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248790	PAPER	FUJITSU ACQUISITION OF FAIRCHILD	7	ND	B1
248791	PAPER	SUMMARY OF RESULTS	2	ND	B1

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① Tom Cline (Timken - 216-438-4226)

In August 1985 Trafalgar (Ch.A.) and Glenn Intl. (UK) announced their intention to purchase Mineba they had been collecting overseas convertible bonds and warrants.

In Sept. 1985 Mineba offered a "presold and/or private offering of convertible bonds" which can be converted to stock in order to dilute the 23% shareholding of Trafalgar

In Nov 1985 Trafalgar announced they would not give up and they applied with an "advance application." Under the Japanese system any foreign interest which wants to own more than 10% of a Japanese company must apply to the Minister of Finance thru the Bank of Japan. This is under the "Foreign Exchange and Foreign Trade Control Act."

The Minister of Finance extended the conclusion on the case for 3 months. (Somehow MITI is also involved - he thinks they delayed their decision for 4 months which was unprecedented and tantamount to saying NO)

On April 1', 1986 Trafalgar and Glenn Co announced the sales of their Mineba stock

② Mike Payne (Anti Friction Bearings Manufacturers Assoc) 429-5155

he thought that the Japanese govt put up some barriers, but didn't know the particulars

[illegible]ampshire [illegible] Acquisition [illegible] U.S. Agency

By Andy Pasztor
Staff Reporter of The Wall Street Journal

WASHINGTON — The Justice Depart[illegible]nt, [illegible]ering complaints of national se[illegible]ty [illegible]ntitrust problems, said it won't [illegible]t to [illegible] the proposed $110 million ac[illegible] New Hampshire Ball Bearings by [illegible]nebea Co. of Japan.

[illegible]artment's decision, announced [illegible]s of investigation and disagree[illegible]ng some of its senior antitrust [illegible]ppears to set the stage for a re[illegible] of the booming industry that [illegible]iniature ball bearings for mil[illegible]ns and aircraft. The proposed [illegible]ll substantially strengthen the [illegible]ongiomerate's position in this [illegible]field and reduce from three to [illegible]mber of U.S.-owned companies [illegible]a major share of the Pentagon's [illegible]r miniature bearings, industry [illegible]nment officials said.

[illegible]epartment officials and private [illegible]lawyers also said the decision [illegible]et a precedent for how federal anti[illegible]olicy makers will deal with future [illegible]ers by other U.S. companies that such [illegible]ntroversial mergers are necessary to [illegible]intain their competitive position in increasingly international markets.

Paul McGrath, the head of the Justice Department's antitrust division, said the proposed acquisition "didn't raise sufficient competitive concerns to warrant" federal efforts to try to block the transaction. Mr. McGrath's decision, according to attorneys familiar with the details, was based on the assumption that the Peterborough, N.H., company in the long run probably couldn't compete effectively against Minebea or other foreign bearing manufacturers willing to make substantial capital investments to gain a stronger hold in the U.S. market.

However, these attorneys said that some senior career Justice Department officials only a few days ago urged Mr. McGrath to try to block or at least restructure the merger because of concerns that Minebea could gain an unreasonably large share of the miniature-bearing market and discourage potential competitors from trying to sell to the Pentagon.

Pentagon officials earlier this year cited national security concerns in requesting a federal interagency study to determine whether the proposed acquisition should be blocked by the government. That review didn't prompt any action to try to block the acquisition, after New Hampshire Ball Bearings executives assured the Pentagon that the company's manufacturing facilities would remain under the direct control of the U.S. subsidiary and would be available to handle military contracts. Minebea has promised to invest as much as $50 million to improve New Hampshire Ball Bearings' facilities, according to documents provided to the department and to a Senate Armed Services [illegible]bcommittee that held hearings on the [illegible]e last September.

Defense Department officials originally [illegible]id they were concerned because more [illegible]an half a dozen U.S. ball-bearing makers [illegible]ave dropped out of the business since the [illegible]te 1960s, and because as much as 60% of [illegible]ertain kinds of ball bearings sold in this [illegible]ountry are made by foreign-based compa[illegible]ies.

New Hampshire Ball Bearings' officials [illegible]ouldn't be reached to comment on the de[illegible]ision.

M J ly 22, 1

Ward's Automotive Reports
7-22-85

Feder[illegible]ogul, [illegible]
ON R[illegible]

TOKYO (FNS)—[illegible] NTN Toyo Bearing Co. have [illegible] joint venture to manuf[illegible] roller bearings in the U[illegible]

Actually, the joint ve[illegible] manufacturing facilities [illegible], as well as its research laboratory [illegible] trademark.

An NTN Toyo spokesm[illegible] formal signing this fall [illegible] decided, but NTN Toyo is [illegible] the planned venture, repo[illegible] stake in the future, possi[illegible]

(Co[illegible]

WARD'S AUTOMOTIVE REPORTS

[illegible]al-Mogul, NTN of Japan To Make Bearings

Federal-Mogul Corp. and NTN Toyo Bearing Co. Ltd. of Japan last week announced they will form a jointly-owned company to make and distribute tapered and cylindrical roller bearings.

Federal-Mogul has manufacturing facilities in Alabama and Illinois, with research facilities in Ann Arbor, Mi. to be included in the new company. NTN is a major international producer and distributor of bearings, with manufacturing facilites in Japan, the U.S., Canada and West Germany.

Koyo Seiko Co. Ltd., another Japanese manufacturer of bearings, also has a U.S. manufacturing facility, in South Carolina.

Federal Mogul, NTN Agree On Roller Bearings Venture

(Continued from page 4)

The official declined to disclose how much the Japanese firm is funding for the joint venture, but the sum is expected to be very large since the two plants will produce approximately $100 million worth of bearings a year.

The two facilities produce tapered and cylindrical roller bearings for heavy truck, construction and agricultural equipment as well as for general industrial purposes. NTN and Federal-Mogul will each contribute personnel to the project.

Officials said the agreement between Federal-Mogul and NTN provides that the "manufacturing and distribution expertise of both companies will be utilized to benefit customers in the United States with timely delivery and availability of high-quality products," and that Federal-Mogul will become a distributor of the newly formed company, NTN and some of NTN's affiliates.

In Japan, the NTN Toyo official confirmed that NTN Toyo exports approximately 35 billion yen, or $140 million of bearings to the U.S. per year, making it the largest exporter from Japan.

Headquartered in Osaka, NTN produces many types of bearings including super-precision miniature bearings manufactured in facilities in Japan, the U.S., Canada and West Germany. In addition to bearings, NTN makes constant-velocity joints for front-wheel-drive cars, part feeders and a broad variety of precision machinery, including ball screws.

Observers believe that easing trade frictions is one major consideration behind NTN Toyo's move. The Japanese firm already manufactures ball bearings in the U.S. through two subsidiaries—American NTN Bearing Mfg. Co. and NTN Elgin Corp., both based in Chicago.

Federal-Mogul is a manufacturer and distributor of anti-friction bearings, engine and transmission products, sealing devices, precision forged products, fastening systems and metal and masonry cutting tools. Those products are sold to customers in the transportation, farm equipment, construction, manufacturing and aerospace industries.

Officials at the two companies said the proposed transaction is subject to negotiation of a purchase price and definitive agreements, as well as approvals from the U.S. and Japanese governments.

—TSUKASA FURUKAWA and AL WRIGLEY

AMERICAN METAL MARKET/METALWORKING NEWS, JULY 22, 1985

BRIEF

...shire Ball Bearings ...nufacturing Space

...N.H.—New Hampshire Ball Bearings Inc. here ... square feet of manufacturing space to its opera... part of an effort to accelerate significantly its ... bearings, spokesmen said.

...esident Robert Bradley said about 95 percent of ...ess to date has been the production of miniature ...rings under one inch in diameter for aerospace, ... and machine tool purposes. It will now step up its ... of bearings up to four inches in diameter, he said. "It is ... customers as much as an upward broadening of our ...

Of ... Minebea Co. of Japan, the company's parent, said late last ... they would spend from $15 to $50 million in "modernization and ... at New Hampshire plants should they be successful in the ... se (AMM/MN, Nov. 19). Minebea completed the acquisition ... and this is the first move toward the realization of those plans.

Bradley said it is now estimated that "downstream plans for equipment purchases" and other expansions will result in an expenditure of between $30 million and $45 million over approximately the next four years.

New Hampshire Ball Bearings will occupy about 30 percent of the Berger-Lahr building in Jaffrey's Drumlin Industrial Park until late November, when Berger-Lahr vacates the property. Miniature bearings will be produced here.

Most of the machinery for the Jaffrey facility will be transferred from New Hampshire's Peterborough plant, Bradley said. That plant, which currently employs about 900, will now produce "a higher percentage of larger-size bearings," he said.

A "significant amount of turning and grinding machinery will be purchased for the Peterborough site," Bradley said.

New Hampshire Ball Bearings also has a plant in Laconia, N.H.

AMM 9/1 pl

Hyatt ... Employee ... Owner ... ecide to Sell

... Hyatt-Clark Industries Inc., in ... its modernization efforts, has ... Allan Lowenstein said last week ... Clark decided to seek negotiations with ... former parent, General Motors Corp., ... itself ... ith whom Hyatt-Clark currently is having ... Corp., Canton, Ohio; and Japan's NSK Corp. ... nt in Ann Arbor, Mich., in addition to other ...

did not sell see AMM Dec. 30, 1985

... earings was bought out by its employees for $53 ... or to avert a shutdown by its parent, GM, in one of ... buyouts of the current wave of them. Lowenstein ... shed reports that the firm has been unprofitable in ... ... dependent existence, saying the firm made money ... and April 1984. ... the layout and equipment in the plant that they inherited ... grey obsolete and the demand for its product—tapered roller ... bings—has been declining as rear-wheel-drive automobiles have ...

(Continued on page 17)

Employee-Owned Hyatt-Clark Is Offered for Sale

(Continued from page 5)

become less popular.

To counter this, Hyatt-Clark has spent aggressively on capital improvements almost since its inception, when it initiated a five year, $32-million capital spending program which included the purchase of numerically-controlled machining centers, chucking lathes, grinders, heat treating equipment and other gear (AMM/MN, Oct. 24, 1983). The company has continued to make these capital improvements and Lowenstein said the firm spent about $9 million this past year.

The company has also sought out new markets, including farm equipment and the railroad aftermarket (AMM/MN, Feb. 4).

Still, plagued by many problems, including increased Japanese competition, Lowenstein said Hyatt-Clark needs an infusion of capital, which it cannot provide itself, for production equipment. He would not specify exactly how much capital is needed or what specific equipment the firm seeks to buy.

Hyatt-Clark's new markets, he said, is one of the attractions of the company, as is a GM contract that the automaker would continue to buy a portion of its bearing needs from the company through 1987.

—MYRA PINKHAM

8/21/85

Timken Is Forming Steel, Bearings Business Units

By GLORIA T. LaRUE

PITTSBURGH—Timken Co., Canton, Ohio, is creating two business units, one for bearing production and one for steel business, beginning next year.

The move is part of the company's previously announced reorganization (AMM, Aug. 7).

Effective Jan. 1 Peter J. Ashton will become executive vice president, bearings, and Charles E. Craig will become executive vice president, steel.

At present James W. Pilz, who will retire in May, is executive vice president and has responsibility for both the bearing and steelmaking businesses.

Under the restructuring, which a spokesman said is only a first step, Latrobe Steel Co., Latrobe, Pa., will operate as a separate subsidiary and will report to Joseph F. Toot Jr., president of Timken. Previously Latrobe Steel, a specialty steel producer, reported to Pilz, a spokesman said.

Officials explained that the two new executive vice presidents

(Continued on page 20)

(Continued from page 15)

would have full responsibility for the businesses they head.

Under the new structure, subsidiary companies and divisions outside of the United States, but part of the current international operation along with all bearing plants, will become part of the bearing business unit. In addition, functions in the corporate division necessary to the bearing business will become part of the new unit.

