

Foreign Industrial Policies

Japan, France, and West Germany have evolved different approaches to industrial policy over the postwar period. As with well-developed industrial policies elsewhere, all three use a mix of policy instruments—both sectoral policies and those with aggregate objectives. The French have relied most heavily on sector-specific measures, while West Germany has stressed macroeconomic and other broad policies,

In France and Japan, which have stronger centralized bureaucracies, the direct promotion of particular industries has often been a national priority. French industrial policy has lately turned toward greater reliance on market mechanisms, an approach that West Germany has followed for many years. In Germany, the role of government intervention in the affairs of specific firms and sectors has been limited compared to both France and Japan. It is perhaps no coincidence that West Germany, with its federal government system and less centralized policymaking apparatus—in both respects the most like the United States—has emphasized sectoral measures less than Japan and France.

Any review of foreign industrial policies must keep in perspective the backdrop of rapid economic growth throughout the industrialized world that persisted from 1947 to roughly 1970. All three of these countries benefited from conditions uniquely conducive to economic expansion; under such circumstances, it is easy but potentially misleading to give too much credit to industrial policy. The critical tests for each—as for the United States—began in the 1970's. These tests will continue in the decade ahead, as the world economy grows only slowly and competition in many industrial sectors intensifies (ch. 7). Even for countries that have in the past successfully promoted industrial development, stronger competition, from more sources, presents difficult policy problems. In each of these three countries, industrial policy is being reexamined, and new approaches are under debate,

The Industrial Policy of Japan

The Role of Government

Few observers would dispute that the Japanese have successfully promoted the development of

key industries during the postwar period. However, disagreement persists concerning the most critical factors in shaping industrial policy in Japan—in particular, the importance of the government role,¹

Observers in countries such as the United States, where Government efforts to directly promote the development of specific industries are more the exception than the rule, have at times assumed that the Japanese Government directly controls and systematically coordinates industrial policy.

While the support and guidance of the Japanese Government have clearly been important for the formulation and implementation of industrial policy, other factors have also contributed to the development of consistent and vigorous policies. Among these are the dynamism and leadership of the business community, an educated labor force incorporated into the industrial system through enterprise unions, a competent, elite bureaucratic corps, and the unusually long reign of the governing conservative Liberal Democratic Party. Furthermore, the political stability and worldwide economic expansion of the postwar period—lasting until the oil and trade crises of the 1970's—offered a climate that contributed importantly to Japan's economic development.

While much has been made of consensus and cooperation in Japan, there has been a great deal more conflict of interest and bargaining among public and private officials than may appear on the surface. Industrial policymaking in Japan, as elsewhere, is a process of conflict accommodation. What is striking about the process in Japan is the effort exerted behind the scenes by business and government leaders to informally gather information, develop a common perspective, and thus lay the groundwork for policy before final decisions are reached. Cooperation and consensus are in no sense automatic, but are carefully nurtured.

Government Guidance

While Japan's Government has traditionally played an important role in stimulating and promoting industrial development, indirect and in-

¹ See F. J. Pempel (ed.), *Policymaking in Contemporary Japan* (Ithaca, NY: Cornell University Press, 1977), for an overview of debates on Japanese policymaking.

formal methods of guidance have generally been preferred to direct Government ownership, subsidies, or regulation.³ The part played by government differs from that in other countries less in the extent of intervention than in the methods used to guide and support industry. The Ministry of International Trade and Industry (MITI), which is directly responsible for industrial policy in Japan, uses different types of policies for different industries, and at various stages of development. These sector-specific measures are supplemented by macroeconomic policy and planning carried out by a number of other government agencies, including the Ministry of Finance, the Bank of Japan, the Economic Planning Agency, and the Science and Technology Agency.³

In the early postwar period, five Japanese industries, including steel, were targeted as essential to a modern industrial economy. Later, attention shifted to the auto and computer industries—signaled by the development of a plan for controlling foreign investment in the motor vehicle industry in 1952, and the passage of the Electronics Industry Act in 1957. Industrial development plans and forecasts such as these are periodically reviewed and revised. The foundation of the government official position toward the electronics industry now consists of three major pieces of legislation—the 1957 Act, plus additional laws passed in 1971 and in 1978.

During the early stages of industrial policy formation, advisory panels—such as MITI's Electronics Industry Deliberation Council—collect information and build consensus among public and private officials. In addition to these official advisory groups, business committees and ad hoc political party conferences have often been formed. Keidanren, the Federation of Economic Organizations, has, for example, been instrumental in developing industrial policy initiatives for the electronics industry through its Committee on Data Processing. Sanken, the Industrial Problems Study Committee, was directly involved in advocating increased concentration in the steel industry. The Auto Industry Policy Conference was established by the Liberal Democratic Party in 1966 to deal with the imminent liberalization of trade,

In implementing industrial development plans, MITI officials have generally relied on “administrative guidance—which often has no specific statutory basis—to informally direct industries and firms. ‘Bank of Japan executives similarly apply “window guidance” to the volume and direction of loans made to customers of the city banks.’ Such guidance has been used to provide incentives for industrial development, to ration credit to industries and firms judged capable of rapid growth, to oversee industrial production and capacity expansion, and to encourage mergers.

