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Defining poor to defining rich: Gauging the middle class in India

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Abstract

This is a simple illustration of using the concept of poverty gap in determining the rich and in turn the middle class given the consumption expenditure distribution of a population. Based on the transfer principle from rich to the poor it assumes complete alleviation of poverty. Such an exposition of defining affluence or rich conveys an understanding of inequality on one hand and extent of richness on the other

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1. Introduction

While there is a substantial literature on identification and aggregation of poverty, there is very little research effort to define the rich. Other associated aspects of inequality have also received considerable attention, particularly because of the exposition of an entire income/consumption distribution as compared with poverty. It is well known that addressing inequality concerns has its obvious bearings on reducing poverty. Nevertheless, in this entire discourse on poverty and inequality, the primary focus seems to be on identification of poor and their attributes and to recognise plausible policy instruments to alleviate poverty. Such appreciation is partly manifested with the inclusion of poverty reduction among the millennium development goals. However, given the emphasis on poverty reduction and addressing inequality concerns, there remains an equal need for identification of the rich as well. Clearly, rich are not to be defined as the complement of the poor - commonly identified according to a designated poverty line - but through constructing a designated line of affluence similar to that of poverty. Such a construct is essential to ensure the scope and space for transitory poverty as well as those designated to be rich having less likelihood of becoming poor due to some or the other financial shocks. This is an attempt at defining such an affluence line to designate rich and as a derivative define middle class in terms of those who are neither poor nor rich. The proposed affluence line is derived here based on the principle of transfer of resources from the richest to the poorest in a manner that, given the poverty line, all the existing poor become non-poor. This definition suggests that the extent of affluence depends more on the intensity of poverty than merely on the poverty head count. It may as well be clarified that this exercise is a theoretical construct and not an operational one in the sense that it locates a level in the consumption/income hierarchy beyond which transfers can be realised to alleviate poverty. Such a level is defined as the line of affluence.

2. Defining a line of affluence

The basis of defining a line of affluence lies in defining a person to be rich. There is no consensus as to who should be designated as rich like who should be considered poor. Since the conception of the term affluence in the year 1805 in Sweden (based on the level of absolute savings (Soltow, 1989)), there are various ways in which it has been defined in the literature. Miller (1971), Williamson (1976) and Deutsche Bank (2000) consider those with income above an absolute level to be rich or affluent. Some studies define affluence based on the position an individual occupies in the income hierarchy Carroll (1998, 2000) and Wolf (2000). This definition adopts an arbitrary means of fixing a higher quintile in the income distribution like upper 1 % or 2 % or even 20 % to define the rich. Such a fixation completely ignores the absolute dimension of income and designates a certain quintile to be rich or affluent. However, if at all affluence or richness is to be defined in tune with the poor then perhaps the method proposed by Rank (1999) and Hischl, Altobelli and Rank (2001) in terms of 8, 10 or 12 times the income level of the poor could be another alternative. Clearly, the stated literature does not offer a consensus on defining affluence or the rich because it remains equally difficult to designate rich as to designate poor. Nonetheless, if the concept of poor has something to do with deprivation then affluence could very well be associated with some kind of excess or surplus.

The problem of fixing an affluence line based on a threshold level of consumption above which every one has to be designated rich could only be resolved with a substantially greater threshold level of consumption. But to establish a borderline between the rich and the non-rich need not necessarily conform to the concept of affluence in absolute terms. The criterion could very well be in keeping with the one used for poverty i.e. the minimum, below which is undesirable. Hence, using the idea of poverty to define affluence could be pertinent.

Linking poverty with affluence originates from the position that poverty is undesirable and could perhaps be eliminated with improved policies for economic growth, human development, and redistribution of productive resources. The proposed affluence line can therefore be based on the distributive criterion that delimits the accumulated resources through income redistribution (reduction in income inequality). Such a concept of affluence cannot be identified with characteristics of an individual rather than the level and distribution of income in a society. Hence the concept of affluence adopted here is based on the principle of redistribution that will ensure elimination of poverty. The principle of such redistribution is based on a premise of transfer of resources from the richest to the poorest that will ensure aggregate gain in welfare. The incremental well being achieved through redistribution of resource increases at an aggregate level whereas at the individual level it is hypothesised that income follows the principle of diminishing marginal returns. In other words any additional income unit transfer to a poorer individual would add greater welfare compared to the same transfer made to a richer individual. As a result of this it is determined that the transfer for elimination of poverty should initiate from the richest individual to the poorest one. When poorest individual reaches the income level of the second poorest individual both start receiving the same amount of resources till they reach the level of the third poorest individual and so on. The construction of this affluence line is primarily based on the egalitarian principle of transfer, which can perhaps be stated as an anti-poverty line obtained through equity.

