

The Challenge of Social Change

Editor

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THE AMERICAN WAY OF ECONOMIC DEVELOPMENT

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THE NEED FOR A DOMESTIC MODEL

There should be a sign: Don't xerox institutions. Societies can learn from each other, but they should not try to copy each other's institutions. The way a society can or cannot transfer social patterns is an issue long familiar to those who live in or study developing nations: can India adopt the institutions of Western democracy? Does the People's Republic of China offer a model for economic development for, say, Indonesia? And, more recently, can Moslem countries pick and choose which Western elements to accept while maintaining their religious heritage?

The issue has now moved from the world of the developing nations to that of the superpowers of yesterday, today's underdeveloping countries, the United Kingdom and the United States. These countries have found their economies stalled, if not in reverse gear — with little or no real economic growth — and their self-confidence has been shaken. They actively seek ways to revitalize their economies, and debate fiercely how this can be done.

Recently in the USA the question has taken the form, whose success story are we to emulate? Japan easily wins the prize as the country most often cited as the 'role model'. There is a fair measure of irony in the spate of self-denigrating news reports, essays and books which combine self-criticism (how we have neglected saving, productivity, highways and so on) with adulation of Japan. Until quite recently the traffic was quite the other way: the Japanese were swarming all over the West to see how we do it and what they ought to emulate. Nor is the celebration of Japan, and the call for the US to take heed, limited to economic achievements. Harvard sociologist Ezra Vogel (1979), in his best-selling *Japan As Number One*, admires and holds up as a model Japanese education, crime control, equality of income distribution, environmental protection and health.

I focus here on the Japanese institutions most often acclaimed, those which fashion its economic and industrial policy. The Japanese are said to have found a way to pull together and work together. Their government co-ordinates the efforts of the various corporations, banks, exporters and importers. Strikes, once common, are now rare. Labour peace and the work ethic benefit from companies' commitment to life-long employment of many of their employees. The government, especially through the Ministry of International Trade and Industry (MITI), is shepherding the development of an economic consensus. Specifically certain industries are selected as promising and promoted by the infusion of public capital or by banks that grant loans in line with the evolving consensus. Export assistance and various indirect forms of protection from foreign competition are also extended to those industries. Reduced competition allows Japanese producers of cars, for instance, to focus on a few models. R & D is subsidized and not encumbered with numerous regulations.

No wonder the US has been told to 'MITIsize'. It too, it has been said time and again, would benefit from an industrial policy, formed by business and labour in collaboration with government, to select winning industries (high in added value, productivity, technologies, exportability) to be showered with special benefits, while loser industries are allowed, if not encouraged, to 'sunset'. Some proponents of industrial policy have called for turning the US Department of Commerce into the US MITI; others favour setting up a new redevelopment agency with its own board and bank. In either case, the American MITI would have a 'desk' for each of various industries, from ball-bearings to industrial diamonds. It would analyse the industry's prospects and provide a data base for decision-making. Tripartite committees (business, labour and government), like those we had for the steel and car industries during the Carter administration, would work out industry-specific plans. The overall board, also to be tri-sectoral, would decide which industries to promote.

I suggest that the American economy cannot be MITIized, and should not be subject to industrial policy, because it is incompatible with American traditions, values and institutions. Although it does *not matter for this thesis* whether or not industrial policy works well in Japan or elsewhere, it should be noted that most accounts of it are too gushing. For instance, they tend to overlook instances when

MITI locked Japanese industry into the 'wrong' products, as when it tried to force Japanese car makers to concentrate on a single model rather than the varied line they have marketed so successfully; or when Japanese successes were achieved by firms, such as Honda and Mitsubishi, that rebelled against the policies MITI laid down.

Why is industrial policy *à la* MITI (there are other versions) incompatible with American institutions? The most important reason is that industrial policy is nothing but a polite term for government planning. While it is true that sectors other than the government participate in the policy-formation process, in the end the decision is governmental; the public funds used are taxpayers' monies; export assistance and the suspension of regulations are accorded by the state; and so on.

