
CHAPTER 8

**Policies Toward Industry
in the United States**

Contents

	Page
Overview *	151
Policies Affecting Industry *****	152
Macroeconomic Policies	153
Other Policies, Largely Aggregate	154
Industrial Policy for the United States	157
Industrial Policy Reconsidered.	157
The Political Context.	158
Prerequisites for IndustrialPolicy	159
Macroindustrial Policy	160
Moving Toward Industrial Policy	162
Summary and Conlusions	165

Policies Toward Industry in the United States

Overview

Chapter 6 reviewed public policies having sector-specific effects on the U.S. steel, electronics, and automobile industries, Chapter 7 outlined likely competitive futures for each of the three industries. A major point of chapter 7 was the increasing intensity of competition on a world scale in all three industries.

The slackening competitiveness described in earlier chapters, to which Government policies have sometimes contributed, suggests that new policy approaches be considered. In the past, the U. S. economy has functioned reasonably well without a consciously developed industrial policy. Attempting major changes in the formulation and implementation of policies toward industry will be a difficult but perhaps necessary undertaking.

This chapter sets U.S. competitiveness, and the public policies which affect it, into the context of industrial policy. "Industrial policy," as used here, refers to the broad array of Government policies that directly or indirectly affect industry. Included are elements of trade policy, domestic economic policy, regulation, adjustment, and science and technology policies. The use of the term industrial policy does not necessarily imply planning, or sectoral intervention in the affairs of particular industries, although such approaches have been favored in some countries (see app. D).

A distinction between policies having sectoral and aggregate objectives—between those directed at a single industry and those directed at a number of sectors or at the entire economy—has been adopted at several points in this report, and particularly in the remainder of this chapter. Not only has sectoral targeting been an important component in a number of foreign industrial policies, but

similar approaches have sometimes been advocated for the United States. Just as there are many types of policies that have aggregate objectives and cut across sectors, so there are different sorts of sectoral policies. For example, some sectors may be selected for promotion as future growth industries; alternatively, sectoral measures may be directed at distressed industries—intended to help rebuild them or to manage decline. Support may be given to industries judged important to national security, or for regional development. While industrial policy can be approached from other perspectives, the sectoral/aggregate distinction highlights issues involving both equity and economic efficiency. These are central to decisions facing policymakers in the United States.

Some **degree** of government intervention is inevitable in a complex industrial society. A distinguishing characteristic of U.S. industrial policy is the ad hoc use of the wide array of policy tools available (and their varying success). The result has been industrial policy which is largely de facto in nature, rather than consciously developed. Many public policies have, in one way or another, affected industry; but they have not been unified by a coherent set of objectives outlining the desired impacts on particular industrial sectors or on the economy as a whole.

Is this necessarily the case? If a consensus existed on the need for a more coherent industrial policy, could it in fact be formulated and implemented, or are there features of our political and economic system that present overriding obstacles? Would an industrial policy aimed at promoting competitiveness and related social objectives be effective? These questions—dealing with political and

economic feasibility—are at the heart of decisions facing Congress. If no effort is made to develop a more coherent industrial policy, decisions affecting industry will continue on a case-by-case basis. With exceptions such as some macroeconomic policies, most individual policy tools are likely to be limited in range and impact. The key to an effective industrial policy lies in their cumulative results; a continuation of past practices will not lead to significant improvement.

OTA'S study of competitiveness suggests that Congress consider establishing a more explicit basis for industrial policy. While an ad hoc approach worked in the past, this report suggests that it may not suffice in a world of intensified competition—one where the United States no longer enjoys the technological advantages and relative economic strength that it possessed in the 1950's and 1960's. Industrial policy cannot by itself cure inflation, lagging productivity growth, or trade imbalances. It could help set these problems into perspective and provide more effective measures for attacking them.

Industrial policies in other countries sometimes include measures such as centralized economic planning that run counter to the U.S. tradition of flexible and pluralistic decisionmaking. OTA outlines below a "macroindustrial policy" option for the United States that would provide a framework for the development of a more coherent industrial policy in keeping with American traditions. Such a policy would include a conscious effort to

build a national consensus on objectives, based on a strengthened capability for sectoral analyses of problems facing the U.S. economy. It would rely on market forces and aggregate policy measures wherever possible—sensitive to the imperfections and failures of the market system, but aiming to improve its workings rather than supplanting it. Macroindustrial policy would continue to utilize sector- or firm-specific policies, but only when other policy tools proved inadequate.

Such an approach would change the process by which the U.S. Government influences international competitiveness. None of the existing repertory of policy tools would be abandoned outright. Nor would radically new measures be introduced. But the process of deciding what to do in given circumstances would change to take a larger view of the needs of the U.S. economy. The effect would be to alter the political process by which Congress now legislates in areas such as taxes, regulation, and trade, OTA is thus suggesting a broader and longer term perspective on industrial policy than common in many recent discussions of this topic. The framework discussed below is one in which the major legislative issues affecting competitiveness might be approached by a Congress that was modifying past political processes. Among the reasons for doing so is the growing public perception that competitiveness has a constituency far wider than those with jobs or profits immediately at stake.

Policies Affecting Industry

A number of policy tools with largely aggregate objectives influence industry in the United States. The purpose of this section is to review several types of aggregate measures that could be incorporated in industrial policy. While chapter 6 discussed policies in the context of the steel, electronics, and auto-

mobile industries, here the view is broader. Measures that affect many sectors, such as macroeconomic policies and R&D stimuli, are emphasized. Macroeconomic and tax policies, trade policy, and science and technology policy are all nominally discrete categories—some but not all aspects of which affect in-

dustry. A better developed industrial policy would seek to coordinate and integrate, but not replace, such policy categories.

