-13). But, it is very small sample to look at overall income inequalities.

Fig3. Trends in Inequality in consumption, income and wealth



Source: Same as Table 5

Many studies have shown that inequality in consumption increased in the post-reform period[10]. Most of the studies show that it increased marginally in rural areas while it rose significantly for urban areas. Table 7 provides trends in inequality in consumption, income and wealth. It shows consumption and income gini increased marginally between 2004-05 and 2011-12. However, wealth inequality increased significantly from 0.66 to 0.74 - by 8 points during the same period.

Table 7: Trends in Inequality (Rural+Urban)

Sector	1993-94	2004-05	2011-12
Consumption Gini	0.300	0.347	0.359
Income Gini	--	0.548	0.553
Wealth Gini *	0.650	0.660	0.740

*Wealth Gini refers to 1991, 2002, 2012
Source: Same as Table 2

The data base for computing income inequality is not as solid as the base for consumption expenditure. The NSSO surveys have been studied for long and have gone through critical analysis. The sharp differences between consumption gini coefficient and income gini coefficient are difficult to explain. Also using the income tax data for computing income distribution has also many problems. In India, only 5 per cent of people come under the income tax net.

[10] For example, see Radhakrishna (2015)

Trends in Poverty

There are two conclusions on the trends in poverty. First one is that a World Bank study by Datt et al (2016) shows that poverty declined by 1.36% points per annum in post-1991 compared to that of 0.44% points per annum prior to 1991. Their study shows that among other things, urban growth is the most important contributor to the rapid reduction in poverty even in rural areas in post-1991 period.

Second conclusion is that within post-reform period, poverty declined faster in 2000s than in 1990s. The official estimates based on Tendulkar poverty lines show that poverty declined only 0.74 percentage points per annum during 1993-94 to 2004-05. But, poverty declined by 2.2 percentage points per annum during 2004-05 to 2011-12. Around 135 million people were lifted above the poverty line in the post-reform period. The all-India poverty ratio in Expert Group (Rangarajan) fell from 38.2% to 29.5%. Totally, 91.6 million individuals were lifted out of poverty during this period. Though Rangarajan Committee methodology gives higher level of absolute poverty ratio, the reduction in poverty ratio from Rangarajan method is not very different than that of Tendulkar method

Poverty Trends: Growth and Distribution

The trends in poverty show that the pace of reduction was much higher in the post-reform period particularly during high growth period. The impact of higher growth on poverty reduction can also be seen from the decile-wise growth in per capita consumption expenditure. In the period 2004-05 to 2011-12 an increase in per capita consumption had taken place across all the ten deciles of the population both in rural and urban areas. Table 8 gives a comparison of the growth rate of per capita consumption (in real terms) during the periods 1993-94 to 2004-05 and 2004-05 to 2011-12. It shows that the average growth of per capita consumption of the top five deciles is more than that of the bottom five deciles. However, the ratio of the average growth rates of the two periods is higher for the bottom five deciles as compared to the top five. It implies that the expansion of consumption of the lower deciles of the population was more than the upper deciles.

Table 8: Decile-wise Growth in Per Capita Consumption (% per year, compound)

Decile	1993-94 to 2004-05		2004-05 to 2011-12	
	Rural	Urban	Rural	Urban
First Decile	0.70	0.66	2.91	2.96
Second Decile	0.49	0.54	3.00	3.28
Third Decile	0.56	0.66	3.15	3.39
Fourth Decile	0.55	0.91	3.17	3.42
Fifth Decile	0.54	1.00	3.17	3.41
Sixth Decile	0.55	1.24	3.30	3.35
Seventh Decile	0.52	1.36	3.40	3.30
Eighth Decile	0.61	1.35	3.45	3.40
Ninth Decile	0.71	1.47	3.48	3.45
Tenth Decile	1.61	2.30	3.71	4.52
Bottom Five Deciles	0.57	0.75	3.08	3.29
Top Five Deciles	0.80	1.54	3.47	3.60

Note: The growth rates are in real terms and derived from URP consumption data.
Source: Twelfth Five Year Plan.

