A Critique of the Welfare-Theoretic Basis of the Measurement of Poverty

PRABHAT PATNAIK

Once we abandon the false theoretical premise of welfare economics that past period's goods and services are available in the current period as well, a number of seemingly contradictory bits of evidence on the measurement and level of poverty in India fall into place and gel into a coherent story. When poverty is defined in terms of access to a bundle of goods and services, which includes a minimum number of calories, there can be little doubt that poverty has been increasing in neo-liberal India.

Prabhat Patnaik (*prabhatptnk@yahoo.co.in*) is Professor Emeritus at the Centre for Economic Studies and Planning, Jawaharlal Nehru University, New Delhi.

The purpose of this article is to argue that the welfare theory which provides the basis for the measurement of poverty in India is fundamentally flawed, in the sense of being unrepresentative of material reality (as opposed to being merely abstract). Section 1 discusses the implicit assumptions underlying this welfare theory and hence by implication the poverty estimates. Section 2 critiques these assumptions. Section 3 draws conclusions for the poverty debate in India.

1 Assumptions of Welfare-Theory

Approach

The method used for measuring poverty in India, as is well known, is the following. From the National Sample Survey (NSS) consumption expenditure data, the levels of per capita expenditure in the base year at which an individual accessed 2,100 calories per day in urban India and 2,400 calories per day in rural India (later scaled down to 2,200 calories) were deemed to constitute the respective "poverty lines" for the two areas. These base year "poverty lines" have been getting updated for each subsequent year by using appropriate Consumer Price Index (CPI) numbers for each of the two areas. Any one falling below this updated expenditure benchmark in each region in a subsequent year is counted as poor in that particular year; the number of such persons relative to the total population constitutes the headcount ratio (HCR) of poverty for the year in question.

The price index used in each case is a Laspeyre's price index with base year weights for the different commodities (though the precise price index has changed in 2009-10, from the consumer price index for agricultural labourers (CPIAL) for rural areas and consumer price index numbers for industrial workers (CPIIW) for urban areas, to a price index constructed on the basis of the NSS data themselves). It can be designated, dropping for simplicity the subscript i to denote the i-th commodity, by $\sum P_2Q_1/\sum P_1Q_1$. Let us now consider a person who happens to be exactly on the poverty line in the base year (in our case year 1), and denote his expenditure in that year by $\sum P_1q_1$ where the lower case letter refers to the individual, as opposed to the total social, quantity figures. According to the method used for measuring poverty, the poverty line in year 2 would be $\sum P_1q_1 \sum P_2Q_1/\sum P_1Q_1$. If that individual's (or any other individual's) expenditure in year 2 happens to be above this, then he is considered non-poor (above the poverty line or APL). Going back to that individual who was exactly on the poverty line in year 1, if $\sum P_2\ q_2 > \sum P_1q_1\ \sum P_2Q_1/\sum P_1Q_1$, then that individual is considered to be non-poor, i e, APL.

Now there is an obvious problem with this argument, and that relates to the fact that the weights of the different commodities in the base year on the basis of which the Laspeyre's price index is calculated might be different from the weights of the commodities in the consumption expenditure of the person exactly on the poverty line. This problem in practice was sought to be overcome by taking that price index whose weights were likely to be very close to the weights of the different commodities in the budget of the person exactly on the poverty line. This was the reason, for instance, that the CPIAL was taken for updating the rural poverty line (the commodity weights in the budgets of the poor and those of the agricultural labourers were thought to be very similar) and the CPIIW was taken for updating the urban poverty line (on similar considerations).

There is however a second problem with this argument. To highlight this second problem, let us deliberately assume away the first problem: we assume that the commodity weights in the Laspeyre's price index used for updating the poverty line and the commodity weights in the budget of the person exactly on the poverty line in the base year are *absolutely identical*. The poverty line in other words is updated by using a price index that can be written as $\sum P_2q_1/\sum P_1q_1$. In such a case a person who was on the poverty line in the base year is supposed to have been lifted above the poverty line in year 2 if $\sum P_2q_2>\sum P_2q_1$ for him. *In other words, if at the current year's prices a person who was exactly on the poverty line in the base year has an expenditure in the current year that is larger than what he would have had in the base year if he was purchasing the base year quantities at these very prices, then he is no longer poor.*

The theory underlying this conclusion can be stated as follows. When $\sum P_2q_2>\sum P_2q_1$, this means that the bundle of goods purchased in the base year could have been purchased in the current year too if the person had wished to do so; it was within the budget line of the person in year 2. The fact that the person nonetheless actually bought bundle q_2 rather than bundle q_1 indicates therefore that he prefers bundle q_2 to bundle q_1 which means that he is better off in year 2 compared to year 1: there has been an improvement in his condition of living. Hence if he was exactly on the poverty line in year 1, he must be deemed to have moved above the poverty line in year 2.