To cite a few specific examples of incentives used to stimulate industrial development, the Japanese Government provided the steel industry with a set of tax and duty exemption measures during 1951 and 1952. Accelerated depreciation allowances and tax breaks have been used to promote the development of new technology in the electronics industry. MITI has also encouraged mergers: the 1957 Electronics Industry Act authorized the Ministry to guide the formation of cartels for standardizing design and rationalizing production in the computer peripherals sector; loans and tax concessions were used to encourage mergers in steel; a special tax deduction helped to promote mergers in the auto parts industry.⁷ In addition, R&D is stimulated through subsidies and financial incentives. MITI Agency for Industrial Science and Technology has initiated a number of long-term research projects to develop technologies such as battery-powered autos, very large-scale integrated circuits, and computer software (ch. 5). Government support is often channeled through institutions such as the Japan Electronic Computer Corp. or the Information Technology Promotion Agency, which receive funding from the private sector as well as loan guarantees from the government or the Japan Development Bank,

Until the early 1970's, Japan's trade policies actively promoted exports, while limiting imports of manufactures and inflows of foreign exchange. Quotas, tariffs, and commodity taxes were used to protect domestic industry. To increase exports, the Bank of Japan discounted short-term export bills at less than the market interest rate, and the Japan Development Bank and the Long-Term

J. Hirschmeier and T. Yui, *The Development of Japanese Business, 1600-1973* (Cambridge, Mass.: Harvard University Press, 1975), pp. 86 ff; G. C. Allen, “Japan,” *Government Intervention in the Developed Economy* (London: Croom Helm, 1979), p. 18.

For a general outline of the economic and technology policymaking systems in Japan, see K. Haitani, *The Japanese Economic System* (Lexington, Mass.: D. C. Heath, 1976), and *Policies for the Stimulation of Industrial Innovation*, vol. II-1 (Paris: Organization for Economic Cooperation and Development, 1978), ch. 5.

⁷K. Yamanouchi, “Administrative Guidance and the Rule of Law,” *Law in Japan*, vol. 7, 1974, p. 22.

⁸Y. Suzuki, *Money and Banking in Contemporary Japan* (New Haven, Conn.: Yale University Press, 1980), pp. 160 ff.

⁹E. I. Kaplan, *Japan: The Government Business Relationship* (Washington, D.C.: Department of Commerce, February 1972), p. 46.

¹⁰*Computer White Paper* (Tokyo: Japan Information Processing Development Center, 1976), p. 31.

Credit Bank provided inexpensive long-term credit for export-oriented businesses.¹⁴ Based on its authority under the old Foreign Investment Control Law, the Japanese Government restricted the entry of foreign firms. Though the circumstances differed, both IBM and Texas Instruments, among U.S. companies, were permitted to establish manufacturing operations in Japan only after agreeing to license patents to Japanese manufacturers.

Such blatantly protectionist policies, though formerly the norm, were substantially relaxed during the 1970's. Tariffs have been reduced to levels comparable to other industrialized nations, broad export incentives have been erased, and import quotas remain on only 27 product areas. With most trade barriers essentially dismantled, the primary obstacles remaining to hinder foreign investment and exports to Japan are less formal—restrictive interpretation of customs and product approval procedures, a complex distribution system, and government and business propensity to “buy Japan.”¹⁵

Effectiveness of Japanese Industrial Policy

While Japan's Government has employed a variety of methods (many of them informal and few of them unique) to promote industrial development, it would be a mistake to assume that such efforts have always succeeded or that they have been consistently well received by business and industry. In a number of cases, Japanese firms have resisted MITI actions aimed at restricting corporate autonomy: auto parts makers opposed MITI's attempts to foster consolidation; during the mid-1960's, Sumitomo Steel refused to follow MITI guidance and limit capacity expansion; more recently, mainframe computer manufacturers have not cooperated in mergers. There have also been conflicts with other government agencies: the Ministry of Finance successfully opposed MITI efforts to establish the Japan Electronic Computer Corp. as partially government-owned; the Fair Trade Commission was successful in resisting MITI's push to enact a “special industry development law” in the mid-1960's, but failed to block the merger that created New Japan Steel. ¹⁶ The politically powerful but uncompetitive

agricultural sector has received extensive government protection and subsidy at a high cost in economic efficiency. These examples show that cooperation between government and the private sector in Japan is not automatic. When it occurs, cooperation is best viewed as less the product of direct government control than the outcome of extensive but informal negotiations which result in policy that industry perceives as beneficial.

The effectiveness of Japanese industrial policy has not depended on government alone. When government actions have produced positive results, they have supported and stimulated the independent dynamism of business and industry, increasing productive efficiency, and intense competition among firms in the domestic market, indicate the vigor and strength of Japanese industry, which is primarily privately owned and operated.

