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# *Growth, Cycles, Crisis*<sup>1</sup>

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The present slowdown in growth rates of production and also of productivity, experienced since the 1970s and reported world-wide, probably has several, presumably interdependent, causes. Let us inspect some of the possible explanations.

## **Energy Crisis**

A favourite scapegoat in economic and political apologia is the energy crisis, the vaulting price of oil, gas and coal which caught the world economy by surprise in the mid-1970s. Yet — except for the sudden and decidedly portentous price hike — there were no other signs indicating an actual crisis; the known symptoms of emerging shortage (for example, gasoline queues at petrol stations in the United States during the six-day war in 1973, just prior to the OPEC price rise) turned out to be short-lived. And it later also transpired that they have been mostly artificial: partly fabricated insidiously to make subsequent price increases more palatable to the individual consumer. By and large supplies could be stretched to meet demand. Improvised and mostly poorly conceived rationing proved to be transitory and there were no drastic cuts in general availabilities. Yet the profits and dividends of oil companies ascended nicely and the demand-supply balance fairly soon adapted itself to the new price relations.

Of course price changes do have their consequences: some countries (mostly the non-oil-producing developing countries) and some products have been hit hard. Yet the extent of the actual price increase remained a thoroughly insufficient explanation for the subsequent general inflation and price adjustments. However steep the rise in energy prices, the direct energy content of most products in most countries seldom exceeded a fraction of its total costs.

Nor was this change apparently unexpected for some. Idle wells were increasingly being exploited by the 1960s in all parts of the world; the conspicuous success of the OPEC organisation in driving up prices could have been anticipated in the face of a steady rise in coal prices.

In a historical sense this flare-up of energy prices was also not a novelty: earlier in the 1920s, the oil prices had peaked, echoing two earlier price explosions of the 1820s and 1870s. (US heat and light price series clearly reflect these eruptions.) In all these cases the general trend of the economy also reversed, and above average growth rates declined to a marginally slower pace.

We may suspect here a cyclical undercurrent in the general economic motion: the waves of accelerated development breaking on the barrier created by the slowly advancing energy production, the latter characterised by very high capital requirements and long gestation periods. In all probability other branches of the extractive industries, sharing the same economic characteristics, have also had an attenuating effect on over-accelerated growth: these are the branches of the economy which tend to be the least flexible in the long run, which behave sluggishly and may thus be held responsible for the slowdown.

## **Long Waves**

Are the extractive industries really the culprits? We turn our attention here to the Kondratiev theory of 50-60 year long waves or cycles. This theory and the very existence of these long waves have become a much debated issue recently. The history of the Kondratiev theory itself exhibits an obvious Kondratiev cycle: after lying half forgotten in the background for 50 years after its inception, an increasing number of papers now address the topic. But, alas, this seems to be the one and only Kondratiev cycle which lends itself to statistical verification! Both the cycle and our present statistical apparatus are too weak to support a conclusive proof and much longer

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<sup>1</sup> This article is a highly condensed and general discussion of some of the issues discussed and raised in Andrew Brody's forthcoming book *Slowdown: about our economic maladies*, Delhi University Press, Delhi [eds.].

economic time series are needed to support or reject the theory. Yet at the same time, and for the same reasons, we are unable to disprove its existence.

If we accept — ‘believe’ — in its existence we may envisage the problem in the following way: let us assume that the long-run rate of growth is equal to an annual growth of roughly 2.5 per cent as claimed for the last 100 years or so in the advanced countries.<sup>2</sup> Suppose that 98 per cent of national product is growing without resource or any other constraints at the trend rate of 2.5 per cent, whilst the remaining 2 per cent of national product is subject to a long-wave or Kondratiev-component with a 50-year cycle. It will be found that at the peak of boom the growth rate reaches 4.5 per cent while at the bottom it shrinks to 0.5 per cent. Just a slightly more powerful Kondratiev component of a 2.5 per cent relative weight in national product totally extinguishes any growth and induces all the syndromes of stagnation. If ever available, the statistical evidence for the existence of Kondratiev cycles will therefore inevitably be weak. The cyclic component itself is probably very weak, and, moreover, it does not have to be strong to cause considerable difficulties. In the price series, where Kondratiev originally noticed the cycles, it is now overshadowed by the somewhat erratic rate of constant inflation since the advent of paper money. In the quantitative series, problems of measurement and qualitative and technological change blur the picture.

