Policy Analysis

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Executive Summary

Market-oriented economists think that it is just a bit wasteful to spend time on problems of international trade. In a properly functioning world economy, after all, international trade would be just a special case of interregional trade. There are, indeed, some special difficulties -- transportation costs, language barriers, and the like -- but they are relatively straight-forward. Why worry about international trade when there are so many more interesting things to think about?[1]

This blasÃ© attitude, of course, is shared by almost nobody else. Industries affected by imports are the first to feel the sting of increased competition from foreign firms. Then, responding to pressure from industry, government gets into the act. Once in a while, even an economist joins the fray, as when Lester Thurow of the Massachusetts Institute of Technology, in a recent Newsweek column, thundered about the danger of a "videocassette recorder gap" between the United States and Japan.[2]

The issue of foreign competition -- especially when accompanied by charges that government-subsidized foreign firms are "dumping" their products at below-cost prices to drive local competitors out of business -- does raise some serious questions of public policy. American firms that are exposed to competition from abroad make a substantial contribution to the wealth of our nation and employ thousands of workers. If promoting economic well-being and combating unemployment are proper concerns of government, then an intelligent policy on foreign trade is essential.

This is the rationale given by the U.S. Semiconductor Industry Association (SIA) for publishing its recent report, The Effect of Government Targeting on World Semiconductor Competition: A Case History of Japanese Industrial Strategy and Its Costs for Americans.[3] While the report is highly polemical, it does make a case that the Japanese semiconductor industry has received and continues to receive various forms of assistance from its government -- although the competitive impact of such aid is unclear. What should the U.S. government do about the situation, if anything?

The Charges against Japan

According to the SIA report, the Japanese government has "targeted" Japan's domestic semiconductor industry for accelerated growth.[4] This targeting, it says, has consisted of four steps. First, Japanese firms are to be protected from import competition, to help the firms develop production capacity and expertise within a sheltered domestic marketplace. Second, industrywide goals are to be established, Japanese semi-conductor firms are to be exempted

from antimonopoly laws, and labor is to be divided among firms through joint projects of research and development (R&D). Third, direct subsidies, preferential tax rates, and virtually limitless loan funds are to be provided to targeted firms at low rates of interest. Fourth, R&D projects cosponsored by government and industry are to be established, and the results of government-sponsored R&D are to be furnished to Japanese firms.

The result of these steps, contends the SIA, has been to reduce costs that Japanese semiconductor firms incur. Their costs are far below costs that their nontargeted American competitors face. Hence, Japanese products can undercut American prices and Japanese technological advancement can proceed more rapidly.

The main thrust of Japanese production in semiconductors has been in very-large-scale-integration (VLSI) memory chips, which store data and instructions for computer devices. Less impressive so far has been Japanese progress in making VLSI logic chips, which operate on the data stored in the memory chips and do the "thinking" for the computer. By 1981, Japanese firms held 38 percent of the world market for 16K RAM chips[5] and 70 percent of the market for 64K RAM chips.[6] These advances in market share came primarily at the expense of U.S. makers of semiconductors, who had previously enjoyed a dominant position in those specific areas. (U.S. manufacturers still have overall dominance in the international semiconductor marketplace.)

But Japanese inroads meant more than just a reduction of market share previously held by the United States. By 1981, the market for 16K and 64K RAM chips had turned into a battle zone, as production soared and prices dropped to ever-lower levels. The SIA notes, "During the first quarter of 1981, when the prevailing market price for the 64K RAM was $25-$30, Fujitsu was offering them for $15. . . . During 1981 the price of a 64K RAM dropped from $25-$30 per device to about $7.75. By early 1982, several Japanese firms were quoting prices of $5 per device, and one was offering $4.25 for fourth-quarter delivery."[7]

Needless to say, American semiconductor firms took a beating in the 16K and 64K RAM product lines. According to the SIA, five major U.S. semiconductor makers reported collective losses (before taxes) of $66 million on the 16K RAM and $77 million on the 64K RAM from 1981 through 1982.[8]

The risk of going head-to-head with the seemingly invincible Japanese, says the SIA, has also discouraged U.S. firms from entering or staying in the marketplace for advanced semiconductor chips. While 14 U.S. firms produced 1K RAMs, 15 produced 4K RAMs, and 12 produced 16K RAMs, so far only 5 are in the arena for 64K RAMs. As for the next generation of RAM chips -- the 256K -- only one American firm, Western Electric, has announced plans to start production. Meanwhile, several Japanese companies have trumpeted their wares in the 256K generation.[9,10] The increased risk, unsurprisingly, has also increased the cost of capital for U.S. semiconductor firms just when they need capital the most. Now, laments the SIA, not only do Japanese firms get capital at government-subsidized low interest rates, but to compete against them their U.S. counterparts must pay a further risk premium.[11]

Finally, the SIA regards the Japanese marketplace -- the second largest in the world, about half the size of the U.S. market and one-fourth of the world market -- as still closed to U.S. semiconductor imports. The SIA reports that the market share of American semiconductors in Japan "has been chronically low and has not exceeded 12 percent for any sustained period." Although Japan has lifted formal import barriers, informal measures remain: "Despite formal 'liberalization,' the government continues to condone de facto 'buy Japan' policies. . . ."[12]

The SIA's Policy Recommendations

What should the U.S. government do about the situation? There seems little doubt that U.S. semiconductor firms, as now situated, are in for a fierce battle and may even be driven from some sectors of the marketplace by their market-share-obsessed, price-cutting Japanese competitors.

The SIA proposes four main steps to deal with the problem.

First, the U.S. government should announce that foreign industrial targeting practices will not be allowed to undermine U.S. technological and economic leadership in this critical industrial sector. The future growth of the U.S. economy depends on the continued vitality of this industry. ["What's good for General Motors is good for the country."]

Second, the U.S. government must identify, analyze, and counter the distorting effects of foreign industrial targeting practices. . . . [it] should establish a monitoring system with respect to major commercial merchant semiconductor product lines. Such monitoring will give "early warning" of export drives, and will alert the U.S. government to possible predatory export trends by Japanese firms as well as the continuing existence of barriers to market access in Japan. .

Third, the U.S. government should insist that U.S. semiconductor firms receive commercial opportunities in Japan that are fully equivalent to those enjoyed by Japanese firms -- including those favored by MITI [the Ministry of International Trade and Industry of the Japanese government]. . . . U.S. firms must receive real, not "cosmetic," market access, reflected in significantly greater participation by U.S. firms in the Japanese market. This will require an affirmative action program to normalize competition in Japan. (Emphasis added.) The Japanese government should establish programs to see that this result is achieved.

