The SDGs: What's Wrong with Them and What Can Be Done

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Data Base for Development Analysis
Data base for development analysis: An overview

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Abstract

The paper provides an overview of the situation with respect to the quality and comparability of data commonly used in development analysis. A section each is devoted to a discussion of macroeconomic (i.e. national income and its components, savings and investment, exports and imports) data, demography (population, life expectancy, fertility and mortality, nutrition and health, labour force, employment and unemployment), poverty and income distribution, validation and cross-checking of data from different sources. The discussion is illustrated with examples, drawn mainly from India. The paper concludes with a set of recommendations for the improvement of data.

Key words: Data base; Development; National income; Unemployment; Literacy

JEL classification: O80; O47; P24

A *Who's Who* of development economics...

- **T.N. Srinivasan**, Data base for development analysis Data base for development analysis: An overview

- **Alan Heston**, A brief review of some problems in using national accounts data in level of output comparisons and growth studies

- **Richard Ruggles**, Issues relating to the UN system of national accounts and developing countries

- **Gary S. Fields**, Data for measuring poverty and inequality changes in the developing countries

- **Jere R. Behrman, Mark R. Rosenzweig**, Caveat emptor: Cross-country data on education and the labor force

- **Robert E. Evenson, Carl E. Pray**, Measuring food production (with reference to South Asia)

- **Howarth E. Bouis**, The effect of income on demand for food in poor countries: Are our food consumption databases giving us reliable estimates?
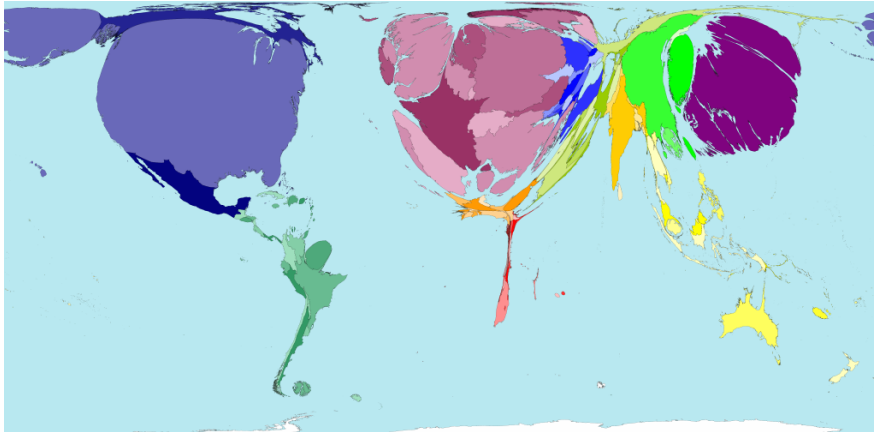
Six issues

1. Do governments always want statistical accuracy?
2. The welfare economics of indicator proliferation
3. Conflicting indicators and the cost of coordination failure
4. Continuity in ODA support to national statistical systems
5. The siren song of big data
6. Statistically-literate personnel in developing countries

- Tradeoff between accuracy and failure to achieve SDG goals
- You get brownie points for achieving or surpassing the SDG target
- This means that the expected number of brownie points depends on the **probability** of you reaching or surpassing the target: this is essentially increasing in the investment you make in activities that improve the indicator in question
- But you get massive **negative** brownie points for not reaching the target
- And the negative brownie points that you get for not reaching the target increase **really** fast with the shortfall (in technical parlance, shame is convex)

The costs of improving statistical accuracy

- But there are costs:
    - Both to improving the SDG indicator
    - And to increasing the accuracy of your measurement of the SDG indicator
- As a result, not only is there an optimal level of investment in terms of improving the indicator, but there is also an optimal level of investment in statistical accuracy, because if you fail to reach the target, **you will look particularly bad if you measure that failure accurately**
- It follows that self-interested governments do not necessarily have an interest in increasing statistical accuracy beyond some level...