The new steel business unit will include all steel plants and departments in the U.S. as well as corporate division functions necessary to the unit.

Following the restructuring, the corporate division will report to Toot.

Minebea Hits Trafalgar Bid

WASHINGTON—The president of bearing manufacturer Minebea Co. Ltd., which earlier this year overcame objections that its acquisition of New Hampshire Ball Bearings Inc. posed a threat to the national security of the United States, last week said a U.S. firm's hostile bid for Minebea would likely not succeed because it presented security risks to Japan. Minebea has been fending off the advances of Los Angeles-based Trafalgar Holdings Ltd. and trying to consummate a friendly merger with Sankyo Seiki Manufacturing Co. Minebea president Takami Takahashi told a press conference he intended to use whatever measures are necessary to fend off Trafalgar's bid, including the national security argument. Minebea also manufactures electronic systems and other products.

Textron Puts Fafnir Division On Sales Block

PROVIDENCE, R.I.—Fafnir Bearing division, New Britain, Conn., last week became the third operating unit of Textron Inc. to be placed on the selling block by Textron in its effort to pay off a $1.4 billion purchase of Avco Corp., Greenwich, Conn. Fafnir is a manufacturer of high-precision ball bearings, with more than $225 million in sales last year.

Textron has already sold its Spencer Kellogg Specialty Chemicals division, and Bell Helicopter Textron, Fort Worth, Texas (AMM/MN, March 3). A preliminary agreement for the sale of its Jones & Lamson Machine Tool division to a California investor group headed by Donald C. Hoodes, president of Sullivan Machinery Co., Santa Barbara, Calif., is being finalized.

Salomon Brothers Inc., New York, has been appointed exclusive financial advisor to assist in the Fafnir sale.

A Textron spokesman said the company was "not in a position to discuss" potential buyers for Fafnir.

Japan Wrestles With American-Style Takeover Battle

By John Burgess
Washington Post Foreign Service

TOKYO—There is no shortage of conflicting theories on a tangled, three-sided corporate acquisition drama that Japan's financial press and rumor mill have been following blow-by-blow since the middle of August.

By some accounts, it is a ruse to secure capital gains. By others, it is mostly a creation of the newspapers. And by still others, it is that developing into Japan's first American-style takeover battle.

But almost everyone agrees it would not have happened this way several years ago and probably pertends some fundamental, if slow-to-develop, changes in the rules by which Japanese companies are bought and sold.

In Japan, takeovers are comparatively rare and occur only if both sides approve. In most cases, one is on the ropes financially or two healthy companies agree that advantages would come through economy of scale or the union of complementary operations under one roof.

The affair began unfolding one month ago, with a report in the prestigious Japan Economic Journal that Minebea Co., a fast-growing leader in production of precision ball bearings, with sales of about $550 million in the year ended last Sept. 30, had quietly acquired a 19 percent interest in Sankyo Seiki Manufacturing Co.

Sankyo is another medium-sized precision electronics firm, with a product line including components, digital clocks, machine tools and 8mm movie cameras. It has a tie-up with IBM in robots. Sales in the year ended April 1984 came to about $350 million.

Minebea quickly acknowledged its stake in Sankyo and said that it was opening talks for a merger. Sankyo responded publicly that it was not interested. By normal Japanese practice, that would have been the end of it. But Minebea President Takemi Takahashi has continued to press his suit, in the media and in private. Sankyo reportedly began lining up support among its shareholders and threatened to cut off business ties with Minebea.

"Old-fashioned people don't accept good employee relations and profit through productivity rather than speculation. All are attributes Japanese companies consider the core of good business practice.

Loyalty, as much as financial gain, binds shareholders, management and employees here. Some companies, in fact, have new hires sign loyalty oaths. Thus, it was no surprise when Sankyo's company labor union lashed up management with a statement that it opposed Minebea's merger idea.

Shareholders trust management to know best, even if things are going poorly. Annual meetings are so tranquil that a special class of entertainers, known as *sokaiya*, or "meeting people," has appeared. They buy a few shares and quietly ask embarrassing questions at meetings—unless management has broken the law and given them a payoff in advance to keep quiet.

"Shareholders are entitled to a decent return," said James Abegglen, former president of the Japanese affiliate of the Boston Consulting Group. "But they don't have unlimited rights, which is really the western notion."

Another barrier to hostile takeovers is that a comparatively small portion of a typical Japanese company's shares are actively traded. Others are in the hands of "stable shareholders" who are looking for long-term earnings, not quick profit. "Major shareholders do not release their holdings very easily," said Yoshihisa Tabuchi, executive vice president of Nomura Securities Co.

Cross-shareholdings keep bind together the Japanese industrial groupings known as *keiretsu*, such as the clusters of companies and banks bearing the Sumitomo and Mitsubishi names. Any group member targeted for a takeover could count on the support of fellow companies.

Such takeovers are, in theory, fully permissible under Japanese law. But the same law tends to favor the status quo. Lawyers say a besieged management group or union could throw up roadblocks in court that would delay it for up to two years.

Trafalgar's status as a foreign company further confuses things. Though there is nothing illegal about what it is proposing, powerful bureaucrats in the Ministry of Finance could well decide to raise obstacles of their own if they feel it is trying to impose "foreign ways" in Japan.

Takahashi predicts the government will protect him. But Trafalgar's Reynolds says he has confidence the two target companies are not big enough for the Japanese government to protect at the risk of provoking another trade dispute with the United States.

Despite their distaste for American ways in this field, some executives here feel that as their country opens its financial and investment markets to the outside world, old taboos against mergers will begin to fade.

Most formal legal restrictions against foreign ownership of Japanese firms have been dropped in recent years. And many business leaders believe that mergers can confer advantages in remaining internationally competitive, securities specialists say.

Rather than starting a new product line from scratch, the normal Japanese practice, it can make more sense to buy a company already making a successful one. Still, no one expects adoption of American-style takeover practices. As Nomura's Tabuchi said, "Any such trend should be in line with the public interest."

In the midst of these fray... player appeared. Trafalgar ... ings Ltd., a Los Angeles-based ... westment company, it is headed by Charles Knapp, former chairman of Financial Corp. of America, who resigned last year under pressure from federal regulators.

Trafalgar said it had acquired an option for 23 percent of the outstanding shares of Minebea and was interested in obtaining more or buying the company outright. In addition, Trafalgar said, it might buy into Sankyo and merge the two Japanese companies.

Takahashi says that Minebea was approached through an intermediary with an offer to sell that option back at a price equivalent to about double what Minebea shares were trading for. He suggested Trafalgar's real intent was capital gains, not takeover. (Early speculation in the market, however, had Minebea and Trafalgar as cahoots to drive up Minebea's share prices.)

Trafalgar Executive Vice President Don Reynolds denies Trafalgar made any such offer and says his company's goal is a long-term stake in an attractive corner of the Japanese electronics industry. "We have every desire to do this on a friendly basis," he said in a telephone interview from Los Angeles. "... But we're not precluded from doing—I don't like the word hostile—an offer to all the shareholders."

In the back seat of his chauffeured Nissan President sedan, Takahashi spent much of a recent hour-long ride from home to office making radio telephone calls that he described as efforts to line up support for his bid for Sankyo.

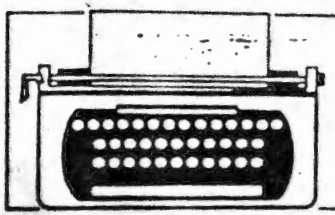
In an interview, Takahashi denied he will press a hostile takeover. But at the same time he says he will use rights accorded by Minebea's existing stake in Sankyo (Minebea is now the largest single shareholder) to open a major investigation of its books.

Some Japanese security analysts believe that he is blowing smoke and really intends to continue talking in hopes Sankyo will agree—the usual Japanese pattern. Sankyo itself is declining comment, saying whatever happens next is entirely in Minebea's hands.

Takahashi is building up defenses against Trafalgar, meanwhile. In a meeting this week, his board of directors approved a private offering of about $65 million in new convertible bonds in an attempt to dilute Trafalgar's option and make it harder to buy a controlling interest.

All in all, the events are bizarre for Japan and are being called the possible start of its first takeover fight. (Some security analysts, however, say that distinction goes to an unsuccessful bid by Seiko Corp. in the 1970s to take over a Japanese textile concern.)

11/11/86 p. 30



SIDE LIGHTS

By MINORU INABA

Offshore Manufacturing Pays Off for Minebea

TOKYO (FNS)—Those Japanese companies with a well-established offshore manufacturing base are finding themselves in a relatively good competitive position with the strengthened yen.

At Minebea Co. Ltd., for instance, an internal document produced by vice president Iwao Ishizuka contained impressive statistics about the company's miniature bearing business: manufacturing costs down 26 percent, sales prices down 24 percent and sales volume up 70 percent over a recent nine-month period.

"We're having thank-you-high-yen bargain sales," Ishizuka said, chuckling.

In the wake of what he called bargain sales in the home market, Minebea's share of the miniature bearing market was said to have swelled to 75 percent.

"The competition is sure matching our prices," Ishizuka admitted. But, he added, "the same price which brings us profits is having the competition bleed."

Why?

The executive said Minebea is now enjoying the increased competitiveness of plants which it had located in Singapore and Thailand, in addition to Japanese plants.

In Singapore, where plants were built in 1973 with a capacity of 4 million units of miniature bearings, manufacturing costs decreased by 22 percent in the nine-month period ended in July 1986. In the same period, costs at Japanese plants running at 1 million units a month decreased by only 4 percent.

At brand-new Thai plants built in 1983, manufacturing costs fell 48 percent in the nine months. Minebea now manufactures 13 million units a month at the Thai plants.

As a result, compared with compounded manufacturing costs—on which Minebea's selling prices were based—Singapore costs are 7 percent lower; Thai prices 20 percent lower; and, to the contrary, Japanese prices are 2.5 times higher.

Ishizuka noted that foreign exchange fluctuation, which brought a 30-percent higher yen in the nine-month period, was the primary factor behind Minebea's "bargain sale."

While its U.S. and Japanese plants might follow the path charted by U.S. bearing manufacturers for higher added-values, such as aircraft bearings, Minebea was determined to stay in standard bearings—the "bread-and-butter lines" in Thailand and Singapore, Ishizuka said.

He also said Singapore and Thailand compared favorably in so-called social costs.

"For example, Thailand's low social costs don't stop at low salaries, probably one-ninth of Japanese salaries, but also include low power costs, utilities and taxi fares," he said.

"If we only manufactured in Japan," the Minebea executive said, "our competitiveness would be just as strong as that of our competitors."

Minebea is known for aggressiveness in shifting manufacturing offshore—one that leads fellow Japanese companies in terms of swiftness as well as thoroughness.

Minebea's overseas manufacturing dates back to the 1971 purchase of SKF's Reed plant in the U.S.

In retrospect, Ishizuka said, "Minebea had a really hard time trying to increase local content for U.S. manufacturing, which was decided on to skirt U.S. charges against Japanese dumping.

"But we also learned that mere assembly manufacturing doesn't bring about much profits," he said.

So Minebea set up full-scale manufacturing plants in Singapore with an investment of $97 million and in Thailand with $141 million.

Ishizuka said Minebea had been able to collect $130 million from the Singapore operation, $106 million in depreciation and $20 million in profits at today's rate. The Thai operation would soon turn profits, he said.

The Minebea executive noted that the company was applying the same corporate philosophy of manufacturing all key equipment and parts by itself in both Singapore and Thai plants. Equipment and parts that Minebea supplies by itself included grinders, super-finishing machines, inner races, outer races and retainers.

Many of Singapore's 2,500 and Thailand's 4,200 workers received intensive training in Japan, he said.

We're Computerizing!

AMM/Metalworking News is in the midst of computerizing its editorial operations and readers may notice some changes in our customary style and appearance.

