

# Planning a miracle: how Japan became an economic superpower

Japan's famed high growth in the post-World War II era was a direct continuation of the Meiji tradition, e.g., the evolution of the Ministry of International Trade and Industry (MITI) from the Industrial Promotion Bureau.

The tools that created the miracle were forged during the postwar Occupation. However, Japan's prospects were by no means sure in those desperate early years. One faction in the Occupation forces—centered on Britain and its allies among Institute for Pacific Relations (IPR)-associated Americans—demanded the reversal of Japan's industrialization, as the "Morgenthau plan" did for Germany. These forces railed against Occupation Supreme Commander Douglas MacArthur's plan to revive Japanese industry. MacMahon Ball, chief British delegate to the Allied Council, wrote in a 1948 book, *Japan: Enemy or Ally?*: "The greatest danger is that in helping Japan rebuild her industrial strength and restore her foreign trade, the U.S. will enable Japan to establish industrial and economic supremacy in East Asia which her leaders will once again exploit for political purposes."

Like MacArthur, Franklin Roosevelt opposed any Morgenthau plan for Japan, seeing industrial revival as the basis for a U.S.-Japan partnership in Asia. But within days of FDR's death, the anglophile IPR adherents swarmed into the U.S. State Department, dismissed many of the "Japan hands," and reversed FDR's already issued "Initial Post-Surrender Policy Directive." MacArthur's new orders were: "*You will not assume any responsibility for economic rehabilitation of Japan or strengthening of the Japanese economy* [emphasis added]."

In November 1945, accompanied by IPR leader Owen Lattimore, Treasury official Edwin Pauley led a mission to determine Occupation policy. His report recommended stripping Japan's economic capacity:

[We should allow Japan only] enough export industry to pay for imports which Japan must have, but . . . decrease the need for imports. . . . [Allow only] exports that consume Japan's own raw materials such as cement, handicrafts, porcelain and toys . . . [and] give preference to those industries in which labor contributes as much as possible and imported material as little as possible [emphasis added].

Aware, of course, that Japan is 90 to 100 percent de-

pendent on imports for most major industrial raw materials, as well as 20 to 30 percent import-dependent for food and feedgrains, Pauley was sentencing industry to death. His report recommended the removal from Japan of:

- 50 percent of all machine tool capacity and machine tools;
- all tools in the categories of arsenals, aircraft, ballbearings, and aircraft engines;
- 75 percent of all steelmaking capacity;
- 50 percent of thermal power capacity;
- all equipment in 30 percent of shipyards and reduction in another 30 percent;
- all capacity for aluminum and magnesium; and
- most capacity for sulphuric acid, soda ash, chlorine, caustic acid, and other strategic chemicals.

At best, the American de-industrializers suggested Japan should concentrate on textiles at home and for exports. They labelled "illusory" Japanese plans to become a heavy industry economy, arguing that "comparative advantage in cheap labor" made low-skill manufacturing the best choice. The British opposed even the latter, fearing Japanese textile exports would disrupt their markets in their colonies.

MacArthur's view was the opposite, as his economic aide, General Marquet, wrote in 1951:

The U.S. believes that Japan's industrial potential may be utilized advantageously to a maximum extent in order to increase raw material production and industrialization in South East Asia. An attractive opportunity exists in Japan to supply Southeast Asia and other areas with capital and consumer goods. To these ends, efforts should be exerted to enlist the support of various U.S. economic aid and technical missions in Southeast Asia to develop programs linked to overall U.S.-Japan economic cooperation plans.

For Japan, avoiding de-industrialization or being confined to light industry was, like the Meiji-era political battles, a matter of survival. Some of the most significant leaders of this fight were the officials of the Ministry of Commerce and Industry (MCI), a direct descendant of Okubo's Industrial Promotion Bureau soon reshaped as the Ministry of International Trade and Industry (MITI). Postwar MCI of-

officials were exactly the same individuals who had run Japan's march to heavy industry in the late 1930s. Only 42 MCI leaders were purged when hundreds of thousands of businessmen, officers, politicians, and officials were ousted as war criminals. Almost all of the 1950-60s MITI leaders had joined MCI in the 1930s.

