Inflation and poverty

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Abstract

It is standard practice in economics to treat a 1% rise or fall in people's *consumption expenditure* (allowing for inflation in the whole economy) as showing a 1% rise or fall in their *consumption*.

This practice relies on an assumption that the inflation rate in goods which poor people buy was the same as the overall rate.

This article asks why anyone should make this assumption, in the absence of any specific price data on poor people's items. It raises a question as to whether or not in studies of poverty, the majority of economists presenting findings based on *expenditure* describe them accurately when they imply specific levels of *economic gains or losses*.

The same applies in the case of studies of income. The same applies to studies which examine a) income and/or expenditure ratios between rich and poor, or b) income and/or expenditure gradients from rich to poor. Such studies of income levels cannot in themselves tell us whether the poor could afford more or less, without some information on price changes for poor people's goods.

The treatment of income or expenditure statistics as showing proportional changes in purchasing power, and therefore of economic welfare, and therefore of welfare, is the default position in economics. But without data on a suitable inference, it is not clear why this is the default position. An approach more in keeping with scientific method might be to state the position more accurately - that these are income statistics which, except for a minority of countries, have no known relationship to purchasing power.

The inflation problem is additional to the problems of data quality and of the confounding of income rises and falls with demographic changes, both of which plague research in development economics. I deal with those issues elsewhere.

1. Does consumption expenditure measure consumption?

Suppose someone knows

a) the amount of money I spend on something,

but not

b) its price.

Are they justified in saying they know how much of it I bought?

Maybe not.

In the following discussion, we might remember that roughly one in eight people in the world are said by the Food and Agriculture Organisation of the United Nations to be hungry; that this hunger is defined as a lack of energy-producing food; and that many more people are thought to be malnourished. You can have enough calories - for example from rice - but still get brain damage as you develop from birth from lack of other nutrients. Other essential nutrients include vitamins, protein and essential fatty acids.

People who are poor can only afford a limited range of goods. To many people, the price of rice or wheat is what matters, not the price of other goods or services in the economy. But it is traditional in economics to treat the overall inflation rate as an indicator of price rises for everyone.

Suppose I know the following.

   A. Average income among the poorest fifth rose 1%.

   B. There was 0% consumer price inflation overall in the same country.

   C. Birth rates, age structure, death rates and migration had a combined effect of 0% on the statistic for average income.

I now know that:

   D. People in the poorest fifth on average received 1% more income for their age.

Do I know that they had 1% gains in *real* income - in relative purchasing power?

No.

Why not?

Because the poor buy a limited range of goods, whose inflation rate we do not know. The inflation rate for the economy is based on total money spent on each type of item. Since the rich spend more money, the inflation rate for the economy tends to reflect to a greater degree the items which richer people buy. It is not clear why anyone might assume that the two rates - overall and poor - should be the same.

It is also dangerous to make the assumption. If prices for their goods rise, then poor people may in year 2 *consume less* but have *higher overall-inflation-adjusted income* than in year 1. An economist could make the mistake of saying the poor consumed more, when in fact they consumed less.

Economists' conclusions are used for the design of policies aimed at helping improve the lot of poor people. The risk here may strike a reader as serious: a government can say that they have helped poor people, when in fact they are now worse off; the economist says that this policy has helped the poor and should be encouraged. The policy is encouraged and the poor do worse. Really, income is less than half of the equation in relation to money available to spend. Another portion of the equation deals with - or should deal with - expenditure needs. Expenditure needs may rise because a higher proportion of people now live in cities, because a higher proportion now are adults, or because the price of goods rises.

How do economists know that their conclusions about economic gains and losses to the poor are not in the wrong direction? The short answer is that they do not, unless they know price trends for the poor.

What safeguard is there in academic economics to ensure that economists never make this mistake? There is no safeguard. Where economists have no price inflation data for the poor, they commonly state their conclusions *as if* they knew that the trend in prices for the poor were the same as that for the non-poor.

How close or far from the true figures for consumption trends of the poor, in any country, are economists' conclusions? Again, we cannot answer this question.

An economist might *hope* that their conclusions are roughly right; an economist may have some intuition based on knowledge that no wild fluctuations in staple foods have taken place; they may know the average price of staple foods well. Prices paid by the poor, however, are not always average. They may be higher if the poor live in more remote areas, or buy in smaller quantities, or are unable to buy when prices are cheapest. The average price might stay the same, while the price for the poor decreases or increases.