It is easy but misleading to overemphasize the contribution of the sector-specific components of Japan's industrial policy to her economic success. Broad-level indicative planning and macroeconomic policy have helped foster a stable economic climate, one conducive to industrial development. During the 1970's, for example, officials in the Ministry of Finance and the Bank of Japan contributed to industrial growth by placing high priorities on anti-inflation and exchange rate policies.

And, while Japan's past record of industrial development is impressive, a crucial question now is whether policy makers will be successful in adapting to new international and domestic conditions. MITI's current policy planning aims at adjusting to a period of lower economic growth and constraints on resources. The MITI “vision for the 1980's” calls for ambitious efforts to revamp Japanese industry and society toward a knowledge-intensive, high-technology, resource-efficient structure. Technology as the key to economic security is at the center of the MITI strategy. ¹⁷ In this sense, Japan's emphasis on the electronics and information industries is based on an economic perspective more comprehensive than a simple sectoral policy.

Such a comprehensive plan will not be easy to implement. Recent experience in Japan shows that when the economy slows, conflicts of interest grow among firms and industries, particularly those in actual or potential decline—such as steel, aluminum, and shipbuilding—which compete for special assistance. In 1978, the Japanese

¹⁴I. C. Magaziner and F. M. Hout, *Japanese Industrial Policy* (London: Policy Studies Institute, 1980), pp. 42 and 78.

¹⁵F. A. Weil and N. G. Glick, “Japan—Is the Market Open? A View of the Japanese Market Drawn From U.S. Corporate Experience,” *Law and Policy in International Business*, vol. 1, 1979, p. 856.

¹⁶Ka plan, op. cit., includes considerable discussion of failures in government-business cooperation; see pp. 48-67.

¹⁷*Hachijunendai no Tsusho Sangyo Seisaku* (The Trade and Industry Policy in the 1980's), Sangyo Kozo Shingikai (Industrial Structure Council), Mar. 17, 1980, p. 9.

Diet passed a law to assist such “structurally depressed” industries; but some observers have questioned the effectiveness of such aid, arguing that the plan has not succeeded in moving resources out of declining industries.

Another factor creating new difficulties for industrial policy is the internationalization of the Japanese economy. Industrial promotion policies cannot be pursued to such extremes that they jeopardize national security by provoking Japan’s allies. Moreover, as the number of agencies and organizations directly concerned with industrial policy has grown, the process of policy formation has become more complicated. These factors suggest that real change will be required of public and private policy makers if Japan is to implement industrial policy appropriate to a new domestic and international climate. If the past provides an indication of the future, the Japanese Government can be expected to play a significant role in promoting the continued competitiveness of Japanese industry—but the governmental role will not be the sole determining factor.

The Industrial Policy of France

The Role of Government

The French have long perceived the interplay of market forces in the economy to be chaotic and wasteful if left unregulated by government. Thus intervention has not been unique to the postwar period, but accepted as a more-or-less permanent feature of the French economy. And, to a greater extent than in many other countries, the French have used industrial policy to attempt to reach goals beyond economic development. For example, the policy of “national ‘champion’ industries followed during the 1960’s valued national security and prestige above economic efficiency.

Public policies in France have for many years included both protection and promotion of key industrial sectors through a wide variety of mechanisms. These mechanisms have embraced financial subsidies of many types, price controls, encouragement of mergers to increase the size and market power of French-owned corporations, export promotion, and facilitation of inward flows of technology in industries such as computers, semiconductors, and aerospace.

As is common elsewhere in Europe, there is considerable government ownership in the French economy. In fact, the sharp distinction between public and private sectors characteristic of countries such as the United States has never

existed in France. Many French banks are publicly owned, and government has a strong voice in the operations of the nationalized railroads, in Air France, and in the two major oil companies—as well as exercising effective control over the two largest steel producers, (Roughly 70 percent of steel capacity is essentially nationalized.) Other publicly owned firms, such as Renault and the aircraft manufacturer Aerospatiale, carry on their activities with little direct government involvement.

The French State is highly centralized, with an elite bureaucracy that has considerable autonomy in shaping industrial policy.⁹ As in Japan, most of the decisionmakers in both government and industry are graduates of a few prestigious schools. However, the extensive process of discussion and consensus building that precedes decisions on industrial policy in Japan is largely missing in France. Although a variety of government agencies influence policymaking, authority is remarkably concentrated, much of the actual power residing in government and semi-public financial institutions. Unlike the routine participation afforded interested parties outside the bureaucracy in Japan or West Germany, neither industry nor labor has a visible role in formulating or legitimating French industrial policy—although they can be heard through informal channels,

Evolution of Industrial Policymaking in France

Industrial policy in France since 1945 has passed through a number of stages. The exigencies of postwar redevelopment led at first to reliance on relatively formalized economic planning. But the very speed and success of redevelopment exposed shortcomings in the planning process, which since the early 1960’s has been largely superseded by a more ad hoc approach.