### Population Cycles

There is nevertheless a territory on the border of economics — demography — where measurement is more accurate and does have a longer tradition. And here, indeed, long waves were rediscovered and renamed as Easterlin cycles. A lucid explanation also suggested itself as a theoretical account for the historical fluctuation. The renowned demographer Keyfitz has unravelled the story for the United States. He argued that the high fertility of the 1950s and its subsequent decline in the 1960s was due not to changes in general prosperity, but to changes in the incomes of couples of childbearing age. Thus, couples of childbearing age in the 1950s were born in the 1930s, between the birth-rate humps of the 1920s and the 1940s. As a result these couples benefited not only economically, but also in terms of security and a sense of wellbeing. These effects were so strong that the predictions of the classic demographic model with fixed age-specific rates were entirely reversed. Rather than the 1950s birth rates echoing the dip of the 1930s, the rise in birth rates of about 20 per cent over trend in the 1950s over-compensated for the fact that the number of parents was about 10 per cent below trend.

<sup>2</sup> Table 1 b) of the introduction implies an annual average rate of growth for 1870-1979 of 2.6 per cent per annum [eds.].

Keyfitz argues that the birth-rate decline in the 1960s was due to the large cohort of parents born in the 1940s, and predicts that it will not be until the 1990s that the parental generation will be small enough to be encouraged to have large families. Keyfitz’s model therefore suggests population waves of two generations in length.

Two generations equals 50 years, or somewhat more — depending on the median childbearing age — and matches perfectly the suspected length of the Kondratiev cycle. And the fluctuation is really strong enough to be readily observable in demographic data. How do these two cycles, the demographic and the production cycle, interreact?

### Production and Population Cycles Combined

If birth rates fluctuate then the age structure of the population must also undergo changes. There will be times when relatively many people are in the active workforce, while the number of children and pensioners is relatively low. Again, there will be times when a great number of under- and over-age dependents must be catered for by a relatively small workforce. There are therefore periods when the costs of schooling and of the pension system are small, so that much more can be spent on economic investments, triggering a higher-than-average growth rate. This ebullient economic climate, as experienced after the end of World War II, gives the faulty impression that it is possible to provide for much more and far better schools, much higher pensions, more lavish general health care, etc. And statesmen and politicians did yield to this temptation and enacted the required legislation to further such a great society and welfare state where universal happiness waits round the next corner.

These hopes, based on the illusion of averages and smooth development, clashed with the real world in which the number of students and pensioners increased, the relative strength of the active workforce decreased, and before long the welfare system found itself everywhere in shambles. Funds became insufficient, budgets went into the red — and statesmen and politicians had to face the uneasy task of reneging on their promises, going back on codified statutes without proper explanation and with the usual sorts of circumlocution. It is unnecessary to elaborate the political climate this entails, whether in the East or the West, in the North or South.

If the term *mal du siècle* (malaise of the century) was coined for the Great Depression prevailing at the end of the 19th century — a depression having a very similar economic background — then we now face the coming troubles of a *mal du millénaire* (malaise of the

millennium), and the occasional slivers of hope and optimism will be scant and few. Still, if we are able to rise above the horizon of our own time and own generation we may harbour some more hopeful perspectives. The economic machine operates clumsily and slowly but it does operate: if the age structure of the population or the rate of growth become distorted by internal forces, the same forces will correct, then overcorrect them. It is only a question of time, though unfortunately of a length which is unavailable to us as individuals.