Some aggregate policy measures—regulations or taxation—have direct effects on industry. Others operate indirectly: education and many R&D policies affect all industries. Even explicitly sector-specific policies often have secondary and sometimes unexpected effects. For example, regulations affecting passenger cars contributed to increased sales of light trucks and vans—which were less tightly regulated—during the 1970's.

Where policies toward industry in the United States have been ad hoc, nations such as France have sometimes relied on elaborate economic plans and targeting of industries for promotion. In some countries, government guidance of industry is strengthened by incentives, pressure, or coercion. Industrial policies in such countries often feature direct subsidies to specific sectors. In contrast, sector-specific policies in the United States have more often been regulatory than promotional. Here, sectoral policies have been developed for agriculture, utilities (and nuclear power generation), communications, and transportation (railroads, trucking, airlines) but rarely for manufacturing industries, except those heavily involved in national defense. Subsidies have typically been indirect and seldom highly visible. Policy makers in the United States have traditionally claimed—despite the examples of Lockheed or Chrysler—to prefer aggregate policies, to believe that decisions at the microlevel of specific industries and individual firms are best determined by the market.

Macroeconomic Policies

Macroeconomic policy is not subsumed by industrial policy but overlaps and interacts with it. Fiscal and monetary policies are used to dampen swings in the business cycle affecting aggregate output, employment, and prices. Their aims and consequences extend far beyond any given industrial sector.

The interdependence of individual industrial sectors and the aggregate economy is critical to industrial policy. Economic growth in the aggregate eases adjustment within and among sectors. To a considerable extent, the problems of individual sectors are caused by, or aggravated by, problems at the macro level—witness the effects of high interest rates and recession on the automobile industry.

Strongly influenced in the United States by Keynesian thinking, both monetary policy (control of the money supply, as by interest rates), and fiscal policy (taxation and Government expenditures) have been used in attempts to counter short-term swings in the economy. Tax policies and Government spending are linked by the need to raise sufficient revenues to offset expenditures (though the Federal budget has been running substantial deficits, State and local revenues generally exceed expenditures). In addition, tax policies have been used as brakes on expansion near cyclical peaks (by raising taxes) or to stimulate demand when the economy is in recession (by cutting taxes). The tax system can also be used as a conscious and direct tool of industrial policy—e.g., through changes in corporate tax rates, investment credits, depreciation allowances, and capital gains taxes.

Taxes of all types are important to industrial policy because they affect investment decisions. Some observers take the position that present U.S. tax policies are biased against capital investment in industry and stifle the economy by slowing rates of growth of productivity and output. The argument is that private returns to capital are distorted by tax policies that undervalue investment in industry compared to alternatives such as real estate. A proposed solution is to lower taxes—both corporate taxes and personal taxes on income from investments in indus-

M. J. Boskin and J. B. Shoven, "Issues in the Taxation of Capital Income in the United States," *American Economic Review*, Vol. 70, May 1980, p. 164.

try—to increase rates of return. Reduced depreciation periods, lower capital gains taxes, and elimination of “double taxation” of dividends (taxing dividend income as well as corporate profits) are among the modifications most commonly suggested,

The distributional impacts of policies to encourage savings and investment make them the focus of political controversy. When capital gains taxes were reduced in 1978, the telling arguments were those based on capital availability for industry. Supporters held that cutting the capital gains tax would encourage investment in small, innovative, high-technology firms—for which venture capital had virtually disappeared as a result of the 1974-75 recession. There has in fact been a dramatic resurgence in the availability of venture capital for new corporate startups since 1978.²

Macroeconomic policies of all types can have significant differential effects on various sectors of the economy—sometimes intentional, sometimes inadvertent. High interest rates—introduced to achieve aggregate objectives in 1966, in 1970, and most recently in 1979—had greater impacts on housing, construction, and automobile sales than on many other portions of the economy. The investment tax credit—designed to stimulate aggregate economic growth¹—benefits capital goods industries because it encourages investment over consumption. Industrial policy could provide a vehicle for addressing differential impacts of such types in more systematic fashion, and for coupling macroeconomic policies more closely to problems of industrial development.

Macroeconomic policies—though more closely coordinated than several other categories of policy measures that affect industry—do not spring from a single source. Several groups in the executive branch are involved—including the Treasury Department, the Council of Economic Advisors, the Office

of Management and Budget, and those in the Executive Office of the President concerned with economic policy. The Federal Reserve Board, an independent body, has the central role in monetary policy. In Congress, the House Ways and Means Committee and the Senate Finance Committee are focal points for tax measures, but are not alone in their responsibility for macroeconomic policymaking. The Joint Economic Committee and the Joint Committee on Taxation, for example, have oversight authority in such areas.

Other Policies, Largely Aggregate

Beyond macroeconomic policies, many other measures—some aggregate, some sector- or firm-specific—affect the viability of individual firms, the competitiveness of industries, the standard of living.

Regulatory policies may have aggregate or sector-specific objectives. Some are implemented on an aggregate basis but have differential effects—environmental regulations have sharply contrasting impacts on the steel and electronics industries. Other regulations are enacted on a sectoral basis—i.e., automobile safety standards.