Funding Sought for AI Center

manufacturing environments. The goal is to develop an "in- manufacturing work ... can ... operate itself

already awarded two contracts totaling $17.4 million for an "in- ... automation" project, led by

Shipping Picture Cloudy For Large Structurals

(Continued from page 18)

newer technology is being de- not expect sufficient demand growth to absorb so much ad-

major industries, ters: survey

ation because declining and bulging imports of yarn have increased in- es and started depress- rket conditions. The re- said that Hokuriku l Japan) and other re- which produce textile earmarked mainly for were in bad shape with rops in export orders.

hit hard is the steel in- as steel exports to the d domestic sales have gging in recent months. steel production topped s in September, down cent over the cor-

responding period a year before, and is estimated to continue a downward trend in the October-December period this year due to declining exports and inventory adjustment. The steel industry does not believe its earnings will be too badly affected by the yen appreciation — thanks to price cuts of imported raw materials and still large exports — but is apprehensive that orders from Japan's export-oriented industries may decline in the future.

The report showed that the electronic /electric industry, too, was badly hurt by the recent yen appreciation as production of semiconductors and videocassette recorders sharply declined. Faced with a grim outlook, the industry is planning to raise the prices of its products and increase production overseas.

Concerning energy use, the report said that although residential electric power demand is still brisk, industrial demand has been lagging because of sluggish industrial capital investment. The ongoing yen appreciation is a boon to the electric power industry, but the report said it will take 2-5 months before upvaluation-based profits begin to show in the earnings of the electric power industry.

Local economies are not being spared the effects of the stronger yen either, according to a report by the Regional Banks Association of Japan. The report, based on opinions expressed by the presidents of 64 regional banks, said the yen's appreciation caused a sudden suspension in export business talks and sharp declines in export orders.

The areas where export business talks have been suspended are Niigata Prefecture (for talks over synthetic fibers), Gunma Prefecture (textiles), Osaka Prefecture (cotton rayon fiber), Shizuoka and Shimane Prefectures (canned fish), and others. In addition, chinaware makers in Gifu Prefecture and silverware makers in Niigata Prefecture have been suffering from lowered exports.

Local manufacturers have

e rate Dec.

ces to plummet after 26. This has resulted in prices of interest-bear- k debentures. The sec- market yields on newly government bonds in reached between 7.4 per cent per annum, cent higher than the rate on interest-bearing debentures issued in er, which was about 6.1 per annum.

anks want the increase rime to be as small as — by 0.5 per cent, the the coupon rate on the er government bond r by 0.6 per cent at the e banks hope to check r reduction in demand term lending.

er, even if the banks d in checking the rise 0.6 per cent, the con- fall in bond prices will e banks to raise the n prime rate again xt year, according to ervers.

es firms ealings

Japanese branches of securities companies bers of the exchange

Figures and Trends

THE OPERATING RATE [illegible] ing industry fell 1.8 per cent [illegible] a seasonally adjusted 101.2 [illegible] average, the Ministry of [illegible] Industry said.

The index rose 1.2 per cent from a year

Minebea head br aside takeover at

"We don't know when it will finish, but please wait and enjoy the process; the longer the more interesting it will be," Takami Takahashi, president of Minebea Co., said referring to a hostile takeover bid being mounted against his company by a foreign group.

Speaking at a press conference at the Tokyo Foreign Correspondents Club on November 18, the outspoken president described the TOB attempt by Trafalger Holdings Co. of Los Angeles and Glen International of London as "nonsense," and stressed that the real motive of the two companies is to sell Minebea stock at high prices.

Noting that more than 15 lawsuits have been filed against Trafalgar Holdings President Charles Knap in the U.S. in the past 15 months, Takahashi said, "Knap has a very bad reputation and is only taking advantage of the Japanese Government's liberalization policy."

Takahashi, while denying much knowledge of the two companies, revealed that Trafalgar Holdings has proposed to buy each Minebea share with a unit consisting of 1) ¥150 in cash, 2) a 3.25 per cent 20-year unsecured bond to be issued by a Trafalgar unit at face value of ¥350 and 3) 6 per cent 30-year zero-coupon bond to be issued by the company at the present value of ¥200. Takahashi labeled the proposal "childish."

Minebea [illegible] bearing [illegible] resolving into precision equipment produces more than 50 per cent of its total output overseas. "We definitely need Sankyo Seiki," Takahashi said. Minebea has earlier made a bid to acquire the Nagano-based precision-equipment maker.

Asked whether the takeover attempt will succeed when more than 60 per cent of Sankyo Seiki shares are held by "stable" shareholders, Takahashi said that if Sankyo continues to increase the number of stable shareholders, the company will lose its status in the Tokyo Stock Exchange, being unable to meet TSE requirements that a certain percentage of stocks of listed companies be allocated to a third party.

City banks give up prime hike

City banks, which have been seeking to raise the short-term

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248789	MEMO STEVE CANNER TO CFIUS STAFF REPRESENTATIVE, RE: ATTACHED REDRAFT	1	12/11/1986	B1

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ID	*Document Type* *Document Description*	*No of pages*	*Doc Date*	*Restrictions*
248790	PAPER FUJITSU ACQUISITION OF FAIRCHILD	7	ND	B1

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DEPUTY UNITED STATES TRADE REPRESENTATIVE
EXECUTIVE OFFICE OF THE PRESIDENT
WASHINGTON, D C 20506
202-395-5114

March 12, 1987

Memorandum For: Ambassador Yeutter

From: Ambassador Smith

Subject: **Fairchild/Fujitsu - Final Preparations**

An EPC discussion of the Fairchild/Fujitsu merger could occur the week of March 23. As we position ourselves for the Cabinet discussion of this matter, there are a number of issues we need to consider.

(1) The NSC has accepted the multi-agency request to develop a broader framework for U.S. national security interests in the inward foreign direct investment area. However, the NSC explicitly rejected the notion that the Fairchild/Fujitsu decision should await its work. Therefore, our final strategy will not benefit from the results of the NSC deliberations.

(2) Packaging the issue - We understand that the White House is considering discussing this issue in the same week as the Semiconductor Agreement and supercomputers, if not in the same meeting. It is not clear how this would affect our ability to get a positive result from the Cabinet on the Fairchild/Fujitsu issue. On the one hand, general frustration with the Japanese resulting from the semiconductor and supercomputer issues could create a climate in which Treasury and State might be more receptive to a hard line on this investment, especially since the strongest arguments on the investment issue are linked to supercomputers and domestic semiconductor industry competitiveness. On the other hand, a number of agencies might recoil from taking three anti-Japanese decisions in a row and might argue that the ambiguous nature of the analysis of this issue warrants an accommodating position. We can probably have some influence on the scheduling decision if we act quickly.

(3) Final Agency Positions - There is now a strong consensus among DOC, ourselves, NSF, OSTP and DOD that the merger should be discouraged. We need to be sure that both NSF and OSTP are invited to the EPC on this issue. All of those agencies (although DOD remains hard to predict) share the concerns that this transaction would create pressure for additional takeovers and speak with a common and increasingly powerful voice in interagency deliberations. Nevertheless, State and Treasury remain opposed to interference and will be difficult to move if they remain united. We have had no indication that the position of those two agencies reflect either Secretary Shultz' or Secretary Baker's views on this issue or how strongly those views are held. You should discuss with Secretary Baldrige (see below) ways in which you might be able to informally broach this issue with either or both of them.

DOD remains an ally but with possibly a different agenda. It continues to press the idea of legally binding assurances by Fujitsu of net technology flows to the U.S. as a solution. From our standpoint this could be the worst of all possible solutions. First, it is not clear what the legal authority would be for extracting these assurances not to mention difficulties in monitoring and enforcement. Second, it will not address our domino effect concerns, especially if companies know that their only obstacle is to generate promises whose true value can only be judged for into the future and especially if the pressure for imitation is related to the acquisition of the distribution chain rather than technology. Third, technology transfer requirements are one of our priority TRIM's for discipline in the Uruguay Round. Adoption of that practice, with the prospect that it could well have to be repeated in other investments, would undermine our initiative before it even gets started. We should search for ways to discourage DOD.

(4) Strategy with DOC - Your breakfast meeting with Secretary Baldrige on Friday should focus on a number of aspects of this issue. First, you should reach agreement that neither the legal assurances option nor any option which would "let the deal go through while sending a signal" are viable. I have already reviewed my reasons on the former. The second is also not a solution, although it could well be where Treasury and State steer the discussion. It is argued that rejection of that option is tantamount to saying that the Cabinet is incapable of responding to changed circumstances. That is simply not the case.

The problem with the signal approach is that it assumes that future deals will be clearly distinguishable from this one in terms of size, technology involved, Defense supply relationship,

etc. In fact, the Agencies analysis shows that there are a number of additional mergers which would only differ from this one by small degrees. In such a scenario, the CFIUS could very plausibly decide that there was not a basis for discriminating among U.S. companies and Japanese investors. By the time sufficient inroads had been made into the U.S.-owned industry to alter Cabinet views, significant additional damage could be done.

You should also find out from Secretary Baldrige his objectives for going public with the debate on this matter. While it could stimulate Congressional and private sector comment which to date has been noticeably lacking, his approach seems to have far more counterproductive implications. Despite his attempts to maintain the linkage to national security, the issue is now framed as a retaliatory measure to Japan's closed supercomputer market. Framing the issue this way detracts from the real concerns related to this issue and will make it more difficult to sustain those concerns if the Japanese respond in supercomputer market access. It could also harden both State and Treasury's position since the Baldrige approach links inward investment policy to market access in goods, a linkage which both agencies have successfully opposed in the past in debates on amending Section 301. His highly visible strategy is somewhat difficult to understand given the fact that we ultimately will have to rely on jawboning to block the deal. Our most likely course of action is to discreetly discourage the merger through the GOJ or Fujitsu directly. His approach is hard to square with the more low-visibility approach which our limited legal options seem to require. The heavy commercial policy spin which Secretary Baldrige has put on his public discussion would also seem to confirm what Treasury and State have said from the start - that the real motivations for interfering with this transaction are counter to the Administration's 1983 Investment Policy Statement.

N.B. It appears that Fujitsu is itself a takeover candidate of Nippon Steel. Fujitsu has also just concluded a joint venture with GTE in which Fujitsu will take 80 percent ownership of GTE's voice and data equipment business. This would seem to add additional credence to the notion that Fujitsu is following a strategy of acquiring ready-made U.S. distribution channels.

cc: Ambassador Woods
Joe Massey
Alan Holmer

Prepared by Don Eiss
Cleared by Bruce Wilson

semiconductor

THE WHITE HOUSE

WASHINGTON

March 14, 1987

MEMORANDUM FOR GARY L. BAUER

FROM: Michael A. Driggs Donald

SUBJECT: Fujitsu/Fairchild Merger (with EPC Schedule)

This memorandum provides background information on the proposed Fujitsu acquisition of Fairchild in anticipation of an EPC meeting on the subject. In addition, it outlines the EPC schedule for the next two weeks. First, the schedule:

UPCOMING EPC SCHEDULE:

March 16	The House Trade Bill
March 18	1) The Farm Credit System 2) The Canadian Free Trade Agreement
March 23	Japanese Semiconductor Agreement
March 24(or 25)	1) Japanese Supercomputers 2) Fujitsu/Fairchild

FUJITSU ACQUISITION OF FAIRCHILD:

Background:

Fairchild is currently owned by Schlumberger, a Netherlands Antilles corporation with principal offices in New York and Paris. Although publicly traded on the New York Stock Exchange, Schlumberger has significant shareholding by members of the Schlumberger family, who are French nationals. Its principal business in in oil field and other testing equipment. Fairchild has manufacturing facilities in the U.S. and Japan, R&D facilities in the U.S., and assembly operations in Germany, Brazil, the Philippines, Korea, and Singapore.

Schlumberger acquired Fairchild in 1979 for $425 million. For the last several years, Fairchild's losses have averaged about $100 million a year. It is the second largest supplier of semiconductors to the U.S. military, largely through sales to military contractors. When it acquired Fairchild, Schlumberger negotiated an arrangement with the

Department of Defense to insulate a subsidiary with classified military contracts from foreign control or influence. That subsidiary in not involved in the present acquisition.