The overwhelming majority of the American electorate and leadership has only recently begun to emerge thoroughly and deeply disenchanted from two decades of government expansion. The reasons are numerous. As a nation founded by people who escaped political and religious authorities and rebelled against a monarchy, Americans have always been more individualistic and anti-government than the Japanese. In contrast the Japanese are a nationalistic, centrist, highly homogeneous, island society; they have a high sense of national identity, togetherness and vulnerability to foreign powers. Just as the Japanese pull together with relative ease, Americans are accustomed to following their divergent individual ways. And they believe firmly — coming about as close as Americans ever do to having a shared creed — in the utilitarian/Adam Smith notion of generating the greatest happiness for the greatest number by each providing for his or her own good. Recently our adversarial system has been given a bad name. A congressional delegation returning from Japan called for the US to emulate Japan's tendency to collaborate; the US is said to be too litigation-prone; and so on. Nevertheless, Americans still believe that the adversarial system — or competition — is what keeps the national juices flowing, and people free and enterprising.

For Americans big government is incompatible not only with basic beliefs but with recent experience. Over the last two decades the government has used its power to spawn literally hundreds of programmes, very few of which worked, most of which were costly, many of which entailed tight regulation of the private sector. The country is hence left with precious little desire for a great, new

government-guided thrust, with detailed intervention in private decision-making, especially in economic matters. President Carter, in his own inadequate way, rode this theme as much as President Reagan galloped it. While there are now some regrets as the dismantling of some social programmes and regulations goes too fast and too far, even liberals do not wish to build on a more-government platform. That is, industrial policy could not have been proposed to America at a worse time.

Beyond beliefs and experience, the institutions of American government are nothing like the Japanese, nor could they be made to work like the Japanese system. The essence of the American system is regional and state pluralism on which interest-group pluralism is superimposed. American national decisions invariably reflect this pluralism. For instance, decisions about the location of military bases, which to close and which to expand, are never made merely on the basis of a judgement of national security. They invariably reflect also the need to accommodate many different constituencies, to divide among them the benefits involved. Similarly 'trade adjustment assistance' and development loans are not merely given to groups disadvantaged by foreign trade or to underdeveloped areas, but are dished out — like dams, roads and canals — to whoever has political clout, which in a pluralistic system means sooner or later most constituencies. (By 1980, for instance, 84.5 percent of the nation's counties qualified for Economic Development Administration loans (Etzioni, 1984: 94).) It is not that all get an equal or proportional share, but that most get some of whatever is to be had — from pages in the Senate to military academy fellowships, from research grants to subsidies. As a result, in the US most government allocations are congenitally highly wasteful and inefficient.

It follows that if industrial policy were introduced into the US, the beneficiaries of loan guarantees, subsidies, tax concessions or whatnot would not be a few industries that consensus-building or independent analysis had chosen as the cutting edge for the future. They would include a wide array of groups with clout — from sugar growers to conservationists of the redwoods, from silver miners ('strategic material') to shipbuilders. Indeed in view of the fact that old industries are politically well entrenched and new ones, by definition, not nearly so well placed, it is very likely that most of the benefits would flow to what industrial policy experts define as obsolescent industries or 'losers', especially steel and cars, not to

'winners' such as computers. It might be worth noting that the industry most industrial policy advocates list as a clear winner for the future, the computer industry, tends to reject government aid. Typically a spokesman for the American Electronics Association W.J. Lanouette, testified against a bill designed to help its members by directing government R & D money to young, high-technology companies. He cited more than eighty 'separate socioeconomic programs, special interest set-asides, preferences, enforcement responsibilities and other miscellaneous "good ideas" that Congress has passed over the years which, taken together, account for a horrendous paperwork muddle' (Lanouette, 1982: 293). As the quote suggests, the fact that, aside from being highly political, American government assistance brings with it a variety of strings, militates against it. So is the fact that it comes and goes — it cannot be relied upon — as administrations change and political fashions run their course.