In recent years, the energy industries—particularly the petroleum sector—have been affected by complicated sets of price controls, taxes, and direct regulations. The extension of Federal loan guarantees to Chrysler is a current example of a firm-specific policy measure. While the United States has always professed to favor the aggregate approach, political pressures, national security considerations, and other objectives have given us many examples of sector- and firm-specific policies,

Trade policies provide other cases of industry-specific effects. Tariff levels, quotas, and other methods for controlling imports are instituted essentially on an industry-specific or product-specific basis—e.g., the trigger-price mechanism for steel and orderly marketing agreements for color television receivers (ch. 6). Export financing programs likewise have clear sector-specific effects—

¹Venture capital availability will be treated at some length in the forthcoming OTA electronics study.

²J. G. Gravelle and D. W. Kiefer, “The Investment Tax Credit: An Analytical Overview,” Congressional Research Service, 1979.

recently on the aircraft and construction industries.

In the United States, the multiplicity of competing agencies and institutions involved with trade issues—as many as a dozen—fragments policymaking. Nations with tightly coordinated central bureaucracies may be better able to implement consistent trade policies. Since Federal policy has seldom actively promoted the international competitiveness of U.S. industry, the fragmented process has not in the past been a major concern. An important question now is whether international trade policy can be more effectively coordinated and, if so, how can it be coupled with the domestic side of industrial policy.

Market promotion policies comprise another category of aggregate measures found in the United States and in other Western nations. Such policies are designed to facilitate or improve the workings of the market system. They aim to enhance the performance of the economy as a whole, generally by working on individual markets. Examples include:

- labor market policies, such as employment services, job relocation and retraining subsidies, and other incentives to increase the mobility of labor;
- capital market policies, including loan guarantees;
 - science and technology policies, such as R&D incentives;
- regional development programs;
- antitrust measures.

Such policies are usually intended to counteract what economists term market imperfections—the failure of markets to allocate resources in ways that society judges desirable.⁴ For example, local and regional development programs—e.g., investment capital subsidies, tax holidays, job training—may help to overcome barriers to the mobility of capital and labor. Antitrust policies are in-

tended to combat actual or potential market distortions resulting from monopoly power or anticompetitive practices. Market promotion policies often have sectoral effects, but that is seldom their primary purpose.

Economic adjustment policies are an important subset of market promotion policies. Dealing with the consequences of structural change or shifts in competitiveness, adjustment policies include a variety of measures intended to help both firms and workers cope with changing economic conditions. In the United States, loan guarantee programs have been used to aid industries and firms, as in the Chrysler case. Job retraining and other programs on the Federal level to assist unemployed workers have been more systematic in intent but not notably successful.

Loans and loan guarantee programs have expanded rapidly in the United States over the past few years, often on a case-by-case basis to assist ailing industries or to attract new investment. Such subsidies typically have been used, not as conscious efforts to ease processes of structural change, but to provide piecemeal, short-run assistance. Sometimes the aid is defined by the affected parties, who may be more interested in impeding change than in easing adjustment.

In addition to ad hoc loans and loan guarantees, the Economic Development Administration (EDA) within the Department of Commerce, and the Department of Housing and Urban Development's Urban Development Administration Group, among others, have administered programs that might be termed adjustment assistance. Directed at promoting industrial or economic growth in "depressed" regions, they have been intended to create and maintain jobs. EDA, for example, granted more than 200 loans and loan guarantees in 1979, totaling over \$600 million, which are said to have produced 25,000 jobs and saved 15,000 more.⁵ Trade adjustment

⁴Market failure as a rationale for policy is discussed in detail in app. B. The conventional terms—market failure and market imperfection—are unfortunate because perfect markets are abstractions that do not in reality exist.

⁵*Economic Development Administration 1979 Annual Report* [Washington, D. C.: Department of Commerce, May 9, 1980]. More generally, see N. A. Noto, "Industrial Policy Implicit in Federal Business Credit Programs," *Congressional Research Service Report No. 8 1-12E*, Dec. 31, 1980.

assistance (TAA) approaches the employment problem from the other side—by giving benefits directly to workers who have lost their jobs because of imports. Expanded under the Trade Act of 1974, TAA expenditures for 1980 were about \$1.5 billion.^b

Although such programs have been ostensibly directed at development and assistance, they have not been guided by any long-term perspective. In fact, TAA administrators are prohibited by law from attempting to anticipate and plan for dislocations in the economy; they are instead forced into a reactive approach. TAA programs have provided income maintenance, but not the retraining or relocation of workers necessary for effective adjustment.^c Too often, economic adjustment assistance in the United States is allocated on a political and geographic basis, too seldom to industrial sectors with good prospects for growth and competitiveness. Such programs are quite different from the subsidies provided abroad to sectors that are expected to be mainstays of future economic growth and competitiveness. Nor has aid to U.S. industry been used effectively to manage contraction in declining or distressed sectors.

Another element in the industrial policies of many countries is the promotion of innovation.^d In the United States such policies date at least from the creation of the Patent Office.

Some policies for promoting innovation support the technology and science base underlying industry. Others attempt to increase possible rewards to innovators (patents, liberal capital gains taxes), or to reduce their risks (forgivable loans, technical assistance programs, Government procurement). Many current suggestions for improving the climate

for innovation in the United States focus on altering tax policies to increase incentives for risktaking by private industry.^e As with trade and economic adjustment, there is no real locus for policies dealing with technology and innovation. Agencies involved range from the Office of Science and Technology Policy, the Departments of Defense, Energy, and Commerce, to the National Science Foundation and the National Aeronautics and Space Administration.

Government policies in the United States could be modified in ways that would improve the climate for innovation—by removing some of the obstacles and risks, increasing the potential rewards. While such an effort might be an important part of industrial policy, it is also an area where the arguments for reliance on market forces are strong. Innovation is a risky and uncertain activity, sometimes resulting from R&D efforts aimed at entirely different outcomes. Because chance and uncertainty characterize the process, there may be less of a role for planning or direct action by Government, more for enhancing the environment for innovation through indirect measures.