Fujitsu is the world's ninth largest semiconductor producer, and Japan's largest computer firm. It is an integrated electronics firm, producing semiconductors for its own use, as well as for sale in the world market. It earns the bulk of its revenues from sales of data processing (60%) and communications (14%) equipment. It has participated in at least two coproduction agreements with the U.S. military.

The proposed acquisition is friendly. A new U.S. company would be created which would be 18 percent owned by Schlumberger and 82 percent owned by Fujitsu. The company would retain Fairchild's current CEO and have a six member Board of Directors (five appointed by Fujitsu and one by Schlumberger).

The U.S. policy for foreign direct investment is open. The President has encouraged it consistently. The potential issue arises only because of the nature of the product manufactured by Fairchild (semiconductors and products dependent on them) and the buyer -- Japanese. Some believe that increased Japanese control of this industry could have adverse implications for U.S competitiveness in electronics, the development of supercomputers, and military technology. If, for these reasons, the U.S. acted to block the acquisition -- when it would not do so if the investor were American -- it might violate the U.S./Japanese Friendship, Commerce, and Navigation Treaty. In addition, it could adversely affect our efforts to negotiate a multilateral investment agreement as part of the new round of the GATT and resolve bilateral investment issues with Canada.

The condition of the U.S semiconductor industry is precarious. After a long period of dominance in this technology, American industry now shares leadership with Japan and is losing ground in the newest generations of semiconductor products. The Japanese now dominate much of the semiconductor memory products and the U.S. is facing new competition in non-memory products.

Unlike many U.S. industries seeking trade protection, American semiconductor manufacturers are highly competitive. Yet, they have been in a two year slump with dramatic financial and market share losses; with Japanese companies the beneficiaries. Much of the Japanese gain can be attributed to their closed market and predatory pricing tactics. With extremely high development costs for new semiconductors and rapid change (new products may be overtaken by even newer ones every three years), volume production is crucial to achieving economies of scale and sufficient profits to invest in new products.

The closed Japanese market restricts U.S. companies to the U.S. and Europe, while Japanese companies may sell in Japan, the U.S., and Europe. Thus, American firms can capture only 10 percent of the Japanese market, while commanding 55 percent of the European market with the same products and against the same competition. This was the basis for the current Section 301 issue on semiconductors. Attached is an issue paper prepared for the President at the beginning of the 301 case which provides background on semiconductors and describes the competitive situation; still accurately.

Status of Issues:

The proposed acquisition is being examined by the Committee on Foreign Investment in the United States (CFIUS), chaired by Treasury. This group will prepare the briefing paper for the EPC.

It appears that the U.S. has few legal options to block or approve the deal. If we wish to influence it, we may have to resort to suasion of the Japanese Government. "Jawboning", however, may be effective given the growing trade friction arising over the semiconductor agreement, supercomputers, and Kansai Airport.

CFIUS is currently debating six possible implications of the merger. These implications will form the basis of the paper that will be prepared for the EPC. They are:

-- Military dependence on Japanese semiconductors;

-- Impact on technology capability of the U.S. industry;

-- Impact on development of U.S. supercomputers;

-- Impact on the competitiveness of the U.S. semiconductor industry;

-- Impact on the U.S./Japanese semiconductor agreement; and,

-- Diversion of technology to the Soviet Bloc.

Agency Positions:

Even though the analysis is still under way, the agencies have developed preliminary positions. There is strong consensus among Commerce, Defense, USTR, NSF, and OSTP [the latter two are not members of the EPC] that this merger would create pressure for additional takeovers of the U.S. semiconductor industry by Japanese firms. To varying degrees, each

wishes to block or place strong conditions on the Fujitsu/-Fairchild merger.

Both State and Treasury are opposed to any U.S. interference in the transaction.

Evaluation:

Since CFIUS is one of the interagency groups closed to OPD, I have not participated in the debates nor been privy to the detailed analyses underway. Nevertheless, my preliminary sense is that it would be inappropriate to consider this in isolation. Our issues with the Japanese on semiconductors (access to Japan and pricing) and supercomputers are of much greater significance. The question should be, then, how can we use this issue to give us negotiating leverage on the other two? A step in the right direction is to have EPC consideration of all three issues within a two day period.

I will offer specific recommendations as we get closer to the EPC meetings.

November 1, 1985

THE IMPLICATIONS OF SEMICONDUCTOR TRADE

On June 14, the Semiconductor Industry Association petitioned for Section 301 relief from Japanese practices which deny market access. At the June 24 issues lunch we discussed the significance of the petition; this is the first from a competitive industry. Since then, the question of semiconductor trade has been active. Anti-dumping cases against Japanese companies have been filed and Secretary Baldrige's Strike Force is developing a strategy for dealing with Japanese trade practices. This paper outlines the implications of this question for American competitiveness.

A semiconductor takes its name from electrical characteristics which allow it to act as both an insulator and a conductor. It can selectively store, generate, or process electrical signals, that is, process information. It consists of a small (10 millimeters square) piece of silicon upon which is etched an electrical circuit. With the lines of circuitry only 1/1000 of a millimeter apart, as many as 100,000 "gates", or decision points, can be on a single chip. Because of the extreme sophistication needed to manufacture the chips, only U.S. and Japanese firms are active. As much as $200 million investment is needed for each fabrication plant.

There are two basic roles a chip can play. First, it can simply store information and return it on demand. Each "memory" cell can be accessed in less than 250 billionths of a second. Memory chips are rated by the amount of information they can store. The current standard is 256,000 bits of data. Although these are standard, high volume, devices, their manufacture requires very precise and complex engineering skills. Consequently, a firm must make memory chips to have a base of production which allows it to also produce more complex items.

The second form is a logic chip. It actually processes data as the "brains" of an electronic system. Computers as we know them today would not be possible without these chips. A logic chip is rated by the amount of information it can process in each step. The current standard is 16 bits. These are even more complex to produce than the memory chips, and are needed in smaller quantities. Nevertheless, they are the key to the development of new electronic systems.

The pace of chip development has been accelerating. In 1978 the first chips offered only 16K of memory and processed it in 4 bit segments. By 1981, the capability had risen to 64K of memory and processing at 8 bits. Since 1984, 256K memory and 16 bit processing has been available. By 1986-87, 1 million bit memory chips and 32 bit processing will be commercially feasible. And, by 1990, 4 million bit chips may be available. These chips will revolutionize the commercial applications of electronics by allowing the development of devices not now possible.

Until recently, the U.S. was the undisputed leader. Five years ago, U.S. manufacturers supplied 65 percent of the world's semiconductor market. Today, they have lost 10 points to

Japanese competitors. The worst market conditions since chips were introduced has marked 1985. A combination of a slump in computer demand, Japanese dumping of chips, and Japanese market barriers has led to a drop in U.S. production of about 20 percent. In spite of the lost volume and profits, U.S. chip-makers will invest over 10 percent of gross revenue on R&D and another 25 percent on plant and equipment this year.

Each new semiconductor product which has come to the market has been marked by a short lifetime (as little as 3½ years) and rapidly falling wholesale prices (as much as 80 percent over the life of the product). Thus, if a firm cannot compete fully in each product developed, it cannot amass the capital and the engineering expertise to develop the next generation. Drop out in one area, and drop out permanently.

Four U.S. firms dropped out with the previous (64K) generation of memory chips. Only Texas Instruments, Micron Technology, and Motorola produce the 256K chips. (IBM produces chips only for internal use. Even so, it sources some 60 percent of needs from outside suppliers.)

The competition for the next generation of products will come from Japanese firms. Japanese companies now supply 60 percent of 64K chip needs, and 90 percent of the latest application of those chips. The European market is large, but has no significant domestic manufacturers.

The Japanese firms have grown so quickly because of a concerted plan. MITI promotion began in 1958. For the next 15 years, the Japanese market was protected by prohibitive quotas, tariffs, and foreign investment controls. In the late 1970's, formal barriers were replaced with government directed and funded R&D and informal limits on U.S. penetration of the Japanese market (10%). We have been negotiating with Japan ever since. Little has been accomplished and evidence of explicit subsidies is mounting.

The analyses now under way in the trade Strike Force will document whether the Japanese have truely been engaged in unfair practices. Recommendations will be made shortly. The outcome of the issue, however, will have a significant affect on America's competitiveness. Almost every segment of both the manufacturing and services sectors of the economy has been changed by computers and other electronic devices -- all made possible by semiconductor chips. The design, availability, and price of those chips determine in the most basic way how these other industries will develop. As American chip manufacturers drop out of the market, more than a company is lost. Each permanent loss takes with it one more bit of American creativity, entrepreneurship, and technical talent.

Office of Policy Development
November 1, 1985

THE IMPLICATIONS OF SEMICONDUCTOR TRADE

Talking Points
November 4, 1985

O Very few items can, in themselves, determine the structure and future of a nation's economy. Semiconductors represent such an item. Almost every facet of our personal and professional lives has been affected by the "electronics revolution".

O Multifold increases in the capability, size, and speed of semiconductors in the next few years will undoubtably bring about another revolution.

O Their manufacture requires large amounts of capital investment. Even more importantly, it requires high levels of engineering expertise and a great degree of innovation. Given the rate of change within the industry, one simply cannot keep up without participating in the development and manufacture of each generation of devices.

O The U.S. is loosing its once commanding lead. We invented the transistor, the integrated circuit, and the semiconductor chip. As recently as five years ago, U.S. companies had 65 percent of the world market. That has now dropped to about 55 percent and shows signs of dropping even further. Our industry will loose $1 billion in 1985.

O Two factors seem to account for this.

O First, the Japanese government has restricted it own market. Through oppressive tariffs, quotas, and informal measures they have restricted U.S. companies to about 10 percent of the Japanese market. With the short life span of each device (as little as 3½ years), it is crucial for each manufacturer to gain economies of scale through volume production as quickly as possible. Thus, U.S. firms may market in the U.S. and Europe. Their Japanese counterparts are free to market in the U.S., Europe, and Japan.

O The best indicator that U.S. products can command more than 10 percent of a market is Europe. There, in spite of Japanese pricing practices which I will mention in a moment, U.S. companies capture 55 percent of the market.

O The next factor is price. During the short life span of these devices, their price falls dramatically, sometimes as much as 80 percent. Some of this, of course, is due to volume production and legitimate price competition. Some of it is almost certainly due to below cost pricing.

O Antidumping cases have been filed against Japanese semiconductor firms with every generation of device since 1976.

O Recent investigations by the Department of Commerce of 256K memory chips found prices of $2-2.50 and production costs of $2.60-4.00.

O Thus, U.S. companies may be faced with an impossible dilemma. Loose market share and, with it, the resources to continue to invest in new procut.. Or, retain market share by charging below the cost of production and still loose the resources for new investment. Trade negotiations have failed to resolve this dilemma.

O The USTR in investigating a Section 301 case dealing with access to the Japanese markets.

O Secretary Baldrige's trade Strike Force has been looking into the pricing aspects of the problem. He will report to the EPC on preliminary results tomorrow. Recommendations will be made shortly on whether we should take unilateral action (such as initiating a dumping case).

O However the specific issues might be decided, the ability of U.S. companies to continue to participate in the development and manufacture of semiconductors will have implications for all other sectors of the economy. This may be the most important industry-specific trade issue to come before you. Unlike all the others which were aimed only at preserving an uncompetitive structure, this is aimed at the future of one of our most competitive.

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DEPUTY UNITED STATES TRADE REPRESENTATIVE
EXECUTIVE OFFICE OF THE PRESIDENT
WASHINGTON, D.C. 20506
202-395-5114

semiconductor

March 19, 1987

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MEMORANDUM

TO: MEMBERS OF THE TRADE POLICY REVIEW GROUP

FROM: MICHAEL B. SMITH, Chairman

SUBJECT: TPRG Meeting, March 20

The semiconductor issue will also be discussed at the TPRG meeting on Friday, March 20, at 11:00 a.m. in Room 203, in the Winder (USTR) building (paper attached).

