

## Economic Growth and Welfare

Modern economic growth is a process of social and individual learning. Societies accumulate economically useful knowledge; they develop institutions devoted to the task of preserving the results of learning processes for future generations. Incentive structures emerge which tend to favor the systematic search for such knowledge and discriminate against traditional wisdom. Individual actors adjust to the process. They learn to behave in ways which turn them into specialized productive members of the labor force in a society devoted to the division of labor. Furthermore they tend to acquire learning routines that help them to adjust to permanent economic change. They do so as producers in the first place, but they try hard to adjust to new conditions as consumers as well.

The processes of social and individual learning produced for centuries and still produce a result which some people consider to entail a paradox: The paradox of waste of resources in a world of steady productivity gains. Economic growth means growth of productivity, growth of both labor productivity and of capital productivity. Even the use of raw materials profits from gains in productivity: You get more energy out of an electric motor of a given weight today than you got out of it a hundred years earlier. But productivity gains notwithstanding modern societies excel or seem to excel not by resource savings but by an immense waste, a truly excessive waste of resources. A second look at this paradox clearly shows that economic growth leads to a substitution of natural resources, energy above all, for human resources, for two reasons. The opportunity costs of human resources grow with growing income; the availability of natural resources was, for centuries, greatly enhanced by technological progress, so natural resources started to replace human strength and even human brains. When we talk of limits to growth we are addressing of course just this kind of substitution or replacement.

We cannot take it for granted that future generations will enjoy growth rates of the same magnitude that were hitherto attained. What will we lose when we have to live with lower growth rates? Or, to put the question the other way round: What did we gain during the last centuries when we got accustomed to high growth rates? How was growth related to our welfare? How is it related to welfare today? Does it contribute to our welfare at all? Are we better off today than our ancestors have been some centuries earlier?

My arguments will lead me to a conclusion of some ambivalence. The measures we got accustomed to apply to the genuinely qualitative learning process of economic growth, are a rather deficient yardstick for the measurement of welfare. Indeed, the

conventional measures of GNP and its derivatives were not designed originally to be a yardstick of human well-being. Let me have a brief look at the history of quantification of modern economic growth.

This growth started, as Joel Mokyr just explained, some centuries ago. And with its deployment it became the objective of intense observation and analysis. However, this observation was, up to World War Second, mostly a qualitative one. Why then became the modern world virtually addicted to the idea that it helps to invest money into the project of continually measuring the growth process? When some economists, shortly before the middle of the 20<sup>th</sup> century, got devoted to the idea that it would be useful to put a figure on the rate of economic growth, they did so as Keynesians who hoped to discover – first - some stable functional relationships between macroeconomic variables and – second - some points of public intervention in the ups and downs of the business cycle. And very soon the new measure started to enter the political process. It came to be treated as an indicator for success or failure of political systems. International comparisons lent themselves to ratings of individual countries according to the level of GNP per capita. And these ratings started to be widely held to reflect the degree to which a nation was able to further and to guarantee the happiness of its citizens. “Growth and Welfare” were seen to move together: With economic growth, so the familiar argument goes, the opportunity space of human beings is likely to become larger. If growth provides people with additional goods and services besides and above everything they enjoyed in the past, they seem to gain something.

But mainstream economics points to strong reasons for a rather critical assessment of welfare gains as a result of growth. The measure of economic growth tries to approximate the amount of final goods and services a society is able to produce, the amount of just those products and services that really help people to meet their needs. But as a matter of fact it is far from easy to draw the line between final products and all those other goods that just help us to keep the growth process going. Some economic activities serve no other purpose than to remedy rather unwelcome, non-intended consequences of growth.

Another idea which wants us to question the utility gains produced by the growth process centers upon the problem of long-run changes in tastes of people. Market forces and man-made institutions tend to steer the process of economic growth in accordance with the needs of people (and in accordance with the money they are able to spend). These needs are likely to change with time, because people themselves change in a process which, as I said, is a process of social and individual learning. So growth may satisfy the needs of the past without satisfying the needs that emerge as a result of modernization. What can we say about the modern history of needs?