Datt et al examine the linkages of poverty decline with growth and inequality. In the post-reform period, “the acceleration in rural poverty decline was higher than that for urban poverty. This happened alongside a significant increase in inequality both within and between urban and rural areas, in contrastwith a decline in rural inequality and no trend in urban inequality pre-1991. Despite the increase in inequality, we find greater post-1991 responsiveness of poverty to growth in the aggregate, regardless of whether growth is measured based on national accounts or survey-based consumption. Thus, faster growth also appears to have been more pro-poor when the latter is measured by the growth elasticity of poverty reduction” (p.28, Dutt et al, 2016).

To conclude, there has been lot of discussion in recent years on inequality. There is no doubt that inequality in itself has several undesirable consequences. It was Simon Kuznets who had argued in a famous paper in 1955 that in the early period of economic growth, distribution of income tends to worsen and that only after reaching a certain level of economic development, an improvement in the distribution of income occurs. In this context, measuring inequality is not the same as measuring the changes in level of poverty. Even if the Gini Coefficient remains the same or picks up, poverty ratio can be steadily declining..This has been true of India. The decline in poverty is much higher particularly in the recent period 2004-05 to 2011-12 inspite of rise in inequality. Even if inequality increases, higher growth can lead to

reduction in poverty. Thus the behaviour of poverty ratio is equally important indicator to monitor.

4.9. NAS-NSS Consumption Differences

Ray and Sinha (2014) say that the committee discussed NAS- NSS differences but lost opportunity in suggesting a compromise to resolve the issue. It may be noted that these two estimates of consumption (NAS and household survey based) do not match in any country and India is no exception. What is alarming in India is that the difference between NAS and NSS is widening over time.

From a difference of less than 10 per cent in the late 1970s, it has come to 68 per cent in 2017-18 i.e. the Survey Estimate is only 32.3 per cent of NAS estimates (Table 9).

Table 9: Private Consumer Expenditure of NSS as percent of National Accounts Statistics

Year	Food	Non-food	Total
1972-73	118	83.3	94.5
1977-78	91.7	86.0	89.6
1983-84	81.5	66.1	75.1
1987-88	86.5	66.7	77.6
1993-94	71.1	50.8	61.9
1999-00	63.5	50.0	56.3
2004-05 (MRP)	62.5	42.0	50.2
2009-10 (MMRP)	74.2	42.9	54.2
2011-12 (MMRP)			46.9
2017-18	--	--	32.3

MRP: Mixed reference period; MMRP: Modified mixed recall period;
Source: Rangarajan Committee up to 2009-10; Estimated by the authors for 2011-12 and 2017-18.

The expert Group (Rangarajan) made an analysis of possible reasons for the difference between the estimates. It made some headway but could not fully explain. Therefore it continued with the practice –initiated by the Expert Group (Lakdawala) and continued by the Expert Group (Tendulkar) – of estimating poverty in India solely by the reference to the size-distribution of private consumer expenditure based on NSSO methodology. However with the difference rising to 68

per cent, the time has come for a deeper analysis of the factors contributing to the difference.

According to National Accounts Statistics private consumer expenditure increased from Rs. 4910447 crores in 2011-12 to Rs. 7417489 crores in 2017-18. This was an increase of 51 per cent. The per capita consumer expenditure increased by 41 per cent during this period. But according to NSSO Survey, per capita consumption expenditure decreased by 8.8 per cent. The difference is too big to be pushed under the carpet. The NSSO Advisory Group or the National Statistical Commission must study the problem and come out with possible suggestions for improving the collection of data through both routes.

4.10.Poverty Measures in Other Countries

There are also comments that we should look at the poverty measures of other countries. The expert group looked at the methodology of poverty estimation of other countries. Most of the developing countries use consumption basket poverty line. Developed countries generally use the concept of relative poverty. In some countries, poverty line is exogenously set proportion of mean or median income of population. Ray and Sinha (2014) also talk about inequality and relative poverty. However, if we look at the Indian data the proportion of population with consumption as a fraction of the median remains largely invariant over time.