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OFFICE OF THE UNITED STATES
TRADE REPRESENTATIVE
EXECUTIVE OFFICE OF THE PRESIDENT
WASHINGTON
20506

March 19, 1987

MEMORANDUM

TO: The Economic Policy Council

FROM: Ambassador Yeutter

SUBJECT: U.S.-Japan Semiconductor Agreement

ISSUE

In the Semiconductor Agreement signed September 2, 1986, the Government of Japan committed to enhance market access opportunities in the Japanese market for foreign-based producers and to prevent dumping by Japanese producers in third country markets. Six months later, there has been no increase in the foreign share of the Japanese market and significant dumping by Japanese producers continues in third country markets.

RECOMMENDATIONS:

The TPRG unanimously recommends that:

(1) A Federal Register notice be published immediately, announcing possible candidates for sanctions in response to the failure by the Government of Japan to fulfill its obligations under the Semiconductor Agreement;

(2) After a three week period for public comment on the proposed list of products (attached), the President would issue a Proclamation raising tariffs to a prohibitive level on a non-MFN basis on a list of products valued at [$90-138 million]; and

(3) If by the end of public comment period, no significant progress is detected in market access (this information will be available by mid-April), the President would again issue a Proclamation raising tariffs to a prohibitive level on a non-MFN basis on a list of products valued at [$165 million]. These sanctions could be enacted at the same time for failure by the Government of Japan to fulfill its market access and prevention of dumping commitments under the agreement.

(4) These sanctions remain in force until such time as the Government of Japan is in full compliance with the agreement.

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BACKGROUND

In the President's determination of the Semiconductor Section 301 case on July 31, 1986, he noted that the Agreement:

> ... will open up the Japanese market to U.S. exports of semiconductors and help prevent the dumping of semiconductors in the United States and third country markets....I hereby determine that any future failure by the Government of Japan to meet the commitments and objectives of the Agreement would be inconsistent with a trade agreement or an unjustifiable act that would burden or restrict U.S. commerce.

- On January 28 emergency consultations were held under the terms of the agreement to address evidence of continued widespread and significant sales below cost in third countries by Japanese companies and lack of progress on market access. This meeting (led by Smith/Smart/McMinn) followed official bilateral meetings in October, November, December and January to address major problems under the agreement. These meetings ended with MITI rejecting our evidence of continued dumping and requesting an additional 6 months to "wait and see" whether foreign sales in Japan increase. Smith/Smart/McMinn judged this response unacceptable and gave the Japanese 30 days to eliminate all aspects of dumping in third country markets and 60 days to demonstrate positive trends in actual sales in Japan; otherwise the U.S. reserved the right to take whatever actions it deemed appropriate.

THIRD COUNTRY DUMPING

- In the arrangement, the Government of Japan agreed to prevent dumping in third country markets by Japanese semiconductor firms by monitoring company-specific sales prices to the first unrelated party in third country markets. (See attached legal analysis for additional details on the breached commitment.)

  MITI's compliance has been late and inadequate. The GOJ's failure to immediately enforce the provisions against third country dumping resulted in major price differences between the United States and third country markets.

- The Department of Commerce analysis of Japanese pricing activity in third country markets demonstrates that significant dumping of DRAMs and EPROMs continues. This analysis is based on pricing activity during the entire month of February 1987, and the foreign market values determined by Commerce in the antidumping suspension agreements covering DRAMs and EPROMs from Japan. (See summary attachment)

- The results demonstrate that both DRAMs and EPROMs from Japanese producers (Fujitsu, Hitachi, Mitsubishi, NEC, Oki, and Toshiba) are being sold at prices significantly below the U.S. foreign market values in the European, Asia-Pacific, and Others markets DRAM prices were 59.39 percent and EPROM prices were 63.58 percent of the foreign market values, based on weighted averages (this does not include pricing in the United States and Japan). The comparison of December to February simple averages is 50.12 percent - 68.75 for DRAMs and 58.15 - 58.72 for EPROMs (Note: the preferred weight average figures for December are not available.)

  On February 25, the TPRG unanimously decided that should the Department of Commerce analysis of the pricing activity of Japanese exports to third county markets demonstrate the continuance of significant dumping (defined as prices less than 80 percent of the weighted-average foreign market value), these results should be forwarded to the EPC for their consideration. The TPRG further agreed to recommend that the EPC take actiòn to encourage compliance with the agreement. The objective of EPC action would be to encourage the Government of Japan and the individual Japanese companies to forthrightly implement the prevention of dumping and market access provisions of the agreement. Thus, termination of the agreement would not be the intended result, although Japan could choose to terminate the agreement and takes its chances on antidumping duties and Section 301 retaliation.

MARKET ACCESS

- In the Agreement Japan committed to "gradual and steady" improvement of access by foreign capital-affiliated semiconductor companies in Japan over the life of the Agreement. (See attached legal analysis for additional detail on the breached market access commitments.)

- U.S. company sales were 8.4 percent of the Japanese semiconductor market over the 9 months prior to the signing of the Agreement. At the time of the November consultations, the Government of Japan forecast that foreign sales of semiconductors in Japan would grow about 1.2 percent by March 31, 1987. Such growth would have met the requirements of the Agreement for gradual and steady growth.

- At the January 28 emergency consultations, however, we conveyed to the Japanese concerns over the lack of progress on increasing market access to date. U.S. industry statistics demonstrated no increase (and possible reduction) in the foreign share of the Japanese market since the agreement was signed. (U.S. sales made-up 99.5 percent of foreign semicon-

ductor sales in Japan in 1986.) Third and fourth quarter 1986 data indicate U.S. share is flat at 8.4 percent and industry booking-to-billing data for the first quarter of 1987 (preliminary) indicate no significant improvement.

RECENT DEVELOPMENTS

- On February 13, MITI issued Administrative Guidance to Japanese semiconductor producers that they should cut back their 256K DRAM and 64, 128 and 256K EPROM production 10 percent in the first quarter of 1987 (January-March). Intelligence sources indicate that MITI has strengthened its enforcement of its export license system. To date, these actions have not had an appreciable impact on the marketplace.

- Since the January consultations, the Government of Japan is reportedly taking the following actions: revocation of all outstanding export licenses; refusal to issue new export licenses; extension of the period of time required for approval of export license applications; instructions to semiconductor producing companies to identify companies authorized to export their products and to ensure that such exporting companies not dump into third country markets; and instructions to semiconductor producing companies to decrease production of 256K DRAMs and EPROMs by 10 percent. In response to inquires from U.S. Government representatives, MITI will only state that it is taking action to prevent dumping, but, that the specifics of such action will not be disclosed. The Government of Japan has alleged that U.S. companies are selling semiconductors below cost in both Japan and third country markets.

- MITI also announced its intention to establish in March the foreign semiconductor sales promotion organization and organize symposia to promote foreign semiconductors in Japan. U.S. industry has expressed dissatisfaction with the proposed activities of the sales promotion organization because they believe it is a repetition of their individual company efforts.

RISKS OF RETALIATION

- Could lend credence to EC charge in pending GATT dispute settlement proceedings that the effect of this agreement is to create a cartel raising prices to EC buyers.

- Non-MFN tariff could result in GATT complaint, counter-retaliation, or termination of agreement by Japan.

- CONCLUSION: The TPRG considers these risks acceptable.

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248791	PAPER SUMMARY OF RESULTS	2	ND	B1

Freedom of Information Act - [5 U.S.C. 552(b)]

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LEGAL ANALYSIS ON BREACHED COMMITMENTS

BACKGROUND

In his July 31, 1986, Determination under Section 301 of the Trade Act of 1984 President Reagan determined that any future failure by the Government of Japan "to meet the commitments and objectives" of the Arrangement would be actionable under section 301 either as inconsistent with a trade agreement or as an unjustifiable act that would burden or restrict U.S. commerce (51 Fed. Reg. 27811, Aug. 4, 1986).

MARKET ACCESS

In the exchange of letters by which the Arrangement entered into force, the Government of Japan committed to implement the measures provided for in the Arrangement. With regard to market access, the objective of the Arrangement is concisely set out in paragraph I.6 of the classified side letter to the Arrangement:

> The objective of the Arrangement is for long-term stable relationships to develop between foreign capital-affiliated semiconductor companies and Japanese semiconductor users. Sales are anticipated across a wide range of competitive products. Through the efforts by both sides, foreign capital-affiliated companies and Japanese companies will enjoy long-term prosperity under free competition in the Japanese market.

To attain this objective, the Government of Japan made several commitments. In article I.1 of the Arrangement, Japan joined the Government of the United States in declaring its desire to enhance free trade in semiconductors on the basis of market principles and the competitive positions of the semiconductor industries in the two countries. Japan committed: (1) to impress upon Japanese semiconductor producers and users the need to aggressively take advantage of increased market access opportunities in Japan for foreign-based semiconductor firms; and (2) to provide further support for expanded sales of foreign-produced semiconductors in Japan through establishment of a sales assistance organization and promotion of stable long-term relationships between Japanese purchasers and foreign-based semiconductor producers. Finally, both Governments agreed that the expected improvement in access by foreign-based semiconductor producers would be gradual and steady over the period of the Arrangement.

The commitments are elaborated in the classified side letter. In paragraph I.2 the Government of Japan: (1) "recognize[d]" the U.S. industry's expectation of growth of semiconductor sales in Japan by foreign capital-affiliated companies, (2) "consider[ed]" that this could be realized, and (3) "welcome[d]" its realization. In paragraph I.3 the Government committed to "encourage" Japanese semiconductor users to purchase more foreign-based semiconductors

(in Japanese diplomatic parlance "encourage" means commitment to take strong action to produce the agreed upon result).

Although the Government of Japan has taken a few pro forma steps toward satisfying these obligations, it has not shown any evidence of serious, concerted efforts to fulfill the Arrangement's obligations to increase market access opportunities in the Japanese market for foreign-based semiconductor producers. The Government of Japan recently accelerated the schedule for establishing the semiconductor sales promotion organization and scheduled symposia to promote foreign semiconductor sales in Japan, but these steps could and should have been taken in September 1986. There are no signs of developing long-term stable relationships between foreign semiconductor producers and Japanese users. Indeed, early reports of optimistic and encouraging meetings between U.S. firms' sales representatives and previously inaccessible purchasing agents of Japanese users have ceased. There are little or no signs of sales across a wide range of products. Indeed, foreign firms' sales in Japan remain essentially flat.

PREVENTION OF DUMPING

A similar picture is presented with respect to the third country market measures. In article I.3 of the Arrangement the Government of Japan also committed: (1) to monitor costs and export prices on semiconductor products exported by Japanese semiconductor firms from Japan in order to prevent "dumping" (circumvention of antidumping measures taken in the United States); and (2) to encourage Japanese semiconductor producers to conform to this principle.

Paragraph II.5 of the classified side letter elaborates that in order to prevent "dumping" the Japanese would "take appropriate actions available under laws and regulations in Japan, including ETC [the Export Trade Control law]."

Again, as with market access, the Government of Japan has taken inadequate steps toward satisfying these obligations, and it has not shown any evidence of serious, concerted efforts. The Japanese did not take the first step to implement the prevention of dumping provision until September 20. Then MITI merely requested that companies not make sales in third countries at prices below cost, and left it for the companies to "determine" on their own what below cost meant. MITI did not require Japanese companies to submit cost and price data to it until November 30. At the mid-November consultations, MITI's response to our concerns was to lower the threshold of the requirement for an export license from one million to fifty thousand yen. MITI also issued administrative guidance to Japanese companies, that all future contracts with unrelated parties in third countries should be at or above company-specific cost of production. Despite our protests, MITI refused to apply these instructions to export shipments contracted for prior to November 17. Further, Japanese

companies still defined the level of their own costs without verification by MITI.

It was not until after the January emergency consultations that MITI strengthened its export license controls and Administrative Guidance to request the major Japanese producers to reduce their production of 256K DRAMs and 64, 128 and 256K EPROMS by 10 percent through March. As evidenced by the Commerce data, the degree of below-cost export sales by Japanese producers belies any argument that Japan is taking the promised appropriate actions to fulfill its commitment.