The Gaullist period of the 1960’s featured a strategy of national champions—targeted sectors intended to bring prestige as well as trade competitiveness to French industry. Largely failures—e.g., the Plan Calcul, the Concorde—the French have now turned away from highly visible national champions while remaining committed to sectoral intervention on a case-by-case basis.

⁹Technology and Steel Industry Competitiveness (Washington, D.C.: Office of Technology Assessment, U.S. Congress, June 1980), p. 125.

¹⁰J. Zysman, *Political Strategies for Industrial Order: State, Market, and Industry in France*. (Berkeley, Calif.: University of California Press, 1977), pp. 59-60.

Since 1978, government pronouncements have placed more emphasis on market forces rather than planning and intervention. There has been a shift away from price controls, as well as attempts to create more competition within the French economy.

During the 1970's, export promotion took on a greater role in industrial policy, largely because of the need to pay for high-priced imported oil.¹⁴ France's lack of energy resources also led to a strong emphasis on nuclear power generation—a technology where French industry is now among the world's leaders.

The net effects of economic planning and industrial policy in postwar France are difficult to evaluate. The government role became more systemized and more openly acknowledged concurrent with a period of rapid and steady economic expansion lasting until 1974. Much of this growth would have occurred irrespective of government actions, making it difficult to identify either positive or negative effects of industrial policy. While the French Government has failed to restore a high rate of real growth since the 1975 recession, this is a problem shared by most of the rest of the industrialized world. Despite such conspicuous failures as the Concorde—and the difficulties France has recently faced in restructuring her steel industry—many features of postwar French industrial policy have been emulated in other European countries and in the Third World.

Economic Planning

Following World War II, France adopted a system of economic planning based on 5-year projections intended to guide industrial development on a sectoral basis. This system of indicative planning—which entailed a careful laying out of public investment decisions, along with suggested directions for complementary private investments—was at first oriented toward the needs of postwar reconstruction. By 1960, indicative planning as originally conceived had been largely abandoned—in part a victim of the increasing complexity of the expanding French economy. The plan still remains—indeed the VIII plan began in 1981—but is now largely a vehicle for discussion and information exchange within the bureaucracy and among political interests, a means of broadening perceptions and suggesting desirable policy directions. The VII plan (1976-80), for in-

stance, included a detailed outline for strengthening French science and technology. It recommended an increase in employment in the sciences, also proposals for the organization of research, as well as desirable fields of R&D (e. g., information industries, electronic components, scientific instrumentation).

Despite the comprehensive nature of these 5-year plans, even during the early postwar period the power vested in the Planning Commission—a small bureau attached to the office of the Prime Minister—was modest. As French industry redeveloped, government influence over the private sector increasingly gravitated to financial institutions—particularly the Ministry of Economy and Finance (since 1978 reorganized into two separate agencies), but also a variety of semi-public lenders such as the Credit National, plus the banks, both public and private. "

During the Gaullist period of targeted support to national champion industries such as computers, these financial institutions played a major role. Agencies such as the Ministry of Industry also participate in developing strategies for industrial policy, but the importance of lending institutions in shaping industrial policy is a notable similarity among Japan, France, and West Germany. In the French case, the government influence over banks and other lenders appears to be considerably stronger than in West Germany, and at least comparable to that in Japan,

Banking in France is highly concentrated, facilitating government involvement in credit decisions; three large nationalized banks control roughly half of all funds on deposit. The Plan Calcul, for example, intended to build an internationally competitive computer firm, received more than a billion francs (roughly \$200 million) in equity investments, loans, and research subsidies—in part directly from the government, in part indirectly through government-influenced credit decisions. The Plan Calcul also illustrates the targeted approach to industrial policy adopted in France during the 1960's. Rather than systematic economic planning, this approach relied on sectoral programs that were themselves comprehensive but not necessarily closely tied to the remainder of the economy. The Plan Calcul involved the coordination of a variety of govern-

¹⁴ Programme #25, *Le VII Plan de Développement Économique et Social 1976-1980* (Paris, 1976), pp. 294-301.

¹⁵ J. Zysman, *The State as Economic Player* (Berkeley, Calif. University of California Press, forthcoming).

J. Melitz, "The French Financial System: Mechanisms and Propositions of Reform." Conference on Political Economy of France, American Enterprise Institute, Washington, D.C., May 29-31, 1980.

¹⁴ L. G. Franko and S. Stephenson, *French Export Behavior in Third World Markets* (Washington, D.C.: Georgetown University Center for Strategic and International Studies, 1980), p. 17.

ment policies, including financial tools, to support an industry judged important to national interests. Recently, as mentioned above, the French have attempted to be more flexible and more market-oriented in their sectoral programs.

The Plan Calcul

The Plan Calcul began in 1967 as the result of an agreement between the French Government and the *Compagnie Internationale pour l'Informatique* (CII). The massive and coordinated effort of the Plan Calcul was in large measure a reaction to a pair of events which reinforced the widespread perception of U.S. dominance of European computer industries.¹⁸ The two events were the acquisition of the French computer firm *Machines Bull* by General Electric in 1964, and the denial by the U.S. Government of an export license for the sale of a Control Data computer to the French Atomic Energy Commission in 1966. These developments catalyzed the French effort to build a strong, independent capability in computers.

