

Forum

# Economic growth and quality of life: a threshold hypothesis

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## 1. Opening remarks <sup>1</sup>

The inverted U-shaped curves that presumably result from the observation that “as income goes up there is an increasing environmental degradation up to a point, after which environmental quality improves” [as quoted in Arrow et al. (1995) article] seem to be merely anecdotes that don’t make history. What I mean is that although anecdotes can be true and elucidating, they are normally too limited in scope and content to allow for the construction of generalizations that may serve as existential, or policy, guidelines.

The curves in reference, as pointed out in Arrow et al., have been shown to apply only in the case of some very selected pollutants and actions involving local short-term costs, such as improvement of sanitation and water supplies, reduction of suspended particulates, and control of SO<sub>2</sub> and CO. The fact that reduction of resource stocks, across-border transfer of pollutants, accumulation of stocks of waste, and dissemination of pollutants with long-term and global effects do not comply with the shape of the curve seems to be conveniently overlooked in

conventional economic argumentations about economic growth and the environment. Furthermore, the well-marketed conjecture of many economists that the curve applies to environmental quality in general becomes, therefore, extremely dangerous, particularly in many developing countries where economic growth based on an obsessive expansion of exports is already causing ecological havoc, such as the Chilean case where it has become an almost undisputed argument. Hence, propositions based on a more systemic vision are necessary.

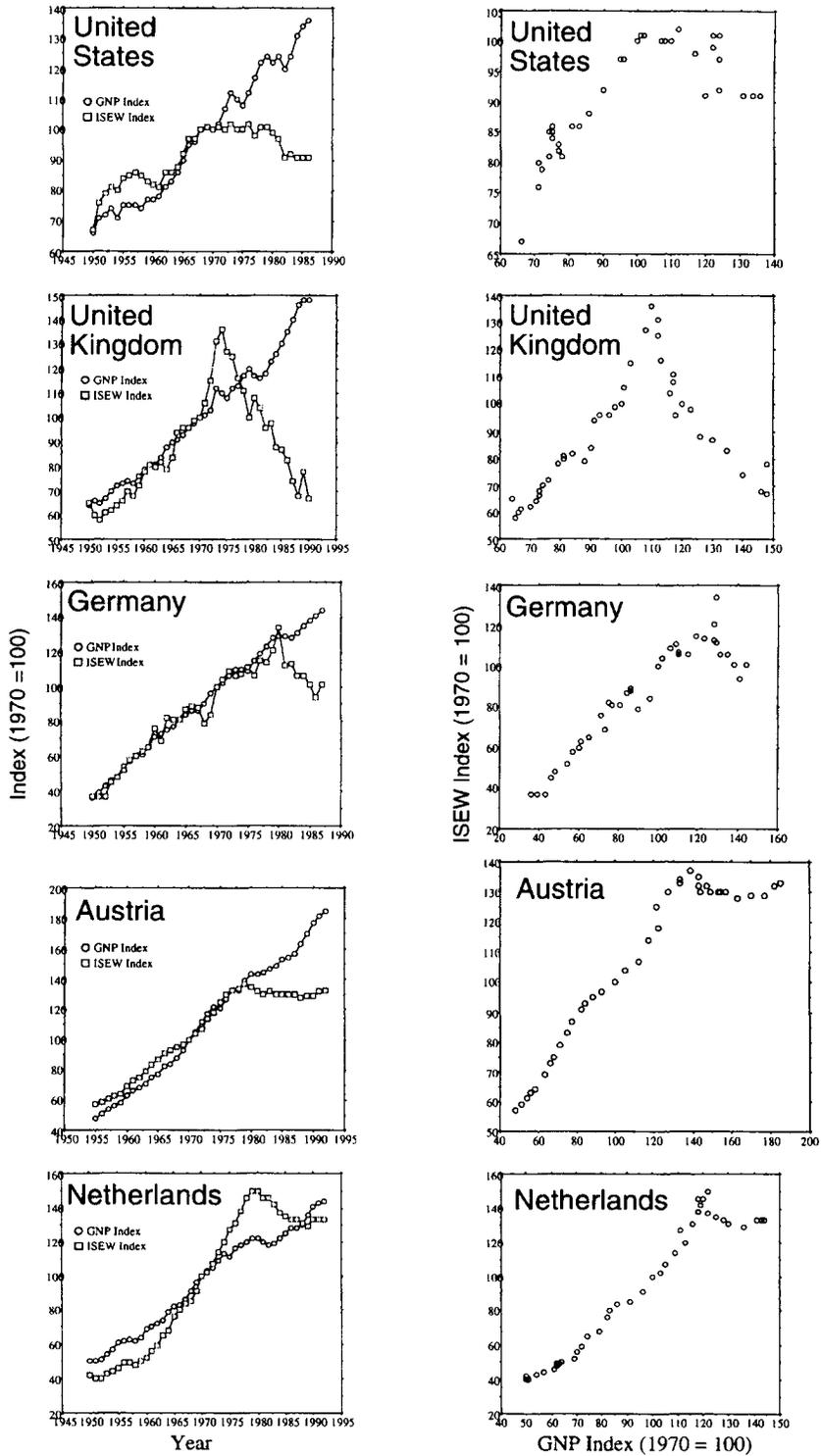
## 2. A threshold hypothesis

If what we are looking for are empirical tendencies that may facilitate the design of policies aimed at the sustenance or improvement of welfare and well-being in both rich and poor countries, we may be well advised to examine another type of inverted U-shape curve that actually reveals exactly the opposite of those referred to earlier. But before going any further, a little bit of background.