## Technological Cycles

There is a still more disturbing symptom to explain here: why did the increase in productivity also slacken? In earlier times the periods of recession have been noted for technological innovation, and the usual bursts of technological improvement were so pervasive that Schumpeter founded a fairly convincing cyclical theory precisely on this contrary motion: slowdown giving impetus to innovation and new innovations propelling the system into new acceleration. Professor Kaldor, once an ardent follower and elaborator of the Schumpeterian theory, felt dissatisfied with the Schumpeterian model, arguing rather that production and productivity go hand in hand. It is difficult to pinpoint the clusters of revolutionary new technology. Atomic energy, according to the view of J. von Neumann and others in the 1950s, should have made the cost of electricity negligible in the 1980s, but in practice it has made it very expensive. Microelectronics, however impressive, has failed so far to work the same wonders as electricity itself did at the turn of century. Other features of the 1920s invention-innovation cycle, such as nylon, penicillin, polythene, radio, radar, television, xerography, catalytic cracking, continuous steel, internal combustion and diesel engines, helicopters and jets, rockets, do not appear to have present-day equivalents. Much new product innovation centres around military technology, but missiles and satellites are not especially productive.

The sources of inventive and innovative thinking, if not drying up entirely, certainly are not flowing as freely as they used to, and their trickle may well come to a standstill. Why did we always take technological development for granted? Those two to three per cent yearly increases in productivity were a historical product of the last two centuries, directly benefiting only a small part of humanity: the more remote parts of humanity spent their lives in a very slowly developing, if not stagnating technological environment.<sup>3</sup> What encouraged us to extrapolate a yearly two per cent improvement in productivity into

eternity? Zero growth is endurable, but zero growth coupled with zero development, without technological change, without qualitative improvement is a nightmare. Yet indications that we are heading in this direction multiply.

In spite of the mounting sums spent everywhere on Research and Development something seems to be amiss in the field of creative work and teaching. On closer inspection a number of unmistakable trends emerge. First, the material conditions for scientific and teaching work — and of the creative types of white collar workers generally — have probably worsened in the past century. Freedom in selecting the subject of research and in the publication of results are two pillars of sound development — and these basic freedoms are being trimmed by commerce and bureaucracy, though to a varying degree, in all parts of the world. The harm done to fundamental science causes incomparable damage in the technological and, ultimately, in the economic sphere. The dwindling esteem in which government, business and society hold the profession of scientists and teachers is clearly expressed in their relative earning-potential which shows a continuous drop in the last two centuries if compared with the earnings of, say, the ordinary waged worker. And the same can be observed for the earning differentials of unskilled workers and skilled technicians. I believe this is a natural outcome of the present bargaining situation, where first these occupations and professions are unionised to a minimal degree, and second, even if unionised, their bargaining power is significantly less, or negligible. In most branches of the economy the production time is relatively short, giving considerable potential bargaining to workers through the strike weapon. But any refusal to work by scientists or teachers has little force: it has no noticeable economic consequences because of the very long production times involved. There is a noticeable exception which strengthens our case. Physicians and lawyers, who may help or endanger one's life or freedom, by and large kept their salaries in line with historical relativities. Consequently these professions remain the chosen carrier for the best talents. Perhaps we should not bemoan this fact, but just acknowledge the foregone opportunities for productivity improvements.

These trends cannot go on for ever. There are already countries — Czechoslovakia and Hungary for instance — where the accumulated lifetime earnings of a secondary school teacher do not reach the level of the average semi-skilled worker. But mankind, after a lot of extra trouble, loss and malfunction will come to the conviction that these relations have to be altered. Sooner or later it must transpire that those countries are doing relatively better where the teacher, the scientist, the skilled worker is better off, in respect to

<sup>3</sup> This point is also made rather dramatically in *World Development Report*, World Bank, 1984 5-6 [eds.].

living standards, social standing and personal freedom. The situation in the Federal Republic of Germany or Japan is decidedly better than in other parts of the world, and it already shows. Thus one can envisage economic forces which may remedy the allocation, but only with very long time lags.