All this has not been lost on the advocates of industrial policy. Some have suggested in response that we need to insulate industrial policy from politics by setting up an independent authority, somewhat like the Federal Reserve Board. Such segregation would go a long way towards allowing the policy to work. It raises two questions though: first, in view of the independent course followed by the Federal Reserve Board, will Congress and the President be inclined to turn over the formation and implementation of another major economic policy to an insulated body, however incomplete the insulation? Second, how would economic policy work if *two* main parts of it — monetary and industrial policy — were free to go their own ways and to ignore fiscal policy? Don't we have enough trouble dovetailing our insulated monetary policy with our political fiscal policy? It seems unlikely that American pluralism will again be held at bay. A solution more compatible with it than that offered by industrial policy is called for.

This is not to suggest that industrial policy is otherwise home free, wise, or easy to implement. Its technical requirements may well outstrip the knowledge available. The industries that will succeed ten years hence need to be identified, taking into account the future actions of other countries, technological development, level of economic activity and so on. It suffices to recall how wrong predictions about the price of oil and the fate of OPEC have been since 1973, to give one very considerable pause.

Before an alternative can be suggested, I need to indicate my

diagnosis of the problem that underlies US economic difficulties. It is based on a theory of economic development and on the lessons of the history of industrialization of America.

A THEORY OF ECONOMIC DEVELOPMENT

Economic development is akin to a housing development. It proceeds in three stages. First the ground is readied: water mains, roads, electricity lines, rough grading. This is the 'infrastructure' stage. Next, heavy investments are made in buildings, the analogue of investments in capital or producer goods (plants, equipment), which are needed to make consumer goods but not consumable themselves. Only in the third stage is the project open to rent apartments, the analogue of mass consumption of consumer goods and services. Of course historically the stages are mixed; some consumption takes place in the first stage, and the infrastructure still requires investment in the third stage, but there is a discernible shift of emphasis. I include six elements in the infrastructure of a modern economy: transportation, communication, power, innovative capacity, human resources, and financial and legal institutions. (Other students of development provide somewhat different, mainly structural, lists but these differences need not detain us here.) The second stage brings in a seventh element: capital goods.

In American history the infrastructural and capital goods sectors were largely developed between the 1820s and 1920s. They idled in part during the Depression. Their first use after that was to serve the second world war. Only after the war did we have twenty-five years of the third stage, the golden age of consumption (and of social and public services).

THE SEVEN ELEMENTS: AN ANALYTIC AND HISTORICAL FLASHBACK

Transportation of Goods

A modern economy requires expeditious large-scale movement of raw materials, parts and finished products. Material and products in transit, like goods in inventory, add to costs, not to production.

In early farming America, roads were narrow, dusty in summer, often impassably muddy in wet weather. Most simply connected farms and local markets. The few built for longer distance travel were crude, making transport slow and unpredictable. Water transportation was better and cheaper, but reliance on natural waterways limited the routes and the direction of travel.

Initiation of industrialization was associated with the development of canals. By 1860 a network of canals linked East Coast ports and the developing areas of the Great Lakes region and the Ohio Valley. Except during the winter freeze, canals could carry freight in larger volume, faster and more reliably than roads, and they brought much lower transportation costs. Before the Erie Canal was built, freight from Albany to Buffalo is reported to have cost \$85 to \$100 a ton; between 1830 and 1850, freight on the canal cost on the average less than \$8 a ton.

Even as the canals were built, railroads began to overtake them. Railroads could be built where steep terrain or uncertain water supply made canals impractical; and they could provide an integrated nationwide transportation system. Moreover, trains could run all winter and travel faster than mule-drawn canal boats. By 1920 over 250,000 miles of track criss-crossed the continent, and four-fifths of intercity freight moved by rail.