3. Estimation of the affluence line

This paper follows the approach of Medeiros (2006a) to estimate the affluence line for different Indian states. It must be noted that the approach adopted here was previously discussed – with contextual variations - in Jayaraj and Subramanian (1996). This approach defines an individual to be rich if her income need be transferred to the poorer persons to cover up the poverty gap (P_{gap}) in question. The individuals who are not involved in the transfer process are defined to compose the population in the middle class since they are neither contributors nor recipients in the redistribution process. The proposed measure takes into consideration the distribution of incomes of the population below the poverty line and scheme of income redistribution, in the process, tilts towards a more egalitarian distribution. The relevance and bearing of such an approach to comprehend affluence is straightforward. As suggested in the literature, a common theme relates to a fair structure of redistributive payments ought to be linked to income of individuals. This concern is indicative of a rule of progressive redistributive payments and leads to a more egalitarian post-transfer income distribution.

For computational purposes, first the poverty gap is computed and then we are required to determine the income level or threshold from where the sum of all individual incomes above it would equal the poverty gap. This sum of income reductions is called as the affluence gap (A_{gap}). More formally, it can be written as follows:

$$A_{gap} = P_{gap} \qquad \dots (1)$$

Or

$$\sum_{i=m}^{n}(y_{ir} - z_r) = \sum_{i=1}^{h}(z_p - y_{ip}) \qquad \dots (2)$$

where, i is the number of individuals ranging between i=1,2,3…,n), z_p and z_r are the poverty and affluence lines respectively; y_{ip} are the individual incomes below the poverty line and y_{ir} are the individual incomes above the affluence line. However, while analysing the data, it must be noted that the affluence line is primarily determined by a trial and error method wherein the income values are simulated such that the difference between the poverty gap and affluence gap becomes zero. Medeiros (2006b) suggests to; 1) compute the poverty gap; 2) for each individual of the population, sorted according to their income, the value of the affluence gap is computed for an affluence line equal to the income of the immediately less rich individual; 3) continue the process till the two gaps become equal. Finally, the middle class population is defined as the individuals who belong to the set (i=i, j, …k), i.e., the ones who are not part of the income-transfers process.

4. Affluence line for Indian states: estimating the composition of middle class

For illustrative purposes, we use the Consumer Expenditure Survey (CES) 2004-05 data of India, collected by the National Sample Survey Organisation (NSSO), Ministry of Statistics and Programme Implementation, Government of India. The CES 2004-05 covers a sample of 1,24,644 households (around 79,298 rural and 45,346 urban) and provides information on household consumption expenditure (NSSO 2007). While every round of NSS includes a consumer expenditure survey, the 61st round survey (July 2004 - June 2005), on which this analysis is based, belongs to the quinquennial series of consumer expenditure surveys, started in the 27th round of NSS (1972-73), and covering a larger-than-usual sample of households. The 61st round survey of consumer expenditure is the seventh survey of the quinquennial series.

Table I shows the computed affluence lines, in Indian National Rupees (Rs.) for the different states of India by regions. It is found that the affluence line for rural India is Rs. 1,964 as against a poverty line of Rs. 356. For urban India, the affluence line is found to be at Rs. 4,548 for the given poverty line of Rs. 539. If we combine the poverty gap arising in both the sectors of residence, than the affluence line for all-India is computed to be Rs. 3,110 implying that all individuals whose consumption values are above this level would be required to transfer their incomes to cover up the monthly consumption shortfall in India as per the official poverty lines. The rural and urban affluence lines are found to be almost 6 times and 8 times the respective poverty lines. However, significant variations in the affluence lines are observed across the selected states. This is largely because of the wide differences in the number of poor across the different states as well as the disproportionateness in the consumption distribution particularly in the upper end of the distribution. Apart from the variation in the absolute level of the affluence line, its position in relation to the poverty line serves to indicate the prevailing levels of inequality in the consumption expenditure distribution. Based on the ratio of poverty line to the affluence line, it is observed that there is a wide range of variation in rural inequality across states as against the urban areas with an exception of Rajasthan. The rural inequality is relatively higher in states marked by less poverty.