### Priority production for recovery

By March 1947, Japan faced an impending halt of production "due to an exhaustion of stockpiles, a lack of imports, and an acute coal shortage." Its response is detailed in Chalmers Johnson's, *MITI and the Japanese Economic Miracle*. Unfortunately, Johnson does not recount the British/Pauley plans nor the factional situation in the Occupation; he does, however, dramatically show how the fight against being confined to light industry created the institutions of postwar industrial policy.

To defeat the "March crisis," the Japanese government set up a Reconstruction Finance Committee (RFC) and an Economic Stabilization Board (ESB). Their job was to get industry going again. They ignored and evaded the faction of the Occupation pushing light industry, the policy of cutting inflation by cutting production, and other mysteries of the invisible hand.

In devastated Japan, the ESB discovered, "a twofold increase in coal production leads to a fourfold increase in general manufacturing." Thus the coal industry came first for RFC loans and subsidies under a "priority production" system. To ensure that priority industries revived, the Economic Stabilization Board (ESB) rationed the woefully inadequate supplies of coal. Steel and fertilizer were first in line.

The ESB disregarded normal price/profit considerations, saying such monetary barometers were totally unreliable in an economy incapable of generating an overall profit. Under ESB direction 15 *kodan* (public corporations) purchased prioritized commodities from makers at prices high enough to cover production costs, selling them to prioritized industries as well as individual consumers at low prices. From 1946 to 1949, subsidies of industrial operating costs and investment took up 20 to 30 percent of the entire government budget.

Contrary to the inflation-fetishists, the system tripled Japan's manufacturing from 1946 to 1950, though the level was still only half of 1940's. Despite this success—perhaps because of it—the Occupation, Johnson writes, "still did not like the indifference to inflation of ESB Director Ishibashi. It therefore purged him."

### Import rationing and the creation of MITI

The major block to further progress was foreign trade, still only 35 to 40 percent of the 1934-36 level as late as 1950. Japan would be doomed to a future of textiles and handicrafts unless it could raise import levels and the exports to pay for them.

Private trade was still forbidden to Japanese citizens. The Occupation provided all the raw materials, particularly raw cotton for textiles, petroleum, and food. Then, control was turned over to Japan through a law that would shape the entire postwar development: the December 1949 Foreign Exchange and Foreign Trade Control Law. As part of the law, the MCI and other institutions were reorganized as the Ministry of International Trade and Industry, Japan's new "economic general staff."

Under the law, all foreign exchange earned from exports had to be turned over to the government. MITI in turn allocated the scarce foreign exchange. The de-industrializers hoped this would limit imports and thus industry, but the opposite occurred. MITI had the power to decide who could import what, thus determining what industries could develop, e.g. by licensing the steel firms to import iron ore and coal, or subsidizing imports of machinery-building equipment. It also protected infant industries from foreign imports. Johnson writes, "It was the single most important instrument of industrial guidance and control that MITI ever possessed."

MITI retained this power until the mid-1960s, and often used it ingeniously. Johnson writes:

Between 1953 and 1955, MITI would issue import licenses for sugar to trading companies—which were then selling Cuban sugar in Japan at from two to ten times the import price—only if they had allied themselves with a shipbuilder and could submit an export certificate showing that they had used 5 percent of their profits to subsidize ship exports. [A similar system was used for machinery]. For the two years it was in effect, the sugar-link system supplied some ¥10 billion [\$30 million] to the shipbuilding industry. It ultimately had to be stopped because too many other industries wanted subsidies . . . and because the IMF [International Monetary Fund] frowned on the practice.

MITI also used the law to aid exports in general, by exempting 50 percent of firms' export income from income tax. This ended in 1964.