Fourth, . . . the U.S. government should promptly seek enforcement of Japan's obligations in multilateral forums [such as the General Agreement on Tariffs and Trade, GATT for short], and should be prepared to exercise U.S. rights under such agreements if necessary.[13]

We will return to these proposals and evaluate the probable impact of putting them into practice later in this paper.

The SIA's Evidence for Its Charges

Considering the length of the SIA report (153 pages), the evidence presented to support its charges of Japanese market malfeasance is surprisingly sparse. Indeed, it is established that Japanese semiconductor firms are outcompeting American firms in certain market segments, and also that they (like all Japanese companies) have an advantage in the areas of taxation, capital costs, and freedom to engage in cooperative ventures. What is not established, however, is whether the governmental targeting measures have had a significant impact in establishing the market strength of Japanese semiconductor firms. Of course, any measure that lowers costs or removes legal barriers to efficient organization will confer some advantages. What is not so clear is whether that targeting measures are responsible for most such advantages Japanese firms enjoy (see below). Let us take a look at each of the SIA's charges against Japan.

Protection from Import Competition

The SIA notes, "Until 1974 the Japanese semiconductor market was officially closed."[14] Even after the Japanese marketplace was officially opened to U.S. semiconductor firms, however, the U.S. market share failed to increase, according to a complaint made by the SIA.

"Liberalization" of the computer and related industries in 1974-6 supposedly ended the barriers to semiconductor imports. . . . Today, however, six years after "liberalization," U.S. semiconductor firms do not hold a larger share of the retail merchant market than they held when imports were controlled by quotas. . . . The U.S. share has been chronically low and has not exceeded 12 percent for any sustained period, despite a substantial yen appreciation against the dollar since the early 1970s.[15]

The report concludes that "this low share, coupled with Japan's history of import restrictions, suggests that barriers to sales of foreign semiconductors remain."[16]

This line of argument is as interesting for what it does not say as for what it does say. Given the scope of the SIA report, one would expect that if import barriers remained, they would be documented in painstaking detail; but this, surprisingly enough, is not what we find. What we find instead is the assertion that since American semiconductor firms have not done as well in Japan as they think they should have, such barriers must remain even if no examples can be adduced. Of course, the SIA does not tell us that the same argument can be used by Japanese firms to prove that the United States erects barriers to imports. The overall market share of Japanese semiconductor makers in America is also a mere 12 percent (the same as U.S. firms' market share in Japan).

It is worth noting that the SIA uses the term "import barriers" in a quite unusual way. Normally, when economists talk about "import barriers," they mean laws passed by a nation's government to restrict imports. But the SIA seems to

assert that a country's market is also "protected" if its consumers simply prefer to buy domestically produced goods. The SIA frets that

an important factor in the inability of U.S. firms to penetrate the Japanese market is the simple fact that the same firms that produce most of Japan's integrated circuits also account for a majority of Japan's semiconductor consumption [17]. . . and that the government continues to condone de facto "buy Japan" policies.[18]

In effect that means that if Japanese firms either produce their own semiconductors or buy them from other Japanese firms, that constitutes an illegitimate "import barrier" against which the U.S. government must take action. The brazenness of such a claim takes one's breath away.

The assertion that the yen has appreciated against the dollar since the early 1970s, a process that would tend to make U.S. products cheaper and increase sales in the Japanese marketplace, is simply mistaken. Since 1975, the yen has fallen in value by almost 20 percent in relation to the dollar.[19] Indeed, when they are talking about Japanese imports rather than American exports, some U.S. executives darkly hint that the Japanese government is deliberately keeping the yen undervalued so as to cheapen Japanese goods in foreign markets.

In summary, then, the SIA report produces evidence that U.S. semiconductor firms do not have a large market share in Japan, but it fails to produce any evidence that this is because of Japanese government restrictions on imports.
Establishment of Industrywide Goals

It is true, as the SIA report observes, that MITI has tried to establish goals for and direct the efforts of Japanese industry. It is doubtful, however, that MITI could direct Japanese firms to do anything that they do not want to do. A recent editorial in the Harvard Business Review notes that

competition in the industry has been so tumultuous that MITI could not have played resource allocator even if it had wanted to. . . . MITI is but a spectator in this disorderly boom. Its blueprint for the 1980s is long on rhetoric and short on specifics.[20]

Indeed, some of Japan's most spectacular success stories have emerged from Japanese industry's outright defiance of MITI. In the 1960s, MITI attempted to cartelize the Japanese automobile industry and was flatly told to mind its own business. And in the 1950s,

a small consumer-electronics company in Japan asked the government for permission to buy transistor-manufacturing rights from Western Electric. Permission was necessary because at the time foreign exchange was controlled by the tax and trade ministries. MITI refused, arguing that the technology wasn't impressive enough to justify the expenditure. Two years later, the company persuaded MITI to reverse its decision and went on to fame and fortune with the transistor radio. Its name: Sony.[21]

Most of MITI's actions on behalf of the semiconductor industry have had the effect of clearing away legal barriers to economically efficient organization of the marketplace; that is, MITI's actions have enabled Japanese firms to do things that they wanted to do anyway. Thus, it overrates MITI's influence to claim, as the SIA report does, that

[through] a process of industry-government consultation, industry-wide goals were established; [and] MITI reorganized the Japanese semiconductor industry in conjunction with these goals, exempting them from the operation of Japan's anti-monopoly laws.[22]

More to the point would be to observe that the industry, freed from uneconomic "antimonopoly" laws by MITI, went along with a plan that appeared sensible, irrespective of its bureaucratic origin. This is even more the case today, as Japanese industry becomes increasingly inclined to completely ignore MITI's grandiose master plans.[23]

Government Subsidies

There is little doubt that the Japanese government does subsidize high-technology firms in various ways. The extent of such subsidies, however, is not as great as is commonly thought, at least in relation to total R&D spending. For the

much-publicized fifth-generation computer project, for example, MITI is spending $50 million during the 10-year life of the project -- which sounds like a lot, until it is compared to IBM's research budget of $1.6 billion for 1981 alone.[24]

MITI's subsidies to the semiconductor industry in 1978, the latest year for which the SIA report provides figures, amounted to $45.7 million. Most of that went into the VLSI Project, which is aimed at developing technology to pack more information on each semiconductor chip. Considering that equipping a single production facility can cost $75 million and up, $45.7 million does not seem so very impressive.

