

A few comments on ‘Sustainability and the measurement of wealth’

ROBERT SOLOW

Professor Emeritus, Massachusetts Institute of Technology, Cambridge, MA, USA

You have to admire the courage exhibited in going out on a limb like this, especially because the acrobats are sophisticated and understand how many chances to go wrong they have. Of course one can stand back and admire courage and dexterity without actually believing in the results, and without any feeling that one could do better.

There is no point in nitpicking the details. There are things I might have done slightly differently, but I have no conviction that my choices would be better than theirs. So I will just mention three issues of principle, or something like principle, that seem to be worth further consideration.

- (1) The authors understand completely that, in an economy that is not engaged in maximizing $V(t)$, that is to say in our economies, marginal rates of substitution (MRS) and marginal rates of transformation (MRT) are not necessarily equal. They seem to think of their estimated shadow prices usually as approximate indicators of MRSs on the utility side. When the issue is sustainability for a long period of time, however, MRTs are just as fundamental. The relative shadow prices of human capital and depletable resources, say, have a story to tell. Social wellbeing depends on consumption, and future consumption depends on, among other things, the ability of human capital to replace depletable resources in the production of objects of consumption. Possibly there is some assumption about MRTs hidden in the use made of shadow prices in the calculations; possibly there ought to be an explicit assumption. I was going to say ‘God knows’, but maybe not.
- (2) I cannot convince myself that it makes sense to treat calendar time as a kind of capital stock with its own rental rate or shadow price as in equations (7)–(11). Just as footnote 12 says, it seems odd because no decision is involved in the passage of time. Granted that waiting is costly, there is no decision because there is no option (as there is in the standard use of ‘waiting’ in capital theory). Time, to coin a phrase, marches on. Countries have different rates of growth of total factor productivity (TFP). But how do we get a peek at the shadow price of t in Brazil?

- (3) Here I do not think it is just I: one is brought up short by the extent to which 'health capital' dwarfs everything else. Almost the whole exercise turns out to be about increasing longevity. Here the problem I mentioned in (1) above sits up: something must turn on the marginal product of an additional year of life. The average American is said to represent US\$ 6.3 million of health capital. Suppose the average American earns US\$ 50,000 a year for ever. Capitalized at 5 per cent per year, that comes to US\$ 1 million, or one-sixth of the health capital. I will not speak of a tail wagging a dog, because longevity is hardly a mere tail. But I would like to understand better what it is that is wagging the dog.
- (4) I will add a different sort of remark. Making sustainability turn on 'intergenerational' wellbeing does seem like an advance on the older consumption-based approach. But there are costs: the calculation of 'comprehensive capital' is complicated, and introduces a lot of measurement uncertainties. I wonder if the gain in generality (or whatever it is) is worth the cost. (See earlier remark about God.)