PRESIDENTIAL AUTHORITY TO ACT

Under section 301 of the Act, the President is authorized to take all appropriate and feasible action within his power to enforce U.S. rights under a trade agreement or to obtain the elimination of an act, policy, or practice of a foreign government or instrumentality that denies U.S. benefits under a trade agreement or is unjustifiable, unreasonable or discriminatory and a burden or restriction on U.S. commerce.

Section 301(b) specifically authorizes the President, inter alia, to suspend or withdraw the benefits of trade agreement concessions and impose duties or other import restrictions on the products of, and fees or restrictions on the services of, a foreign country for such time as he deems appropriate. Measures under section 301 may be taken on a discriminatory or nondiscriminatory basis at the discretion of the President.

Thus, in response to the apparent failure by the Government of Japan to fulfill its obligations under the U.S.-Japan Semiconductor Arrangement, the United States has the legal authority to impose tariff increases on products imported from Japan on a non-MFN basis having a value comparable to the effect on United States commerce of Japan's failure to fulfill its obligations under the Arrangement.

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ATTACHMENT B

RECOMMENDED SANCTIONS LIST

The dollar value of products recommended for inclusion in the Federal Register exceeds the estimated damage by Japanese practices to allow for flexibility in choosing products for possible sanctions after the public comment period. Products recommended fall into two groups: semiconductor bearing, and non-semiconductor bearing. Products in the semiconductor bearing group are produced by the Japanese firms found to be dumping, and have good alternate sources of supply in the United States or from other countries. The Japanese could possibly circumvent U.S. sanctions against some of these products by exporting the parts to the U.S. and assembling the finished products domestically. Products in the non-semiconductor bearing group are recommended for possible santions because they are produced by the relevant Japanese firms, and good alternate sources of supply exist.

Semiconductor Bearing Products

TSUSA	PRODUCT	1986 IMPORTS1	IMP/ CONS2	JAP'S IMP1 SHARE3
684.5815-30	Telephone Sets and Parts	333.0	na	44%
676.3055	Hard Disc Drives	187.8	19%	78%
684.57	Telephone Switching App.	165.0	na	46%
676.3046	Displays, non-color	78.9	35%	22%
676.15	CPU's -- 32 bit	75.0	na	na
678.5061	Radio-tape player comb.	31.7	na	27%
678.5066	Phono-tape player comb.	20.5	na	29%
684.80	Communication Satellites	0.5	na	3%
	TOTAL:	$ 892.4		

Non-Semiconductor Bearing Products

TSUSA	PRODUCT	1986 IMPORTS[1]	IMP/ CONS[2]	JAP'S IMP SHARE[3]
68220,68225	Small Electric Motors	$ 69.5	12%	50%
724.4565	Computer Tape	64.2	21%	45%
661.200x	Air Conditioners, Window	27.0	2%	32%
	TOTAL:	$160.7		

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[1]1986 imports for consumption from Japan, c.i.f., millions of dollars

[2]Total imports as share of U.S. consumption, 1985 (DOC estimate)

[3]Japan's share of total U.S. imports, 1986

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Semiconductor Bearing Products

Central Processing Units (CPU's) -- 32 bit
TSUSA: 676.15,20,30 (New category break-out)
1986 Imports from Japan: Estimate $60 - 90 million

- This category includes full 32 bit and 32/16 bit microcomputers, super microcomputers, supermini computers, and mainframe computers. Of the total $630 million in CPU imports from Japan in 1986, 32 bit CPU's constituted an estimated $60-90 million.

- All systems in this category have ample alternative U. S. sources of supply. Japanese producers NEC and Hitachi market Japanese produced 32 bit mainframe systems in the U.S. through Honeywell and NAS, respectively. 32 bit systems are among the fastest growing CPU segments in the U.S. marketplace. There are strong indications that Japanese firms are planning to increase their marketing efforts in the U.S. in the future.

- DOC and ITA are working together to develop technically enforceable definition.

- The precise imports figure for the proposed breakout

Telephone Sets

TSUSA	PRODUCT	1986 IMPORTS1	JAP'S IMP SHARE3
684.5815	Single line phones	$ 87.0	24%
684.5825	Multiline telephones	100.3	47%
684.5830	Parts	145.7	83%
	TOTAL:	187.3	44%

- Alternate suppliers of both single and multiline telephone sets are plentiful. Both types of telephones are produced domestically, and have numerous alternate foreign suppliers. Market disruption from restricting Japanese supply would be minimal.

- Single line phones are produced in Japan by: NEC, Hitachi, Oki, Panasonic, and Toshiba (as well as others). Multiline phones are produced by NEC, Fujitsu, and Toshiba.

Hard Disc Drives
TSUSA: 676.3055
1986 Imports from Japan: $187.8 million

- Japan's U.S. market share of hard disc drives is still relatively low (12-15%) and alternate domestic sources are plentiful. The UK and FRG also supply a small portion of the U.S. market.

- Fujitsu, Hitachi, and NEC are the largest Japanese exporters to the United States.

Telephone Switching Apparatus

TSUSA	PRODUCT	1986 IMPORTS	JAP'S IMP SHARE
684.5710	Key System Switching App.	$ 37.4	46%
684.5720	Other Switching App.	24.9	45%
684.5730	Parts	102.7	38%
	TOTAL:	165.0	

- Key Switching Apparatus: Good alternate domestic as well as foreign sources of these products exist. Toshiba, Iwatsu, and NEC are the largest Japanese suppliers to the U.S. market.

- Other Switching Apparatus: Category includes PBX systems and central office systems. Japan's present U.S. market share is quite small (probably 5% or less), and U.S. and Canadian producers generally still have a technological edge. Japanese firms want to increase their share of this market. While hard data is unavailable, presumably Toshiba, NEC, and Iwatsu are the largest Japanese supplies to the United States.

- Parts, Switching Apparatus: The vast majority of these parts are probably being imported by NEC for assembly in its Texas plant. Inclusion of parts on the list would probably lead NEC to begin sourcing from U.S. suppliers again. U.S. companies have plenty of capacity to fill this supply.

Computer Displays, non-color

TSUSA	PRODUCT	1986 IMPORTS1	JAP'S IMP SHARE3
676.3041	Monochrome displays	$ 38.2	11%
676.3046	Other displays	40.7	34%
	TOTAL:	78.9	22%

- Good alternate sources of supply exist, both abroad (Taiwan and Korea now export more monochrome displays than Japan), and domestically.

- NEC, Toshiba, Mitsubishi, and Fujitsu are all major producers.

Radio Tape-Player Combinations

TSUSA: 678.5061
1986 Imports from Japan: $31.7 million

- Plenty of alternate suppliers exist: Taiwan and South Korea together they account for 55% of imports). Japan has been losing market share to these countries.

- Hitachi, Mitsubishi, and Matsushita produce these products.

Radio-phonograph-tape-player Combinations
TSUSA: 678.5066
1986 Imports from Japan: $20.5 million

- Good alternate sources of supply exist in Taiwan and Korea imports from Japan are declining

- Hitachi, Mitsubishi, and Matsushita produce these products.

Communications Satellites & Parts

TSUSA: 684.80
1986 Imports from Japan: $ 0.5 million

- Imports to date have been parts of satellites, primarily travelling wave tubes from NEC. There are good U.S. as well as European sources of alternate supply.

- Inclusion would preclude Japanese access to a market they have shown interest in penetrating.

Non-Semiconductor Bearing Products

Small Electric Motors
TSUSA: 68220, 68225
1986 Imports from Japan: $69.4 million

- These are electric motors of 1/40 horsepower or less, which are used in a variety of electric and electronic products.

- Japan's U.S. market share for these products is low (5-10%) and alternate sources are numerous, both domestically and

abroad (e.g., Singapore, Hong Kong, Taiwan).

- Hitachi, Mitsubishi, and Toshiba are the largest Japanese exporters to the U.S.

Computer Tape
TSUSA: 724.4565
1986 Imports from Japan: $64.2 million

- Category contains computer tape and other types of magnetic recording media for computers (e.g., floppy disks).

- Imports from Japan are growing (1986 figures are about double those of 1984), but Japan's share of imports is falling, reflecting increasing imports from a number of EC countries.

- Domestic sources of these products are numerous and competitive.

- Japanese imports are from a number of companies. Hitachi (Maxell) is a major exporter of these products.

Air Conditioners, Window
TSUSA: 661.2003 - 661.2009
1986 Imports from Japan: $ 27.0 million

- Japan's share of the total U.S. market is below 1%. Domestic sources of supply are numerous and quite competitive.

- Imports have been growing. 1986 Imports from Japan ran about 7 or 8 times 1985 levels.

- Matsushita, Hitachi, and Toshiba all export window AC's to the U.S., but their share of imports is not known.

The following attachment is being made available to the TPRG but will not be attached the paper going to the EPC.

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Attachment A

MARKET ACCESS

ESTIMATED LOST U.S. SALES
($ millions)

DATE	1Q 1986	2Q 1986	3Q 1986	4Q 1986	1Q 1987	2Q 1987	3Q 1987	4Q 1987
U.S. SALES[1]	179	224	242	227[2]	251[3]	274[3]	295[3]	317[3]
SIZE OF JAPANESE MARKET[4]	2,229	2,631	2,882	2,732	2,800[5]	2,869[5]	2,937[5]	3,005[5]
U.S. SHARE IN JAPAN	8.0%	8.5%	8.4%	8.4%	8.4%	8.4%	8.4%	8.4%
EXPECTED MARKET SHARE[6]	NA	8.5%	8.5%	9.125%	9.75%	10.375%	11.0%	11.625%
LOST SALES	$0	$0	$3.2	$20.1	$37.8	$56.7	$50.4[7]	NA

ESTIMATED TOTAL LOST SALES (12 month period -- 9/01/86 to 8/31/87): $168 Million

REDUCTION TO ACCOUNT FOR NON-U.S. SALES $168 x 99 percent = $166.32 Million

TOTAL (with rounding) = $165 MILLION

DESCRIPTION OF ANALYSIS

Despite the market access provisions of the Semiconductor Agreement, the U.S. share of the Japanese market has held at slightly above 8.0 percent. The estimate of lost sales -- $165 million -- is annualized from the period beginning when the Agreement was signed in September 1986. This estimate is based on the following three assumptions: (1) U.S. market share continues to be flat at 8.4 percent (U.S. share has not been significantly higher than this since the first quarter of 1985); (2) the size of the Japanese semiconductor market grows at an annualized rate of 10 percent in dollar terms in 1987 (1986 growth was 22.5 percent and forecasts predict growth in the 10-15 percent range in dollar terms in 1987). However, even if there is zero growth in the Japanese semiconductor market in 1987, the estimate of lost sales totals $158 million; and (3) the "Expected Market Share" growth is "gradual and steady" over time, as provided in the agreement.

The "Expected Market Share" growth is assumed to be linear and 0.605 percent per quarter based on the goal of reaching at least 20 percent in five years. This expected growth is compared to the actual (extrapolated) U.S. share to calculate the estimated lost semiconductor sales. Since the USG is committed to improving foreign market access in Japan on a non-discriminatory manner and this agreement does not require a Japanese preference for U.S. products, non-U.S. sales are subtracted from the estimate of lost sales. Non-U.S. semiconductor sales in Japan made-up 0.5 percent of total foreign sales in Japan in 1986 (down from 1.2 percent in 1985). Thus, we have reduced the estimated lost sales figure by 1.0 percent to $166.32 million to capture only lost U.S. sales. This 1.0 percent reduction is 100 percent higher than the actual 1986 non-U.S. share in Japan. In addition, this figure has been rounded down to $165 million to provide even greater leeway.

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1 U.S. sales based on WSTS

2 Includes estimate of December sales based on continuation of October and November trend

3 Based on the assumption that U.S. market share remains constant at 8.4 percent.

4 WSTS data that conforms closely with official MITI statistics.

5 Assumes 10 percent annual growth rate in the Japanese semiconductor market in 1987; 1986 growth in dollar terms was 22.5 percent.