Communication Systems

Communication systems move symbols that contain information and control signals, as well as expressions of sentiments and values. Information is an important input for productive decision-making, and expeditious movement of signals is vital for large-scale organizations — national corporations, financial institutions and markets. The communication of values and sentiments is as important. They help broaden people's horizons and loyalties from the village to the nation; they also allow public policy-makers to gauge what the populace will support, tolerate or resist.

American colonists were chiefly identified with Virginia or New York or Massachusetts. It took a century or more after federation for a strong sense of national identity to evolve, one which could compete with and supersede local loyalties.

Improved communication technologies played an essential part in the process of nation-building, as well as in the transmission of

information and control signals. Early communication depended on slow surface transport. The Overland Mail in the 1850s pared down the mail-coach trip from the Mississippi to San Francisco, but it still required twenty-two days. A decade later a message could travel the same distance by telegraphy in a matter of minutes. Towards the end of the century, the telephone still further advanced communication. By 1900 almost two million miles of telephone lines interlaced the entire country.

Power

Mass production requires massive, routinely available, reliable, easy to stockpile, highly concentrated sources of energy. These qualities suggest heavy and growing reliance on extra-human and extra-animal sources.

Early American factories depended primarily on water power, available at a limited number of sites. After 1840 the use of steam increased rapidly, fuelled by increasing production of coal; by about 1860 steam surpassed water as the chief source of power. The mechanical power available in manufacturing plants grew from 2.3 million horsepower in 1869 to 5.9 million in 1889 and 18.1 million in 1909.

Through the 1870s, electricity was used primarily for communication — for the telegraph, for example; steam and water power continued to be the dominant power sources for industry. With the introduction of central generating stations in the 1880s, electricity gained importance in transportation and industry. By 1902 production of electricity was 6 billion kilowatt hours, and from then on it rose rapidly, reaching almost 57 billion kilowatt hours in 1920.

Innovative Capacity

Economic growth is propelled not merely by larger 'inputs', increases in the available amounts of the productive elements, but also by combining them in new, more efficient manners. Hence the role of innovation, which in turn is fed by research and development, is central.

Several innovations, often listed as crucial to American industrial development, include the internal combustion engine, the vacuum

tube, the electrical transformer. The cotton gin, the power loom and the sewing machine contributed to the development of the New England textile industry, a fully developed factory system before the civil war. The steamboat opened up the Great Lakes region, and an adaptation of the steam engine was the base of the railroads. The process developed by Henry Bessemer in England and, independently, by William Kelly in the United States, made large-scale steel production possible. A rough measure of America's growth in innovative capacity is the number of patents issued for inventions: 544 in 1830, 883 in 1850, 12,137 in 1870, and 25,313 in 1890.

Financial and Legal Institutions

Each of the elements of industrialization examined so far is affected by the encompassing society within which it is nestled. Key among the factors that shape this setting are financial and legal institutions, such as those that make it possible to amass large amounts of capital or regulate the amount of money in circulation; those that can promote or retard the development of corporations, which are legal entities chartered by the state; and so on. The more society is divided into separate political, cultural and territorial entities, the more difficult it is to evolve the financial and legal framework required by high economic growth, because the division limits economies of scale and rational division of labour. Typically at least a measure of nation-building and unification precedes or accompanies industrialization.

In nineteenth-century America, the national financial system developed with great difficulty due to the low level of nation-building. Until savings were no longer dispersed in thousands of banks, for example, specialists such as Pierpont Morgan, Edward Harriman and Jacob Schiff had to improvise the linkages to secure enough capital for large projects.

For twenty years prior to the civil war, bank notes were issued by local banks operating under diverse state laws. From 1863 on, as the nation sought to resolve the divisions accompanying the war and the economic crises following it, a greater degree of uniformity and national collaboration gradually evolved. In 1913 Congress established the Federal Reserve System, which provided a basis for national co-ordination of banking activities.

While the majority of the financial and legal developments between the 1860s and the 1920s were basically favourable to industrialization,

not all pointed in this direction. In sizable segments of the American public, concentration of wealth and economic power tended to evoke fears, sometimes leading to regulations of benefit to all concerned, sometimes to irrational interventions in the economic process.