The United States has had many other policies—both aggregate and industry-specific—which influence the behavior of industry. Among those which **have not been discussed** here, but which nonetheless have substantial indirect effects, are defense policies and education. As pointed out in chapter 4, much of the R&D performed in the United States is aimed at national security objectives. This strengthens U.S. capabilities in many fields of technology, and sometimes leads to developments that prove commercially significant. Public education is, over the long run, especially critical because it affects the human resource—the skills and abilities of the people employed in U.S. industry—production workers, engineers, and managers.

^bR. A. Hobbie, "Trade Adjustment Assistance for Workers," Congressional Research Service Issue Brief No. IB80082, Nov. 19, 1980, p. 1.

^cG. R. Neuman, "Adjustment Assistance for Trade-Displaced Workers," *The New International Economic Order: A U.S. Response*, D. B. H. Denoon, ed. (New York, N. Y.: New York University Press, 1979), p. 109.

^d[Policies for the Stimulation of Industrial Innovation, Vols. I and II (Paris: Organization for Economic Cooperation and Development, 1978).

^eSee, e.g., *Stimulating Technological Progress, A Statement by the Research and Policy Committee of the Committee for Economic Development*, January 1980; and *The Impact of Tax and Financial Regulatory Policies on Industrial Innovation* (Washington, D. C.: National Academy of Sciences, 1980).

Government policies in this country have seldom been directly concerned with competitiveness and economic efficiency. Such matters may now deserve more attention. Political and economic realities will determine

which policies can be most effective under various circumstances. The interplay between economics and politics is in fact at the heart of the decisions facing the United States.

Industrial Policy for the United States

OTA'S study of the steel, electronics, and automobile industries shows that even the most vital sectors, such as semiconductors, now face challenges in adapting to new international realities. Among the changing circumstances are: narrowed technological advantages; the rise of aggressive foreign competition—in overseas markets as well as in the United States; and efforts by foreign governments to promote their own industries. Congress may want to consider new strategies designed to maintain and enhance U.S. competitiveness and to deal with regional and employment dislocations.

The basic choice is not between Government policy and no policy—intervention or nonintervention. An industrial society cannot function without some government involvement in the affairs of industry. The crucial questions concern the form and effect of public policies: What sort of industrial policy is most compatible with the U.S. political and economic system, most appropriate in the present context?

Industrial Policy Reconsidered

Different people use the term industrial policy in different ways. For some, industrial policy means sectoral policies—such as Japan's VLSI program—which feature direct government promotion of targeted industries. But industrial policies seldom rely on sectoral measures alone.

The analysis on which industrial policy is based must nonetheless be carried out on a sector-by-sector basis—as illustrated by the earlier chapters of this report—whether policy measures are aimed at promoting com-

petitiveness or at other objectives that depend on economic efficiency.

The policy instruments chosen can be sector-specific, aggregate, or a mixture; some countries emphasize one type more than the other. A sectoral emphasis typically entails promotion, subsidy, or protection of selected industries. An aggregate emphasis focuses on incentives for innovation, labor and manpower policies, adjustment assistance, and the traditional spectrum of monetary, fiscal, and tax policies.

Sectoral policies are often intended to help countries develop and maintain segments of their economies that are judged important to the national interest, such as defense industries or those that export. In some countries, sectoral measures are used in attempts to speed structural adjustment—e.g., by moving resources from industries in decline to those with seemingly better long-term prospects. Japan has developed plans to promote a transition from heavy industries, particularly those that are energy-intensive, to knowledge-intensive, high-technology sectors—an effort to anticipate and adjust to shifts in comparative advantage.

Sectoral policies are sometimes said to involve picking “winners” and “losers.” In principle, winners get government support, while public policies also help to cushion and manage decline. In practice, pressures for a protectionist industrial policy come from distressed industries trying to reverse their losses. Picking winners is a difficult task for governments, picking losers still more so. The unhappy result in either case can be interference with normal market processes at the expense of overall economic performance.

In contrast, aggregate policies such as market promotion measures aim to enhance market mechanisms but not to replace market decisions. It is not an easy task to predict which industries will rise or decline, nor are growth and contraction absolute and irreversible. Aggregate policies do not depend on such predictions. They are also more consistent with the principle that government intervention should not overtly discriminate among sectors and/or firms. Those who favor an aggregate approach to industrial policy say that sectoral policies tend to distort market signals, leading—particularly in the long term—to misallocation of resources. In addition, market promotion policies, once in place, may respond more flexibly to changes in labor, capital, and product markets than sectoral policies (see app. B on the economics of industrial policy).

A fundamental task for industrial policy-makers, regardless of whether they choose a sectoral or an aggregate emphasis, is to set priorities, select policy tools, and evaluate progress within a consistent framework. In the United States, consistency and continuity in approach would distinguish a consciously developed industrial policy from the ad hoc approach taken in years past. Industrial policy also requires agreement on objectives, and mechanisms for coordinating policies consistent with political and institutional realities.