If urbanisation increases in a country, there are two increases in consumption need relative to expenditure: a) average prices of basic goods may rise (prices are often higher in cities) and b) the need for additional items of expenditure (for example rent, fuel, and/or water) may rise. The same considerations apply to average prices for *poor* people, if a greater proportion of a country's *poor* people now live in urban areas.

2. On income ratios and gradients

Prices for the non-poor are important for the poor who rise out of poverty, but not other poor people

Things are slightly more complex. The issue of "purchasing power for which goods?" raises a philosophical question, which seems quite relevant for thinking about welfare measurement.

Let's think about a situation where poor people get a bit richer. Other things being equal the poor can now consume more.

Now if in addition, prices paid by the poor for goods they end up buying the same goods as before. Is that good, bad or indifferent for the poor?

Well, in one sense (if we are talking about people who are poor enough for consumption to be always good) it's the same - they consume the same amount.

But if some poor people then go on to become non-poor, then percentage increases in their incomes are *more* valuable to them if both prices and incomes of the poor were high to start with. That's because goods of the non-poor are relatively cheaper. Both incomes and prices to the non-poor are high. That's equivalent to saying that both incomes and prices to the non-poor are relatively low.

For those who will become non-poor in the future, the current prices at the next level may be important, because the prices may in the future stay at roughly that level. If a lot of people are moving up into the non-poor group, then it's good for the future of some poor people now to have low prices at the next level.

But the real point is that relative prices of poor and non-poor people's items are important in any measure of income inequality, if that is being used as a *welfare* measure and not a fiscal statistic.

The level of purchasing power of a unit of currency for poor people's items at different times is unknowable from the overall inflation rate. In other words, I can't tell the amount and/or quality of goods bought in the real world by a poor person just by looking at how much money they spent in different years, even if I adjust for overall inflation in the country. So that is expenditure. In relation to income, a poor person's *real income* (the real – constant-over-time – value of their income) is not knowable from their *nominal income adjusted by the inflation rate for both items which they can afford and those they cannot afford*.

Nevertheless, economists traditionally infer, from a *percentage change in poor people's inflation-adjusted income*, that the poor gained or lost in *real income* (i.e. gained or lost in purchasing power for the goods they buy) by the same amount/proportion.

In countries where most humans live, there is no evidence supporting such an inference. Furthermore, economists traditionally assume that "prices for the poor change exactly in line with the overall inflation rate, under all conditions", including such conditions as these: a) increasing or decreasing income gradients from rich to poor; and b) positive and negative changes in income per capita.

Prices of items depend on supply and demand. Where income shares of the rich and poor are converging or diverging, the relative demand for some kinds of goods and services in an overall price index will change. The same is true when new goods enter the market: the rich often begin to buy new kinds of items while the poor do not. The list of items which composes the index changes.

There are thus prima facie reasons why we might expect, as per capita income and/or income shares of fractiles[1] change, the relative purchasing power of the money of the rich and the purchasing power of the money of the poor, for the items which each buy, to converge or diverge. Where technology advances rapidly, and prices of high-tech items fall rapidly, this could in theory have a relatively large effect on the index, but little or none on the purchasing power of the poor.

The divergence between the purchasing power of the rich and poor was noted by Adam Smith. In *The Wealth of Nations*, he wrote of an observed relative increase in the purchasing power of the poor in times recent to him: he termed purchasing power "the real recompence of labour". In other words, poor people's items seemed to him to have become cheaper relative to overall purchasing power of people's money. I refer here to "people's money", which is purposefully ambiguous, since it is not clear whether Smith was comparing the purchasing power of the poor to the average purchasing power of *people* or the overall purchasing power of the *currency*. The first of these might be what an observer would intuitively look at, while the second is what overall inflation rates are determined by. In the words of Angus Deaton, the first is democratic and the second is plutocratic. But whichever of these Smith was thinking of, his perception is perhaps intuitively plausible.

The question arises as to whether economists are justified in making the assumption of zero divergence in "the real recompence of labour" in modern times, in all or any countries. Modern times - the last fifty years - have been characterised by:

a) technological progress,

b) the introduction of new kinds of goods,

c) falls in prices of high-tech items,

d) large rises in many countries in consumer spending on high-tech goods,

e) large changes in trading relationships between countries and consequent price changes in labour-intensive goods,

f) advances in agricultural efficiency.

It is clear that in many countries, prices of some goods consumed by the minority of people on above-average incomes have changed dramatically. The trends in prices paid by the poor may or may not have changed to the same degree.