Human Resources

Industrialization requires a labour force motivated, educated and trained to staff the new factories, offices, financial institutions and laboratories. In the US, unlike many other developing countries, the very availability of persons was a major problem. Industrialization was not largely propelled by 'surplus' farm labour; the large majority of the industrial millions were immigrants.

Farm hands and immigrants were educated, acculturated and trained rather effectively. By 1900, for instance, 90 percent of white adults are reported to have been literate. Expenditures on education grew from 0.6 percent of GNP in 1840 to 1.7 percent in 1900; since GNP was climbing rapidly, actual expenditures increased thirty-fold. By 1920 83 percent of Americans aged 5 to 17 were in school for at least some part of the year, and although only about one in six graduated from high school, that proportion was increasing.

Capital Goods

The infrastructural elements are in a sense 'prerequisites'. Industrialization itself requires the accumulation of producer assets — the plants and equipment, the manufacturing industries.

While before 1860 much of the American industrial effort was piggybacked on the produce of field and forest, in the era that followed, new sources of power and important innovations in iron and steel production were major factors in making industry less dependent on growing things, more dependent on minerals and on capital goods.

While steel can be used to make both capital (producer) and consumer goods, early in industrialization much of it is typically used for capital goods, and the capacity to make steel reflects a rise in capital goods. Hence the amount of steel produced is often used as a gross measure of the potential of the capital goods sector. In

1860 raw steel production in the US was 13,000 tons; ten years later it was 77,000 tons. By 1910 it had grown to over 28 million tons.

The production of other capital goods also grew rapidly. The value of output of industrial machinery and equipment increased from \$99 million in 1879 to \$512 million in 1910. In general, manufacturing production multiplied twelve times from 1860 to 1914, and output per man-hour in manufacturing doubled from 1869 to 1914.

The cumulative result of assembling — over a period of a hundred years — the factors of a modern economic system, was an unprecedented economic machine. By 1913 the United States produced over one-third of the world's manufactured goods, more than twice as much as its nearest rival, Germany. Manufacturing production continued to grow after the first world war, increasing in real value by over 50 percent from 1920 to 1929. During the same period, manufacturing output per man-hour, in constant dollars, increased by more than 60 percent, and real per capita GNP rose by 27 percent. This economic machine in turn provided not only for wealth in an avalanche of consumer goods and services, but also for a high standard of health and education, and a great volume of cultural activities as well as social services and government.

However, the key point of this whole line of analysis, in my judgement, is this: in the golden age of consumption the seven underlying elements, the foundation of the economy, were not adequately maintained, nor adapted to changing circumstances, especially in the power (energy) sector. Decades of 'over'-consumption and 'under'-investment are reflected in the seven elements, and not only account for a good part of our problems (other factors always intrude), but suggest where correction may take place.

Today a brief re-examination of the seven elements reveals a state of uneven but widespread deterioration. The *transportation* system is in the worst shape of the seven elements. The railroads especially have been undermaintained. Many bridges are overdue for replacement. Numerous ports have not been maintained for bigger ships. Roads are in relatively better shape but deteriorating. The only modern element, air transport, is of very limited significance for transportation of raw materials and goods.

Communications is the most vigorous sector, marked by innovations, rapidly growing industries (satellites, computer ventures, etc.) and declining unit costs — a model for a vibrant economy.

Power reflects the adaptation lag, especially since 1973. Above all, the expected continuing high cost of oil and its British Thermal Unit (BTU) equivalents, compared to the pre-1973 era, requires heavy investments, not merely in this sector but up and down the economy, to make it more energy-efficient and less oil-dependent. This has been achieved only in small measure.