Josef Schumpeter, the Austrian-American scholar who, in the age of World Wars I and II, added decisively to our understanding of processes of economic development and innovative behavior introduced the concept of “creative destruction”: new economic developments may open up new opportunities and enlarge the opportunity space for

relevant numbers of people. An innovation may help to solve some existing problems in new and better ways with fewer resources. But when it does so, traditional modes of production might get driven out of the market, and with the older modes of production the skills and the knowledge of people hitherto engaged in those modes get obsolete. Now I suggest that we apply this notion to the sphere of consumption also; the so-called “new theory of the household” provides us with strong reasons for such a new strategy: The theory treats a household as a productive unit and the process of consuming goods and services as a productive process. In this process the goods and services which we buy with our money are mere inputs that do not add to our satisfaction by themselves. They add to our satisfaction as far as we are able to put them to good use: Satisfaction depends on our ability to deal with goods and services adequately. Let me give an example – and with this example I draw on my very personal experiences: A new piece of software – fire fox three – does not make me happy per se, unless I learn how to handle it. And fire fox three destroys some of the human capital I developed by handling fire fox two. This means that what we measure as an aggregate of goods and services in a single figure of GNP adds to welfare only to the extent that our abilities and knowledge help us to make good use of them. “Creative destruction” destroys traditional modes of production; it also destroys human capital and the people in which this capital was incorporated.

So may be we should drop the idea that conventional measures of economic growth tell us very much about human welfare. Are there any other routes to be taken in order to arrive at an adequate idea of welfare gains realized in the process of modernization? Some decades ago the dissatisfaction with conventional measures of economic growth led to new definitions of something which many authors came to call “social indicators”, indicators which tried to approximate a measure of human well-being in new ways. By now some fruits of these endeavors are available which at least convey a huge amount of pertinent information. However they at the same time make amply clear that any bundle of social indicators reflect methodological decisions that strongly depend on value judgments, on a philosophical framework shared by the authors and by those readers willing to rely on the results of statistical evidence conveyed by the data. One of these fruits, a particularly ripe fruit I dare to say, appeared some months ago in the United States under the not very modest title “The Measure of America; American Human Development Report 2008-2009”. It tries to construct an index of human well-being and directly addresses our problem by quoting Nobel prize winner Amartya Sen: “Human Development is concerned with what I take to be the basic development idea: namely, advancing the richness of human life, rather than the richness of the economy in which human beings live, which is only part of it.” GNP is not an adequate measure for “Human Development”, just because it reflects the richness of the economy instead of the richness of human life. But how is it possible to catch in an index, in one single figure, the multidimensional nature of the “richness of human life”? The authors of the new report develop their answer to this crucial question in two steps. To start with they identify the “richness of human life” with a concept of individual freedom, “the real

freedom ordinary people have to decide who to be, what to do, and how to live” (p. 14); and then they go on to define those dimensions of individual “capabilities” which make up the opportunity space, i.e. the “real freedom” of individual agents. Of all these dimensions they select just three which lend themselves to quantification and which command general attention in many political quarters: First: “A long and healthy life”; second: “access to knowledge”; third: “a decent standard of living” (p. 15). A statistical description of individual capabilities in these three dimensions provides the observer of a society with highly important insights even if it tends to overlook or even obscure many other aspects of human empowerment. During long periods of time modern economic growth was responsible for considerable gains in terms of human capabilities as defined by the report. And if we take the human-resources-approach to be a good approximation to a quantification of welfare we seem to be entitled to a rather optimistic judgment: People today enjoy, in some rich countries at least, better health, than they did some decades ago, they lead a longer life, they enjoy more education and schooling, they dispose of greater earnings so that the opportunity space within which they make their decisions became larger. –

Do these findings provide the conclusive answer we are looking for? I am not so sure. To some extent a justification of the methods applied by the “human development approach” comes very close to a justification of the growth process itself. I tried to define this process as a process of social and individual learning. In this process education and health are the essential prerequisites to be guaranteed if the process shall go on. Well educated, healthy people make up the decisive inputs. Are we addicted to education and health because we are addicted to growth? Or is it the other way round, as the authors of the human-resource-report seem to believe: Do we plead for growth because our moral attitudes want us to help human beings to enjoy education and good health?

If such moral attitudes really were the ultimate driving motivation for the growth process to go on, this process would have – in our time of globalization - to provide human beings with health and education all over the world. This points to a fundamental dilemma that we are confronted with: A better life in terms of health, education and living standards for everybody living on our planet means either redistribution of resources - or further resource consumption. Redistribution is not a feasible option for political reasons. Further growth is inevitable as long as we carry an ideal of equality in our mind. If this process must go on – within the limits of available natural resources - we obviously have to learn new things, we have to learn to do old things in new ways. I hope that on Friday we will see better what kind of things we have to learn and how to do old things in new ways.

(12'700 characters)