6 The Agreement calls for "gradual and steady" improvement of access with the expectation that foreign capital-affiliated companies' sales will grow to "at least slightly above 20 percent of the Japanese market in Five years" (1991).

7 Excludes estimate for the month of September to provide a one-year (annualized) timeframe (09/01/86 through 08/31/87).

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Producer Surplus and it Application to the Semiconductor Agreement.

I. Producer Surplus Defined

Producer surplus is a measure of the value of sales opportunities based on observation of market behavior. Change in producer surplus is a measure of the effect of policies or demand shifts on suppliers. In the simplest case (an upward sloping supply curve and a homogeneous product) producer surplus is the area above the supply curve and below the price line. If one of the quantities is not directly observable, it may be estimated from the known quantity, the price change (as a proportion of the observed price), and an estimate of the price elasticity (an estimated relationship between changes in price and changes in quantity).

Analysis of producer surplus changes in the case of semiconductor sales to third markets is more complex, but the principle is unchanged. Supply curves tend to be nearly flat for exports to a specific market and the Agreement requires price/quantity combinations not on the firm supply curves. Supply elasticities are not relevant because producer surplus under the agreement (if implemented in full) is a quasi-rent resulting from Japanese firms pricing above their supply curves. Because general shortages are not observed at current prices, current prices must be consistent with the market demand. The relevant changes in quantity are determined by the elasticity of demand, as a result of these complications. The relevant loss in producer surplus is the revenue loss that would have occurred if the higher prices specified in the agreement and the lower sales levels those prices imply had prevailed.

II. Why the Concept of Producer Surplus is Important

Producer surplus is preferable to comparisons of quantities because a firm may maintain or even increase the quantity sold as a result of a drop in the equilibrium price. This is particularly likely when supply curves are flat and non market driven restrictions on price are considered. The firm may be worse off as a result of the drop in prices, but this may not be detected through examination of quantities or revenues.

III. What Producer Surplus Isn't

Profits - Although there should be a relationship between producer surplus and prices, this isn't necessarily the case. Profits are determined by accounting conventions; a shift to more or less conservative accounting methods may have a large impact on reported profits.

National Welfare - Producer surplus changes in one industry do

not occur in isolation. In general, trade policy action that increases producer surplus in one industry lowers national economic welfare by creating more than offsetting losses government revenue, consumer surplus, and producer surplus in other industries.

Calculating Change in Producer Surplus for less than FMV sales of DRAMs and EPROMs in Third Country Markets

Basic Data: DOC data

Value of MOS Memory sales by U.S. firms	345 million
Proportion of MOS Memory in DRAMs	40%
Proportion of MOS Memory in EPROMs	21%

Calculated Short Run (Quarterly) Price Elasticities of Demand

DRAMs** (16K and higher)	-1.0
EPROMs** (32K and higher)	-1.0

Calculations

Value of Third Country Market sales of DRAMs by US-owned producers ($345 m. * 0.40)	= $138.00 m.
Value of Third Country Market sales of EPROMs by US-owned producers ($345 m. * 0.21)	= $72.45
Price change to restore FMV pricing for DRAMs and EPROMs	+74.4%
Implied quantity change for DRAMs ln (Q+dQ)/Q = e*ln (P+dP)/P	-42.70%
Implied quantity change for EPROMs ln (Q+dQ)/Q = e*ln (P+dP)P	-42.70%
Producer Surplus (i.e. Rent) Loss for DRAMs (138*(1.0 - 0.427)*(.744)	58.8
Producer Surplus (i.e. Rent) Loss for EPROMs (72.45*(1.0 - 0.427)*(.744)	30.9

Net Loss in Quasi-Rent to U.S. Semiconductor Firms $89 million

** The elasticities used in this calculation are assumed. Estimates of loss of producers surplus are sensitive to elasticity assumptions. Some estimates suggest elasticities may be larger than unity and producer surplus loss smaller. For example, an assumed elasticity of about -2.0 would result in a total producer surplus of about $55 million.

[redacted] Attachment C

U.S. LOSSES FROM CONTINUED DUMPING IN THIRD COUNTRIES

The Department of Commerce believes that the estimate of U.S. losses due to third country dumping by Japan is conservative for at least three reasons:

1) These figures are based on lost sales in the MOS memory market. This is the market for which we have hard evidence of Japanese dumping. However, we believe that the Japanese are dumping nonmemory products into both the U.S. and third countries based on allegations by domestic semiconductor manufacturers. Had the agreement not been signed, it is likely that the industry would have initiated antidumping cases on other nonmemory products.

2) The market size figures used in this analysis measure in-market consumption. While these figures are the most up-to-date and concrete market information available, they underestimate the actual size of the market especially in Asia where a large share of the market activity is for transshipment to another country, not for consumption in that market.

3) Given that the relative competitiveness of the two countries' industries has not changed over the past year, we have assumed that each country's market share should remain constant. This assumption, however, does not take into account the appreciation of the yen over the past year. Rather than a constant market share over the past year, one would expect that Japan's market share in third countries would have declined.

U.S. Loss

Before calculating the loss from continued Japanese dumping in third countries based on changes in Japan's revenue market share, two questions must be answered: 1) Does the change in Japan's revenue based market share accurately reflect the loss in revenue to U.S. companies and 2) once the loss is calculated, what part of it can be attributed to Japanese dumping?

Calculating the U.S. loss from Japanese dumping in third countries on the basis of Japan's increase in revenue market share severely underestimates the total loss to U.S. companies in third country markets. Since revenue is determined by the price times the quantity sold, selling at less than fair value underestimates the value of the goods sold and the actual loss to the U.S. companies from losing these sales. To correctly calculate the actual loss, Japan's market share increase should be adjusted by a multiplier that reflects the amount of Japanese dumping in third countries.

[redacted]

To reflect the differences in costs between sales in the U.S. and third countries, we have reduced the U.S. FMV by the amount of any U.S. selling and movement expenses. We think this underestimates the actual fair value of sales in third countries as some additional selling and movement expenses would occur in any third country sale.

Japanese sales in third countries averaged 57.34 percent of the adjusted FMV. To reflect the actual increase in Japan's market share, this increase should be multiplied by the inverse of the above percentage (1.74). The new market share would then be multiplied by the value of the market to get the total loss to the U.S.

For example, a U.S. producer loses a sale of 5000 chips because of Japanese dumping. The value of the lost sale should be based on a fair value for that product rather than the artificially low Japanese price. Therefore, if the FMV is $1.00/unit and the Japanese sold at $0.55/unit, the loss to the U.S. producer should be $5000 not $2750. By multiplying $2750 by the inverse of the percentage that $0.55 is of $1.00, one can determine the actual loss ($5000).

$2750 X 1/.55 (i.e. 1.82) = $5000

Any sales loss due to an increase in Japan's revenue based market share requires an adjustment since the sales figure would be derived by multiplying quantity by an artificially low price. Therefore, we have adjusted Japan's market share to account for dumping in third countries.

In general, two factors determine the success of a sale, quality and price.

Quality: The quality of U.S. memory devices is equal to that of the Japanese as demonstrated during ITC's injury hearings. Although a 1979 Hewlett-Packard study showed that Japanese DRAM chips were ten times less likely to fail than U.S. chips, by January 1982, the same testing program revealed that the quality of the two countries' chips were equal. This was due to a massive effort on the part of the U.S. semiconductor industry to improve the quality of its chips; the failure rate of U.S. semiconductors in 1985 had dropped to 6 percent of what it had been in 1981.

Price: From an examination of bid information on over $3.5 million worth of sales in third countries during December, we found that U.S. companies were competitive with the adjusted FMVs and were bidding at prices below the FMV 99 percent of the time. While U.S. companies may not have won every one of these sales, had the Japanese companies bid at, or even near, their adjusted FMV it is likely that the U.S. would have won a large share of these.

Therefore, we believe that the sales loss can be attributed reasonably to Japanese dumping in these markets.

THIRD COUNTRY DUMPING

MOS Memory

$ MILLION

	1986 MOS MEMORY MARKET*		85-86 CHANGE IN JAPANESE MARKET SHARE**		ADJUST FOR 3RD COUNTRY DUMPING***		LOST SALES
Europe	$822	X	(+8%	X	1.74)	=	$114.4
Other 3rd Countries	$222	X	(+6%	X	1.74)	=	$ 23.2
TOTAL LOST SALES							$137.6

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* Consumption figures. While these figures are the most up-to-date and concrete market information available, they underestimate the actual size of the market especially in Asia where a large share of the market activity is for transshipment to another country, not for consumption in that market. Category includes DRAMs, ROMs, (both EPROMs and EEPROMs) and SRAMs. Used by interagency agreement. Source: Dataquest.

** Source: Dataquest

*** Japanese sales in third countries during the fourth quarter of 1986 averaged 57.34 percent of the foreign market values (FMVs) determined in the context of the suspension agreements on DRAMs and EPROMs with reductions for U.S. sales related expenses. To reflect the actual sales loss to U.S. companies, the Japanese increase in market share has been adjusted to reflect fair values using as the multiplier 1.74, i.e., the inverse of 57.34 percent.

ATTACHMENT D

PROS AND CONS OF ANALYSES OF TRADE DAMAGE IN THIRD COUNTRY MARKETS

PRODUCER SURPLUS APPROACH

Pro:

- More accurately reflects agreement, which is cast in terms of price levels rather than market shares.

- All elements (including product categories and elasticities) are based on actual evidence.

Con:

- Appears to constrain the U.S. to its present small share (i.e., its present demand curve) of the world DRAM market. The movement along a demand curve assumed by this approach ignores the fact that as the U.S. (re)gained sales to markets denied to them by Japanese dumping, the demand curve for U.S. products would shift outward.

- Only estimates producer loss for DRAMs and EPROMs. While dumping cases have not been filed on other MOS memory products, this approach disregards Japanese pricing on SRAMs, for example, which have shown 20 percent price declines in the months subsequent to the signing of the Agreement.

- Model incorporates a number of assumptions; such models are only as good as the data and assumptions they are based.

LOST SALES APPROACH

Pro:

- Based on view that no credible economic reason aside from dumping exists to explain the growth of Japanese market share during the past year. Given the relative competitiveness between the two industries and the appreciation of the yen, one would expect the Japanese market share to decline or at best stay constant. These assumptions are not based on an insistence that U.S. market share remain fixed.

- Estimates losses for the entire range of MOS memory products, an area with both a documented history and continued allegations of Japanese dumping.

- Reflects actual experience as well as economic theory. Aims to account for what happened in the marketplace.

Con:

- Appears to assume that U.S. and Japanese market shares must remain fixed.

- Appears to assume upward sloping demand curves, thereby contradicting credible evidence that higher prices reduce demand. Specifically, assumes that 74percent price increase does not decrease demand, and that an increase in sales to 1985 level is warranted despite the price increase.

- No evidence of dumping for three of five major product categories chosen, that account for roughly 39% of total.

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PROTECTIONISM WON'T HELP U.S. COMPUTER FIRMS, STUDY SAYS

WASHINGTON, January 28, 1988 -- Protectionism and government subsidies for U.S. semiconductor firms will not help increase America's competitiveness in high technology, says a new study from the Cato Institute.

Software industry expert Eugene Volokh writes that the "voluntary" Semiconductor Trade Agreement forced on the Japanese in 1986 hurt American computer firms by raising the cost of the chips they use.

Following are some highlights of the study:

* The agreement broke down, as cartels usually do, because of widespread "cheating" on the cartel arrangement.

* The agreement called for the Japanese government "to ensure that U.S. firms' share of the [Japanese chip] market rose significantly above the 10 percent level." In other words, the Japanese government was required to "impose controls on private Japanese citizens that few Americans would tolerate from their own government. . . . Imagine what the Japanese must feel when a foreign government tries to require such intrusive controls of citizens' daily business lives."