While it is trite but true that two wrongs do not make a right, the U.S. government does confer extensive subsidies on high-technology research in this country. In particular,

when American negotiators complain of the Japanese joint research ventures in electronics, the Japanese quickly point to the Defense Department's VHSIC (Very High Speed Integrated Circuit) program. Even the production equipment developed for this program will not be permitted to be sold abroad. . . . We claim that the purpose of such defense programs is not commercial development. Whatever their purposes, our trade partners retort, these policies have commercial consequences and must be considered when negotiating.[25] According to the U.S. Department of Commerce, government pays for approximately 50 percent of all R&D efforts in the United States. American firms, of course, do not consider this to be subsidization of R&D; after all, subsidization is what Japan, not the United States, does. The crux of the matter is that the Japanese can point to just as many subsidies in the United States as Americans can point to in Japan.

Government-Industry Research Projects

The SIA report emphasizes the Japanese government's VLSI Project as a key element in Japanese firms' ability to outcompete American firms in the 64K RAM marketplace. What we are not told, however, is that Oki Electric -- Japan's fastest-growing producer of the 64K RAM chip -- was not involved in the project at all. Oki had reached the testing stage for its 256K RAM chip before the Japanese semiconductor firms even became involved in the VLSI Project. So how much of an advantage did involvement in the project confer? The project may have actually retarded the R&D of the firms involved.[26]

How Bad Are Japanese Policies?

It seems fairly clear that at least in the area of high technology, Japanese firms receive assistance from their government. Naturally, the contentions of the SIA report may be viewed with a some suspicion; there is more than a little self-interest involved. However, the fact that Japan has targeted semiconductors and high technology generally is confirmed by independent sources that do not particularly stand to gain. For example, Wheeler, Janow, and Pepper recently concluded in a study for the U.S. State Department that

the Japanese government has an extensive network of institutions in place to provide direct and indirect support, particularly for R&D investment, to hightechnology activities and industries. Support for this network is likely to continue. . . . [27]

Zysman and Cohen, in a study for the Joint Economic Committee of Congress, discuss borrowing for such large projects:

The government has supplied one quarter of all funds for computer-related research and development in Japan. . . . The government has initiated major projects required to make the large technological jumps in the industry. The money served not only as an indication of government priorities, which made it easier to borrow funds for continued expansion, but absorbed part of the financial and executive risk in pursuing these sectors. . . . [28] American banks have lent to Japanese clients with debt levels they would not tolerate in American clients; they have perceived Japanese debt as being secured by government guarantees.[29]

It should be emphasized that government assistance, whether in financing R&D or in other areas, is no guarantee of success. The spectacular achievements of targeted industries in narrow areas tend to obscure the fact that most targeted

projects have failed.[30] Unless the project is viable to begin with -- a determination better made by private entrepreneurs than government officials -- and unless the scientists and managers working on it are competent and motivated, then it will not succeed, subsidies or no subsidies. Japanese high-technology firms have succeeded, where they have succeeded (and it is not everywhere), primarily because they have made the right moves at the right times.[31]

Nevertheless, government actions that reduce costs can indeed give domestic firms a competitive advantage over foreign firms that are not so blessed. Below we will consider the proper response to such actions.

Outside the narrow targeted areas, the Japanese market is surprisingly free and open, with a minimum of government interference. A 1983 report prepared for the United States-Japan Trade Study Group reveals that although Japanese exports to the United States amount to 1.3 percent of U.S. gross national product, U.S. exports to Japan amount to 1.9 percent of Japanese GNP. Moreover, an estimated 50,000 types of U.S. goods are offered in Japan, and U.S. companies doing business there are generally more profitable than their Japanese counterparts.[32]

This is not to say that doing business in Japan is easy. Although by 1983 the Japanese government had eliminated most legal barriers to entry of foreign firms into the Japanese marketplace,[33] many cultural and informal barriers remain. In particular, the Japanese place great value on market tenure of local firms. Thus the Japanese tend to choose home-grown products over imports.[34] Product distribution systems are frequently incomprehensible to non-Japanese observers.[35] Foreign goods must often meet seemingly arbitrary standards to be cleared for import into Japan.[36] However, preferences of local buyers and unfamiliar distribution systems do not constitute government discrimination against foreign firms; and bureaucratic requirements (such as standards certification) are steadily being reduced.

As for the extent of government subsidies and other assistance to Japanese industry, two observations should be made. First, the bulk of such assistance goes to politically powerful interest groups, such as agriculture or aluminum -- indicating that clout matters more than competitiveness.[37] Second, in absolute terms, the total amount of government subsidy to Japanese business has been and remains small in relation to overall government spending and Japan's GNP. The vast majority of Japanese firms never get a subsidy, never consult with MITI, and succeed or fail entirely on their own.[38]

Policy Response to Industry Targeting

The instinctive response to industry targeting practices is to call for "reciprocity" legislation -- in other words, whatever the Japanese are doing to us, we will do the same to them. If they subsidize high-technology industries, then we should too; if they restrict the access of American firms to their markets by means of legal or informal barriers, then we should keep their goods out of the United States. Zysman and Cohen see such behavior as a means to an end -- namely, discouraging our trading partners from interfering in the market process.[39] Other analysts, adopting a somewhat more belligerent tone, declare that free trade is fine if everybody plays by the rules, but since we are the only ones who observe them, we should switch to the "hardball" mercantilist approach that other countries take.[40]

To decide how to deal with industry targeting by our trading partners, first we need to identify the effects of such practices both on those partners and on us. Although the complexity of social phenomena precludes determining the exact quantitative effects of given economic policies,[41] it is possible nonetheless to trace the sequence of events that are likely to occur -- always bearing in mind that factors unrelated to the original policy may have a great impact on the outcome.

Effect on the Targeting Country

Other things being equal, there is little question that targeting measures can stimulate development of individual industries and can help them develop a competitive advantage over their nontargeted counterparts in other countries. We must stress the "other things being equal" part of that statement. The history of Japan's industry targeting is littered with the remains of subsidized research projects and targeted industries, such as its large-scale computer projects of the late 1960s, which consumed $28 million in subsidies and produced nothing.[42]

Successful targeting, however, is a classic case of what French economist Frederic Bastiat characterized as "the seen

versus the unseen." At any given time, with given resources, a country can produce only a limited quantity of goods; this is usually called its "production frontier." Diverting resources to produce more of good X entails diverting those resources away from other employments -- consequently producing less of good Y. When government subsidizes targeted industries, it artificially reduces their costs at the expense of other industries, which are more heavily taxed to make up the difference. The wealth of the nation as a whole is not increased but is merely redistributed among different sectors of the economy. What is seen is the successful targeted industry; unseen are the other industries that suffer reduced competitiveness because they must pay to support the government's favorites. (Also unseen, because they are not "news," are the targeted industries that either failed altogether or did not become particularly successful.)