Table I: Affluence lines for different states by sector (in Rs)

States	Affluence line			Multiple of poverty line	
	Rural	**Urban**	**combined**	**Rural**	**Urban**
Andhra Pradesh	4050	5422	4894	14	10
Assam	879	16578	1565	2	44
Bihar	538	1837	677	2	4
Chhattisgarh	1154	6052	2664	4	11
Gujarat	1810	5445	3525	5	10
Haryana	4590	8471	5557	11	17
Jharkhand	549	3558	1216	1	8
Karnataka	6981	2753	3071	22	5
Kerala	24403	12585	18725	57	22
Madhya Pradesh	753	2829	1563	2	5
Maharashtra	1678	3716	3021	5	6
Orissa	583	1301	782	2	2
Punjab	5609	141066	128816	14	303
Rajasthan	2155	4472	3252	6	8
Tamil Nadu	9125	4272	5818	26	8
Uttar Pradesh	1515	3337	2149	4	7
Uttarakhand	1580	2511	1921	3	4
West Bengal	1813	6723	4053	5	15
All India*	**1964**	**4548**	**3110**	**6**	**8**

*Note: * The estimated affluence line for all-India is for major states only, however, the national poverty line by sector is used to determine the multiple factor. We have used the official poverty line estimates provided by the Planning Commission of India. The poverty line (implicit) at all-India level is worked out from the expenditure class-wise distribution of persons (based on Uniform Recall Period-consumption, that is, consumption data collected from 30 -day recall period for all items).*

Among rural areas, the affluence line is observed to be the highest among the southern Indian states of Kerala (Rs. 24,403) followed by Tamil Nadu (Rs. 9,125) and Karnataka (Rs. 6,981) whereas it is found to be at lower levels in poverty laden States of Bihar (Rs. 538), Jharkhand (Rs. 549) and Orissa (Rs. 583). In case of urban areas, Punjab (Rs. 1,41,066) has the highest affluence line followed by Assam (Rs. 16,578) and Kerala (Rs. 12,585) and is at lower levels in the states of Orissa (Rs. 1,301), Bihar (Rs. 1,837) and Uttarakhand (Rs. 2,511). It can be noted that after combining the sectoral poverty gaps for each state, Punjab possesses the highest affluence line (Rs. 1,28,816) followed by Kerala (Rs. 18,725). These states notably have lower poverty rates as well as lesser number of poor individuals. Hence the income transfers required in these states is the minimal. In fact, from the computations it is evident that Punjab has the lowest poverty gap, which to a greater extent explains the higher level of affluence line.

The observed affluence lines in the states, namely Bihar, Orissa, Jharkhand and Madhya Pradesh are at a much lower levels because of the huge poverty gaps in these states owing to the fact that these states have not only higher poverty levels but also poverty gaps along with a large population base. In fact, for rural areas of these states, the affluence line is no greater than a multiple of two taken with respect to the state and sector specific poverty lines. This reflects the need for greater social and capital investments in these regions as income-transfers alone may not generate sufficient resources for the economic betterment of the population.