During the late 1980s, using a methodology designed in the Development Alternatives Centre in Chile which I headed at the time, we carried out studies in 19 countries, both rich and poor, in order to assess elements and conditions that inhibited peoples’ possibilities of adequately satisfying their desired personal well-being and collective welfare

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<sup>1</sup> Being in full agreement with the authors’ comments about carrying capacity, ecosystem resilience and environmental policy, my response will concentrate on the case of the inverted U-shaped curves.



(Max-Neef, 1991). Without going into a description of the methodology here, the result was that, having detected among people in rich countries a growing feeling that they were part of an overall deteriorating system that affected them both at the personal and collective levels, we were led to propose a “Threshold Hypothesis” stating that: for every society there seems to be a period in which economic growth (as conventionally measured) brings about an improvement in the quality of life, but only up to a point—the threshold point—beyond which, if there is more economic growth, quality of life may begin to deteriorate.

A few months after stating our hypothesis, the Index of Sustainable Economic Welfare (ISEW) was published for the United States (Daly and Cobb, 1990, Fig. 1). Although based on a totally different methodology, we found it to be a fine illustration of the Threshold Hypothesis. The index, combining social factors, income inequalities and environmental deterioration (all components that have an evident impact on peoples’ quality of life), runs parallel to the per capita GNP index between 1950 and the early 1970s. From then on per capita GNP continues to grow, but the ISEW begins to decline—a U-shaped curve showing that economic growth is qualitatively better in the earlier rather than in the latter stages. Exactly the opposite of what the other curves reveal.

At the time it looked exciting, but much more evidence was needed, of course, for the hypothesis to become robust. Such additional evidence has, fortunately, been turning up during the last year. The index has now been derived for the United Kingdom (Jackson and Marks, 1994, see Fig. 1), for Germany (Diefenbacher, 1994, see Fig. 1), for the Netherlands (Rosenberg and Oegema, 1995, see Fig. 1), for Denmark (Jespersen, 1994) and for Austria (Oberrmayr et al., 1994, see Fig. 1). Despite some methodological differences or adaptations due to local characteristics and/or availability of data, the ISEW analyses show that in all the countries studied so far, economic welfare per capita rose in the early parts of the study period and then began to decline despite continued growth of per capita GNP. The

timing of the decline as well as its intensity varies by country. In the case of the U.S. the threshold point appears in the early 1970s, in the case of the U.K. in the mid-1970s, and in all other cases in the early 1980s. To contrast the ISEW index with the index of per capita GNP, see Fig. 1.

Recognizing that an index such as the ISEW can be improved, it remains so far as the most comprehensive effort of its kind to challenge the GNP as a significant measure. Possible improvements notwithstanding, what the six country studies reveal so far is of great importance. In fact, if the Threshold Hypothesis stands, it may mean, among other things, the late vindication of John Stuart Mill’s stationary state (Mill, 1848) or of Herman Daly’s earlier concept of the steady-state economy (Daly, 1974). Or, it may reveal the existence of a point in a country’s economic evolution where quantitative growth must be metamorphosed into qualitative development. If this is so, then we are faced with an enormous wealth of new research and policy possibilities. For instance: What indicators must be designed to reveal how close a given economy may be to its threshold point? How does income inequality (not per capita GNP) correlate with environmental deterioration? How must development and environmental policies differ if applied before or after the threshold point? Can a threshold point only be reached in a so-called wealthy economy? Is it always the same combination of elements that determines the threshold point? And so forth.

In the face of expanding new evidence and challenging new research possibilities, it would be a serious mistake to overrate presumptions that are based on precise yet restricted information, as is the case with the initially criticized curves. The merit of such curves is that they are valuable for what they show, and as such they are useful indeed. To attribute to them more than what they actually reveal may lead to the discrediting of otherwise helpful tools. Again, the anecdote does not make history, but it is a part of it and as such it needs to remain. An enormous unexplored territory is waiting to test our abilities and imagination.

Fig. 1. Plots of indices of GNP and ISEW versus time (left column) and GNP indices versus ISEW indices (right column) for several countries. Peaks in the right column plots indicate the threshold when increasing GNP no longer leads to increasing ISEW.

### 3. An afterthought

It is interesting to note that the ISEW for the United States levels off during Nixon's presidency, and begins its decline during the Reagan period. In the case of the United Kingdom, the decline begins with the Tory government of Edward Heath, and sharpens during the entire period of Margaret Thatcher. May it be that the decline observed in the other countries is caused by the influence of Thatcher–Reagan neoliberal principles? Food for thought.

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