Possible solutions to some puzzles in international statistics: Thoughts on the philosophy and theory of social science

Matt Berkley
Draft

26 September 2004

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Summary

This article examines problems in economists' claims about policies and international poverty.

Such claims ("policy X reduces poverty"; "the world is on track to halving poverty by 2015") have been quoted in policy documents and public pronouncements from the World Bank, the UK Department of International Development and elsewhere.

The article argues that the aim of "poverty reduction" is fundamentally flawed, since in traditional economic theory in a country where the worst-off survive longer, the economists say that the poor have done "worse"; and that what is measured by economists currently in countries where most humans live is not poverty.

The first problem is that in standard economic theory there is no benefit for people in living longer.

The second is that there are no estimates of need. The theory behind economists' large-scale statements as to how well or badly people have done does not address the question of what people need. The available statistics are therefore not poverty statistics.

Economists traditionally treat statistics about the economy as referring to changes for real people. But if people live longer, the economists say they have done worse! Economists have here confused cross-sectional statistics (about the economy) with longitudinal statistics (about people over time). In philosophical terms, they have confused "average utilitarianism" with "the greatest good for the greatest number". The average falls if you are the worst-off person and someone saves your life.

Economic theory in the studies also confused inflation with the cost of living (the cost of living depends on what you need); and expenditure statistics with consumption (in reality to know about consumption you would need to look at not only the money but also at food prices).

These confusions by economists may help explain several puzzles in international statistics:

1) why Cubans, Sri Lankans and Keralans have lived a long time despite economists saying they were very poor;

2) why Millennium Goal Indicator 1 has been reported as significantly ahead of most of the others (we might expect people to eat better if they are getting richer, and health to improve

promoted).

The article considers questions concerning the accountability of politicians in their capacities as board members of international organisations, and responsibility for scrutiny of their actions as such board members.

It also makes some suggestions in relation to the aim of increasing consumption adequacy among people who cannot afford enough food.

A. Introduction

The author of this document is not an economist.

Two problems with most economists' recommendations on how to make people's lives better are:

One, they leave out the benefit of living. Two, they leave out the cost of living.

B. Suggested axioms for social science

Axiom 1: It is not possible to infer the average outcome without knowing how many people survived the period.

Axiom 2: It is not possible to aggregate outcomes for people during any period without knowing how many survived.

Axiom 3: It is not possible to infer how much or how well people ate from expenditure data without knowing food prices.

Axiom 4: It is not possible to infer consumption adequacy without delineating consumption needs.

Axiom 4a: It is not possible for an economist to infer a poverty trend without knowing the proportion of children's meals required.

C. Two overarching problems

Overarching problem 1: Statistics about the economy are not statistics about people

The first problem with economists' claims about global poverty is that it is not possible to aggregate outcomes for people without knowing how many survived the period.

Cross-sectional statistics are statistics about people alive at different times.
Longitudinal statistics are statistics about people as they go through their lives.

"Poverty reduction" is ambiguous, since if the number of poor people falls, this does not mean that the poor people got richer.

In that respect, economists worldwide have confused not only cross-sectional with longitudinal statistics, but also "classical utilitarianism" (the idea of maximising good for the greatest number) with "average utilitarianism" (the idea of maximising the average at a later date".

The economists did not realise that in a country where people live longer, the resources are shared among fewer people during any period. Common sense says that people do better, other things being equal, if they survive longer. But also in economic terms, people have more use of resources if they live longer. They are more prosperous.

scientific way, even where survival data are available.

Overarching problem 2: Claiming to measure poverty without looking at the cost of living

The second problem is that poverty is a state of need, but the theory behind the economists' claims failed to define needs.

Whether or not poverty can be quantified is a reasonable question to ask. It is perhaps equivalent to the question whether prosperity can be quantified.

What is perhaps unreasonable is for someone to claim how much better or worse the poorest people did under a policy without any reference to

a) survival rates
b) food prices
c) other prices
d) food needs or
e) other needs
f) changes in assets
or
g) changes in debts.

It is important to understand what economists refer to when they talk about "income". It is a shorthand word for something more complex. In respect of countries where most humans live, the statistics often refer to a) consumption expenditure and/or b) the monetary value of food eaten.