Some of the most influential studies by economists have used income and expenditure statistics in complex equations involving variables connected with policies. The studies make claims such as that growth, or globalisation, is good for poor people. Such studies, because they have not excluded the possibility of systematic price rises or falls coinciding with the policy variables, should perhaps be treated with a healthy dose of scepticism.

We might consider whether, in studies of relationships between average incomes and poverty, or trade and poverty, whether there might be any correlation between *prices* paid by the poor relative to the overall inflation rate) and average incomes or trade, respectively. If an economist cannot reasonably exclude the possibility of *systematic* disparity between poor prices and non-poor prices, then there is a rather large problem in accepting their conclusions as to economic gains to the poor.

3. Comment

It is puzzling that economists believe trends in consumption expenditure represent trends in *consumption levels* of poor people even where data on prices are unavailable. But that is the almost universal practice in economics.

The poor can do better, while the economist says they have done worse; or vice versa. We have no way of knowing from economists' studies of poor people, or inequality, whether poor people did better or worse in terms of the real value of their income.

All economic studies of the income or expenditure of the poor, or of inequality, which make no specific mention of estimated price inflation for poor people, are of unknown value. The conclusions may be in the wrong direction, and it is not clear why anyone should believe that the price of rice or wheat rose in line with the overall inflation rate.

4. United Nations "hunger" statistics suffer from the inflation flaw

An alternative might be to use consumption statistics. In the case of very poor people in poor countries, some such statistics are available from the Food and Agriculture Organisation, but not many. Unfortunately the FAO's main statistics on the prevalence of hunger are derived using household income and expenditure survey data. These have similar data reliability problems as Anthony Atkinson of Oxford University has identified in the case of income statistics. This should not be surprising, given the fact that in many countries there are not the resources to mount large and meticulous surveys, and the fact that the survey methods vary widely. The data are also very sparse.

The survey data passed to the FAO from national governments are usually in the form of money amounts. They are not amounts of food, but amounts of money. It is the distribution of income, together with a mean figure for food consumption from national food records, which determines the number of people classed by the FAO as hungry. But the FAO statistics suffer from the inflation flaw. We do not know how much food a family could buy for a unit of money. The financial statistics for each subsequent year are divided by the new consumer price index to give nominal (numerical) incomes for each fractile. But those are not the same as gains in purchasing power over food. If the price of food falls, hungry people are in fact better off; but the overall inflation rate will fail to reflect this adequately. The numerical income of hungry people cannot tell us how much more or less they ate in any particular year. If the price of luxury goods falls, then not only will poor people appear to have more income (because the overall inflation rate falls) but also the measures of hunger will be distorted as well.

Another problem with the FAO approach is the life-length flaw: in countries where inequality of life length widens between the hungry and the non-hungry, the proportion of hungry people will fall. In countries where hungry people live longer the proportion will rise.

The children flaw - a general flaw in economic analysis arising from the failure to take note of the fact that adults need more food than children - is carried forward in a primitive way by FAO statistics through analysis of the age structure of the whole population of a country. The fact that this does not tell us the proportion of adults to children among hungry people is probably of minor importance compared to the severe problems of data quality and the use of financial statistics to infer consumption amounts without taking food price inflation into account.

5. Hunger, economics and a simple alternative

The hungry are perhaps a sensible group for economists to study, since they are both the most needy and a homogeneous group.

In relation to the hungry, I suggest that the cost-effective solution is not to use cross-sectional statistics at all.

I suggest this a) because of the difficulty of working out consumption adequacy levels (age structure, average size of the people, work load) and b) because cross-sectional measures such as food gaps, proportions in hunger and averages of hungry people have the flaw that they can be mistaken for showing deterioration when in reality the majority is living hungrier.

The main aim of any humane person towards the poor is to try to keep them from dying early. Survival of people in our own - the non-poor's - families is what we value most. It is perhaps time to turn to survival-rate information as an indicator of economic outcome.

Amartya Sen once wrote an article entitled "Mortality as an indicator of economic success and failure". I would like to propose survival as an indicator of economic success.

Here is a new idea: the mean life length of the over-5s. Survival rates can have twin indicators: 1) child survival and 2) the new indicator. The new indicator gives an easily understandable guide to levels of life in rich countries as to the conditions of the poor.

Alternatively, we can simply use mean life expectancy of hungry people, which would be perhaps even more striking. Economic poverty is inadequacy of resources to meet basic needs. The economic poverty of hungry people has one aspect which stares us in the face - they cannot eat enough. If you are chronically hungry and you eat more, you are very likely to live longer. Those kinds of statistics are cheap, transparent and relatively incorruptible.

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[1] Such as fifths or tenths of the population.