Innovative capacity has been declining. A widely used measure is the proportion of GNP dedicated to R & D. As a percent of GNP, total R & D expenditures fell from 3 percent in 1964 to 2.3 percent in 1979. A Commerce Department economist found one major technological development in the US during the 1970s: the microprocessor, or silicon 'chip'. Between the late 1930s and the late 1940s, by contrast, he counted at least six, including the transistor, nuclear power and synthetic fibres. Other R & D-related problems reported range from growing 'scientific illiteracy' among school pupils to a shortage of engineers and computer programmers.

In the golden age of consumption and social services, *legal and financial institutions* gave less support to production and were more inclined to impose non-economic priorities on private market decision-making. The number of regulatory agencies grew from about a dozen before 1930 to fifty-eight by 1979. By the late 1970s, completing the more than 4,000 different forms required to comply with federal regulations was said to be eating up over 140 million hours of executive and clerical effort each year.

It is widely agreed that in the last decade budget deficits and expansionist monetary policies contributed to rising inflation, which in turn undermined the sources of investment (by undermining the motivation to save, the bond and stock markets, and public confidence in the government's ability to curb inflation, and by encouraging extensive credit use by consumers). But it does not necessarily follow that between 1820 and 1920 either the banking system or Congress and the Presidents of the time followed wiser economic policies. Indeed severe bouts of inflation and recession were far from unknown. That over the century the economy did so well is probably more because the interests committed to industrialization had a freer hand in those days than after the second world war, and because the government, being much smaller in size, scope and powers, caused less damage even when its economic policies were no wiser.

As to the gradual changes between 1950 and 1980 in the financial and legal framework of the American economy, they seem to have

turned less accommodating, either because increasingly they promoted values other than economic growth and efficiency, or because the government grew bigger, more bureaucratic and more restrictive.

There is no general agreement that the quality of *human resources* was lower at the end of the post-war generation than it was at the end of the first century of industrialization, but there are some signs of weakening since the second world war. The labour force's preparation — as measured by capacity to read, write and compute — seems to have weakened in the 1960s and especially in the 1970s. Data about the motivation to work are divided between data that show deterioration and those that suggest a change in the nature of the motivation. Motivation now is said to call for more open, sensitive, participatory management, a style that had not been widely adopted by 1980.

Major segments of the *capital goods* sector were seriously under-maintained during the period of high consumption. Plants, machinery and equipment in several key industries grew in obsolescence. This seems to be the case in such major American industries as cars and steel, as well as in rubber, textiles and shipbuilding.

It might be said that the decline of some industries and the rise of others is part of the adaptation of the economy to changing conditions. For instance, in a world of rising oil costs it might serve well to 'reduce capacity' in car manufacturing and to build up energy services. At issue is not drawing up a master plan but accepting the market's way of adjusting to changed circumstances. There is certainly a measure of truth in this argument. At the same time, it is clear that on balance the *total* American capital goods sector did not fare well. Its share of the investment ploughed back into the economy declined, while the share channelled into residential housing, actually a consumer good, rose. And a growing segment of investment in capital goods was dedicated to safety and pollution abatement rather than production.

REINDUSTRIALIZATION: AN AMERICAN MODEL

Earlier and recent American history suggest, if the preceding analysis is roughly correct, that a strong economy requires that the seven elements listed above be in good condition, and that by 1980 six of them had deteriorated at least to some extent. This analysis thus

provides in effect an agenda for reconstruction. Such a second industrialization, or reindustrialization, as I call the process, entails shoring up the infrastructure and capital goods sectors, *not* retracing the nineteenth century or necessarily investing in the same basic or 'old' industries. Indeed each item might be replaced by a late-twentieth-century equivalent, and still reconstruction would have taken place so long as the basic needs were covered. Thus expeditious transportation might be served by slurry pipelines and cargo planes, not railroads. Energy needs might be served more by solar and nuclear power, and less by oil and coal or some other mix, so long as it is securely available and plentiful enough to prevent upward pressure on energy prices.