The Political Context

In many respects, the de facto industrial policy of the United States is a consequence of a political system that fragments power and presents obstacles to the formulation and implementation of coherent policies of many types. A diffused and decentralized policy-making apparatus provides many channels for interested parties to press their case; it can give redundancy and flexibility to accommodate uncertainties and complexities. Such a system may encourage competition of ideas, ultimately producing a decision that is more widely accepted than one made by a small

group. But under such conditions, it is easier to say that the country might need a better developed industrial policy than to propose realistic steps for achieving it,

In a pluralistic and decentralized political system, industrial policy might not always produce the desired results. Competitiveness springs from a rich and complex ecology (table 13, ch. 5), in which public policies are but one element among many. Tampering with the ingredients that have brought success in the past always carries dangers. One potential danger is that firms or sectors losing out in the marketplace might dominate the policy process. Distressed sectors or firms, and their employees, may be the first to seek protection or assistance from the Government, while the indirect costs and benefits of such measures may be so broadly distributed that other groups do not even recognize that their interests are at stake. The more successful firms and industries generally prefer to remain autonomous. Another possible danger is that a more tightly coordinated industrial policy could stultify competition and innovation, ultimately jeopardizing long-term economic efficiency. The essence of the problem is to find ways of formulating industrial policy that are more effective than the current ad hoc methods, while preserving flexibility.

Because the decline of firms or industries may not be permanent, and reversal could appear feasible through industrial policy measures, difficult and painful decisions may need to be made in a highly politicized atmosphere. In the last analysis, fears that sectors in temporary or long-term decline may dominate do not constitute a persuasive case against industrial policy. The possibility of capture by distressed sectors will always exist—and may be more likely in the absence of industrial policy. A coherent framework for industrial policy could guide evaluation of the claims of competing firms and industries, making it easier to avoid measures that favor special interests at the expense of long-term competitiveness and other social goals.

Prerequisites for Industrial Policy

If consensus grows on the need for a more coherent industrial policy, the Government's institutional capabilities would need to be developed. Two prerequisites for industrial policy are: 1) mechanisms for reaching agreement on objectives that are acceptable to Government and various interest groups; and 2) improved analytical capability on the part of Government agencies concerned with economic efficiency and competitiveness.

Industrial policy requires cooperation and consensus—among Government, labor, business, consumer and other interest groups, and the public at large—sufficient at least for agreement on basic goals. The traditionally adversarial relationships among such groups in the United States form an obstacle to industrial policy—in contrast to countries such as Japan where cooperation is often viewed as a key to industrial policymaking. While the extent of cooperation abroad is sometimes exaggerated, the differences between the United States and Japan are nevertheless striking. The question for U.S. policy makers is: What sort of agreement on the ends of policy can, as a practical matter, be fashioned within the context of the American political and economic system?

Advisory groups such as the Steel Tripartite Committee already have a role in policy-making, primarily at the level of particular industries or sectors. Calls for increased cooperation among Government, business, and labor are now common, but neither agreement on broad industrial policy objectives nor substantial cooperation in implementation has yet been attained—in part because of the deeply rooted distinctions between public and private sectors in the United States.

From the beginning, business and industry in this country were free to pursue entrepreneurial ambitions—in contrast to nations like France where a strong state bureaucracy played a central role in industrialization. Such patterns of extensive government involvement in framing industrial strategies differ markedly from the American case, where

the lack of a feudal past, plus our vast resources, permitted a rapid and independent flowering of industry.

Following the Depression and World War II, industrial policy and economic planning became the norm in many Western nations, but not the United States. Discussion of an expanded role for Government still arouses distrust and condemnation in this country, where the adversarial tradition has been viewed as healthy. Suspicion of Government-business accommodation is a historical tradition. Even the Department of Commerce has lacked ties to its nominal constituency—business and industry—comparable in strength to those characterizing agencies such as the Departments of Labor or Agriculture. New policy initiatives must take these historical patterns into account; to change them would be a long-term undertaking.

Labor, consumer, and environmental interests must also be included in formulating industrial policy. Such groups are justifiably concerned that the costs of policy and the burdens of adjustment be equitably distributed. Experience abroad with industrial policy suggests that the participation of labor and public interest groups is essential for a well-rounded perspective. There are many ways in which labor, for example, can contribute to industrial policy and competitiveness—not only by safeguarding the rights of workers, but also by helping to develop an atmosphere in which the contributions of individual employees to improvements in productivity and product quality are maximized.¹⁰

Participation by such groups is not enough. To develop more effective policies, the Government would need to strengthen its analytical capacity for evaluating competitiveness, as well as for choosing policy tools. Especially if the Government decides to selectively intervene to promote competitiveness, it must have an independent capability for analyzing alternatives.

¹⁰See, for example, R. E. Cole, "Will QC Circles Work in the U.S.?" *Quality Progress*, July 1980, p. 30. Cole stresses that methods such as quality circles cannot be treated as quick fixes or panaceas.

Many parts of the Government—including the Departments of Commerce, Labor, and Treasury; the International Trade Commission; the Council of Economic Advisers; and the Federal Trade Commission—already study and regulate industry and the economy as a whole. Numerous other agencies have at least a limited capability. Improving the ability of public agencies to analyze industrial competitiveness is nevertheless critical for a better developed industrial policy. Specifically, Government agencies could cultivate a greater appreciation of the ways in which industry functions at a practical level—the level of technology, the shop floor, the R&D laboratory, the marketplace. Effective industrial policy demands efforts to anticipate future trends based on a concrete and realistic understanding of the sectors in question—empiricism rather than abstraction, theorizing, and empty statistics.

In addition to judging the competitiveness of particular sectors, evaluating the cost effectiveness of policy alternatives is vital. As the economic arguments for industrial policy initiatives outlined in appendix B suggest, there is no *prima facie* case for intervention in a market economy—even a highly imperfect one. The basic tests are: 1) Do the benefits exceed the costs? and: 2) Are the benefits and the costs distributed with an acceptable degree of equity? Determining the answers is inevitably complex and difficult. Witness the protracted controversies over costs and benefits of various motor vehicle regulations: passive restraints, 5 mile-per-hour bumpers, braking distances for tractor-trailer trucks.