In 1948 ESB officials drew up a five-year plan, proposing development be led by investment in heavy and chemical industries. They predicted the plan would increase high value-added exports, alleviating trade deficits, and ending subsidies at home. Washington vetoed the plan and took economic power out of MacArthur's hands. In 1949, Detroit banker Joseph Dodge was sent to run the Japanese economy. Under the cloak of fighting inflation, budget deficits, and trade deficits, Dodge prohibited price subsidies and RFC loans to industry.

Johnson writes, "When governmental aid to designated sectors of priority production stopped and SCAP [the Occupation] began to promote export industries, there was a radical reallocation of what little private capital was available. Funds for coal and electric power development de-

clined drastically, while funds for the reestablished textile industry shot up." Total domestic investment fell in 1950 by *one-half* from 1949's still dismal levels, while personal consumption was kept at only 70 percent of 1930s levels through 1952.

The Korean War ended the Dodge policy, and, in 1952, a peace treaty ended the Occupation. Japan once again controlled its own economic destiny.

### Hamiltonian allocation of credit

During the Occupation, "industrial policy" consisted mainly of rationing of scarce physical resources, imports, and capital. These were emergency measures in a war-devastated country. Now Japan was ready for more normal forms of industrial policy.

It must be kept in mind, however, what 1950s Japan was like: Japan did not recover even 1940 manufacturing levels until 1955; a majority of people still lived on the farm; and per capita national income as late as 1960 was no higher than Argentina's. As late as 1954, Japan could still produce only 9 million tons of steel, the level of Mexico or India or Korea

today. In many ways, despite almost 100 years of progress, Japan was still what is today called a Newly Industrializing Country. But it was ready to resume catching up with the West.

With the end of the Occupation, Tokyo revived its Hamiltonian credit system. In this system, the state creates all credit, and prioritizes, directly and/or through the private banking system, allocation of credit to those infrastructural, manufacturing, trade, and other sectors that "leverage" rapid national development. The major Hamiltonian financial institutions are the Japan Development Bank (JDB), the Fiscal Investment and Loan Plan (FILP), and the Bank of Japan's use of the "overloan" system of credit to the private banks.

The JDB replaced the RFC abolished by Dodge. In days of scarce capital, it financed Japan's transition from a textile producer and toy maker to heavy industry giant. During 1953-55, 83 percent of all JDB loans went to build up electric power, shipbuilding, coal, and steel, and JDB loans accounted for 23.1 percent of all investment in electric power, 33.5 percent in shipbuilding, 29.8 percent in coal mining, and 10.6 percent in steel.

## Depreciation laws speed technological gains

It is now notorious that some U.S. firms buy patents to prevent them from being used "prematurely," lest their existing technology be made obsolete. Some banks use lending power to slow down innovations that might force other customers stuck with outmoded methods to lower prices and profits. This is only partly because some business leaders, like U.S. Steel's Edgar Speer, deny the difference between paper profits and production; U.S. tax depreciation laws haven't helped either.

In Japan, equipment can be depreciated in 6 to 8 years on average, compared to 9 to 11 years, until 1981, in the United States. Accelerated depreciation allows 25 to 30 percent write off in the first year; special depreciations, for specified equipment in specified industries, allow another 25 to 33 percent in the first year (for a total depreciation of 125 to 133 percent of cost). At a 50 percent tax rate, this allows reclaiming 25 percent of cost in the first year. A firm scrapping a factory to build a new, more modern one can write off the entire remaining book value of the plant (minus scrap value) and stretch the tax savings up to five years. And, if a firm proves that *new technology lowered the value of its assets*, it can depreciate its assets by that amount.

All this means, even if a firm has not paid off debts on old equipment, these provisions may still lower capital expenditures enough to make it pay to scrap old machines and get new ones whose higher operating profits pays the debts on both. This is especially true in the favored sectors.

United States tax laws have only some of these features. The Reagan reforms lowered the depreciation time of almost all equipment to five years. Even before that, the United States had the scrap and build provision, but never had the even more important provision for technological depreciation. Nor does U.S. law discriminate among industries to channel investment into areas which most upgrade the economy as a whole.