Targeting, applied to different industries over a period of time, must have a disruptive effect on the economy of the country that practices it. Suppose, for example, that Japan targets industry B in the 1960s and taxes industry A to support the process. Industry B, developing in an environment of artificially low costs and little competition, has less incentive to become as efficient as possible than it would if fully exposed to the rigors of the marketplace.[43] In the 1970s, when its subsidies are removed and its taxes are raised to underwrite the targeting of the newly favored industry C, the increased costs to industry B of doing business will constitute a substantial shock that will reduce the industry's competitiveness (at least temporarily), below what it would have been if the industry had never been the recipient of the government's largess. (Because of this irony -- and because of the political pull that gained the special aid in the first place -- subsidies, like diamonds, tend to be forever.)

Meanwhile, poor industry A, first taxed to support industry B and now taxed to support industry C, is on the sick list. Thus, while targeting can help individual targeted industries -- for as long as they remain in favor -- its disruptive effect must lead to reduced production and wealth for the economy as a whole. This applies even if targeting allocates productive resources just as efficiently as the market does(an improbability). If the bureaucrats' knowledge is less than what is embodied in market processes, the wealth-reduction effect will be even more severe.[44]

Effect on the Economy of a Trading Partner

The effects of Japanese industry targeting on the U.S. economy are both positive and negative. To see the positive effects, we first need to clear away some misconceptions about international trade as well as some very pernicious terminology.

The vocabulary of international trade comes straight from the 17th-century mercantilists, who advocated government measures to ensure that exports would exceed imports in order to guarantee an inflow of gold and other "treasure." When exports exceed imports, there is said to be a favorable balance of trade and a surplus; when imports exceed exports, there is said to be an unfavorable balance of trade and a deficit. The very words we use tend to prejudice the issue in favor of a long-discredited economic theory.

The fact is that if anything, a surplus of imports over exports is a favorable balance of trade. When Americans exchange dollars for Hondas, they receive useful goods; when the Japanese exchange Hondas for dollars, they receive green paper or bank deposits. Unless at some point they redeem those pieces of paper or bank deposits for American goods and services, they have given up items of considerable value for items of relatively little value. Of course, redeeming the dollars in American-made products is a major motive for wanting the dollars in the first place.[45]

Suppose, then, that the cunning Japanese launch an export drive into the American marketplace and cut the prices of their goods to incredibly low levels in an effort to capture market share. If the goods involved are capital goods, such as semiconductor chips, then the cunning Japanese have done us the favor of drastically reducing the costs of American firms that use those capital goods in creating their final products. This lowering of costs will tend to cause an expansion of business activity in the sectors to which the Japanese are selling -- creating more jobs, helping capital formation, and so forth. In the case of capital goods, one may almost lay down a "law of mercantilist economics" that when country A targets industry X that sells to industry Y in country B, it has also targeted industry Y in country B.

If the goods involved are consumer goods, such as television sets, the beneficial effects are more diffuse but still present. For example, being able to obtain television sets from the Japanese at considerably lower prices than before leaves American consumers with more surplus cash than they would have had if higher domestic prices had prevailed. This money will be spent and saved in accordance with the individual consumer's marginal propensity to save,

stimulating demand for other consumer goods and making more funds available in American capital markets. A secondary effect is the release of factors of production from the U.S. consumer electronics industries. This release, by increasing the supply of factors available to other industries, tends to depress the price of factors and thus reduce costs in other industries.

The harmful effects of targeting on the U.S. economy are mostly "frictional" -- that is, there will be losses of production while the economy adjusts to the new trade situation. When a domestic industry comes "under attack" by a Japanese export drive, it does not immediately give up the ghost and release its factors to other industries -- nor should it. Neither do laid-off workers immediately find new jobs in other industries. This just means that there may be some idle capacity in the economy until adjustment is complete and domestic production in the affected industry has settled at a lower level.[46]

We can conclude, then, that the long-run effects of Japanese industry targeting on the U.S. economy are overwhelmingly positive, while the short-run effects are somewhat negative. Economics itself cannot dictate which of these two classes of effects is more important. However, barring continual disruption of the economy by export drives in one industry after another, national wealth is likely to be higher under a policy of free trade than under one of retaliatory reciprocity legislation.

Disruption of one industry after another is improbable, for two reasons. First, if old subsidies are terminated to allow for new targeted industries, then the Japanese economy will be disrupted too, as has already been argued. Second, if the old subsidies are not terminated -- and in political reality, this is more likely -- then targeting will become less effective with each new industry to which it is applied. The point of targeting, after all, is to shift resources from nonfavored to favored industries. However, as the number of targeted industries increases, the non-favored part of the economy available to plunder becomes smaller and smaller.

The reductio ad absurdum of industry targeting would come when the Japanese government, desiring to subsidize new "sunrise industries" but unable for political reasons to cut off old subsidies, ends up targeting the entire Japanese economy -- and trying to shift resources from everybody to everybody else. This is why, in the long run, industry targeting cannot work as a strategy to increase national wealth. Indeed, the effects are just the opposite. Targeting increases the wealth of Japan's trading partners and decreases the wealth of Japan itself. In effect, Japanese taxpayers are forced to subsidize American economic growth.

The Monopoly Argument

The argument for government intervention is not yet finished. The ultimate justification for government intervention to shore up domestic industries against price-cutting foreign competition is remarkably similar to the argument against "predatory pricing" in the domestic market. In its domestic version, the argument goes as follows: A large firm, desiring a monopoly in its area of the marketplace, cuts prices below costs in order to drive its smaller competitors out of business. Having succeeded in that, the firm raises prices above their former levels, both to reap the benefits of its newly achieved monopoly and to make up for the losses it sustained during the period when it had to sell below cost to bankrupt all its competitors. This is the same sort of argument one hears from U.S. industrialists who favor government protection against the Japanese. Anthony Harrigan, president of the United States Industrial Council, warns: "After the Japanese get the market share they want, we will become cruelly dependent on Japan's products. If our steel industry were to collapse under the weight of foreign competition -- guided competition -- we could have a steel OPEC in our future."[47]

Unfortunately, this argument cannot be justified on either theoretical or empirical grounds. First, if every time he faces a competitor the predatory monopolist cuts prices below costs to retain market control, then consumers will be getting bargain prices most of the time. Second, the high profits in the monopolized sector will attract entrepreneurs; they can pick up the assets of the bankrupted firms at bargain-basement prices and therefore may enjoy even lower costs than the predatory monopolist. To drive out this second round of competitors, the monopolist must once again cut prices below costs -- probably even lower than before -- and sustain even more serious losses to maintain control of the market. Sooner or later, the would-be monopolist must either go bankrupt or abandon his strategy as too costly.[48]