This reasoning which necessarily underlies all poverty estimates is based on a number of assumptions. Some of these, such as the assumption that the individual is the best judge of his own welfare may be debated on philosophical grounds; but we shall not do so. *One very important assumption which is crucial for the validity of this reasoning is that the bundle of commodities available in the base year is also available in the current year*. And this assumption is patently untrue. Our objection to the method of estimation of poverty is therefore an objection to a very basic proposition of welfare economics, which underlies for instance the evaluation of national income, namely, that the bundle of commodities available in the base year is also available in the subsequent years.[1] Let us examine this proposition.

2 Critique of Assumptions

A moment's reflection shows the falsity of the proposition. Commodities die out over time only to get replaced by other newer commodities. Wooden toys which children played with over half a century ago have given way to Barbie dolls; records containing music have given way to compact discs; log tables have given way to calculators, and so on. But it is not just the phenomenon of old products giving way to new ones that we are concerned with here; something else also happens in the process, which is far more important, namely, that *new commodities preferred by the middle class replace old commodities in the consumption pattern not only of the middle class itself, but of society at large*.

There are two processes which contribute to this phenomenon. First, middle class tastes are conditioned by the lifestyles prevailing in the advanced capitalist countries (the latest example of which is the preference for Wal-Mart outlets over the traditional petty shops). This typically entails the replacement in their demand-pattern of corporate-produced goods and services for those produced by petty producers. Now, suppose a petty producer had a market for 100 units of a good, but loses 20 units out of this market because of the availability of a corporate-produced substitute which weans away middle class customers from him. Given the small margins with which petty producers operate, even the loss of 20% of the market would make it difficult for such a producer to make ends meet, i e to continue even with simple reproduction. He would stop producing altogether and join the ranks of labourers looking for work.

In the process however even the remaining 80 of his former customers who had not been weaned away by the corporate-produced substitute good are forced now to turn to it. The middle class preference for the corporate-produced substitute is not necessarily because of the latter's relative cheapness; on the contrary this substitute good is usually more expensive than the original petty-production-generated good that it substitutes. The consequence of this process therefore is that the entire population has perforce to purchase the new corporate-produced good, despite it being more expensive. The fact that wooden toys have given way, over large tracts of the country, to Barbie dolls, which are not necessarily any cheaper, is not because everybody prefers the latter to the former, but because some do, and *their* preference is what forces everyone to make the switch, for reasons just mentioned.

The second process involves government provisioning of goods. It is a well-known fact that if the middle class makes a switch away from some government-provided service, then the quality of that service drops precipitously, virtually forcing everyone else to make a similar switch. If middle class train travellers start buying bottled water at railway stations, then the provision of free drinking water, through taps at stations, atrophies. The absence of a vociferously-complaining middle class clientele, ever vigilant against any drop in the quality of the service provided by the government, actually leads to a drop in the quality, which forces everyone to switch to private, especially corporate-provided, services. Such services, however, are typically more expensive; and everyone is forced to purchase such more expensive goods and services, just because middle-class customers have decided to make the switch. They may have done so for reasons of greater prestige associated with accessing private service provision; or even because the quality of service provided by the private source is genuinely somewhat better. But the difference in quality between public and private services gets greatly exaggerated because of the switch by the middle class; and everybody else is forced to make a similar switch even though it entails much larger expenditure.

The most striking example of this relates to healthcare. The moving away of middle class consumers of public healthcare to private facilities invariably leads to a drop in the quality of public healthcare services; and this means that even for the poor it is no longer possible or worthwhile to access public healthcare. They too have to move to private healthcare even though it is far more expensive for them. What appears as a voluntary choice on their part therefore is not in reality a voluntary choice, but is more or less forced upon them.

The assumption that base period goods are available in the current period exactly as they were in the base period is untenable. On the contrary, they have disappeared in the interim, because of which people often have to buy goods at much higher prices, which they would not have done if the base period goods had been available. And because they have to buy substitute goods at higher prices, there is an actual worsening in their condition, which welfare economics, given its belief that all goods are always accessible and hence all choice is voluntary, misreads as an improvement in their material condition.

Suppose a particular surgery could get done in a government hospital for Rs 2,000 in the base year, but that surgery can no longer be done in the government hospital in the current year, because government hospital facilities have atrophied in the mean time, and the queues at such hospitals have become inordinately long. The same surgery now has to be done at some private hospital for Rs 50,000, forcing the poor who now have to pay this large amount to cut back on their consumption of several other necessary items. They witness a massive deterioration in their living standards because of this, which is a consequence of the non-availability of public healthcare facilities. But standard welfare economics would well conclude that their material condition has improved!