The important, albeit limited, Reagan reforms have, however, been obstructed by Volcker's credit policy. None of Japan's measures, including depreciation, are isolated "supply side" gimmicks; they are part of a total financial/economic environment. American firms may agree that improved equipment will be more profitable from the standpoint of operating costs. However, the capital costs of getting rid of the old equipment, borrowing at high interest rates for the new, and, up until 1981, the fact that it took so many years to depreciate existing equipment, combine to make total costs so high as to almost preclude rapid modernization.

In Japan, finance is made to conform to the criteria of the real economy; for the United States, it is the other way around. In the end, the Japanese have newer, more productive, and more profitable factories.

As recovery proceeded and capital became more abundant, the JDB's financial importance declined. It lent 22 percent of all industrial capital in 1953, but only 5 percent in 1961 and 4 to 5 percent now. Politically, however, JDB loans still counted: "A JDB loan," comments Johnson, "regardless of its size, became MITI's seal of approval on an enterprise, and the company that received a JDB loan could easily raise whatever else it needed from private resources."

FILP was funded by ordinary citizen's deposits in a postal savings system. Today, it adds up to a Ministry of Finance-controlled bank with four times the assets of Bank of America. FILP financed low-interest loans for industry and, more important, rebuilding infrastructure. As a percent of GNP, FILP loans grew from 3.3 percent in 1956 to 7 percent in recent years. Now, it finances housing construction, environmental protection, and transport.

From 1953 to 1961, direct government financing of industry through JDB, FILP, and so forth comprised a portion of total capital as high as 38 percent in 1953, gradually declining to 19 percent by 1961. It ranged from 12 to 20 percent in the 1970-80 period.

In the much-discussed overloan system, the Bank of Japan creates credit, not by monetizing government debt as in the United States, but simply by making loans to the large private banks. These banks in turn lend to private industry, giving priority to the frontier industries favored by MITI and the JDB, making sure recessions and quarterly bottom line considerations do not interrupt needed credit. They also lend to regional banks.

The private banks provide most of industrial funds, op-

erating as the handmaiden of industry through the "scrap and build" system. Industries like steel with huge investments in old plants get loans to scrap them and build new, more modern ones, even before the old ones are paid off. Industry and banks all know that eventually the total profits will be greater than if the old plant were kept. Depreciation laws allow writing off of the scrapped plant's remaining value [see box]. Japan moved very early into Basic Oxygen Furnace plants, and then repeatedly into larger, more modern, newly built Greenfield plants. In contrast, U.S. steel firms in the 1950s could not get loans for new technologies for fear that this would disrupt the price structure based on old Open Hearth technology. They expanded existing plants with existing technology. After 30 years, the Japanese use up to 30 percent less coal, iron ore, energy, and labor for each ton of steel, and earn more profits.

In semiconductors, American producers were forced to cut back expansion during the 1974-75 recession for lack of capital. Japanese firms, by contrast, kept getting long-term loans to expand their capacity and to automate. In the late 1970s, when U.S. firms could not meet domestic demand, the Japanese filled the gap. By 1979 the latter had captured 40 percent of the U.S. market.

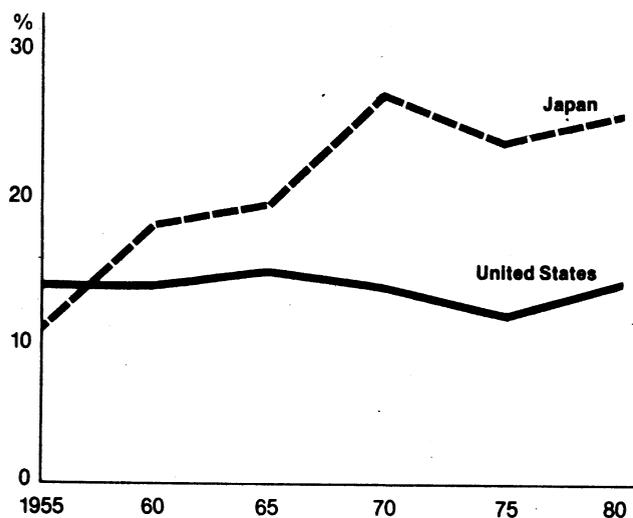
In any capitalist economy, the surplus product of a given year cannot be circulated unless new credit is created to circulate it. Contrary to monetarist myth, credit is not based on savings out of *already existing* consumer or business income. Rather credit is *created by the state* and paid for out of the new surplus generated by investing it. As long as the credit is invested in surplus-generating production, no problem arises.