These two prerequisites—improved mechanisms for developing consensus among interested parties, and a strengthened capability for analyzing competitiveness—are essential to the long-term success of industrial policy.

Macroindustrial Policy

OTA'S analysis of the steel, electronics, and automobile industries—all three of critically importance to the U.S. economy—suggests that Congress consider the option of a more coherent industrial policy. The problem

is to develop a replacement for the present patchwork of policies that is compatible with the American political and economic system. "Macroindustrial policy" is an approach which seems feasible in light of this country's traditions, as well as the structural features of our policymaking system. While there are potential dangers to pursuing a more integrated industrial policy, the advantages appear more compelling. Foreign experience shows that there are many approaches, a variety of policy tools available. OTA'S examination of the past history and future prospects of the industries covered in this report reinforces the logic of a macroindustrial policy approach. It is discussed below essentially as an organizing perspective, not a blueprint.

Fundamental to macroindustrial policy is an emphasis on the links and commonalities among industrial sectors, and a preference for economic adjustment through market mechanisms where possible. To improve the environment for industrial growth and competitiveness, a macroindustrial approach would stress aggregate policy measures to stimulate savings and capital formation, modernization of the capital stock of U.S. industry, investment in new and innovative technologies, and competition by U.S. firms on a world scale. Upgrading the capabilities of the labor force could be another central feature—providing workers with satisfying jobs and ensuring an adequate supply of employees at all levels, including management, with skills suited to a high-technology economy.

Macroindustrial policy would seek to integrate the goals of industrial development with other social objectives. The need for integration is illustrated by the dilemma created by productivity improvements in slowly growing industries such as steel. As earlier chapters show, continued productivity increases are required to maintain competitiveness, but as productivity rises employment opportunities in a particular industry can decrease. If the economy grows rapidly enough, jobs may keep pace. But when economic advance slows—as it did during the

1970's—productivity growth can lead to unemployment in some industries. Tradeoffs of these sorts are examples of problems of industrial change that several European nations have addressed more systematically than has the United States. The macroindustrial approach would value employment opportunities across the economy as a whole above maintaining employment in particular sectors.

An important task of industrial policy is to determine when different types of policy measures are appropriate and practical. The macroindustrial perspective would be based on sector-by-sector analysis of industry, but would choose aggregate over sectoral measures where possible. By stressing long-term and structural issues aimed at creating a stable climate for industrial growth and development—capital formation, technological advance, education and training of workers, the promotion of structural adjustment—such an approach might avoid capture by narrow special interests and enlist the support of a broad array of groups.

Macroindustrial policy could incorporate elements such as the following:

- Measures for supporting technology and science, particularly generic technologies of commercial importance—e.g., computer-aided design and manufacturing, tribology (friction, lubrication, and wear), materials processing, production engineering—and R&D directed at commercial products and processes.
- Measures for increasing the potential rewards to innovation, and otherwise indirectly stimulating R&D and the development of new products and processes.
- Policies to encourage and facilitate domestic technology transfer, particularly the diffusion of technologies to smaller businesses.
- Policies to increase rates of capital formation in the economy as a whole, along with measures encouraging investment in more efficient production facilities (such as continuous casters for steel) and new technologies. Both tax and reg-

ulatory policies could be directed at such objectives.

- Support for education and training of the labor force, including retraining of employees displaced by technological change. Improvement appears possible in the preparation of both production workers, semiskilled and skilled—welders, toolmakers, electronics technicians—and at professional levels. In particular, the engineering work force could be substantially upgraded in both numbers and quality by supportive public policies.
- Economic policies designed to ease adjustment to changing circumstances—e.g., by smoothing flows of capital and labor from distressed firms or industries, or those with limited future growth prospects, to sectors that offer rapid growth and future competitive strength.
- A more coherent set of trade policies that would support exporting by competitive U.S. firms and industries, improve protection against “unfair” import competition in the domestic market—as defined by the domestic laws and international obligations of the United States and its trading partners—and press for equitable treatment of American firms that seek to invest and sell overseas. Such policies would not be inconsistent with the traditional U.S. posture favoring open world trade, but would be intended to ensure that U.S. industry is not placed at a disadvantage compared to foreign rivals.
- Economic and industrial projections on a more detailed analytical basis than is now common, with particular attention to technology and to the efforts of foreign countries.

While macroindustrial policy would prefer measures such as those listed above, other varieties might also be necessary—for example, to ensure national security. If traditional macroeconomic policies (monetary, tax) proved inadequate to address a particular problem, then other types of aggregate pol-

icies—those cutting across a number of sectors—could be used: for example, market promotion policies (e.g., innovation, competition). If these too proved insufficient, then sector-specific or firm-specific policies could be employed. But the central feature of the macroindustrial framework is its preference for aggregate policies.

Moving Toward Industrial Policy

If Congress decides to work toward a more coherent and explicit industrial policy, several avenues are open—e.g., building on past initiatives concerned with exporting or with innovation. Over the past several years, many congressional committees and subcommittees have held hearings on international trade, industrial innovation, export policy, capital formation, and related topics that fit within the approach OTA has suggested for macroindustrial policy. There has also been considerable interest in trade reorganization. Such activities could provide a foundation for the further development of industrial policy.