What is an American way for reindustrialization? One in which the political process sets a context in favour of the infrastructure and capital goods, but does not render detailed decisions; those are left to the market-place. How can this be done? By government's providing semi-targeted *sector-wide* incentives — tax benefits, credit on favourable terms, etc. — without deciding which industry or corporation will get what and how much. There is no need to establish winners and losers or to reach consensus as to who will lead the parade. Government intervention and regulation are avoided in favour of incentives, and these are allocated on the basis of sector-wide principles, keeping politicians away from detailed, allocative decisions.

Most basically, it is necessary to encourage saving and investment and at the same time discourage consumption, to correct for our recent tendency (1958–80) to eat into our seed-corn. This is best served, not by across-the-board cuts in personal taxes, but by incentives to save and invest. The so-called supply-side cut in personal income tax is said to encourage people to save. Although in recent years Americans have saved as little as \$4 out of every \$100 of income, advocates of the supply-side tax cut argued that they would save at least \$40, maybe \$80, out of every \$100 of tax relief, especially since many of the released tax dollars would end up in higher income groups, which tend to save more. At least so far, no such avalanche of savings has followed the tax cut. Savings rose only a bit (Americans still save less than \$7 out of \$100) and the increase might well be attributed at least in part to the exceptionally high, real interest rates (after discounting inflation).

Direct incentives to saving and investment were incorporated in the 1981 tax bill. These include a reduction in the capital gains tax, the

very considerable liberalization of the rules concerning Individual Retirement Accounts (IRAs) and Keogh Retirement Plans, and the accelerated depreciation allowance. These items are remarkable in that, with the exception of the capital gains tax reduction, they not only spur investment, but also limit it largely to productive assets, excluding collectables (such as gold, antiques, art objects). At the same time, they do *not* favour the stocks or bonds or machinery of one industry (or corporation) over another. The incentives set a wide context, and allow the market to make decisions within that context. It is useful to refer to this approach as semi-targeted, in contrast to non-targeted measures (such as granting each taxpayer the same proportional tax cut), and targeted ones (such as industrial policy's selection of winning industries).

A second element of a policy that favours reindustrialization by promoting a whole sector — without taking sides within it — is new support for R & D. To spur growth in innovation, the 1981 tax bill gives corporations a 25 percent tax credit for research and experimentation costs, to the extent that current or future expenditures exceed previous investments in the field. The base for calculating this amount is the average expenditure over the three previous years. In addition corporations giving new scientific equipment to colleges and universities can claim a charitable contribution equal to their investment in the equipment plus 50 percent of the gain that could have been realized had it been sold at market value.

This too is a context-setting measure, in that it rewards those corporations that increase their expenditures but does not prefer one line of research to another. It contrasts sharply, for instance, with the suggestion that \$20 billion of federal funds be committed to fusion research, based on a 1980 congressional decision that this specific research project was more deserving of funds than numerous others. Indeed in the past most public funds for R & D were allocated on the basis of project-by-project reviews.

The effects of these measures — favouring capital formation and R & D — cannot yet be assessed, because they were introduced in a period of severe clash between monetary and fiscal policy, resulting in a prolonged recession and very high interest rates, which largely negated these tax incentives.

The other elements of reindustrialization have not fared as well and still need attention. US energy policy currently calls mainly for decontrol, and for elimination of the Department of Energy, which

means that the market is to provide the only guidance. A tariff on imported oil should be instituted and its revenue used to spur development of all energy resources without discrimination. Similarly all conservation efforts should continue to be encouraged, for instance, by extending the right to write off conservation expenditures.

Similarly there is no transportation policy, and above all, no labour policy. In transportation, deregulation is to be applied to railroads and, to a lesser extent, to trucking. Returning publicly held railroads to the private sector — or closing them down — has been suggested, in line with the non-targeted approach. However, if only to make up for decades of neglect, transportation systems need some semi-targeted help, even some infusion of public funds, above and beyond reliance on the private sector alone, to rehabilitate and maintain them and to introduce innovations.

