Assessing Development

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There are a number of possible purposes in assessing the level of economic development of a country or part of a country. The assessment may provide an incentive for better development, particularly if it can be compared meaningfully with assessments for other countries. It may help evaluate the effectiveness of economic policies and institutions. It certainly speaks to the people at large, even if most are unsure quite what it is saying, and might well influence their votes and other political actions.

When we look at the level of development in a particular year, we may want to ask what good the economy has done that year; or a rather different question, how much its people have enjoyed themselves that year. GDP is, I think, supposed to measure the first of these. I suggest that aggregate consumption, private and public, is supposed to measure the second. There are other possibilities. The assessment need not come down to a single number. It could instead be a whole battery of numerical measures and verbal reports. But there is a demand for single numbers, and it is interesting to consider how far we might get without being too arbitrary. For many years, the UNDP has been publishing estimates of a Human Development Index, and more recently an Inequality-Adjusted Human Development Index. These are single numbers for each country each year. They try to allow for aspects of development that are generally perceived to be neglected by national income aggregates, namely health, education and inequality. They have not attempted to correct for the neglect of the environmental and resource effects of development, nor do they do anything about the labour, employment and security side of the living experience. The Human Development Reports have not neglected these aspects of development, but they have not yet found a way to incorporate them in the indexes.

It may be hard to persuade people to attend to two different measures, but I think it is worthwhile to look at the two assessment notions separately. First consider how to measure the good the economy does. That is the output of the production part of the economy, which contributes to the wellbeing of individuals both in the year considered, through the production of consumption goods and services, and in future years, through the capital created by investment. If we ignore, just for a moment or two, environmental effects, the prices used to aggregate outputs should be producer prices. The value of producing capital goods then reflects the discounted value of the consumption they will provide in future, and can therefore be added to the value of the consumption goods and services. In the ideal case, government will be applying taxes in accordance with good general principles, incorporating whatever degree of egalitarianism is deemed right for the country. Then producer prices do measure the value of the goods and services, allowing for inequality. GDP cannot be said to neglect distributional considerations. But it is surely also legitimate to see what is implied by welfare judgments different from those that might be implicit in current tax policies. That is most easily done when measuring consumption.

GDP measured at factor prices, or, more precisely, at producer prices does, I believe, in practice omit the destruction of mineral resources by dispersion and their creation by discovery; and in principle neglects some major externalities. It is entirely desirable to have "green" GDP measures that corrects these omissions – all of them. Producer prices ought to be reduced by an amount that reflects pollution in any form, unless of course taxes are already in place that reflect these costs. It may be possible in many cases, though difficult for most statistical agencies, to estimate the

external costs. Traffic congestion is a good case, where it can be demonstrated that taxes are too low, or at least imperfectly targetted, in most countries. But with global warming, well-informed and unprejudiced people can differ greatly in their estimates. Value judgments may be involved too: typically future deaths in distant countries need to be valued.

We may also suspect that the production of health and education are not well measured by their parts of GDP. But it cannot be said that they are absent. No doubt I am ignorant of important research, but I suspect that we have no real basis for thinking that the pay of physicians or the prices of pharmaceuticals understate their marginal contributions to health. I am not claiming that these prices, or the wages of teachers, in fact are good approximations to their marginal products: the forces that might keep them close are certainly much weaker than market forces in other areas. But the (roughly) equal weighting of GDP, years of schooling and life expectancy in the Human Development Indexes seems to me to double count quite seriously.

When we compare years or countries, should we compare GDP per member of the population, just GDP, or something else? Since it is really a measure of achievement, it is the achievement of workers that year. It seems to me it would be natural therefore to use GDP per worker, i.e. productivity, for comparisons. There would be a case for subtracting the services of existing capital from GDP, but I recognize that measuring capital and its services is a large and perhaps unnecessary task.