Questions of productivity, industrial competitiveness, and economic efficiency have also moved toward the forefront of attention in the executive branch and the public at large. Despite widespread interest, there are still differing interpretations of what industrial policy for the United States means and differing opinions on whether an integrated industrial policy would be desirable.

Within Congress, a considerable number of committees and subcommittees have responsibilities relating to industrial policy, but there is no one committee in either House with industrial policy as a primary responsibility. In the Senate, the Finance; Commerce, Science, and Transportation; Appropriations; and Budget Committees all have interests in certain subsets of industrial policy concerns, but so does the Banking, Housing, and Urban Affairs Committee—which found itself with responsibility for the Chrysler loan guarantees—as well as the Foreign Relations; Environment and Public Works; and Labor and Human Resources Committees. In the House, the Ways and Means; Banking, Finance, and

Urban Affairs; Appropriations; Energy and Commerce; and Small Business Committees all make policies affecting industry, as do the Education and Labor; Foreign Affairs; and Science and Technology Committees. The Joint Economic Committee has oversight jurisdiction but not legislative authority. It might therefore be appropriate for Congress to consider activities aimed at clarifying the meaning and implications of industrial policy; at examining institutional capabilities for analyzing the problems of industry and reaching consensus on objectives; and at fitting ongoing legislative activities into an evolving industrial policy framework or perspective. Concrete actions Congress might consider in the near term are outlined below.

One example of response to continuing interest in problems related to competitiveness and industrial policy has been the formation of congressional caucuses organized to deal with policy issues such as exporting and innovation—as well as those focused on particular industries (e. g., the Steel Caucus). Congress might wish to reshape such activities to explicitly encompass industrial policy. A more decisive step would be to create a formal task force on industrial policy—or alternatively, an ad hoc committee—to bring together members and staff from various committees. Formulation, coordination, and evaluation of industrial policy measures might benefit from such mechanisms for facilitating interactions among the various committees of the House and Senate that are responsible for legislation directly affecting industry. Other useful activities could include seminars on industrial policy topics such as those organized during 1980 by the Congressional Research Service and the Congressional Clearinghouse on the Future.

Recognition of industrial policy in the executive branch has been reflected in limited form in proposals for “economic revitalization,” as well as efforts such as the Domestic Policy Review on Industrial Innovation carried out by the Carter administration. More specifically focused on the international trade competitiveness of U.S. industry were a pair of executive branch studies mandated by

Congress in the Trade Agreements Act of 1979. These studies—on export policy¹¹ and on U.S. competitiveness¹²—were coordinated by the Trade Policy Committee. Congress could choose to request such reviews on a continuing basis, as it did for the 5 year outlooks on science and technology required by the National Science and Technology Policy, organization, and Priorities Act of 1976.

Other opportunities within the executive branch might be found in a revitalized National Productivity Council. The Council, established by executive order in 1978, was intended to provide a focal point for executive branch activities related to productivity, superseding the National Center for Productivity and Quality of Working Life, whose authorization had been allowed to expire. To date, the Productivity Council has had little visibility, but it could be strengthened.

Congress might also reinforce efforts to develop cooperation and consensus on the objectives of industrial policy beyond the Government itself. The recent trend toward advisory committees and commissions such as the Steel Tripartite Advisory Committee reflects a desire by both Government and the private sector to stimulate meaningful dialog. Congress could seek to broaden such committees to include stronger representation by labor and particularly by public interest groups, and also to ensure that such committees reflect the breadth and diversity of industry—e.g., that they include representation from firms that have performed both poorly and well. Moreover, Congress could encourage such committees and commissions to move beyond narrow sectoral interests toward the broader concerns of industrial policy as a whole.

A further step would be to create a council or other group to directly address the groundwork for industrial policy. Such a council could be located within the executive branch

and might have a small staff and an advisory board of experienced and respected individuals from outside the Government (i. e., from business, labor, universities, and public interest organizations).

Such efforts would be essentially preparatory. The recent executive branch reviews of exporting and trade competitiveness remind us that discussions of industrial policy in the United States remain unfocused and preliminary. Knowledge and expertise relevant to analyses of industrial policy and competitiveness are now widely diffused within the Government. The review of competitiveness—conducted mostly by the Department of Labor—devotes little attention to technology, while from the OTA perspective technology is an essential element in such an examination. Yet within the Government, technological expertise is concentrated in agencies and laboratories with operational responsibilities such as the Department of Defense, the National Aeronautics and Space Administration, and the Department of Energy. Such agencies are not oriented toward industrial policy.

OTA has emphasized the desirability of improving the analytical capability of the Federal Government as a step towards a more coherent industrial policy precisely because the capability which Government can now bring to bear is spread so thinly through the agencies. Another way Congress could begin to lay groundwork for industrial policy is thus by improving the institutional infrastructure for such analyses.

For instance, an analytical group intended as a locus for industrial policy might be formed by drawing together skills and expertise from existing agencies and attaching it to an executive branch program—perhaps to an upgraded and expanded Bureau of Industrial Economics in the Department of Commerce (although much more than economics is needed—e. g., expertise in technology, as well as in the analysis of social impacts). Alternatively, a group with ongoing policy responsibilities could be added to an independent agency such as the International Trade

¹¹Report of the President on Export Promotion Functions and Potential Export Disincentives (Washington, D.C.: Department of Commerce, September 1980).

¹²"Study of U.S. Competitiveness," Economic and Trade Policy Analysis Subcommittee of the Trade Policy Staff Committee, July 1980.

Commission. Another option is for Congress to strengthen its own capability.