### Conjunctural Slowdown

All of the processes identified — energy production, population cycles, technological innovation — and many others, reproduce themselves through time in a cyclical fashion. If the downswing of the longer-run cyclical phenomenon, particularly those arising from population growth and technological change, come together at the same time, combining with shorter and medium-run inventory and investment cycles, then the outcome is slowdown. Empirical verification of the role of population and technological cycles in the current slowdown are notoriously difficult to establish, but as noted above, their effects do not need to be particularly powerful to produce long-run cyclical effects. While this may add up to a bleak future, it would not deserve the name of crisis, since it does not exhibit a necessarily downward spiralling trend. However, present-day circumstances lack even this reassuring feature!

### The State and Military Expenditure

One of the most perturbing symptoms of contemporary national accounts can be found in the high share of transfers within the domestic product, indicating and measuring the involvement of governments in economic matters. Some causes of the latter were given previously. If the economic machine operates sluggishly, if it procrastinates, hesitates or fails to deliver the goods, there will be a rational excuse for the authorities to intervene. The tragedy is that there appear to be no limits to government intervention. The distribution of the national income between wages and profits is a process which economic forces will keep within relatively narrow limits both in market and in planned economies. Yet there seems to be no such intrinsic or economic process or limit to the amount of transfer payments or other government activities. Government budgets bear no relation to other economic indicators, as is clear from the analysis of military expenditure.

Professor Pigou in his *Political Economy of War* came to the considered opinion that whereas in peaceful times this seldom surpasses two per cent, in a national calamity spending may jump to half the national income. How long such a situation may be maintained is one of the still-unanswered questions in economics. It is even more difficult to estimate accurately how much is actually spent today. Professor Leontief,

compiling data in the 1970s for his World Model, found various percentages, ranging from around four to five, to 20 per cent. It was conspicuous that the oil producing developing countries had the highest shares, not because they are the most bellicose, but because their expenditure consists mostly of imported items, which are very difficult to hide.

Alas, there is no statistical consensus in this respect and a clear distinction can seldom be made, because most defence spending can be so readily tucked away, for example, as expenditure on Research and Development. The enormous rise of Research and Development expenditure perhaps indicates not respect for science and innovation but the attraction of the dangerous glitter of weaponry. Defence spending can also be concealed as investment in seemingly peaceful fertiliser and chemical plants, electricity generators driven by atomic power, engineering and steel producing capacities, communication systems and so on. One of the most serious repercussions of such an investment strategy is the universal increase in pollution, because these branches happen to be those which produce the most dangerous pollutants and will — with military and political help — tend to override environmental considerations everywhere. Considering all this we cannot err much if we judge contemporary defence spending as being of the same order of magnitude as ordinary investment into productive capacities. Simple arithmetic would indicate that this by itself cuts the growth rate available for the world to half its possible size. Yet the actual situation is worse, since by throwing economies off balance by 10 to 20 per cent, it may eventually cause not only stagnation but actual deterioration, as the theory outlined above indicates.

### Crisis

*Si vis pacem, para bellum*, (if you wish for peace, prepare for war) goes the old Latin adage, and if the costs *per capita* of killing become so very low, while at the same time defensive measures became forbiddingly expensive or impossible, there seems to be no way out of escalated armament, even if the overkill accumulated is already sufficient to wipe out organic life on more than one planet. The potential dangers for the future are terrifying. The only hope of reversing this self-aggravating process is research into truly defensive technology. This seems to be avoided by the superpowers — one almost suspects under a tacit agreement. Other countries will sooner or later investigate the technological possibilities of protection and preservation, redefining the very concept of defence in the process. If such a process restores economic balance between the costs of attack and defence, then mankind may once again cherish hopes

for survival. Until then, the crisis prevails. Its economic consequences have been made more or less clear. The ideological consequences must be mounting alienation from government as such, a revival of all colours of anarchist — even anti-social — theories.

If Professor Kenneth Boulding, a sober citizen, good scholar and patriot, in a paper given to IIASA (International Institute for Applied Systems Analysis) on similar problems, comes to the conclusion that he is unable to decide whether his government actually defends or lethally endangers him, we, as subjects or citizens of any part of the world, cannot but concur.