Reviewing the method of estimation of poverty in other countries and World Bank, the Rangarajan expert group arrived at the conclusion that neither their methodological nor procedural aspects are superior to what is being used in India at present. The estimates of poverty in India are based on a methodology which stands far apart for it is able to measure the incidence of poverty by capturing the demographic pattern and consumer behaviour separately in rural and urban areas and also by capturing the state-wise variation in the prices of goods and services.

4.11. Public Expenditure and Poverty

The official poverty ratios in India are estimated using certain minimum level of private consumer expenditure on food and non-food items. For example, according to Rangarajan Committee Report on Poverty, the MPCE (monthly per capita

consumption expenditure) of `972 in rural areas and `1,407 in urban areas is treated as the poverty line at the all India level in 2011-12. This level of private expenditure has to be seen in the context of public expenditure that is being incurred in areas like health, education, food security, sanitation, and drinking water. In this article we argue that the actual well-being of the household will be higher than what is indicated by the poverty line, if we take into account public expenditure along with private expenditure. This aspect is specifically dealt with by the Rangarajan Committee.

The issue of public expenditure on social sector has been mentioned in earlier committees on poverty as well. For example, the 1962 expert group of the Perspective Planning Division (PPD) of the Planning Commission recommended a national minimum of private consumption expenditure on food and non-food items for estimating poverty ratios. The Committee Report says that “this national minimum excludes expenditure on health and education, both of which are expected to be provided by the State according to the Constitution and in the light of its other commitments”.

Similarly, Lakdawala Committee on Poverty (1993) says that the “poverty line derived from personal consumption patterns and levels do not take into account items of social consumption such as basic education and health, drinking water supply, sanitation, environmental standards etc., in terms of normative requirements or effective access”. It also says “consumption of free goods and services provided by the State or charitable institutions is not recorded. Social consumption of these publicly provided services is in the nature of transfer from the government to the people. In other words, the real levels of living of the poor, inclusive of social consumption are expected to be higher than what is reflected through the estimates of private consumption expenditure reported in NSS data”.

Public expenditure, particularly in the areas of health, education, food, sanitation etc., constitutes a significant proportion of the total consumer expenditure of these items. Their proportion is high particularly among the poor as these services are provided either free or at nominal cost to them. In the seven-year period 2004-05 to 2011-12, public expenditures on education and health per capita at constant 2004-05

prices have nearly doubled with an implied compound annual growth rate of close to 10 per cent per annum (Table 10).

Table 10 : Per Capita Per Month Public Expenditure at Constant Prices (2004-05)

Year	Education	Health
2004-05	78	20
2005-06	90	25
2006-07	85	26
2007-08	95	27
2008-09	101	28
2009-10	129	32
2010-11	146	36
2011-12	157	38

Source: Estimated from Budget Documents, Ministry of Finance, GOI

Given that these services are, typically, provided at heavily subsidised prices—if not given free, the reported private expenditures as captured in the NSS Consumer Expenditure Surveys on them would be lower than their true value. However, in the absence of data on the distribution of the public expenditures on these social services by size-class of private consumption expenditure, they cannot be factored into either the construction of the poverty line or in the assessment of their impact on measured poverty. However, it is reasonable to assume that the bulk of the public expenditures on health and education would have gone to meet the needs of lower deciles of population.

Unlike in education and health, in the case of PDS (public distribution system), we do have information on the MPCE of households using PDS and the quantities of grains etc. bought. One could, therefore, analyse the impact of PDS on measured poverty.

Himanshu and Sen (2013) estimate the size of PDS transfers and the impact of these transfers on poverty. According to their estimates, the value of PDS transfer was 2.4 per cent of MPCE for the population as a whole and 5.2 per cent of MPCE for the bottom 40 per cent. In other words, poor benefited more than others due to these in-kind food transfers. Their study also shows that with PDS transfers, total poverty ratio (Tendulkar methodology) was 30.68 per cent in 2009- 10. Without PDS transfers, poverty ratio was higher at 33.85 per cent in the same year.

A survey on "Social Consumption: Education" was conducted in NSS 71st round (January-June 2014). In this survey, information was obtained for each student on various educational incentives received by them such as free education or tuition fee waived, scholarship/ stipend/reimbursement, books or stationery free or at a subsidised price, mid-day meal, student's concession in public transport etc.