A criterion not often relied upon in the past should be pivotal in the future: the degree to which various transportation systems and mixes are capital-intensive. Capital will continue to be scarce, and hence expensive, and much is needed for reindustrialization. This will be reflected in higher interest rates throughout the 1980s than in the preceding decades. As a result, the market context created by the polity should favour less capital-intensive transportation systems. In the movement of people, this might mean buses over rapid transit systems. Which systems are least capital-intensive for the movement of goods requires extensive study, which has yet to be undertaken. For the same reason, and via the same mechanisms, transportation systems dealing with freight should take priority over those that transport mainly people, such as airlines.

Regarding labour policy and human capital, no effective schemes have been advanced so far to allow workers to participate in productivity gains. This is an essential element if workers are to become more strongly motivated to contribute to economic reconstruction, and if the American industrial system is gradually to shift from reliance on cost-of-living allowances to a productivity-based reward system.

Possibly not much more can be done by the government. Precisely because we deal here with the human element, with values, sentiments, perceptions and motivations, the government is a particularly unsuited agent, certainly for close and detailed intervention as distinct from broad-gauged economic incentives. Much more must come from the private sector. The recent interest of corporate management in quality-of-worklife (QWL) programmes bodes well from that viewpoint.

Nevertheless, public policy does have some limited roles here. It can provide a model for such plans by QWL circles in government agencies, call attention to successful efforts in the private sector, and in some situations provide tax benefits, as it does in effect for the Kelso Employee Stock Option Plan (ESOP) plan. However, quite suitably in a new era of semi-targeted incentive, much of the actual modification of work patterns must be done by the corporations themselves and their workers.

More important are the relations between labour and the administration in the public arena itself. The basic question is whether co-operation is sought and achieved or an implicit assumption is made that economic reconstruction can be undertaken without labour's support. The first road leads to consultation with labour leaders, to an American reindustrialization board or its equivalent, to policies that reduce the pain of adjustment to technological changes (for example, support for retraining programmes and for enhanced labour mobility from declining areas to rising ones), and so on. The opposite approach assumes that rising market pressures, high unemployment, and decline in public support for labour unions will suffice for the administration to have its way, whether the workers and their representatives like it or not. The American tradition of adversarial relations among the main sectors — business, labour and government — promotes the second approach. However, in view of the sizable pain a major reindustrialization drive is likely to entail, in a period where 'givebacks' are needed to keep up with international competition where once hefty raises were the rule, it seems that a policy of collaboration and attempts to gain a 'social contract' are called for.

These omissions pale in comparison to the difficulty resulting from active attempts to pursue two other policy goals — rearmament and deflation — simultaneously with attempts to shore up the economic foundations and secure a higher level of economic growth. The steep defence build up — whatever its virtues — obviously competes with reindustrialization in using very large amounts of resources. It might well have some beneficial side effects, but basically it competes and does not complement reindustrialization in the near future. When the economy was more vigorous, it seems, it was possible to dedicate more resources both to defence build ups and to the consumer economy; the period of the Korean war is an example. However, with a deteriorated capacity, some say an ageing economy, a full-throttle approach to two major goals seems impractical. A slower defence

build up until economic revitalization takes place may be inevitable. (The opposite trade-off — deferring economic recovery until defence build up is advanced — would generate an even greater strain between the two goals.)

The drive against inflation has fallen largely on the monetary authorities (as a result of large budget deficits, the work of the fiscal authorities). This led the federal reserve in effect to keep interest rates very high for long periods, causing a prolonged recession, directly antithetical to economic growth. In the longer run, lower inflation may well serve saving, investment and wholesome growth. Meanwhile high interest rates largely nullify the reindustrialization drive.

In the context of the present environment, it is difficult to judge the effectiveness of the semi-targeted reindustrialization tools. A plausible case can be made that they would work in a more favourable context, and a compelling case can be made that they are needed if America is to find its own way of economic reconstruction. To reiterate, it is clear that the foundations of the economy, the infrastructure and capital goods sectors (made up of seven elements) need to be shored up. A typically American way to proceed would be to provide context-setting incentives and allow the market to render specific, allocative decisions.

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