From these statistics, economists have claimed "average benefits" of x% with a policy, or that y number "rose out of poverty".

But these statistics about money cannot tell a researcher about food. Economists have not yet compiled food prices for the target group in each country. Nor have they compiled prices for anything else which the target group need.

Let us be clear on this. The fact that someone spends 1% more does not mean that they bought 1% more.

What about people who grow their own food? If the economist sees the money value of their food go up 1%, does that mean they ate 1% more? No.

Do the economists have some reason to ignore this inflation problem? Apparently not. The present author found almost no reference in the academic literature to the fundamental problem that economists have assumed that all policies affect food prices no differently from other prices equally.

The economists appear simply to have confused inflation in the economy with inflation for the target group.

What seems to be the case is this: No economist has estimated either food price inflation or any other price inflation for the poorest people under different policies.

Therefore, it would seem that economists cannot know which policies resulted in more food for the hungry or malnourished.

That is the inflation problem, one part of the general cost-of-living problem.

The next part of the cost-of-living problem is this. The statistics are per capita statistics - per person. Why is that a problem? Because the proportion of children varies between countries, and globally it is going down. Adults need more food than children.

Suppose the FAO are right that the proportion of hungry children is falling per hungry adult, due to falling birth rates. They make this assumption for their global hunger reports (which are not very good for other reasons, including the longevity error).

The present author was unable to find any reference to this problem in economists' discussions of the trend in world poverty up until the end of 2003.

A third problem with treating inflation as showing the cost of living is this: How much you need does not only depend on your size. It also depends on the weather, on your need for rented accommodation, transport, and other factors.

The ten statements listed below may appear bold. But to this author, they appear to be true. They are certainly true of the statements by World Bank spokespeople to the media during the last few years. It is beyond contention that Chief Economists of the World Bank have made claims to the media concerning the economic effects of policies on poor people, and concerning the global progress of poor people, without reference to survival rates, food prices, food needs, other needs or assets or debts.

There are certainly economists who understand that assets are important to people. Some economists have recognised their fundamental mistake about longevity.

D. Ten confusions in development economics

1. To confuse inflation with the cost of living is standard practice in development economics.

2. To confuse "the average went up 1%" with "on average people had rises of 1%" is standard in development economics, even though the first is affected in the wrong direction by changes in longevity.

3. To confuse consumption expenditure (money) with consumption (food) is standard in development economics.

4. To confuse the (luxury-dominated) inflation rate with the inflation rate for hungry people is standard in development economics.

5. To confuse "poverty reduction" with "poverty alleviation" is standard in development economics.

6. To confuse "income rises" with "real income rises" is standard in development economics.

7. To confuse "income rose 1%" with "expenditure rose 1%" is standard in development economics.

8. To confuse the fall in the proportion of poor people with the degree of benefits to poor people is standard in development economics.

9. To confuse expenditure rises with economic gains (while ignoring changes in assets and debts) is standard in development economics.

10.To confuse World Bank data on consumption expenditure with poverty statistics is standard in development economics.

We might add that there are more dimensions to human welfare than financial. But the point is that the economists have not even got the financial part right.

E. The real problem* is structural bias

* in the financial part of economists' analysis

The problem with these confusions is not simply that they introduce elements of unreliability into economists' statements.

Logically, using these methods, an economist would say that a country which keeps luxury prices low has helped the poor to eat more; that a country which keeps food prices from rising fast has not helped the poor as much as it really has; and that a country which helps the poorest survive looks as if it has "failed to reduce poverty".

F. What makes the author think that these are serious problems?

Two things.

First, the author was unable to find in the academic literature or from conversations with officials and senior academics reasons why these might be considered minor problems for economists' policy advice - or for the perceptions built up over many years by economists and politicians as to which policies had which effects on consumption patterns among the poorest people on earth.

In respect of the longevity error, the leading academics had not written about the problem at all before the author began raising it with them. The same was true of the children's meal requirements error. The same appeared to be true of the food prices error.

Second, the confusions provide neat, if partial, solutions to:

G. Four puzzles in international statistics

1) Why do Cubans, Sri Lankans and Keralans live a long time despite economists saying they are very poor?