CII was established by merging the two French firms with computer hardware capability that remained after the *Machines Bull* purchase. Implementation of the Plan Calcul depended on broad participation and cooperation within the French Government, involving institutions ranging from the Ministry of Industrial and Scientific Development to the Ministry of Defense. Coordination of their activities was the responsibility of an ad hoc body within the office of the Prime Minister, the *Délégation pour l'Information Science*.

In 1975, the Plan Calcul was in essence terminated: it had been no more than marginally successful in its attempt to build a viable computer sector, although maintaining a French presence in the industry. Many reasons have been suggested for the Plan's shortcomings, including a lack of coordination with overall macroeconomic policy and an overly ambitious strategy of attempting to quickly reach technological parity with the U.S. computer industry over a broad front, rather than concentrating on more limited segments of the market. But its comprehensive outlook was nonetheless an important development in French sectoral planning. The Plan Calcul went beyond the earlier *Concorde* program—which had been oriented towards a single development project—to an industrywide approach. A variety of policy instruments—including fiscal incentives, man-

power training, and market forces—were coordinated in order to support CII and the French computer industry.

In 1976, CII merged with *Honeywell-Bull*—the firm that resulted when General Electric, the purchaser of *Machines Bull*, sold its computer business to Honeywell. This merger—again nurtured by the government—marked the end of a purely French mainframe computer firm, but not the end of sectoral involvement by the government in the industry; CH/Honeywell-Bull has continued to benefit from substantial government aid, and the French bureaucracy retains considerable influence over the firm's activities.

Policy Instruments

As the Plan Calcul illustrates, the French Government has used a complex and continually evolving set of economic incentives to influence and guide industry. These tools include tax benefits, outright grants, allocation of loans and credit on preferred terms, government purchases, and pricing policies. Incentives have been used selectively to encourage the private sector to undertake projects and investments that the State judges desirable.

Although the tools of French economic and industrial policy are similar to those existing in other market economies—including the United States—the French system exhibits several noteworthy features. First, while demand targets have often been formulated, in practice government incentives operate exclusively on the supply side; manipulation of taxes to influence demand has been rare. Second, incentives are positive; they do not constrain firms in the private sector but attempt to guide and encourage them by making certain activities profitable or otherwise attractive. Finally, despite the deep government involvement in many industrial sectors, short-term macroeconomic policy has not been well-coordinated with industrial policy. This appears to have been a major weakness of the French approach to policymaking, with its emphasis on sectoral measures.¹⁹

Although finance has recently been the central instrument of French industrial policy, many other tools have been employed. In the early post-war period, extensive trade barriers protected French industry and allowed it to redevelop without foreign competition. This had also been a

¹⁸ *National Support for Science and Technology: An Analysis of Foreign Experience* (Cambridge, Mass.: Massachusetts Institute of Technology Center for Policy Alternatives, 1975) pp. 71-76.

¹⁹ S. Cohen, *Modern Capitalist Planning: The French Model* (Berkeley, Calif.: University of California Press, 1977), p. 8.

prominent feature of French policies before the war. Tariff walls moved outward following the establishment of the Common Market, but France continues to restrict imports through nontariff barriers—imports of Japanese automobiles are a current example.

Support for R&D has also had a prominent place in French industrial policy, and remains an important feature of the planning process. Nuclear power generation and integrated circuits are among the currently favored targets.²⁰ The VIII economic plan—beginning in 1981—puts great emphasis on government support of R&D in six key sectors: electronics, energy, aerospace, marine technology, machine tools and manufacturing equipment, and biotechnology. The French propose to spend \$25 billion on the development of these industries over the 5-year course of the plan.²¹

Recent Developments

Several of the more recent shifts in French industrial policy are illustrated by government aid directed at the semiconductor industry. Rather than supporting a single national champion, Le Plan Circuits Integres is promoting several independent efforts—typically involving joint ventures with U.S. firms and aimed at transferring integrated circuit technology to the French partners.²² This splitting of the effort among several nominally competing ventures can be taken to illustrate the greater reliance on market mechanisms to which the French have turned. At the same time, given the long tradition of government intervention, and the continued existence of the apparatus and mechanisms used in the past, the move toward a market-oriented industrial policy may prove slow.

Beyond protection and promotion of high-technology growth industries such as semiconductors, the French Government has continued to intervene in sectors perceived as mature or declining. As in Japan, shipbuilding and textiles have been important to the French economy. And again as in Japan, these sectors have received aid aimed at managing decline and ameliorating some of its consequences.

Their steel industries are also important to the economies of both France and Japan. Steelmaker

²⁰ "Aims of National Research Program for 1980-1990 Outlined," *West European Report Science & Technology*, Joint Committee Research Service [PRS 1, 896 L, Mar 3, 1980, pp 11-16].