America has gotten into trouble—where a far more indebted corporate Japan has not—only because the credit created in the United States has been misinvested for so long. The Federal Reserve creation of credit by monetizing government deficits on current expenditures tends to promote current consumption rather than investment. The Bank of Japan's lending of newly created credit to the big banks to lend to industry promotes an investment-led economy.

Tokyo's control of its national credit system is being eroded. Mounting flows of money into Japan through trade surpluses and now-abundant internally generated capital has ended private firm dependence on state-allocated credit. Additionally, Washington now claims that Japan's lower interest rates are an unfair trade barrier, and prima facie evidence of closed capital markets, as U.S. Trade Representative William Brock told *EIR* (June 29, 1982). It demands Japan open its banking system to hot international money flows to let its interest rates rise to Volcker levels. Officials within the finance ministry propose acquiescence to such "internationalization" of its credit system, along with an offshore banking system. The Bank of Japan is opposed to this. Nonetheless, Japan remains the only advanced country with a national, rather than international-based, credit and currency system.

## Capital Investment, Japan vs. U.S.

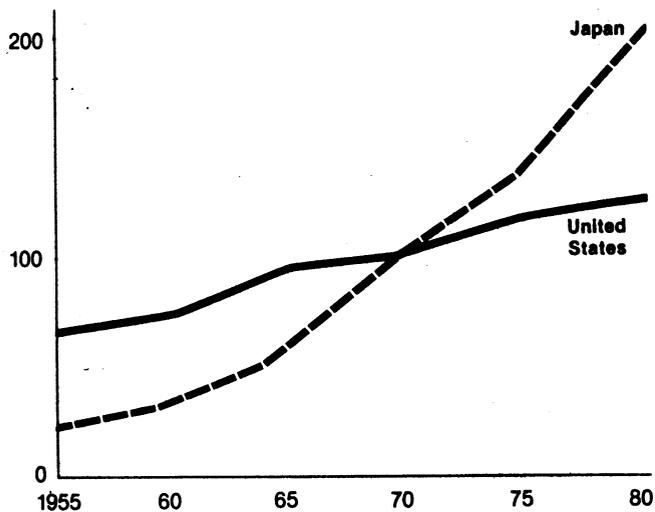
(Gross private fixed capital investment as a percent of GNP)



Source: MITI, U.S. Department of Commerce.

## Labor productivity, Japan vs. U.S.

(Index of manufacturing output per manhour, 1970 = 100)



Source: U.S. Bureau of Labor Statistics.

## Protectionism on trade and foreign technology

Another weapon in MITI's arsenal, until the 1980 revision of the 1950 Foreign Capital Law, was control over foreign investment, a power used to force transfer of new technology to Japan. Japan's attitude stems from experiences like those of Kiichiro Toyoda, the founder of Toyota automobiles. His story is told in *Entrepreneurship: the Japanese Experience*, a magazine promoted by the Electronic Industries Association of Japan. In 1924 Toyoda developed a time-saving automatic loom that experienced very little operating failure:

The new model was considered such a success it was called the "Magic Loom." . . . In the first year of manufacture orders poured in for 6,000 looms within Japan alone. In time, Toyoda looms were exported all around the world . . . In 1929, Platt Brothers & Co. of England applied for the transfer of patent rights offering 100,000 pounds. . . . Once in control of the Toyoda loom technology, Platts held the monopoly on the production and sales of the Toyoda loom in every country except Japan, China, and the United States . . . however, *Platts sold only 200 Toyoda looms in the following two and a half years. Later, Kiichiro became convinced that Platts had used the agreement as a ruse to stop Toyoda's advances into the British and Indian loom markets. . . . [emphasis added].*

Kiichiro decided to invest . . . in the manufacture of automobiles. . . . Ford and General Motors had already introduced knock-down mass-production sys-

tems into Japan in 1925 and 1926 . . . [and] they drove the budding domestic automobile industry to extinction. From this time until the 1950s, many prominent figures in the government and big business, arguing that Japan would never succeed in developing its own indigenous passenger car industry, held that it was wisest to rely on imports. Kiichiro, however, did not see why something which could be produced in America could not be produced in Japan. . . .

[In 1935] the Automobile Manufacturing Industry Law was enacted, prohibiting automobile manufacturing with foreign capital, and providing an opportunity for the domestic automobile industry to revive.

In the 1950s-60s, American auto firms did not try to export to Japan, never developing the right models for that, but to buy into Japanese firms. MITI stopped this. From all over Europe, stories came back of the American "buy-up" of Europe. MITI used the Foreign Capital Law to avoid that fate, lest Japan lose its ability to build up independent technology and advanced industry.

Computers posed a special problem since IBM had organized itself in Japan as a yen-based firm, IBM-Japan, rather than as a foreign firm. Johnson comments:

IBM held all the basic patents of computer technology, which effectively blocked the development of a Japanese computer industry. [MITI Vice-Minister Shigeru] Sahashi wanted IBM's patents and . . . he made his position clear to IBM-Japan: "We will take every measure possible to obstruct the success of your business unless you license IBM patents to Japanese firms and charge them no more than a 5 percent royalty." In one of his negotiating sessions, Sahashi proudly recalls, he said that "We do not have an inferiority complex toward you; we only need time and money to compete effectively."

IBM ultimately had to come to terms. It sold its patents and accepted MITI's administrative guidance over the number of computers it could market domestically as conditions for manufacturing in Japan. Since IBM leased its machines rather than selling them outright, in 1961 Sahashi responded by setting up a semiofficial Japan Electronic Computer Company, financed by the Japan Development Bank to buy hardware from domestic producers and lease it to customers. To ensure MITI's control, he appointed the old MCI senior, Murase Naokai, president of the leasing company.

Throughout the 1950s and early 1960s, MITI used its control over imports and foreign investment to protect the industries it wanted to build up, a precise implementation of 19th century American System economics.

## 1960s: Import liberalization

The mid-1960s marked a major turning point. State allocation of credit became less important as a booming economy ended the days of scarce capital, and, in 1964, licensing of imports and direct subsidies to exports were abolished when Japan accepted Article 8 status in the IMF. By that time, Japan began to enjoy regular trade surpluses, making import allocation and export subsidy superfluous. Leaps in modernization left fewer industries at the infant stage where they needed import protection to survive. Many had already become internationally competitive.

Licensing of imports was replaced by tariffs, which were steadily lowered in the late 1970s and early 80s under international pressure. By 1983, Japan had the lowest tariff rates among advanced industrial countries for many items. Exceptions were politically sensitive weak sectors, e.g., tobacco, leather, certain agricultural items, and certain high technology items.

The 1950s-60s import and foreign investment protection and export aids remain a source of controversy to this day, along with charges that Japan's market remains closed due to "non-tariff barriers." This year has seen numerous reports and petitions to Washington by American business associations accusing the Japanese steel, semiconductor, television, auto, and other industries of hiding behind protection until they were ready to pounce on targeted American counterparts.

Yet, over the years, American industries from textiles to television to steel to autos have obtained similar import protection—including export restraint agreements by Japan—but have misused the relief. After obtaining "trigger price" import relief in 1977, American firms used the increased cash flow to move out of steel. The television industry, which waited three years before following the Japanese in labor-saving solid state technology, obtained an export restraint agreement from Japanese makers in 1977. Even then it continued shipping facilities to Taiwan and Mexico. Other industries simply continued outmoded methods.