A partial solution to this puzzle is in the question. In countries where people live a long time, the resources are shared among fewer people during any period.

Therefore, they are better off economically, other things being equal, than in other countries.

In countries where poorer people survive longer, the average falls because of this.

In countries where retired people survive longer, the average falls because of this.

The statistical effect on the economic figures may be small. But it is undeniable.

Plausibly, in countries where people live a long time healthy food is cheap and needs are few: the cost of the necessaries is low.

It is important to understand how economic statistics ("gross domestic product", "average income") are derived. The raw figures are deflated by a price index (inflation rate). The important thing to understand is that national inflation rates are disproportionately affected by prices of luxury goods. It is the total amount spent on a type of item which determines how influential it is in the overall inflation rate.

Let us say that in a small country £1 million is spent on cake, and £1 million on bread. Even if only a few people eat cake, cake prices influence the overall inflation rate (and so the "income" statistics) as much as bread. The inflation rate for bread is not reflected properly in the overall rate.

If cake prices fall, the economist says "the poor have got richer!", and the World Bank says "the policy was good for the poorest!", and the British Government Target Strategy Paper (2000), or background document for the White Paper (2000), or the Cabinet Office report "Adding it Up", says "the policy reduced poverty". In reality the economists do not distinguish between inflation rates for people who buy different things. In respect of people who grow their own food, national statistical offices look at the food which people eat, then value it in money. The economists then look at the money value and adjust it by

All this is really to say that the economists do not distinguish between inflation for necessary and unnecessary goods. A flippant person might say that in a country where prices rise for luxury goods for the minority, the economist worries about inflation more than the people do on average; and that in a country where prices for basic goods rise for the majority, the economist worries less about inflation than the people do on average. Since some goods are more necessary for survival than others, and governments have different priorities in respect of keeping people alive, it is not surprising that economic statistics (as adjusted for the national figures) do not correlate very well with life length.

GDP will go up if the government pays people to do useless jobs - such as economists pretending to have data on poverty when they do not have food prices. GDP will go up if the government encourages people to take commuting jobs which increase transport costs. If you take one of these jobs and pay a bus fare, the economist counts the bus fare portion of your wages twice - once as a benefit to you (which it isn't) and once as a profit to the people running the bus (which it is). Child care is another example of this kind of extra expense. So is rent, if in the old days people lived in a village on the family land and now live in the city. (This kind of double-accounting by economists may help explain not only why income is not well correlated with life length, but also why people do not always report being happier with more GDP. We can note also the time-cost of commuting. Many people may feel that they have enough money but not enough time).

GDP or "average income" as adjusted by economists does not take into account

survival rates
the trend in prices of goods deemed necessary
food needs
other needs
changes in assets
changes in debts.

So there are quite a few areas where economics (at least the economic results as reported from official sources and the macroeconomists who use similar methods) cannot reasonably be said to measure economic gains and losses.

Without looking at prices of basic goods, and needs, and asset and debt levels, an economist cannot reasonably be said to have measured prosperity even in the most narrow sense. One reason why life length is sometimes badly correlated with economists' claims of prosperity is that prosperity is not what economists measure. If you own your own land, you do not need to pay rent; and you have something to sell if bad times come. If you have debts, you pay interest. Neither of these cases is dealt with by the theory behind economists' claims from "income" (often in reality expenditure) statistics. It may be that people in countries where they live a long time have fewer debts. It may be that landlessness has been prevented, so that people are in fact more prosperous than they look. It may be that there is less waste by governments in those countries.

Other puzzles which the economists' confusions can explain are:

2) how the World Bank reports success for the poorest while the Food and Agriculture Organisation of the United Nations reports failure for the hungry. This is a puzzle because we might reasonably think the poorest are hungry; and the survey data are similar in origin.

Solution: The FAO do adjust crudely for food needs of hungry people (see L.Naiken account of FAO methodology in FIVIMS documentation). The Bank do not (see Chen and Ravallion documentation).

The FAO assume that hungry people's needs have gone up, because there are not so many children per adult: birth rates have gone down. The Bank (and all economists making statements about the progress of the poorest people in the world) have assumed that the food needs of the poorest have been the same throughout history.