Table 11 provides proportion of students receiving scholarships in rural and urban areas for each quintile class of MPCE. Percentage of students receiving scholarships was higher for lower quintile classes. For example, in rural areas, 33 per cent of students received scholarships for bottom quintile while compared to that of 13 per cent for highest quintile. The table also shows that female students were getting more scholarships than males

Table 11. Percentage of students receiving scholarship for each quintile class of UMPCE: 2014

Quintile classes of UMPCE	Rural			Urban		
	Male	Female	Person	Male	Female	Person
1	30.7	36.0	33.2	16.0	20.1	18.0
2	26.4	29.9	28.1	11.4	14.0	12.6
3	22.5	24.4	23.3	9.7	11.8	10.7
4	19.0	24.0	21.2	7.6	8.5	8.0
5	11.9	14.8	13.1	5.6	5.5	5.6
All	21.9	26.1	23.8	10.0	12.2	11.0

UMPCE: Usual monthly per capita expenditure
Source: NSS 71st Round (Jan-June, 2014). Report no.575

The survey on education also shows that around 57 per cent of males and 63 per cent of female students were getting free education in primary schools. In the case of upper primary, these percentages were 58 per cent for males and 64 per cent for females. Regarding secondary schools, 32 per cent of males and 37 per cent of females were getting free education. The proportion of students getting free education must be much higher for the poor. Similarly, poor must be getting higher benefits from the public expenditure on health.

To conclude, it is suggested here that increased public expenditure on health, education and other social services will have to be taken into account while

assessing the trends in poverty. This is because the actual well-being is higher than what is indicated by the poverty line and it has policy implications.

4.12.Poverty Ratio for Eligibility Under Programmes

Finally, the Planning Commission has earlier decided to delink the consumption based poverty estimates for allocating resources to states. The Expert Group deliberated on the issue of use of poverty ratio for determining the eligibility and entitlements for a wide range of poverty alleviation programmes and social welfare schemes implemented by various Ministries and Departments of the GoI in association with the State governments.

The Group recommends that the beneficiaries under target group oriented schemes of the Government may be selected from the deprivation-specific ranking of households. Such ranking of households could be generated for a large number of indicators representing deprivation and levels of living for which the information has been gathered at the household and individual level in the SECC-2011 and population census. The beneficiaries could be selected from this set of households until the resources earmarked for the programme/scheme permit. Ray and Sinha (2014) also argue for multidimensional measures for identification of the poor. Poverty ratio of Planning Commission can play an important role in deciding allocation of resources among States although now it is delinked as mentioned above. The Ministries and Departments in association with the State governments may draw the guidelines for defining the beneficiaries for their programmes. The process could be similar in rural and urban areas.

5. Conclusion

To conclude, one has to review from time to time the methodologies for arriving poverty estimates in keeping with the changing needs of the population. Poverty lines are only approximations to the socially accepted minimum standards. Thus, in any poverty line approach, an inevitable element of arbitrariness is inescapable. It is by nature subjective and judgmental. There is a hilarious description of how the poverty line evolved in the United States in the latest book by Deaton (2013) entitled *The Great Escape*. Nevertheless an attempt has been made in the report of Expert

Group (Rangarajan) to approach the subject on methodology of measurement of poverty as systematically as possible.

The methodology adopted by the new group on poverty is based on sound principles. However, as the group has clearly indicated, this measure is not considered as an appropriate basis for determining entitlements under various programmes. Each programme focusing on a particular deprivation may have to choose that criterion which is most appropriate for it. But to obtain a general picture of the progress of the country, a suitable measure on poverty is useful. Poverty is not the same as hunger. Hunger is far worse. Nor does the poverty line means a comfortable standard of living. It represents absolute minimum. Obviously, policy should work towards not only to reduce the number of people below that line but also ensure that people in general enjoy a much higher standard of living. Numbers do indicate that poverty ratio in India is coming down even though it may remain at a high level. Policy makers must continue to follow the two-fold strategy of letting the economy grow fast and attacking poverty directly through poverty alleviation programmes.

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