III Forum: Alternative Development Indices
(ed. Iris Borowy and Corinna R. Unger)
The Index of Sustainable Economic Welfare (ISEW), which later evolved into the Genuine Progress Indicator (GPI), was first presented as an appendix to For the Common Good (1989).¹ It grew out of the dissatisfaction that many had long felt with the GNP, because the latter was designed to measure economic activity, not welfare, although it was frequently considered “the best measure of welfare that we have.” Furthermore, even to the limited extent that it did measure welfare, there was nothing sustainable about the measure in that its growth required depletion of natural resources beyond renewable capacity.

In his classic Economics of Welfare, A.C. Pigou divided total welfare into economic welfare and non-economic welfare, thus:

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\text{Total Welfare} = \text{Economic Welfare} + \text{Non-Economic Welfare}
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The reason for Pigou’s distinction was that economic welfare can meaningfully be measured by money, while non-economic welfare cannot meaningfully be measured by money.

However, to be numerically summed the two terms would require some common unit of measure. To add or subtract the two terms, either non-economic welfare must be shrunk and bent to fit the measuring rod of money, or economic welfare must be stretched into conformity with a more general unit of non-economic welfare, say “social utility.” To escape this problem, as Abramowitz put it, echoing Pigou: “Economists have relied, however, on a practical judgment, namely, that a change in economic welfare implies a change in total welfare in the same direction if not in the same degree.”²

If they move in the same direction, then economic welfare by itself is a “good enough” indicator of change in total welfare. This was more or less true in the empty world, but ceased to be true as the world became full and the economy pressed against containing ecosystem limits. The gain in economic welfare

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1 Herman Daly and John Cobb, For The Common Good: Redirecting the Economy Toward Community, the Environment, and a Sustainable Future (Boston: Beacon Press, 1994², 1989¹).

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from growth can now easily be more than offset by a loss of non-economic welfare from natural ecosystem services provoked by the extra depletion and pollution of nature required by increased production, or by a deterioration in the moral quality of society induced by the widespread use of a meretricious new “good,” or a dangerous new technology. In other words, reductions in economic welfare in an increasingly full world result from the increasing production of unmeasured “illth” as a joint product with measured wealth. Increases in illth must be measured and subtracted from increases in wealth. It is a matter of common sense that growth in the economy can become uneconomic in an inclusive welfare sense, but to show this precisely requires a common unit of measure.

In *For the Common Good* John Cobb and I followed mainly the non-monetary strategy of reasoning in terms of social utility, conceiving of *Homo economicus* as person-in-community rather than atomistic individual. We showed the shortcomings of GDP, and made the theoretical case that GDP growth could, and probably has, become uneconomic in the sense that it causes a loss of non-economic welfare that is greater at the margin than the gain in economic welfare (at least for rich countries). We were satisfied with the case we had made, and initially did not want to try to make the same case in monetary terms because the measuring rod of money is treacherous, with market prices reflecting only marginal utility (exchange values); they do not measure total utility, much less the welfare experienced by the person-in-community as opposed to atomistic individuals.

However, John’s son, Clifford Cobb, a very helpful critic, argued that even so we should also attempt a money measure of welfare simply by adding a few neglected costs and benefits that could be expressed in money, and rearranging existing GNP sub-accounts to separate those that measured beneficial activity from those that measured regrettable or defensive activity made necessary by other production. We also made a correction for the increasing inequality in distribution (an extra dollar to the rich signified less welfare than an extra dollar to the poor, so we weighted it less). The net sum from these, and a few other reasonable adjustments, would then be a better (at least less arbitrary) monetary measure of total welfare than GNP. Since GNP was never intended as a measure of welfare, it was not hard to make a better measure, even if still far from perfect. We could then correlate our ISEW with real GNP and see how they tracked. It turned out that they were closely correlated up until around 1980 and then diverged significantly with GNP continuing to rise while ISEW became constant or slightly declining. We considered the result significant, and rather conservative in that the major component of both time series was the same, namely Personal Consumption. There was thus an autocorrelation bias making it statistically difficult for the two series to diverge. Yet they did diverge. Furthermore we had made no correction for the diminishing marginal utility of total income as it grew. We only
corrected for marginal utility differences in distribution between rich and poor classes, not for differences over time resulting from growth of total income of both classes.