They cannot both be right.

Note 1: The FAO are mistaken for other reasons: they make the assumption that the faster the

Note 3: Strangely, Martin Ravallion of the World Bank co-wrote an article in the Royal Economic Society's Economic Journal in 1995 which appears to make the point that economists should remember that adults need more food than children. It makes the point that smaller families are less efficient per person. Dr Ravallion ignored his own advice for his statements on global poverty. The fact that this makes the World Bank look better may be a coincidence.

To halve the proportion of people under a consumption line is not to halve the proportion of people under a consumption-adequacy line. And so, even in the absence of other problems, this World Bank method would not measure a halving of world poverty, but exaggerate it somewhat. The notion that the proportion of children among the poorest people will not have varied between 1981 and 2015 is perhaps implausible given the fact that it is the aim of UN agencies to reduce population increases and increase birth control.

3) Why Millennium Goal Indicator 1 has been reported as significantly ahead of most of the others.

A puzzle because if the poorest people are eating more, we might expect them to be more healthy.

As above; plus perhaps the other confusions by economists.

4) why global health goals are not being met (plausibly, both the aims and methods of lender countries are the wrong ones).

The aim of "poverty reduction" rather than poverty alleviation is mistaken; and the methods of economic policies have been based on misdescription of past statistical trends.

H. Responsibility and accountability

Responsibility for errors: World Bank Governors

There is a common view that the World Bank is unaccountable. But in reality, the policies of the Bank are in the hands of its Governors. The Governors from democracies are accountable to their voters for their actions.

The institutional structure of the World Bank is such that lender countries have voting power in proportion to financial input. The influence of the United Kingdom (with under 1% of the species in headcount terms) is much more per head of population than, say, India.

Accountability for mistaken public statements by Chief Economists of the Bank therefore lies largely with lender countries.

Accountability for policy decisions also lies largely with lender countries.

The British Governor of the World Bank is the Secretary of State for International Development.

The Alternate Governor is the Chancellor of the Exchequer.

The British Governor of the International Monetary Fund is the Chancellor of the Exchequer. He has been Chair of the IMF's main decision-making body for several years. The Millennium Goals were agreed by the Organisation for Economic Co-operation and Development, the IMF, the UN and the World Bank.

Note: The Development Assistance Committee of the OECD is a body for which similar considerations must apply as in the case of the global financial institutions: since elected politicians are on the Committee, they are answerable for actions in the name of their

Responsibility for reporting errors

It would seem that responsibility for reporting errors in World Bank statements about global poverty, and about the effects of different policies on the world's poorest people to the Bank, lies with the Governors in cases where they have been informed of the errors.

To know of errors and not to share that knowledge with other Governors or senior Bank staff with a view to the errors being corrected would be to fail in a public duty.

Responsibility for oversight of British teaching of social science

It would seem that this responsibility would lie with the Education and Skills Select Committee of the House of Commons.

Responsibility for oversight of British board members of international bodies

It would seem that responsibility for oversight and scrutiny of the actions of the British Governors of the World Bank and International Monetary Fund must lie with

a) the International Development Select Committee of the House of Commons
and/or
b) some other public body or bodies (such as the Treasury Committee)
or
c) no-one.

I. Four suggested solutions to the problem that a self-described intelligent species cannot, despite the stated intentions of its most powerful elected officials, feed itself

1. A new emphasis on survival as a measure of success. Since the statistics with which we measure success are determined by our aims, this is equivalent to saying that a prime aim of governments aiming to help poor people would be to keep them alive longer. That is not to say that longevity is the most important thing.

It is, however, true that even with the best data on food prices, it is not possible to infer the adequacy of the food (quantity and quality) without reference to survival rates.

Without data on survival rates, economic statistics are of little use in inferring consumption adequacy.

There are two parts to the equation for prosperity: the quality of a life, and its length. Only one is measurable.

2. A dropping of the term "poverty" from the vocabulary of governments. Without data on:

food prices,
food needs,
other prices and
other needs, and
changes in assets and
debts,

economic statistics are of questionable use in inferring prosperity.