In practice, the monopoly argument fares no better. For example, in the steel industry, which Harrigan is so concerned about, new and more efficient U.S. producers have shown themselves quite capable of meeting the challenge posed by Japanese competition.[49] Moreover, systematic empirical studies have shown that predatory price cutting is a generally ineffective and a highly unprofitable method of achieving and sustaining a monopoly.[50]

Regarding the danger of a Japanese monopoly, there are four casesto consider. First, the Japanese achieve a monopoly or near-monopoly and continue to provide us with all the semiconductors we want at low prices -- thereby helping American firms to keep prices low and production high. We would not mind that at all. Second, the Japanese achieve a monopoly and attempt to exact monopoly prices; then, competition springs up and Japanese prices will have to be lowered again to drive out the new U.S. firms. Third, for political reasons, the Japanese government forbids Japanese firms to sell us semiconductors at any price. Here, given that we already would have the basic technology to produce them (and probably some surviving U.S. producers), the worst outcome would be a short-term discomfort. Fourth, as part of a war effort, the Russians interdict shipments of semiconductors to the United States. In this case, if both the United States and the Soviet Union have not already been incinerated in a hail of nuclear missiles, semiconductors could be produced in the United States as part of the war effort or could be obtained covertly from Japan (just as the Soviet Union now obtains U.S. technology through covert channels).[51]

Evaluation of the SIA's Policy Recommendations

After the foregoing analysis of the effects and effectiveness of industry targeting, we are finally in a position to intelligently evaluate the SIA proposals for government intervention to protect the U.S. semiconductor industry against Japanese competition.

The first proposal is that the U.S. government announce a policy of combating industry targeting on the part of other countries with like measures. This makes no sense unless the second proposal -- to use subsidies and protectionist measures to "counter the distorting effects of foreign industry targeting practices" -- is also put into practice. On balance, it would be unwise to enact the second proposal. If the Japanese want to sell us semi-conductors at low prices, the overall effect would be to increase the production and wealth of the U.S. economy. It is indeed unfortunate that American semiconductor firms may suffer reduced profits or even perish, but public policy must be geared to the welfare of the nation as a whole, not the welfare of a single sector.

The third proposal, that the U.S. government force Japan to establish an affirmative action program in its domestic market for American semiconductor firms, would benefit neither the U.S. nor the Japanese economy. This proposal is politically impossible besides. One can imagine the howls of rage that would ensue if the U.S. government were ever to establish an affirmative action program to benefit Japanese agriculture, which has virtually no market share in the United States. And the Japanese are just as nationalistic as we are.

The fourth proposal, that the U.S. government bring complaints about unfair Japanese trade policies to the appropriate international forums, does make sense for both the United States and Japan. Anything that can be done to liberate trade and to eliminate barriers, subsidies, or other interferences with the market process will benefit everyone. This type of action is what is involved in GATT, to which both the United States and Japan are signatories.

Restoring American Competitiveness

It seems that the right policy response to foreign industry-targeting practices is to have government officials sit on their hands and wait patiently for the market to work. If industry targeting were the only reason for U.S. problems in international trade, this analysis could end here. However, the U.S. economy -- for all of its enormous strengths -- has serious weaknesses that will hobble its performance until and unless they are corrected. No "quick fix," such as President Reagan's three-year tax cut (which, of course, did not actually cut taxes at all, but only reduced the rate of overall tax growth), will do the job. A fundamental reorientation of government attitudes and policies is required to secure this country's economic future.[52]

Since we have been discussing Japan in this study, it may be useful to compare business conditions in Japan and the United States. It has already been established that industry targeting by itself cannot account for the success of Japanese firms, even in the areas of the economy that are targeted. As for the others -- industries that do not receive

government subsidies and protection but flourish anyway -- what is the explanation of their success? We will find, by comparing the business environments in the United States and Japan, that Japanese firms enjoy several important advantages.

Tax Rates: United States versus Japan

Tax rates can affect competitiveness in two ways. First, they alter the internal cash flow of a firm, and thus affect how much money the firm will be able to allocate to R&D and investment in production capacity. This factor is more important than it may seem at first, in that funding of R&D internally -- always a risky undertaking -- is much cheaper than using outside funds. Anything that damages the cash flow of a firm will reduce its ability to pay for the R&D it needs to develop marketable advanced technologies. Second, of course, unless the firm inflates the returns on investment to uneconomic levels, higher tax rates will discourage potential investors from providing funds.

America's tax policies are quite harmful to the ability of firms to compete in high-technology markets. A study done for the Securities Industry Association, released in June 1983, compared the tax rates on saving and investment-related income of 11 countries. The study concluded that the United States is "one of the harshest" in its treatment of corporate taxation.[53] The figures are not encouraging. See the rates given in the tables that follow.

Whereas those who buy stock in American firms must pay from 20 to 50 percent on any capital gains earned (or "unearned," as the tax terminology would have it), Japan's corresponding tax rate is zero. In the United States, corporate profits are taxed twice (once at the corporate level and once at the individual level); but in Japan such profits are taxed only once. In Japan, interest income is taxed at a lower rate. That is most significant in the investment-stimulating categories of savings accounts and corporate bonds. In Japan, the first $61,234 of saved or invested income is exempt from taxation. For most savers, this provision reduces the effective tax rate to zero. These advantages, along with lower overall tax rates in the Japanese economy,[54] allow a much lighter tax burden on Japanese investors.

Table 1
Taxation of Portfolio Stock Investments

Category	USA	Japan
Maximum rate, short-term capital gains	50%	Exempt
Maximum rate, long-term capital gains	20%	Exempt
Minimum holding period for long-term treatment	One year	Not applicable

Table 2
Taxation of Dividend Income

Category	USA	Japan
Double taxation of corporate income	Yes	No
Maximum marginal tax rate	50%	70%*
Special allowances	$100 dividend exemption for individuals	Lower tax rates (20% to 35%)apply within "very liberal limits"

*This rate does not apply most of the time, due to the lower tax rates on most dividend income, noted under "Special allowances or exemptions."

Table 3

Taxation of Interest Income		
Category	USA	Japan
Federal gov't bonds	50%	35%
Corporate bonds	50%	35%
Savings accounts	50%	35%
Other interest	50%	75%
Special allowances or exemptions	State/local interest on bonds is exempt	Interest on the first $61,234 is tax-exempt each year

This applies whether a Japanese firm is in a favored, targeted industry or not.[55]

Because of lower tax rates on business, Japanese firms have more cash on hand than American firms. At the same time, Japanese individuals are encouraged to save more because the rewards they can earn are subject to lower tax rates.