²¹ K. Dreyfack, "France Wants Bigger Piece of Pie," *Electronics*, Oct 23, 1980, p 98.

²² E. Di Maria, "Intel, Matra Harris Confirm C1 ech. Exchange Plan; Set Design Subsidiary," *Electronic News* April 6, 1980, p 1.

in both countries have faced substantial overcapacity, although the Japanese industry is much more efficient. A task for industrial policy in France since 1978 has been to encourage and direct contraction in the steel sector. Financial aid has been provided to ease the burden of indebtedness on the three major steel groups, and policies have been designed to harmonize and rationalize production—e.g., by closing down unprofitable mills. The government intends to phase out more than 30,000 jobs by 1983. The problems in the French steel industry have required continuing State involvement, in part because of the delicate social and regional problems created by the restructuring effort—the turn toward market mechanisms has clearly not precluded government actions in distressed industries.

Effectiveness of French Industrial Policy

A balanced view of French industrial policy should recognize its positive contributions to national economic development, but that it also has major weaknesses—and has failed in several ambitious attempts to guide the economy along particular paths. Positive incentives aimed at directing growth on a sectoral basis have often succeeded. But the isolation from market forces created by government intervention has also, in a number of instances, resulted in misallocation of capital and other resources.

Since the mid-1970's, there has been a marked shift in rhetoric concerning industrial policy in France, with government statements now emphasizing a renewed reliance on market forces. Nonetheless, as shown by the strong and continuing role of the bureaucracy in electronics and steel—and also in the automobile industry, where the government engineered a recent merger between two private firms, Peugeot and Citroen—France remains a highly interventionist State, one where industrial policy is centralized to an extent unusual in a nominally free market economy.

Industrial Policy in the Federal Republic of Germany

Economic and industrial policymaking in West Germany is less centralized and less coordinated than in Japan or France. No single agency or institution such as MITI exists to develop and implement industrial policy. Industrial policy in West Germany is more like that in the United States than that in France, with sectoral intervention less prevalent.

The West German economy has performed well in the postwar period, the Federal Republic being noted for consistent reliance on macroeconomic policy emphasizing price stability and export-led growth. A central theme has been the “social market economy”¹—a preference for relatively unhindered price adjustments combined with social programs aimed at moderating the more undesirable impacts of the free market. The role of the government has been comparatively limited—a major contribution has been to provide a stable and consistent policy environment, and an undervalued deutsche mark.² Business-labor consensus and a liberal foreign economic policy helped to create a climate in which West German industry prospered. In recent years there has been increasing debate about the need for sector-specific measures to promote industrial development and adaptation, but West Germany has thus far avoided a strongly sectoral approach to industrial policy.

Participation in Policymaking

The West German governing system is comparatively de-centralized. The Laender (State) governments play important roles in the Federal structure. Business and labor are relatively well-organized, and structurally integrated into the policymaking apparatus.³

Industry is represented by umbrella organizations such as the Federation of German Industry (BDI), which plays a significant role in formal and informal policy discussions with government officials. Trade associations which participate in the BDI—such as the Association of Electrical and Electronic Industries—work to promote consensus on industry-specific programs. Labor unions are likewise involved through industry-wide and regional collective bargaining. Systems of codetermination and plant-level councils give workers a direct voice in the operations of factories. Labor unions are informally consulted about measures to promote industry. They also participate through organizations such as the Federal Institute of Labor, which develops programs to ease adjustment to change. At one time the “concerted action”⁴ system was also an important vehicle for labor participation—a mechanism that could be revived in the future.

Interest groups—from both business and labor—are systematically represented in policy-making, but government institutions are also important. Specialized agencies such as the cartel office (which has pursued a comparatively moderate antimonopoly policy) and the Deutsche Bundesbank (the central bank in West Germany, which operates with considerable autonomy) provide continuity in economic policy. Although Germany’s social welfare programs are the most extensive of the nations discussed in this appendix, the West German approach to industrial policy exhibits little direct government intervention compared to France or Japan.

Approaches to Industrial Promotion

Price stability, high employment, and economic growth are fundamental goals of West German industrial policy. The 1967 Growth and Stability Law provides for the coordination of public and private decisions through a system of consultations between government, management, and labor.⁵ Finance plans are prepared on a 5-year basis: the Deutsche Bundesbank has a wide array of instruments to implement monetary policy. Though the Bundesbank is theoretically independent, it is bound to support the overall economic policy of the government, and in practice normally acts in close consultation with public officials.

A number of institutions—the Council of Economic Advisors, the Ministries of Finance and Economics, the Bundesbank—develop macroeconomic policies affecting all industries; but the banks deserve special emphasis. During the high growth period through the 1960’s, the Bundesbank maintained exchange rates at a level that undervalued the deutsche mark and promoted exports. More recently, the bank has emphasized stabilization.