We were encouraged in our efforts by the fact that Nordhaus and Tobin had earlier made a similar effort. They devised an index, Measured Economic Welfare (MEW), and had correlated their MEW with GNP and found a significant positive correlation over an extended time period. They used that to conclude that GNP was a “good enough” measure of welfare, and therefore MEW was not needed. However, Clifford divided their time series (1925–1965) in half and showed that in the more recent and more relevant half (1947–1965) the correlation was much lower. So GNP was becoming less correlated to MEW over time. And, in addition, we felt that our ISEW was a better index of welfare than Nordhaus-Tobin’s MEW and, contrary to their conclusion, indicated that GNP had become a perverse index of total welfare, in more recent years.

In sum, we decided that the monetary measure of the ISEW gave a supplementary a fortiori argument to our non-monetary arguments in chapters 3 and 7. So we added an Appendix developing the monetary ISEW. Economists like monetary numerical reasoning better than conceptual-dialectical reasoning. Consequently the Appendix attracted more attention than the related chapters 3 and 7 in the text, even though both reached the same conclusion.

Subsequently John and Clifford encouraged further development of the ISEW in a very exemplary manner. They identified a list of national accounts experts who would likely be critical of the ISEW, offered them an honorarium to write a critique, published their critiques, and revised the ISEW accordingly, or else explained why not. This led to the revised ISEW in the second edition of For the Common Good, which later evolved into the GPI and other variants.

A friendly critic astutely pointed out the fundamental inconsistency underlying chapter 3’s reliance on non-monetary measures and the Appendix’s reliance on monetary measures. Our arguments in the text were based on the concept of “strong sustainability,” i.e., the recognition that natural and manmade capital are complements not substitutes, and the one in short supply is the limiting factor. The limiting factor has changed from manmade capital to remaining

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natural resources and services which are closely tied to non-economic as well as economic welfare. The phenomenon of complementarity and the resulting limitationality of natural resources and services was captured in dialectical reasoning of chapters 3 and 7. The ISEW, however, by necessity of monetary measure as a common denominator, implicitly assumed substitutability and consequently “weak sustainability.” Without complementarity there can be no limiting factor, so monetary measures, on which the ISEW was necessarily based, are blind to the more limiting condition of strong sustainability. The role of money as a fungible common denominator means that a dollar’s worth of natural resources is indifferently substitutable for a dollar’s worth of capital or labor in production, which is weak sustainability, not strong sustainability.

In Pigou’s terms, adding economic and non-economic welfare with the measuring rod of money can more easily increase total welfare if manmade and natural capital are considered substitutes. But if they are complements, then natural capital can be a limiting factor and a loss of welfare (both economic and non-economic) resulting from its depletion can easily reduce total welfare.

In addition to the strong sustainability difference not captured by the monetary measure was the basic difference in assumptions about *Homo economicus*, the one who actually experiences the welfare being discussed and measured. Welfare is not a thing but an experience. Therefore one must know something about the subject which experiences welfare, namely humans. In chapters 3 and 7 we defined *Homo economicus* as the person-in-community rather than the atomistic individual of neoclassical economics. The person-in-community is constituted by relationships with the rest of the community, and unlike the independent atomistic individual assumed by neoclassical economics, his welfare is influenced by the welfare of others with whom relationships form his very identity. The person-in-community’s welfare is not reducible to the money value of what he individually consumes. This important reality is missed by the market-based measuring rod of money.

In sum we considered our conceptual arguments to be more basic and more critical of GNP, while the numerical accounting corrections of the Appendix were weaker since they necessarily assumed weak sustainability and the neoclassical atomistic individual. Nevertheless, the numerical argument in the Appendix was more convincing to economists because it relied on their own numerical accounting methods to reach the same basic conclusion as chapters 3 and 7. In other words, the strong sustainability and person-in-community assumptions gave a more forceful critique of GNP. But the weak sustainability and atomistic individual assumptions of the ISEW allowed us to, in a sense, beat the neoclassical growth economists at their own game.
Efforts to develop improved indices of welfare and of sustainability continue. However, GNP (or the now favored variant, GDP, Gross Domestic Product) continues to dominate both thought and policy of economists and governments. Although GNP/GDP is not a measure of welfare, it is a pretty good index of the volume of resource flow from depletion to pollution – that is to say the entropic metabolic throughput which the economy imposes on the ecosystem. It measures the physical cost of maintenance of the stock of wealth that is the direct source welfare. If we could maintain the same stock of wealth with a lower throughput we would be better off, not worse off. As Kenneth Boulding said, GNP should be relabeled GNC – “Gross National Cost”. Maybe a good strategy for the future would be to keep “GNC” as an index of cost, and to start over again on an independent index of welfare. This would allow a more direct comparison of costs and benefits of physical throughput growth.