Saving Rates: United States versus Japan

Viewing not only rates of taxation but also savings rates offers an enlightening comparison of the United States and Japan. In the most general economic terms, a higher rate of saving means that individuals are choosing to forgo immediate consumption so as to increase their possibilities for future consumption. In more concrete terms, the higher the level of saving is, the more capital is available to firms for conducting R&D, expanding production capacity, and engaging in other wealth-creating enterprises.

To no one's surprise, studies show that Japanese workers save an average of 20 percent of their income, as opposed to only 6 percent for Americans. According to these statistics, Japan has a rate of saving 3.3 times greater.[56] This increases the amount of capital available to Japanese firms and lowers their capital costs. Katsuro Sakoh has pointed out that there are two major incentives to save in Japan. Savers in Japan receive favorable tax treatment. They also have a negative inducement: The Japanese government provides virtually no retirement payments of the Social Security type. In Japan, individuals must provide for their own retirement -- and in so doing enhance the productive strength of the economy.[57]

Capital Costs: United States versus Japan

Even if everything else were the same, lower tax rates and higher saving rates would translate into lower costs for Japanese firms. However, a study done for the American Business Conference (ABC) reveals that the cost of capital for American firms is three to four times higher than for Japanese firms.

The main reason for this difference is that U.S. business relies much more heavily on equity financing whereas Japanese firms tend to borrow to meet their capital needs. The ABC study finds that although equity financing is more than twice as expensive as debt financing, American firms use it because they cannot sustain the astronomical debt-to-equity ratios typical of Japanese growth companies.[58] Japanese companies can rely more on debt financing mainly because they enjoy an innovative type of business organization. George Hatsopoulos, author of the ABC study, explains that

Japanese companies are loosely knit into groups. Each group consists of many companies that serve diverse markets, and [each group] usually includes different types of financial institutions, such as a commercial bank, a trust bank, and an insurance company. The leadership of the group is usually assumed by a bank.[59]

These business groups reduce each member's risks through weak members being supported by stronger ones in times of difficulty. With risks reduced, it is easier for a firm to handle high levels of debt. Needless to say, any attempt to form such groups in the United States would meet stiff resistance from those who enforce the antitrust laws. Yet in Japan, besides the extra advantages that targeted industries enjoy, even nontargeted Japanese industries pay far less for

capital than U.S. firms obliged to pay.

Capital Spending: United States versus Japan

The triple burden of higher tax rates, lower saving rates, and higher capital costs generally has the effect on U.S. capital formation that one would expect. Between 1961 and 1974, the U.S. capital-to-labor ratio -- the amount of capital invested per worker -- was increasing at a rate of only 3.3 percent per year; between 1974 and 1981, the rate of increase fell to 1 percent per year.[60] Meanwhile, the Japanese capital-to-labor ratio was burgeoning at a rate of more than 10 percent per year.[61] Because capital spending is the primary determinant of labor productivity, as American firms fail to keep up with Japan in providing workers with the most advanced productive tools, the United States faces a gradual erosion of its competitiveness.

This is, by the way, an especially crucial problem for American semiconductor firms. Even apart from the vast sums that must be spent on R&D to stay technologically competitive, simply providing a plant with the equipment needed to produce current-generation chips is very expensive. In 1973, a semiconductor plant could be built and equipped for a "mere" $20 million; today it can cost $75 million or more to build and equip a similar plant.[62] The American Electronics Association (AEA) reports that Japanese R&D spending, starting from a lower base, increased at an annual rate of 11.6 percent during the last half of the 1970s, while U.S. spending increased at a rate of only 8.9 percent. The AEA also reports, incidentally, that "less than 30 percent of Japan's R&D expenditures have been paid for by the government."[63] The U.S. Department of Commerce reports that 25 percent of Japan's R&D is sponsored by the Japanese government.[64] In terms of mercantilism, that percentage compares favorably with the approximately 50 percent of R&D that is paid for by the U.S. government.[65] One reason why the U.S. government's R&D spending lacks commercial impact is that about 52 percent of government R&D money goes for military projects, whereas our trading partners, such as Japan, spend little in such areas.[66]

Labor Factors: United States versus Japan

While capital spending is the main determinant of labor productivity, other factors do enter into the equation. In particular, the adversary system of labor/management relations fostered by the American system of unions and collective bargaining generates effects that cripple the ability of American manufacturing firms to compete. For example, a recent study from the Economics Department of Citibank shows that Japanese labor costs are from 50 to 60 percent of costs in the United States.[67] In concrete terms, this means that in production costing $10,000 in the United States, Japanese firms will have a labor cost advantage of $2,800; they also enjoy an added capital-cost advantage of $2,300, which reduces their cost to only $4,900.[68] To whatever extent the labor-cost differentials reflect the ability of unions and minimum-wage laws to push wages above market levels and do not reflect greater productivity, U.S. industry is at a competitive disadvantage.[69]

Another index of labor problems in the United States is the fact that American firms suffer 10 times more lost working days than their Japanese competitors.[70] Some of the ways that Japanese firms inculcate loyalty in workers would be highly suspect in the United States from the standpoint of both labor-union chiefs and antitrust officials. In the spring of 1983, for instance, the Japanese automobile industry "borrowed" workers from the country's depressed steel firms so that layoffs would not be necessary.[71]

Antitrust: United States versus Japan

Two of the key elements in the challenge to American firms concern the freedom of Japanese firms to enter into whatever business combinations will reduce their costs, spread out their risks, and enhance their efficiency. These two elements are the sharing of expenses and business groups. In the Japanese semiconductor industry, enormously expensive R&D was allocated between firms so as to avoid duplication of effort. While this was done under government (MITI) supervision, there is no reason such allocating cannot be done on a private basis. Similarly, Japanese firms from different industries voluntarily band together to form business groups, thus spreading the risks of entrepreneurship and enabling any firm to weather difficult periods by leaning on its partners in the group.