West German banks play an additional role in industrial policy because they are allowed to hold stock in corporations, as well as making loans to them. Because bank loans are important sources of capital for West German firms, lending policies can influence business strategies. So while it would be an exaggeration to suggest that the Bundesbank or the banking community orchestrates economic and industrial policy in any centralized fashion, financial institutions do have an important part in West German industrial policy, as in France and Japan.

¹J. Pinder, T. Hosomi, and W. Diebold, *Industrial Policy and the International Economy* (New York: Trilateral Commission, 1979), p. 30.

²P. Katzenstein, *Between Power and Plenty: Foreign Economic Policies of Advanced Industrial States* (Madison, Wis.: University of Wisconsin Press, 1978), p. 320.

⁵*The Aims and Instruments of Industrial Policy* (Paris: Organization for Economic Cooperation and Development, 1975), p. 30.

Subsidization of industry in West Germany is both direct and indirect, but is not used as widely or heavily as in many other industrialized nations. The shipbuilding industry has been given export financing assistance and tax benefits; incentives are offered to purchasers of domestically built ships. Germany's coal industry receives substantial subsidies and tax benefits, and mergers have also been encouraged.²⁶ Generally speaking, however, manufacturing industries in West Germany have not depended on government subsidies, which have been relatively modest in size.

The West German Government also influences industry through public ownership. The government owns more than 3,000 firms, accounting for 10 percent of national income.²⁷ The Federal and Laender governments together hold 40 percent of the stock of Volkswagen. While Volkswagen has been quite successful, Salzgitter—a steel company wholly owned by the government—has suffered the largest losses of any nationalized firm. Generally speaking, publicly owned firms function much like privately owned companies. There is little direct government involvement in management, nor much special assistance.

While distressed sectors such as shipbuilding, coal, and textiles have received considerable government attention, West German industrial policies have also attempted to target growth industries.²⁸ In recent years, the promotion of technological innovation, particularly in new and developing industries, has become an important element in industrial policy. Set up in 1972, the Ministry for Research and Technology (BMFT) has developed a wide variety of programs to assist both large and small firms.

Electronics companies receive R&D assistance from both the BMFT and the Ministry of Economics. The government has helped large companies such as Siemens develop advanced computer technology, and has begun an R&D support program for very large-scale integrated circuits.”)

²⁶ G. deCarmoy, “Subsidy Policies in Britain, France, and West Germany: An Overview,” *International Trade and Industrial Policies*, S. J. Warnecke, ed. (New York: Holmes and Meier, 1978), p. 50. In 1974 subsidies to the coal industry totaled DM 1,721 million, more than \$600 million.

²⁷ A. Wilson, “National Structural Differences of the Economies of the U.S., Germany and Japan: An Overview,” Congressional Research Service, 1111, Library of Congress, Oct 31, 1979, p. 47.

²⁸ A. Steinherr, “German Industrial and Labor Policy and the European Community,” *West Germany: A European and Global Power*, W. L. Kohl and G. B. Jasevi, eds. (Lexington, Mass.: D. C. Heath, 1980), p. 125.

²⁹ Between 1976 and 1979 the government reportedly allocated \$625 million in matching R&D grants to companies producing small computer systems and peripheral equipment. The VLSI program launched in 1980 will be funded by \$300 million in matching government grants. See *Microelectronics in the 80s* (Luton, England: Mackintosh Publications, Ltd., September 1979), pp. 51-2.

While the bulk of the government's assistance has gone to large companies,” in recent years there has been a growing effort to assist smaller firms, of which there are more than 1,000 in electronics alone. A variety of methods are being used; for example, the government helps to support the Venture Financing Co., a corporation established in 1975 to emulate some of the features of U.S. venture capital markets.

BMFT has also setup a number of pilot projects to help smaller firms. The VDI Technology Center, for example, was established in 1976 to help small companies develop and apply microprocessor technology. The Center now has more than a hundred projects.

BMFT activities are extensive and diverse. In addition to its direct sponsorship of programs such as the VDI Technology Center, BMFT works indirectly through trade associations. It also provides some of the funding for the Fraunhofer Gesellschaft, a nonprofit society that conducts applied research useful to industry, generally on a contract basis. Substantial government funding is channeled to the Gesellschaft, the BMFT providing a core of basic support, as well as contracting or sharing costs with industry for most projects. A primary aim is to facilitate the rapid transfer of new technology to industry. There are 28 individual research institutes in the Fraunhofer Gesellschaft, each with its own facilities and a good deal of autonomy. The institutes are organized on a disciplinary basis—e. g., there are separate facilities for solid state electronics and semiconductor processing technology. Each institute has a board of directors with strong industry representation.

In addition, the West German Ministry of Economics supports 80 industrial research associations, emphasizing R&D assistance to small- and medium-sized firms, these are organized across disciplines to cover the range of technologies important to a particular industry.

Other distinctive features of West German industrial policy have been the use of regional development plans, and a strong focus on labor issues. A Federal-Laender committee plans re-

³⁰ In 1980, the BMFT planned to spend 7.5 percent of its 6.17 billion DM (about \$3 billion) budget on assistance to smaller businesses—*Financial Times*, Oct. 17, 1980.