*Japan used import controls to protect advancement; the United States has used them to protect backwardness.* High interest rates and tax laws have a great deal to do with such corporate decisions, but the problems did not begin with Volcker. These days, the Japanese advantage is secured, not by protection, but by competitiveness of price and quality. To say America *today* suffers a trade deficit with Japan or cannot compete due to its past or present import barriers is a hoax. The answer is for the United States to adopt industrial policy, and to step up U.S.-Japan cooperation in technology and reviving world trade.

## The 'knowledge-intensive' era

Trade and capital liberalization changed the form of industrial policy, not its substance. 1964 saw the creation of the Industrial Structure Council (ISC) of MITI, an "advisory" body consisting of MITI officials and top business leaders.

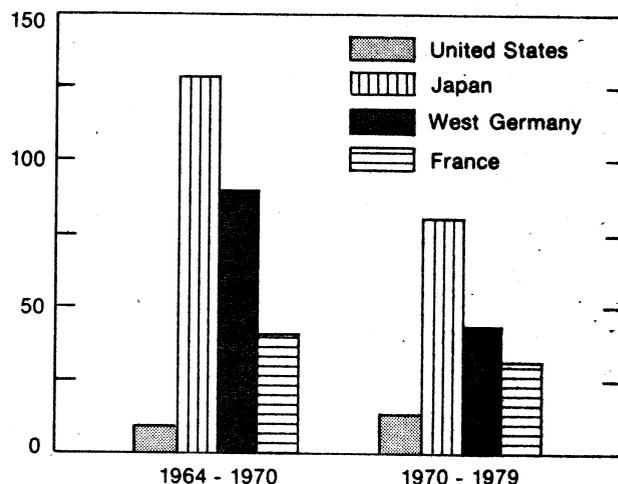
The ISC plans where Japan should go economically over the next 10 to 30 years, decides which are the key frontier "leveraging" industries to achieve the goal, and announces the plan in occasional "Longterm Visions of Japan's Industrial Structure." Through the fabled "administrative guidance," MITI and the business leaders, grouped in the powerful Keidanren association, guide investment to the chosen sectors. The familiar tools of selective depreciation benefits, MITI/industry aid to R&D, JDB loans to industry, FILP loans for required new infrastructure, and prioritized private credit get the "vision" implemented.

In 1971, the ISC proposed Japan move into the "knowledge-intensive" era of technology-based industry, fine chemicals, nuclear and fusion power, bio-technologies like genetics and photosynthesis, industrial robots, and new materials such as ceramics for car engines. The ISC specified that it would be impossible for Japan and other advanced countries to make such a switch without the industrialization of the developing countries since, as MITI officials told *EIR*, the population of the northern countries is too small to permit the division of labor required by a fusion power economy in the 21st century. Japan's crucial aid to the Korean industrialization process followed the issuance of this report. One MITI official recently told *EIR*:

You want to know what our industrial policy is? Look at Korea and Taiwan. See how they are industrializing. We have been a catalyst for that, and must continue to be one. This is our industrial policy. Our internal structure is determined by our international role.

Developing nations justly complain that promises to transfer technology outweigh Japan's deeds, a discrepancy

**Real growth of R&D expenditures**  
(percentage change)



that has grown with the worsening of world trade. Nonetheless, MITI's analysis is not just rhetoric. Half of Japan's exports go to the developing countries and half of the total are capital goods. Japan has now become one of the largest lenders to developing countries, largely to help finance capital goods exports and industrial development projects. As Prime Minister Nakasone told President Reagan, "There can be no prosperity in the advanced sector without development in the South." This is one reason Tokyo wants a partnership with America in Pacific Basin projects.