In the past, either of these forms of doing business -- if implemented in the United States -- would have brought immediate attack from government agencies charged with enforcing the antitrust laws. However, there is now good

reason to hope that such burdens may be lifted from U.S. firms. With the tacit blessing of the Reagan administration, the U.S. semiconductor industry has formed the Semiconductor Research Corporation, a jointly funded group that will spread the costs and risks of advanced R&D over the whole industry, very much on the Japanese model.[72] Many other joint projects have been announced or are in the planning stages. To formalize the government's approval of such ventures, Senator Paul Tsongas of Massachusetts has introduced a bill (the "Joint Research and Development Ventures Act") to legalize joint R&D projects.[73] The bill, currently under consideration by the Senate Judiciary Committee, does not grant as much "freedom from antitrust" as would be ideal, but is still a step in the right direction.[74]

Exchange-Rate Effects: United States versus Japan

One factor that has stimulated Japanese exports to the United States -- and retarded American exports to Japan -- has been the exchange rate between the dollar and the yen. From 1975 to 1981, the yen's value fell by almost 20 percent in relation to the dollar;[75] this meant that yen-priced Japanese goods became cheaper in the United States and the reverse for dollar-priced American goods in Japan. While the issues involved are too complex to go into here, it should be noted that either an international money based on a gold standard of 100 percent or a system of competing private currencies would have advantages. Either system would remove money from the influence of politically dictated economic policies and thus would tend to prevent swings in currency values that change the terms of international trade without any change in the underlying productive realities.[76] As for exchange-rate conspiracy theories, which hold that the Japanese government is keeping the yen artificially undervalued to stimulate exports, it is worthwhile to note the following. First, the Japanese government lacks the foreign-exchange reserves to keep the yen undervalued for very long. Second, since imports to Japan are priced in dollars, such a policy would increase costs of factors for Japanese industries that can least afford it, such as aluminum and petrochemicals.[77]

Conclusion

The preceding investigations have revealed some surprising facts, among them the fact that industry targeting enriches not the country that resorts to it, but the countries that it is used against. The goal of restoring American competitiveness and productivity cannot be achieved by so-called quick fixes, but only through a sustained commitment to removing the heavy burden of government from the economy. Through reductions in tax rates and government spending, repeal of interventionist labor and antitrust legislation, and adoption of stable monetary policies, U.S. business can regain the initiative in world markets.

Japan, in ruins 38 years ago, became an apt pupil of American economic and management philosophies just as the United States was turning away from them. Through a strict rule of balanced budgets, low taxes, predominantly non-interventionist economic policies, and "Made in USA" management techniques, Japan came back from defeat to become the second-wealthiest nation in the world.

Although an unequivocal cause-and-effect relationship cannot be shown, it is still interesting to note what has happened to the Japanese growth rate since 1970, when Japan's government turned its attentions from simply providing a stable marketplace to increasingly pursuing "social welfare" schemes. From 1953 to 1969, the Japanese GNP grew at an average annual rate of 9.8 percent in constant-yen terms. But during the period from 1970 to 1974, as shown in the bar chart below, growth dropped to an average of only 4.7 percent per year. For the 1975-80 period the average hovered around 5 percent. While other factors such as the increased price of oil had an impact, there seems little question about the negative impact of welfare-state policies on economic growth.[78]

Annual Growth of Japanese Gross National Product (in Constant Yen)					
6.9%	8.5%	11.3%	11.3%	4.7%	5.1%
1953-1955	1956-1960	1961-1965	1966-1970	1971-1975	1976-1980

Japan's welfare state may eventually sink its economy to our level and thus relieve American worries about competitiveness. But surely it would be better for us to work our way back up to Japan's level by freeing U.S. business from crippling tax rates and interventionist laws.

There is no arguing with people who think, as one executive has written, that the problem of competitiveness arises because the Japanese system . . . is one of strong nationalism, excessive discrimination, limited personal freedom, a labor force of willing captives, savers who happily demand little as payment for foregoing current consumption, and shrewd negotiators who demand enormous concessions but grant none in return. . . . It is capable of producing more goods and services of higher quality and at lower costs than any other nation in the world.[79]

The writer concludes dourly that "it is just a matter of time before Western economic democracies come unraveled and collapse."[80] But for those who have not yet given up or have concluded that our only option is a nuclear strike on Tokyo, there is a prescription for restoring America's economy to robust health. It is not moderate -- but then neither are our economic difficulties; only the strongest medicine will set things right. The remedy includes these recommendations:

- Cut government spending and reduce taxes at all levels. David Boaz and Earl Ravenal have shown in previous Policy Analysis papers how to cut hundreds of billions of dollars from the federal budget in particular.
- Maintain a stable money supply. In the long term, money should be placed on a reserve commodity standard of 100 percent or removed from government control altogether.
- Repeal all antitrust and labor laws, including minimum-wage laws.
- Abolish all restrictions and taxes on capital and goods coming into and going out of the United States, except in case of war.
- Drastically reduce the scope of welfare benefits and initiate a gradual privatization of Social Security to reduce government spending, promote saving and capital formation, and make it less profitable to go without work

In the short term, these policies will be a political disaster. In the long term, they offer the best hope for revitalizing the American dream. And although economics cannot dictate which is more important, one would think that the future of the United States should take precedence over transient questions of political expediency. More than 2,000 years ago, facing a death sentence, Socrates gave a clear solution to our troubles: "The best course is not to be disabling others, but to be improving ourselves."

FOOTNOTES

[1] Special thanks to Philip Trezise, Jimmy Wheeler, Katsuro Sakoh, Tom Humbert, Don Fullerton, Werner Chilton, and Arthur Neef, all of whom contributed vital information and ideas to this study.

[2] Lester Thurow, Newsweek, April 4, 1983, p. 67.

[3] Published by the Semiconductor Industry Association, Cupertino, Calif., 1983.

[4] Ibid., p. 15.

[5] "K" equals 1,024 bits of memory space; 8 bits stand for a single letter or character. "RAM" stands for Random Access Memory, which means that the data on the chip can be obtained in any order needed.

[6] SIA study, p. 4.

[7] Ibid., p. 5.

[8] Ibid., p. 39.

[9] Ibid., p. 59.

[10] For example, Feedback from Fujitsu, Spring 1983, which announces on page 1 the 'World's Smallest, Fastest 256K--A Fujitsu Feat."

[11] SIA study, pp. 60-61.

[12] Ibid., p. 5.

[13] Ibid., p. 6.

[14] Ibid., p. 69.

[15] Ibid., pp. 70-71.

[16] Ibid., p. 71.

[17] Ibid., p. 75.

[18] Ibid., p. 5.

[19] U.S. Department of Commerce, International Trade Administration, An Assessment of U.S. Competitiveness in High Technology Industries (Washington, D.C., February 1983), p. 9.

[20] "Hope and Reason," Harvard Business Review, Summer 1983, p. 101.

[21] David R. Henderson, "The Myth of MITI," Fortune, August 8, 1983, p. 113.

[22] SIA study, p. 2.

[23] See "Industrial Policy: Is It the Answer?" in Business Week, July 4, 1983, p. 61.

[24] "Hope and Reason."