Table II: Percentage of poor, middle and rich population by state and sector

States	Percentage poor			Percentage middle class			Percentage rich		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Andhra Pradesh	11.2	28.0	15.8	88.5	71.0	83.7	0.3	1.0	0.5
Assam	22.3	3.3	19.7	72.3	96.5	78.3	5.4	0.2	2.0
Bihar	42.1	34.6	41.4	41.5	61.8	49.3	16.5	3.6	9.3
Chhattisgarh	40.8	41.2	40.9	57.2	57.6	58.4	2.0	1.2	0.7
Gujarat	19.1	13.0	16.8	79.9	86.4	82.7	1.0	0.6	0.5
Haryana	13.6	15.1	14.0	85.0	84.7	85.6	1.4	0.2	0.4
Jharkhand	46.3	20.2	40.3	36.2	78.8	55.0	17.5	1.0	4.7
Karnataka	20.8	32.6	25.0	79.1	63.6	73.9	0.1	3.8	1.1
Kerala	13.2	20.2	15.0	86.7	79.2	84.9	0.1	0.6	0.1
Madhya Pradesh	36.9	42.1	38.3	54.7	55.1	58.9	8.4	2.8	2.8
Maharashtra	29.6	32.2	30.7	68.2	65.6	67.4	2.3	2.2	1.9
Orissa	46.8	44.3	46.4	39.4	43.3	44.2	13.8	12.4	9.4
Punjab	9.1	7.1	8.4	90.7	92.8	91.6	0.2	0.1	0.0
Rajasthan	18.7	32.9	22.1	80.4	66.1	77.1	0.9	1.0	0.8
Tamil Nadu	22.8	22.2	22.5	77.1	76.6	77.2	0.1	1.3	0.3
Uttar Pradesh	33.4	30.6	32.8	64.7	67.8	65.6	2.0	1.7	1.6
Uttarakhand	40.8	36.5	39.6	55.8	60.1	57.7	3.4	3.4	2.8
West Bengal	28.6	14.8	24.7	70.2	84.8	74.6	1.2	0.4	0.7
All India*	28.3	25.7	27.5	70.5	73.2	71.5	1.2	1.1	1.0

Following the assessment of the affluence lines, the percentage of poor, rich and the middle class is evaluated across different states and presented in Table II. At the national level, with a 27.5 percent of poor and 1 per cent affluent, 71 per cent of the population is adjudged to be middle class. But the affluence level across states indicates that states with higher levels of poverty have a larger share of affluent within them. The States of Bihar, Jharkhand and Orissa depict 9.28, 4.68 and 9.68 per cent of affluent respectively with above 40 percent of poor in them. Such an observation is indicative of the fact that larger inequality levels can give rise to a sizeable affluent proportion in the population. Affluent as defined here are those from whom transfer has been realised towards alleviating the poor. Hence, the greater affluence level does not convey countable rich alone but a strict polarization in the income/consumption distribution. Rural affluence levels are significantly higher in the above-mentioned states reiterating the fact that rural inequalities are higher compared with the overall situation. Besides contrasting the share of poor and affluent, there is considerable variation in the share of middle class (as defined here) across different states. This variation is between a level of 44 percent in Orissa and 92 per cent in Punjab. This share of middle class as it is computed here relates to those from whom transfers are not required for alleviating the poverty. So when these shares are large, it is evident that transfer from a minimum number of individuals in the consumption hierarchy could alleviate poverty. It means either that the number of poor is less or their intensity in terms of the poverty-gap is relatively less. Such an assessment of the middle class may accommodate a wider scale of income/consumption hierarchy but this has definite concordance with the levels of poverty as well as inequality. This perhaps is the strength of gauging the share of middle class in this manner.

5. Some considerations

The present approach only provides us an idea that how much of the income (consumption expenditure) transfer from the higher income individuals to the lower income ones would be warranted to meet the monthly basic minimum consumption needs of the poor. This approach, however, does not offer any strong rationale for redistribution or redistribution policy. But after obtaining such results for all the states on the basis of consumption data it would be useful to elaborate upon a few policy choices available. It is observed that among richer states the consumption levels are very high and as a result the affluence is also set at a higher point. In addition, it only requires less than a percent of the population to cover up the poverty gap arising in these richer states. This is a clear case that highlights how effective redistribution can be in a short run, particularly, in a richer society where only a fraction of the resources would suffice to address the poverty gap. The current description of poor, middle class and the rich (affluent) informs not only about the concentration but also about the extent of the richness. This therefore may offer an argument for differential taxation to subsidise the poor. Policymakers should further aim for redistribution that generates substantial income in the long run. Finally, an interstate assessment of the middle class provides a fresh clue as regard the growth of the middle class in response to a positively skewed consumption distribution.

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