Industrial policy now faces a major debate sparked by the world economic crisis. Some businessmen and politicians argue that Japan must acquiesce to annual growth as low as 2-3 percent indefinitely due to world conditions. MITI argues instead that technology will eventually restore world growth and that Japan must prepare for this period; it must sustain at least 5 percent growth to generate the surplus to invest in new technologies. The 1980 ISC report declared that Japan had achieved its century-long goal of catching up with the West; Now, it must move on to new goals to deal with its new position in the world. The report rejected

. . . the now prevalent apprehension that technological progress is about to stagnate. . . . [Instead] great expectations are therefore placed on technological innovation providing the key to the solution of various problems in the 1980s. . . . In the past, Japanese industry achieved brilliant results in improving and applying imported technologies. In the 1980s, however, it will be essential for Japan to develop technologies of its own. . . .

It is extremely important for Japan to make the most of her brain resources, which may well be called the nation's only resource. . . . Possession of her own technology will help Japan to maintain and develop her industries' international superiority and to form a foundation for the long-term development of her economy and society. . . . Basing national development on technology should be our aim in the 1980s.

Leveraging industries these days are ones that help create a knowledge-intensive industrial structure. A 1978 law, which will last only until 1986, provides the computer industry with low interest JDB loans for R&D and capital development, along with special accelerated depreciation of equipment. The famous Fifth Generation computer research also enjoys low-interest financial aid from MITI. To help overcome the cliché that Japan can produce hardware, but not software, a 1979 temporary law initiated by MITI allows up to 50 percent tax exemption of revenues from general software sales if the funds are used for further R&D on general software.

MITI is promoting the development of nuclear energy, not only because it is the cheapest, safest form of energy, but because this high-temperature energy can create new

industrial processes, gases and chemicals not available with conventional energy at any price, as MITI official Hiroshi Murata wrote in 1979 in *Nuclear Engineering International*. Beginning in 1973, MITI pioneered research on nuclear powered direct reduction of iron ore into steel. Since 1976, MITI has arranged low-interest JDB loans so the nine electric utilities can purchase nuclear equipment made in Japan. The joint private-government Nuclear Power Reactor and Nuclear Fuel Development Corporation was established to gain independent access to nuclear fuel, and to develop a breeder reactor. *Fusion* magazine editor Dr. Steven Bardwell, who recently toured Japan's fusion facilities, estimates "Japan has the most aggressive fusion program in the world and may beat the United States in commercializing the energy of the 21st century."

This year, MITI sponsored a law providing for the *creation of 19 new cities of a few hundred thousand people each as new "technopolis" centers*. Low-interest loans, tax incentives, cheap land, and depreciation benefits will be extended to firms opening up operations in the new cities in designated high-technology industries, or infrastructural support for the latter.

### MITI versus the post-industrialists

MITI scorns the "Atari high-technology" so popular in the United States. One veteran official laughed at the phrase "Atari Democrat." "Atari is going bankrupt, and even Texas Instruments is in trouble. I don't understand people who talk about a 'post-industrial era.' Don't they understand you can't have software without hardware; you can't have white collar industries without blue collar? Don't they understand that maintaining smokestack industries is a national security issue for America?"

Depressed industry cartels notwithstanding, Japan is not scrapping basic industry in favor of high technology. The whole purpose of high technology is to revolutionize heavy industry. When Washington said energy-intensive steel should be scrapped, Japanese firms moved to continuous casting and other energy-saving devices. To be sure, capacity-expansion investments in Japanese steel are in the specialty area, and imports of steel from Korea have increased—from a plant built with the aid of Nippon Steel. However, basic steel is being maintained through heavy investment in productivity and resource efficiency. Textiles have declined as a *portion* of production, and textile imports have increased—which aids sales by developing country manufacturers—but absolute production has increased through modernization.

There is a great deal of talk today about whether America should "copy" Japan and its successful industrial policy. Many of those doing the talking distort what Japan actually does. However, that aside, the real issue is not whether America is to copy Japan. The question is whether we shall re-import from Japan the system we gave them more than 100 years ago.