To see this let us assume in this instance that all prices remain unchanged between the base year and the current year, including the costs of the surgery at the government hospital (where it is rarely performed in the second period) and at the private hospital. Let us also suppose that the total expenditure of an individual goes up between the two periods by Rs 20,000, and that performing one such surgery per period is essential for the individual. Then the individual's healthcare expenditure between the two periods would go up by Rs 48,000; since total expenditure goes up only by Rs 20,000, the remaining Rs 28,000 would have to come through a compression of expenditure on other items, i e, by a reduction of consumption.

Now standard welfare economics would conclude in this case that the individual is better off in the second period than the first, because his total expenditure has gone up while all prices have remained unchanged. In fact, the individual is worse off since he has a vector-wise smaller bundle of goods and services in the second period compared to the first. Standard welfare theory gives a false result in this case because it assumes that the availability of government hospital services remains the same between the two periods; and this is nothing else but a part of its assumption that the first period's bundle of goods and services can be purchased in the second period. This assumption lacks validity.

3 Conclusions

For some time now there has been a great poverty debate in India (very different from what was covered by a compilation of papers under a similar title (Deaton and Kozel 2005)). Patnaik (2007, 2010) has argued that since poverty in India has always been defined, even officially, with reference to a calorie norm, the indubitable fact that larger and larger proportions of population, both in rural and urban India, have been falling below the respective calorie norms for the two regions during the period of neo-liberal economic policies must mean that the magnitude of poverty, contrary to all official claims, has been increasing. This fact of growing hunger is also corroborated by the simple evidence relating to the per capita annual availability of foodgrains which has been declining after reaching a post-Independence peak in the late 1980s.

This conclusion has been contested on a number of grounds, each of which, however, does not stand scrutiny. The argument that per capita absorption of foodgrains goes down as people become more prosperous is wrong, because it refers to direct absorption alone, *not direct plus indirect absorption* (the latter in the form of processed foods and feed grains) which invariably rises with per capita real income, whether we look at cross-country data alone or a mix of cross-section and time-series data for a large number of countries (Krishna Ram 2013).

The argument that people consume less foodgrains and need less calories because they no longer have to perform hard manual labour is also invalid for the same reason: per capita absorption of foodgrains both directly and indirectly, as well as per capita calorie intake, increase with per capita real income across countries, even though such an increase in real income is not associated with any increase in the amount or intensity of manual work. (An average American for instance consumes more than five times the foodgrains consumed by an average Indian, both directly and indirectly, even without doing any more arduous manual work.)

The argument that we need not concern ourselves with the calorie intake since people are diversifying towards proteins is wrong because in India the per capita protein intake too has been falling during the very period when per capita calorie intake has been falling. And the argument that people's preferences are changing, and that they are diversifying towards other goods such as healthcare, which is the cause of their declining foodgrain consumption, raises the question: why should there be such a significant increase in the proportion of persons falling below the calorie norm both in rural and urban India within, say, a short time between 2004-05 and 2009-10? Changes in tastes occur over a long period of time: they cannot explain sharp increases in calorie-deprivation over such a short span of time.

While each of these arguments against the evidence regarding growing poverty is untenable, the question has nonetheless puzzled many: why should we have growing calorie deficiency in a situation where per capita real expenditure has apparently been increasing? The simple answer to this is that people are forced to move to more expensive "modern goods" in the place of "traditional goods" because of the predilections of the middle class (which has gained in affluence), and the propensity of the government to run down the quality of the services it provides; because of this they are also forced to consume less of necessary goods like foodgrains.

Once we abandon the false theoretical premise of welfare economics that past period's goods and services are available in the current period as well, a number of seemingly contradictory bits of evidence fall into place and jell into a coherent story. What appears initially as a contradiction, between rising per capita real expenditure on the one hand and declining per capita calorie intake on the other, turns out not to be so. On the contrary the apparently rising per capita real expenditure and declining calorie intake turn out to be two sides of the same coin (as the above example showed). And if poverty is defined, as it must be, in terms of access to a bundle of goods and services, which includes a minimum number of calories, then there can be little doubt that poverty has been increasing in neo-liberal India.

NOTE

1 For a discussion of the problem of evaluation of national income see Little (1950).

REFERENCES

Deaton, A and V Kozel (2005): *The Great Indian Poverty Debate* (New Delhi: Macmillan India).

Krishna Ram (2013): "Cereal Consumption as a Proxy for Real Income", *Economic & Political Weekly*, forthcoming.

Little, I M D (1950): *A Critique of Welfare Economics* (Oxford: Oxford University Press).

Patnaik, U (2007): "Neo-liberalism and Rural Poverty in India", *Economic & Political Weekly*, Vol 42, No 30, 28 July.

– (2010): "Trends in Urban Poverty Under Economic Reforms", *Economic & Political Weekly*, Vol 45, No 10, 6 March.