Among the functions of such a group—whether located in the executive or legislative branch—might be economic and industrial projections. Its other responsibilities could include: analysis of technological developments in the United States and abroad; evaluations of the impacts of Government regulations on competitiveness; and acting as a central point for digesting and disseminating information on trends in markets, international trade, and technology in forms useful to business and industry. Because similar work is sometimes carried out in other Government agencies—with widely varying effectiveness—as a first step, it might be appropriate simply to conduct a review of existing analytical capabilities relevant to competitiveness, economic efficiency, productivity, and industrial policy. Such a review would not be another study of competitiveness itself, but an inventory of capabilities for analyzing competitiveness.

In all probability, movement toward a more coherent industrial policy in the United States will prove slow and incremental. Therefore, Congress is likely to face important decisions on policies affecting industry before any clear framework or perspective for industrial policy emerges. As a result, it seems appropriate for OTA to suggest, based on the preceding chapters, those elements of a macroindustrial approach that appear to have the highest priority—both for improving the performance of the American economy in the near term, and from the longer term perspective of maintaining and enhancing U.S. competitiveness over the 20-year period of substantial industrial change outlined in chapter 7.

In the near term, the climate seems favorable for tax policies intended to encourage capital investment that could improve the productive efficiency of U.S. industry. OTA'S study of the steel, electronics, and automobile industries indicates that such measures could have positive effects if tax policies are designed with these objectives in mind. Be-

cause U.S. industries compete for investment funds among themselves and also with nonindustrial sectors of the economy, undifferentiated tax cuts might not lead to increased investments in modernization of equipment, upgrading of worker skills, or technology development. Tax policies that are specifically designed to encourage productive investment in industry, and to stimulate R&D and the development and diffusion of new commercial technologies, are more likely to have directly beneficial impacts on competitiveness and productivity.

Congress could also give a high priority to more effective measures for stimulating industrial innovation. A continuing effort in Congress and the executive branch on several fronts dealing with innovation—e.g., cooperative R&D, patent policy, development of better mechanisms for the diffusion of technology, evaluation of Government regulations—could be a significant contribution to the development of industrial policy.

On a longer term basis, OTA'S study indicates that the United States—along with many other industrialized countries—could profitably develop more workable and effective mechanisms for economic adjustment. Adjustment policies—e.g., for increasing the versatility and mobility of labor, for managing the decline of sectors that have lost competitiveness, for retraining people with obsolescent skills—have not functioned well here or abroad. Such problems are likely to intensify in the years ahead—they will certainly not disappear. The disappointing results of programs such as Trade Adjustment Assistance indicate that economic adjustment may be a policy area that Congress and the executive branch need to reevaluate.

Education and training of the work force is essential for both innovation and for effective economic adjustment. Government policies and corporate decisions are made by individuals whose attitudes, values, and skills are shaped in part by their education. Industry depends on skilled workers, capable engineers, and competent managers to build and maintain competitive firms and industries.

Investment in the human resource could be the most vital single element in a macro-

industrial policy oriented toward the long-term needs of the U.S. economy.

Summary and Conclusions

This chapter began with a brief review of policies having largely aggregate objectives. The dominant tradition in the United States has been reliance on fiscal, monetary, and tax policy to promote overall economic welfare and to moderate extremes in the business cycle. While the competitiveness of U.S. industry is directly related to aggregate economic health, there has seldom been any attempt to couple macroeconomic policies to policies dealing with individual industries, nor has competitiveness been a common goal of public policies,

Other types of aggregate measures have also had shortcomings. Economic adjustment policies in the United States have been reactive rather than prospective and supportive. Trade adjustment assistance functions primarily as unemployment compensation, and does not confront the real problems of adjustment—mobility, education and training. Science and technology policies have sometimes overemphasized science at the expense of technology—a more directly determining factor for international competitiveness. U.S. trade policy has yet to fully reflect that the country no longer enjoys technological advantages so large that it can refrain from insisting on fully reciprocal treatment in terms of both tariff and nontariff barriers.

While the United States was able to operate quite successfully without a consciously developed industrial policy in the past, circumstances have changed, U.S. firms are more exposed to foreign competition both here and overseas. Other countries have rapidly developed their economies and their technological abilities. American firms are no longer the undisputed world leaders in many markets that they once dominated. It is not clear that the United States—faced with declining industries, slow economic growth, friction with our allies over trade, constraints

on supplies of energy and other resources, persistent inflation, and structural unemployment—should continue as in the past.

A compelling argument in favor of the industrial policy alternative is that, in its absence, political pressures may lead to haphazard, counterproductive policies intended to aid particular industries or firms. Such action tends to interfere with economic growth and adjustment. A market economy inevitably produces winners and losers. The winners generally have few grievances to press through political channels. The losers are likely to attempt to use the political process to reverse their losses. Industrial policy could provide a consistent framework for evaluating the claims of interested parties, and for judging the costs and benefits of policy alternatives,

OTA suggests “macroindustrial policy” as an approach to the task of developing an integrated perspective on policies toward industry. By emphasizing aggregate and market promotion measures, macroindustrial policy would aim at flexible response to changing conditions, not a rigid “strategy.” Macroindustrial policy would minimize aid to specific industries, rather attempt to ease the transformation to a high-technology, resource-efficient society. It would place high priorities on retraining and educating workers with the skills needed for new jobs and on encouraging labor mobility; on technological innovation, in manufacturing processes as well as products and services; on incentives to improve capital formation, energy efficiency, and productivity; on open trade and competition in domestic markets coupled with support for American industries seeking to export. The intent of such a policy would be to retain and supplement the dynamism, competition, and adaptability that have traditionally characterized the U.S. economy,