3. A rapid move towards the correction of past statements concerning the progress of people

"average benefits" to the poor or "average benefits" to other people of such-and-such percentages, without data on food prices, or food needs, or asset changes, or debt changes, or survival rates) and elsewhere.

4. A rapid move towards replacing the ambiguous language of "poverty reduction" with clear and specific and meaningful statements about statistics, described accurately without spin.

Axioms for the use of economic statistics appear at the beginning of this article.

It is self-evident that economic statistics without prices of staple foods are not statistics on extreme poverty.
It is self-evident that economic statistics without survival rates do not tell a researcher average outcomes.

In reality, the source of global statements on the progress of people deemed extremely poor are survey data on

1) income and/or
2) consumption expenditure and/or
3) the money value of people's self-grown food.

It is inaccurate to describe these statistics as "income" or "gains".
It is inaccurate to describe the economic statistics as referring to longitudinal trends for real people.

It is inaccurate to describe the World Bank statistics using an international dollar as "poverty statistics". There are no global food prices for the target group for any year; there are no survival rate data for the target group for any year; there are no estimates of amounts needed in any year, due to changing food needs, changing needs for rented accommodation, changing needs for expenditure on debts, changing needs for savings to offset landlessness, or anything else.

It is inaccurate to refer to the statistical results of studies of the numerical distribution of "income" as if they represented consumption amounts, or consumption adequacy (consumption poverty), or "income poverty" without estimating necessary expenditure.

It is the tradition among macroeconomists to confuse income with profit.

It is inaccurate to describe the target group as "people living below a dollar a day". The "dollar" here is a World Bank dollar, not a real dollar. In national buying power, it is worth a fraction of a real dollar. In buying power for basic goods, its value is apparently not known to anyone. But it does not appear to be worth what a backpacker from the United States could live on with a dollar a day in a target country. A sensible guess might be that it is worth four times less than that.

A statement about survival rates is open to misuse in fewer ways than are economic statistics.

J. Concluding remarks: economists are wrong about prosperity as well

Many of the errors above apply equally to economists' and governments' statements about prosperity among people who are not usually considered poor. The idea that additional items of expenditure (such as commuting costs) should not be counted against income is absurd. The idea that debts and assets are not part of economic gains and losses is absurd. The idea that most people are better off dead is absurd. The idea that no matter how long or short working hours, people are equally well off is absurd. The idea that money measures, with all these fallacies of reasoning and misdescriptions of data, can measure human welfare with no reference to the quality of life is absurd.

saying that they have evidence that it has been true in the past. Unfortunately, successive Chief Economists of the World Bank, making the most high-profile announcements in this area, have not realised the difference between cross-sectional and longitudinal statistics, and the fact that adults need more food than children, and the fact that if you don't know how a policy affected food prices you don't know how it affected people who can afford little else.

The central idea which governments and civil services like is that when they receive more money, the people are better off. People perhaps naturally believe what they see around them, and assume that things are the same elsewhere. If there is more money coming into the Treasury, then a government may think that the people have more money spare. But that does not follow. Income is not profit, and inflation does not measure the cost of living. Inflation does not measure the cost of living, because a) income is not profit (needs for expenditure may rise) and b) inflation is disproportionately affected by prices of unnecessary goods.

Ultimately the cost of living is not something which can be measured, since that would necessitate specifying an equivalent life at another time or in another place. Since the combined benefits and costs of climate, culture, working conditions, and various physical, emotional, intellectual, and spiritual wants are not measurable, all comparative statements in this general area are laden with subjectivity. The benefit of living longer is not measurable either.

K. A personal note

Perhaps we all try to convince ourselves on occasion that the picture which the world presents to us at this moment confirms our pre-existing notions of it.

It may be that the problems which I have identified above in the use of statistics in social science are minor, in the sense that they do not matter to the happiness of any human.

Just to be on the safe side, though, I think that it would be best - if what governments are aiming at is better lives for people - if governments provided more of the truth about what their statistics actually represent, and less in the way of unfounded speculation dressed as science.

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Contact information

Matt Berkley
33 Howard St
Oxford
OX4 3AY

+44 (0)1865 726768
matt@mattberkley.com