³¹ “General Scheme of the Federal Government's Research and Technology Policy for Small and Medium-Sized Firms” (1979 update), Ministry for Research and Technology (BMFT).

³² *Sixth Report of the Federal Government on Research*, Ministry for Research and Technology (BMFT), 1980.

³³ *Jahresbericht 1979*, Fraunhofer-Gesellschaft, Munich, 1980, pp. 53-55.

gional economic development. Sixty percent of the land area of the country is now covered by the program, which has channeled assistance to industries near the East German border and in the Saarland coal mining region. Businesses in development regions receive incentives such as tax-free grants covering 10 to 25 percent of investment costs, loans on preferred terms, and accelerated depreciation allowances. Land acquisition assistance is also provided to firms locating or expanding facilities in designated areas. West Germany has thus developed a rather systematic approach to regional development.

The emphasis on labor concerns in West Germany is in marked contrast to countries such as Japan where enterprise unions are common. In 1974, BLIFT and the Labor and Social Affairs Ministry set up a joint program of research on workplace humanization. Stimulated by the Works Councils Act of 1972, the program reflects concern about the effects of industrial change on both skilled and unskilled workers; it aims not only to protect the health and safety of the labor force, but also to encourage organizational changes which workers themselves help to identify and implement. Oriented toward field experiments, a number of projects have focused on effects of automation and applications of computer technology.

The labor movement is strong in West Germany compared to Japan or France. Union representation on the supervisory boards of corporations is required by law. Whether despite or because of the participation of labor in business decision-making as well as public policy, labor unrest in West Germany has been remarkably low. Over the most recent 5-year period for which data is available (1974-78), work stoppages in the Federal Republic cost, on the average, 6 working days per 100 employees per year.¹ The corresponding figures for other countries are: Japan, 13 days; France, 21 days; and the United States, 48 days.

A final important element of postwar West German industrial policy has been its international orientation. West Germany has had consistent trade surpluses, more than half of its exports going to other nations within the European Community (EC). The Federal Republic also carries on extensive trade with Eastern European nations. West Germany has clearly benefited from trade

with its neighbors, and has favored EC policies aimed at reducing obstacles to free trade within the community. Less progress has been made in common EC industrial policies. An EC steel policy has been developed and superimposed on the national policies of the members of the Community, but the national policies are not always consistent with those of the EC Steel Directorate. In electronics, there has been no real Community policy. Some leaders of the West German electronics industry believe that here too a common approach—at least to problems of sudden surges in imports from abroad—may be necessary in the years ahead.

New Directions in West German Industrial Policy

A distinguishing feature of postwar German industrial policy has been its "free market" orientation, combined with extensive social programs aimed at easing the impacts of structural change on various groups, particularly labor. But while the West German Government has consistently tried to avoid strong intervention in particular industrial sectors—such as the French or Japanese emphasis on targeted industries—over the years sectoral intervention has nonetheless increased. Since the late 1960's, a number of sector-specific programs have evolved, particularly for high-technology industries. Such policies represent a conscious attempt to meet foreign competition through expanded public support for growth industries and new technologies. They have been intended largely as supplements to macroeconomic policy.

The BNFT programs discussed in the previous section, in particular, have been based on the proposition that government policies can and should promote positive structural adjustment. In some contrast to the industry orientation of the Ministry of Economics and its associated industrial research associations, BMFT projects emphasize development of new and key technologies such as semiconductor electronics important across industries.

Sectoral programs have been the subject of continuing controversy in the Federal Republic. Advocates of vigorous structural policy (*Strukturpolitik*) contend that government support for highly competitive industries and technologies is essential if West German industry is to remain internationally strong and if structural change is

¹Research on the Humanization of Work: Action Programme of the Federal Ministry for Labour and Social Affairs and the Federal Ministry for Research and Technology DoNo218174e

Katsuyuki Kodolake et al. *Useful Labor Statistics* (Tokyo: Nihon Seisaku Kenbukai/Japan Productivity Center) (1980) p. 4-69

²Technology and Steel Industry Competitiveness report, pp 60-65

to be smoothly accommodated domestically. While they do not call for the introduction of an elaborate economic planning system on the French model, advocates of Strukturpolitik believe that government actions are justified to relieve bottlenecks and distortions in the market. Opponents worry that government support for targeted industries and technologies will lead to controls on investment and ultimately to cartels.³⁷

³⁷ For a discussion of the Strukturpolitik debates, see M. Kreile, "West Germany: The Dynamics of Expansion," *Between Power and Plenty: Foreign Economic Policies of Advanced Industrial States*, P. Katzenstein, ed. (Madison, Wis. University of Wisconsin Press, 1978), pp. 220-22.

This dispute has been colored by partisan and bureaucratic politics and is likely to persist in the years ahead. Fundamentally, the controversy concerns the appropriate role of the West German Government in industry and the economy—whether the free market tradition needs modification in a period when technological development seems essential for maintaining competitiveness.