If we now come to the other question, whether we can measure the enjoyment, pleasure, happiness, wellbeing of the country's residents, I suggest that is a very different exercise. We should, in particular, be prepared to second-guess the government's welfare judgments implicit in its system of taxes and subsidies. If we do, as the Human Development Reports do, we will not be creating an "objective" index. But it is not an arbitrary calculation: their Inequality-Adjusted Human Development Index makes a good deal of sense. What I propose is somewhat different, but in the same spirit. There is not space to discuss general principles. Instead, here is a specific proposal, motivated by the kind of generalized utilitarianism that many economists use to sort out value questions, a conception of utility intended to indicate peoples' wellbeing and the way they might compare one another's. To be fair to the Human Development Reports, I have to emphasize that my proposal would be quite difficult to implement satisfactorily, because information on the distribution of consumption that is up to date and covers all kinds of consumption properly is generally not available.

First find the distribution of consumption within the population. The index I propose will be an average of the utility of consumption across the population. The big difficulty is that we cannot take utility to be a function of a weighted sum of the different goods and services. Food and clothes are not good substitutes for one another. Education and health care are very far from being substitutes for one another or for transport, say. This matters because we want to compare countries, not just neighbouring years. For marketed goods and services, we could use estimates of income elasticity to construct a utility function in terms of the various consumption categories.

The simplest plausible form amounts to using a geometric mean. That is what the Inequality-Adjusted Human Development Index does, for income, years of education, and life expectancy. Perhaps we could at least separate necessities and luxuries, with different weights. In the case of education and medical expenditure, included imperfectly if at all in household surveys, the statistician will have to guess. Where I would like to differ from the Human Development Index is in using medical expenditures rather than life expectancy. That is easy to say, but the data is not available. Still, life expectancy is not an acceptable proxy for medical expenditure. It would be better to ignore health. Life expectancy will play a role in the final index I am suggesting, though.

There are still other important consumption categories I have not mentioned: public goods (like street lights), other publicly provided goods (like home sanitation) and jobs. The problem is that many people have zero, so that we cannot use a geometric mean for them. Adding arbitrary constants before incorporating them in a geometric mean will have to do for now. Research on the value people would place on these facilities is needed.

I take it for granted that not having a job is, for most people, painful. Utility is low without a job and for many occupations increases with the time spent working up to a point, decreasing thereafter. For other occupations, utility may be a decreasing function of working time starting from zero. I do not know how one could incorporate these considerations in a practical measure of utility. But it seems to me that differences in job quality are almost as unequal as differences in consumption quality, and that improvements in job quality are a major feature of economic development. That is part of the answer to "What is good development?" It means little without numbers.

When we have numbers for real consumption in an economy, what shall we do with them? We will want to divide by the size of the population that year. Now I suggest we should be estimating the life-time utility of an average person living at the time. We should multiply the utility per year by the number of years of life. The most natural interpretation of the geometric mean is as the uniform consumption equivalent to the actual distribution using a logarithmic utility function. A little simple mathematics show that the proportional rate of change of the final real consumption index is the rate of growth of per-capita geometric-mean consumption, plus a term which is the rate of growth of life-expectancy times utility per year of life. Unfortunately, that additional term requires a judgment about how happy (or unhappy) people in the society are: we need to know the ratio of actual consumption to the level at which life is just worth living. In the end, then, it is hard to give adequate credit to increases in life-expectancy, while acknowledging it is very important. This is a strong argument for leaving it as a separate figure, not incorporated in the real-consumption index.

For some countries, notably China, the rate of growth of inequality-adjusted real per-capita consumption is considerably less than the "headline" growth rate of GDP. In the case of China, using GDP to assess how well the economy has developed involves an implicit assumption that capital accumulated now will eventually be used, perhaps through child and grandchild capital, to produce consumption goods. It is an unverifiable assumption. Real consumption growth shows what has actually been achieved. GDP growth includes long-run possibilities. There is no way that one number per country per year can show people all they should know.