Is There a Catch to Innovation?

With "reindustrialization" very much in vogue and President Carter promising an "economic renewal program," a report* just published by the Organization for Economic Cooperation and Development (OECD) in Paris offers a timely, ecumenical view of what is wrong economically and what to do about it.

Not all of what the report has to say may be welcome. In arguing that technological innovation is central to the solution of current problems, the OECD's "expert group" raises the question of whether quickened innovation may not increase unemployment. In a time of recession, the question is a particularly awkward one for policy-makers.

The report looks at the problem of slow economic growth from a science policy standpoint and finds explanations in the direction pointed by the report's subtitle, "Science and Technology in the New Economic Context."

In defining this new context, the report cites the oil price rises of the 1970's as only one source of current difficulties. Others are the lockstep march of inflation and unemployment, the growing influence of the less-developed countries and, among the industrial countries, a challenge to the economic primacy of the United States by other OECD countries, particularly Germany and Japan. Important also is the triumph of new social values and aspirations reflected, for example, in regulatory legislation.

These "structural" changes are seen as underlying causes of economic troubles. The report cautions, therefore, that conventional "demand management policies," relied on by Western industrial nations in the past, will not be sufficient to break the cycle. In fact, tinkering with fiscal and monetary policy may make matters worse.

The pattern that emerged in the 1970's was one of slow growth accompanied by persistent inflation and high unemployment. A key indicator has been a decline in the rate of increase in productivity. This has been particularly pronounced in the United States.

Although flagging productivity began attracting notice in the late 1960's, the trend accelerated sharply in all OECD countries after the oil shock of 1973. The report agrees with the widely held view that a shift of workers out of high-productivity industry, such as manufacturing, into lower productivity sectors, in particular, service industries, has hastened the decline in productivity. Another factor has been the imposition of government regulation aimed at protecting health, safety, and the environment. Such regulation adversely affects productivity, but the report notes that it also brings benefits that are not reflected in current measures of productivity and should be taken into account.

The way to escape the doldrums, says the report, is to increase the pace of technological change. Essential to this is increased investment in plant and in R & D and a reversal of the recent trend toward short-term and "safe" R & D.

Particular promise is seen in the "electronics revolution" spurred on by the promise of the microprocessor. The electronics industry as a whole is hailed as a model of expansionary growth and innovative vitality. The report, however, perceives great potential in the "microelectronic revolution" not just for the communications and information industries but also, by diffusion, for other laggard sectors through numerical control of production and creation of a new range of machine tools. Biotechnology also is viewed as having an enormous potential for growth.

Implicit in such change is the replacement of labor-intensive by capital-intensive industry and what, presumably, is entailed is the displacement of labor. The fuel is present for a flare-up of the automation scare of the late 1950's and early 1960's when wholesale unemployment was foreseen as a result of automation in manufacturing and white-collar work. That particular crisis was averted by the movement of large numbers of workers into service industries. This time, fears of unemployment could trigger political resistance to technical change that offers hope of controlling inflation and increasing U.S. competitiveness.

The authors of the OECD report describe the dilemma but do not offer a prognosis. Their restraint is characteristic of the OECD approach. A legacy of the Marshall Plan after World War II, the OECD continues to serve the Western industrial countries plus Japan as a fact finder and forum on common economic interests. Its member nations, however, have different problems and perspectives, and OECD reports undergo a review process that guarantees that touchy issues are stated in terms of the least controversial common denominator.

In the case of the new report, tensions are evident within the group of international experts† from industry and academia over the handling of the innovation-unemployment issue. It is known, for example, that British economists and planners tend to be more pessimistic about conversion problems spawned by innovation than are many American experts, including some who worked on the report. The report, while it brings the matter into the open, begs the question of probable effect by leaving it open.

The report does note that adjustment mechanisms are available and that the transition caused by innovation can be managed best in a growing economy. A corollary is that science and technology policy, to be effective, has to be closely coordinated with economic policy. This means, of course, that those responsible for science policy and economic policy must work together much more closely than they have in the past.

In this concern with the interactions between science policy and social and economic dynamics, the current report differs from many previous efforts. Earlier reports, including some from OECD, tended to concentrate on the relation between R & D and innovation. The new report's analysis of the innovation system is not strikingly different from analyses that preceded it. The significant shift in emphasis is, first, on the long-term, structural nature of the problems plaguing the economy and, second, on the social dimensions of innovation. As the report puts it, "The most intractable problems lie not in the potential of science and technology as such, but rather in the capacity of our economic system to make satisfactory use of this potential."

—JOHN WALSH

*_Technical Change and Economic Policy_. Available from OECD, Suite 1207, 1750 Pennsylvania Ave. NW, Washington, D.C. 20006. $12.50.

† Chairman of the group was Bernard Delapalme, director of research for Elf-Aquaitaine, France; members from the United States were Herbert Fusfeld, NYU; Robert Gilpin, Princeton; Albert O. Hirschman, Institute for Advanced Study; Richard Nelson, Yale; Nathan Rosenberg, Stanford; and Emma Rothschild, MIT.

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