[25] John Zysman and Stephen Cohen, "Double or Nothing: Open Trade and Competitive Industry,' Foreign Affairs, Summer 1983, p. 1131. [26] Henderson, p. 114. The Summer 1983 issue of Feedback from Fujitsu reports that Japan has admitted its first U.S. firm, Digital Equipment Corporation (DEC), to its government/industry fifth-generation computer project. Whether or not it has thereby done DEC a favor remains to be seen; true innovation is much riskier than copying as the Japanese have done until recently.

[27] Jimmy Wheeler, Merit Janow, and Thomas Pepper, Japanese Industrial Development Policies in the 1980s: Implications for U.S. Trade and Investment (Croton-on-Hudson, N.Y.: The Hudson Institute, 1983), p. 27.

[28] John Zysman and Stephen Cohen, The Mercantilist Challenge to the Liberal International Trade Order, prepared for the Joint Economic Committee of Congress, Washington, D.C., 1983, p. 22. An abridged version of this study appeared as "Double or Nothing: Open Trade and Competitive Industry," (see footnote 25).

[29] The Mercantilist Challenge, p. 19.

[30] Katsuro Sakoh, "Industrial Policy: The Super-Myth of Japan's Super-Success" (Washington, D.C.: Heritage Foundation, July 1983).

[31] An example is Japan's investing in semiconductor production capacity in the early 1970s, when American firms were skimping on new capacity.

[32] McKinsey and Co., Japan Business: Obstacles and Opportunities (New York: John Wiley and Sons, 1983), pp.1-8.

[33] Ibid., p. 17.

[34] Ibid., pp. 30-31.

[35] Ibid., pp. 26-30.

[36] Ibid., pp. 22-26.

[37] For example: "In the 1950s, the bulk of FILP financing [one of Japan's subsidy programs] was directed at targeted priority areas; however, in recent years the major portion of FILP funds has been directed at less competitive, politically sensitive sectors such as small and medium-sized companies and agriculture, or to social programs such as housing and regional development." See An Assessment of U.S. Competitiveness, p. 27.

[38] Sakoh, in "Industrial Policy," documents in great detail the predominantly free-market character of the Japanese economy.

[39] Zysman and Cohen, "Double or Nothing," p. 1134ff. [40] Anthony Harrigan, "Needed: A Strategic Economic Policy," National Review, March 4, 1983, p. 240.

[41] See F. A. Hayek, "The Theory of Complex Phenomena," in Studies in Philosophy, Politics, and Economics (New York: Simon and Schuster, 1969); and also "The Facts of the Social Sciences," in Individualism and Economic Order (Chicago: Henry Regnery Company, 1972).

[42] Datamation, July 1983, p. 94.

[43] This effect is mitigated to some degree in the Japanese case, where the government allows -- indeed, encourages -- vigorous competition among domestic firms in the targeted industry.

[44] See F. A. Hayek, "The New Confusion about Planning," in New Studies in Philosophy, Politics, Economics and the History of Ideas (Chicago: Henry Regnery Co., 1978).

[45] See Milton Friedman, "Free Trade," in An Economist's Protest (Thomas Horton and Daughters: Glen Ridge, N.J., 1972).

[46] Surprisingly, import competition may have little effect on the ability of domestic firms to stay in business. "The Employment and Wage Effects of Import Competition in the United States," an empirical study by Gene M. Grossman, notes that "employment and wages would actually have been lower in some sectors" without import competition; he adds that "even in cases where job or earnings losses could be attributed to import competition, the effect was relatively small, except in one industry (radios and television). . . ." See Working Paper #1041, National Bureau of Economic Research, Cambridge, Mass., 1982 p. 180.

[47] Harrigan, "Needed: A Strategic Economic Policy." A few pages later in the same issue of National Review, Walter Olson found the perfect comeback: "When we rely on them for tape decks and towels, and they rely on us for food, he thinks we are 'cruelly dependent' on them, not vice versa." ("Don't Slam the Door," in National Review, March 4, 1983, p. 248.)

[48] This essentially recapitulates the analysis given by Murray Rothbard in Man, Economy, and State: A Treatise on Economic Principles, vol. 2 (Los Angeles: Nash Publishing, 1962), pp. 600-604.

[49] See Rone Tempest's "Mini-Mills Prosper Through Innovative Management," in Competition, March/April 1983 (published by the Council for a Competitive Economy, Washington, D.C.).

[50] See, for example, Roland H. Koller, "The Myth of Predatory Pricing: An Empirical Study," in The Competitive Economy: Selected Readings, edited by Yale Brozen (Morristown, N.J.: General Learning Press, 1975). [51] In one case, a Soviet agent had set up 43 dummy companies in California to buy American technology forbidden to be sold to the USSR. (Source of information: background interviews for an article in the ICP Insiders' Letter, of which the author of this study is editor.)

[52] These considerations apply even though obituaries for the U.S. semiconductor industry now seem to have been somewhat premature. AEA Update, the monthly newsletter of the American Electronics Association, reports in its June 1983 issue that demand and profits for semiconductors are expected to surge during the next year -- for all producers.

Likewise, the Wall Street Journal reports that "All of a sudden, computer chips are in short supply. As a result, many computer companies are paying more and waiting longer for the tiny electronic circuits. . . ." See "Heavy Demand for Computer Chips Sets Suppliers, Buyers Scrambling," Wall Street Journal, July 15, 1983, p. 21.

[53] Arthur Andersen and Co., Comparison of Individual Taxation of Long and Short Term Capital Gains on Portfolio Stock Investments and Dividend and Interest Income in Eleven Countries (New York: Securities Industry Association, June 1983), p. 2.

[54] See Japanese Industrial and Labor Policy, published by the Joint Economic Committee of Congress, (Washington, D.C., 1982), p. 128.

[55] U.S. taxation authorities only now seem to be becoming aware of the need for advanced R&D. In May 1983, the U.S. Treasury Department reversed its earlier ruling that would have denied an R&D tax credit for most computer software projects. Computer software is one area of high technology in which the United States is still the unchallenged world leader; for details, see AEA Update, June 1983 (published by the American Electronics Association). "The Effects of Taxation on the Selling of Corporate Stock and the Realization of Capital Gains," written by Martin Feldstein, Joel Slemrod, and Shlomo Yitzhaki, confirms that reducing tax rates not only would stimulate business activity but also would increase tax revenues. See Reprint $147, National Bureau of Economic Research, Cambridge, Mass., 1981.

[56] An Assessment of U.S. Competitiveness, p. 20.

[57] See Sakoh, "Industrial Policy."

[58] George Hatsopoulos, High Cost of Capital: Handicap of American Industry (Washington, D.C.: American Busin