A theory of optimal statistical accuracy

$x =$SDG indicator, $x^* =$SDG target

$g =$investment that increases the mean of the SDG indicator

$\rho =$inverse of the accuracy of the SDG indicator

$x \in [0, \overline{x}], x \sim f(x; g, \rho), 0 < x^* < \overline{x}, \omega'(\rho) > 0, g = E[x]$

$$W = \underbrace{[1 - F(x^*; g, \rho)]\, b}_{\text{benefit to achieving the SDG}} - \underbrace{\int_0^{x^*} (x^* - x)^2 f(x; g, \rho)dx}_{\text{cost of failure to achieve the SDG}} - cg + \omega(\rho)$$

$$= [1 - F(x^*; g, \rho)]\, b - 2 \int_0^{x^*} \left(\int_0^x F(y; g, \rho)dy \right) dx - cg + \omega(\rho)$$

Optimal level of accuracy of SDG indicator FOC:

$$\underbrace{-F_\rho(x^*; g, \rho^*)}_{\gtreqqless 0 \Leftrightarrow x^* \gtreqqless g} b - 2 \underbrace{\int_0^{x^*} \left(\int_0^x F_\rho(y; g, \rho^*)dy \right) dx}_{\geq 0} + \underbrace{\omega'(\rho^*)}_{>0} = 0$$

Entirely possible to have $\frac{dg^*}{dx^*} < 0, \frac{d\rho^*}{dx^*} > 0$!!!

- The set of SDG targets is to a large extent the result of a bargaining process amongst a large group of highly heterogeneous interest groups
- Consequence: proliferation of indicators to satisfy a plethora of special interests
- Externality theory tells you that the number of indicators will be much larger than what is socially optimal because:
  - the private benefit (to the interest group involved) to having "its" SDG indicator included is almost always much higher than the social benefit
  - as such the institutional "market" for creating goals and indicators will tend to oversupply them

- Same result flows from Mancur Olson: *The Logic of Collective Action* (in this case, the "illogic" of collective action)
- The basic point is that everything suggests that we have an **oversupply** of indicators with respect to what would be socially optimal
- It becomes impossible to prioritize:
    - This is a sure recipe to fail Management 101...

- Insufficient thought given to the compatibility amongst the different SDG indicators in many developing countries
- Consider the following thought experiment
  - If a higher value of indicator *B* implies a lower value of indicator *A* then, when we allocate budgetary resources between improving the two indicators
    - It is quite possible we could achieve a higher level of both indicators by reallocating the resources devoted to each of them
    - Why: because there will often be little coordination amongst the ministries responsible for each indicator

$$x = \text{SDG indicator} \qquad g = \text{budget allocation}$$

- Infrastructure: $x_B = g_B$
- Environment: $x_A = g_A - \frac{1}{2}x_B$ (when infrastructure improves, the environment suffers)
- Government budget constraint: $g_A + g_B = g$
- Social welfare function (increasing and concave in each indicator): $W = \ln x_A + \ln x_B$
- Ministry A gets a share λ of the total budget g (and ministry B gets a share $1 - \lambda$), through some bureaucratic bargaining process
- Suppose a 50/50 split: $\lambda = 1 - \lambda = \frac{1}{2}$

Illustration of the Mickey Mouse example
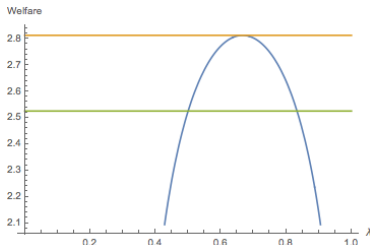
- Green line shows the level of welfare without coordination using the 50/50 split
- Yellow line shows the level of welfare with perfect coordination: the optimal budget share going to environment should be 2/3 and not 1/2
- Consequence: significant loss of welfare

Coordination failure

- More concrete, budgetary, manner of seeing this:
  - If one coordinated by giving a 2/3 share to environment, one could achieve the same overall level of social welfare as with no coordination by spending **13% less**!

- Will having the SDGs lead:
  - To more coordination ?...
  - Or to a greater degree of misallignment between optimal budget shares for line ministries in terms of overall societal welfare?
  - The second possibility is unfortunately quite realistic, if having a paramount SDG target increases your bargaining power in terms of budgetary allocations

- Anybody's guess, though the experience with the MDGs does not bode well...

- Long-term continuity of support to national statistical systems is the key
- Very high *marginal* cost of maintaining support to statistical systems in developing countries...
  - Because you need a commitment over **decades**
  - Because it is built on long-run human relationships
  - What bilateral or multilateral agency has that sort of bureaucratic continuity or memory? (think of a typical 4 year project cycle)
- Examples of what happens when support is withdrawn:
  - Almost complete collapse of national statistical capacity
  - A 20 year investment can be essentially wiped out in a single budget
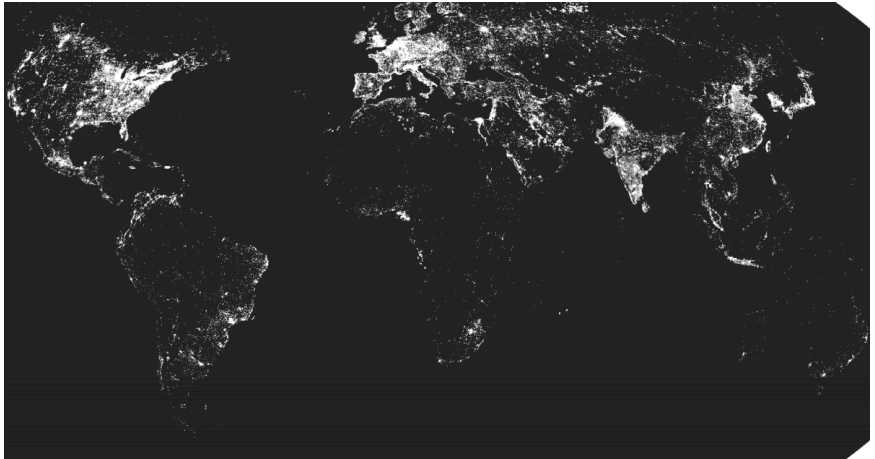
- Academic researchers in **rich** countries use them all the time...
- Night time luminosity, rainfall, temperature, great soil types, forest cover, topography...use of internet data by Cambridge Analytica in Brexit / US election
- Has vastly improved academic research
  - Example: night time luminosity as a proxy for economic activity –"economic growth from outer space"
- "Big data" is no solution at all if developing countries do not have the capacity to use and interpret the resulting data
- Example: using night time luminosity to construct local measures of GDP per capita
  - How many academics in developing countries, let alone civil servants, know how to use QuantumGIS?

- The labor market for skilled personnel in developing countries is highly distorted by the development community
- **Tiny** supply of statistically-literate personnel
  - Disfunctional national training systems
  - How many of those trained abroad go back home?
- Remuneration in government service is usually paltry
- Bilaterals, multilaterals, NGOs poach the best elements from government service
  - Example: most government statistical offices in West African countries are functionally inoperative –the best people have been lured away by having their salaries doubled or quadrupled...many culprits

So let me add a few SDGs of my own...

- **245**: As Juvenal put it in his *Satires*: "Quis custodiet ipsos custodes?"
    - Some developing country governments may have to be "forced" to devote attention to their statistical systems because they may not wish to do so out of self-interest
- **246**: *Thou shalt prioritize*....Implement an SDG "Non-Proliferation Treaty" (probably harder than achieving this with the DPRK)
- **247**: Long-term commitment to national statistical systems has to be ensured by donors: some laudable initiatives do exist...grossly insufficient
- **248**: Donors (bilateral, multilateral and NGOs) need to get their act together: currently they are the main source of the problem in terms of the labor market for statistically-literate personnel in developing countries