* Japanese firms are frequently accused of "dumping" chips at below cost, but there is little solid evidence of that. "The bottom line is that 'dumping' is just a pejorative name for a variety of perfectly sound, fair business practices that are beneficial to American consumers."

-- more --

* A recent Defense Science Board report on "defense semiconductor dependency" manages to completely misunderstand the semiconductor industry. For instance, it warns that a Japanese advantage in memory chip production means that the United States has lost technological leadership, but in fact, "in the computer industry . . . it is design advances in fields such as artificial intelligence, software engineering . . . , and execution speed . . . that are important."

* "The findings of the report vary from the implausible and unproven (that interruption of foreign semiconductor supplies will damage the United States in case of war or mobilization) to the implausible and vague (that some sort of 'leadership' is being lost in the entire computer industry because of uncompetitiveness in memory chips) to the irremediable and downright silly (that any foreign production is a risk to the United States because the Soviets might steal it)."

* The $2 billion that the Department of Defense proposes to invest in a federally funded Semiconductor Manufacturing Technology Institute, as endorsed in the congressional trade bills, ought to be "kept in the hands of the private sector, which is known for making generally sounder economic decisions than the government. By taking $2 billion out of the private sector's hands, the DOD may actually hurt American technological leadership" because it will be depriving other industries of funds that would otherwise be invested in them.

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ROUTING REQUEST

THE SEMICONDUCTOR INDUSTRY AND FOREIGN COMPETITION

by Eugene Volokh

Perhaps the most disquieting aspect of the troubles presently faced by America's semiconductor industry is that high technology was the very area in which the United States was supposed to be superior. When the automobile and steel industries were in deep trouble in the late 1970s and early 1980s, pundits predicted that the future of American industry lay in "sunrise industries," high-technology fields where the cheap labor available to foreign competitors would be more than compensated for by our Yankee ingenuity.

Unfortunately, it seems we Yankees do not possess a monopoly on ingenuity, for the Japanese semiconductor industry has proven very competitive. In one particular area--the production and sale of general-purpose memory chips, so-called DRAMs (Dynamic Random Access Memory) and EPROMs (Erasable Programmable Read Only Memory)--the performance of American companies has been disastrous. In 1975, U.S. merchant producers (companies that make chips to sell to others rather than just for their own internal use) had 100 percent of the U.S. DRAM market. In 1986, they had 5 percent of that market.[1] When all chips sold by merchant producers are taken into account, the U.S. producers' market share declined from 60 percent in 1975 to less than 50 percent in 1985, while the Japanese share rose from 20 percent to 40 percent in the same period.[2]

Naturally, such a loss of industrial competitiveness and the accompanying losses in employment quickly turned the issue from a private one into a public one. In 1983, the Semiconductor Industry Association (SIA) published a report that accused the Japanese of a variety of unfair trade practices.[3] In 1986, the United States and Japan signed the Semiconductor Trade Agreement, under which the Japanese promised to take steps designed to alleviate the plight of American chipmakers. In February 1987, the Department of Defense's

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Science Board issued its "Report on Defense Semiconductor Dependency," which asserted military reasons for protecting and strengthening America's semiconductor industry; in April 1987, in response to Japanese violations of the 1986 Semiconductor Trade Agreement, the U.S. government imposed trade sanctions on Japanese imports; and, currently, the congressional trade bill would authorize $500 million over the next five years to finance Sematech, a government-industry research consortium to develop new semiconductor manufacturing techniques, a proposal advanced by the SIA and then by the Defense Science Board.

This, of course, is not the first time foreign trade and protectionism have been discussed in the United States, and will certainly not be the last. In a democracy, it is inevitable that whenever one segment of society feels put upon by forces it believes are outside its control, it will petition the government for help; and there might well be some cases where a hands-off approach to international trade is not the best solution. However, before the United States embarks on a new round of trade protectionism, it should first investigate where the true interests of the nation as a whole--not just the semiconductor manufacturers--lie.

Us vs. Them

"We don't want [a U.S.-Japanese trade war] and the Japanese certainly don't want one," said the late Secretary of Commerce Malcolm Baldrige. "Japan sells about $85 billion worth of goods to the United States in a year, while we sell about $27 billion to the Japanese. Who has the most to lose?"[4] This presented, of course, a classic mercantilist question, and Baldrige clearly implied that the party with the most to lose was Japan--that the United States trade deficit with Japan indicated that Japan was somehow getting the better end of the deal.

Mercantilism, however, is not a highly regarded economic theory these days, and has not been for about 200 years. The classical mercantilists measured a nation's wealth by the amount of gold--these days, it would be by foreign reserves--that the nation possesses; when the United States buys $100 million of goods from Japan, the United States "loses" $100 million and Japan "gains" it--U.S. wealth is decreased and Japan's is increased.

Classical economists, starting with Adam Smith, successfully challenged mercantilist analysis by pointing out a simple fact: an informed voluntary trade is, by definition,

to the advantage of both parties involved. This is a cliche, but a cliche is merely an often-repeated truth, and this truth is worth repeating. The United States doesn't really "lose" $100 million by trading with Japan; it exchanges $100 million for some amount of goods, an amount that is clearly worth more (to the American purchasers) than $100 million. Similarly, Japan does not "gain" $100 million from the trade--it gains $100 million minus the value of the goods to itself. Both parties gain, or else they would not trade. A cash trade "deficit" usually turns out to be a wealth surplus, since the dollars we give up are more than offset by the goods we get in return.

On the microeconomic level, when a Japanese chipmaker sells chips to an American chip user (typically a computer manufacturer), the American clearly gains by getting a better deal than he otherwise could; cessation of international trade would certainly hurt the American computer maker a great deal, since it would drive up its costs and thus its product prices, and drive down profits. One third of the total production cost of a microcomputer is in the chips.[5]

This is why it is useless to speak of which trading partner has the most to gain from trade and which has the most to lose. Japan's gains and the U.S. gains are hard to compare, since they are largely subjective, reflecting the value that each places on the goods that were sold; suffice it to say that both sides gain, and gain rather handsomely indeed.

In fact, it appears that in the short term, chip consumers may gain more than chip producers. Chip producers--American as well as Japanese--have been having an unprofitable streak recently, suffering hefty losses while their customers have been raking in the benefits in low prices. Although this is unlikely to remain a long-term trend (economics teaches us that people rarely sell things at a loss for long), these days our cash trade "deficit" in the chip trade might actually mean a "surplus" in the total amount of wealth being exchanged. This is important because it is tempting--and, to some parties, profitable--to label the current trade situation as a case of "Us vs. Them," with "us" being the United States (the good guys) and "them" being Japan (the bad guys). The trouble with this idea, though, is that at least some of "us"--the chip consumers--benefit as much as "they" do from low Japanese chip prices. The real losers are American chipmakers, who are seeing themselves being undercut by Japanese competition. Japanese competition is not "bad for America"; it is bad for some Americans and good for others.

"Unfair" Competition

Naturally, U.S. chipmakers are not willing to simply complain that the Japanese outcompete them. The American public has little patience for companies that are failing just because they cannot do as good a job as the next guy. In fact, the Semiconductor Industry Association's 1983 report concentrated on several specific allegations of "unfair" competition:

* Dumping. The Japanese are said to sell their chips at below cost to the United States, thus forcing American chip manufacturers to take similar losses just to stay even.

* Government Targeting. The Japanese have the benefit of government subsidies (from the infamous Ministry of International Trade and Industry, or MITI) which American chipmakers do not receive, so the game is not being played on a "level playing field."

* Import Restraints. While the Japanese merrily export chips (and other things) to the open U.S. market, they stubbornly refuse to let American exporters return the favor.

The great thing about being in favor of fairness is that it is, by definition, so hard to oppose. When a presidential candidate campaigns on a platform of fair trade, how could anybody disagree with him? What would be the alternative, "unfair trade"?

Still, before launching a crusade for fair international trade, we must ask ourselves a few key questions:

* Are the trade policies in question really unfair?

* Do these trade policies contribute substantially to the American producers' woes?

* Even if these trade policies are unfair, could we not profit from them?

* If we find that we do want to do something about Japanese trade policies (whether or not they are fair), will our planned actions actually bring about the desired results?

The answers to these questions are by no means obvious.

Dumping

The dumping issue has surfaced with a vengeance in the U.S.-Japanese "voluntary" Semiconductor Trade Agreement of August 1986. Prior to the agreement, U.S. authorities had declared the Japanese guilty of selling chips below cost, with the intent of driving American competitors out of the market and then recouping their losses using their "unfairly won" market share. In response, Japan agreed to a "worldwide minimum price for Japanese chips determined by the U.S. government."[6] Note the adjective "worldwide"--Japanese exports to other countries, such as Europe, South Korea, etc. would be controlled by this agreement just as surely as exports to the United States.

Now, let us defer for a moment the allegation that dumping is "unfair"--we will get to it shortly. Is Japan's sale of chips below cost to American firms actually harmful to American interests? The mercantilist would, of course, say yes. Mercantilists consider any successful competition by a foreign producer to be harmful. If the foreign producer happens to be unrestrained by considerations of cost, that just makes it all the more likely that the producer can compete successfully.

The trouble with the mercantilist view is that it considers only the interests of the American chip producer. The American chip consumer, on the other hand, is more than glad to buy chips for less than they cost to make. Just as any low-priced competition is bad for the producer (whether it is "fair" or "unfair"), so it is good for the consumer. An American computer manufacturer does not really care how much it costs the Japanese to produce a silicon wafer; he has his own competitors to worry about, and he will profit from any price decrease in his product's components, whatever its origin.

From a macroeconomic point of view, the situation looks even better. Suppose that the Japanese are selling the United States $100 million of chips that cost them $125 million to make. Presumably, to the American chip consumers, the chips are worth $150 million (or some amount greater than $100 million, or else they would not be buying them). In terms of net change in wealth--factoring in both cash and product value--Americans gained $50 million and the Japanese actually lost $25 million. Both American gains and Japanese losses are greater than what they would be if no dumping took place. Admittedly, this is a crude model, but seemingly the only reasonable one--how can the Japanese (or anyone, for that matter) at all profit from selling a product below cost?

But, the anti-dumping argument goes, the consumer benefits from foreign dumping are only short-term, to be followed by long-term disadvantages caused by dumping's destruction of the domestic competition. Dumping, it is said, is actually "predatory pricing," in which dumpers sell products at artificially low prices, drive the competition out of business, and then take advantage of their monopoly position to recoup their losses by charging exorbitant rates. Certainly, if this were true, we might well be justified in forgoing the short-term advantages of dumping in order to avoid the long-term harm from the imminent monopoly.

But this just is not true. Predatory pricing is a theoretical bugaboo with no real possibility of practical manifestation. It requires more than just an establishment of a monopoly (which is itself a hard proposition, considering the losses a firm has to incur to get it)--it requires retention of the monopoly even after prices are raised.

Once the Japanese manufacturers, at great cost to their pocketbooks, destroy the American chipmakers and start charging monopolistic prices, what is to prevent a would-be competitor from undercutting them? Certainly there are entry costs, but they may be more easily borne by the would-be competitor than the dumping costs incurred by the would-be monopolist. Furthermore, there are plenty of "captive producers" in the domestic market who produce chips but simply do not choose to sell them to others;[7] if someone tries to charge monopoly prices, the captive producers can easily jump into the fray with little start-up costs. (Western Electric, for example, tried to use its "captive" chipmaking ability to sell to the commercial market in 1983--an arguably bad time to do this.[8])

But, finally, let us even assume that not a single chipmaker or would-be chipmaker remains on American shores. It is a capital error to assume that the Japanese are somehow the monolithic Japan, Inc., able to monopolize anything in every way. Even the Defense Science Board report, while maintaining that Japanese chipmakers often cooperate in R&D, acknowledges that "in the application of resulting technology to products [chips], the [Japanese] companies compete fiercely."[9] To really profit from predatory pricing, the fiercely competing Japanese companies would have to organize a cartel to keep prices artificially high. But the only people guilty of even contemplating any sort of semiconductor industry cartel these days are the American chipmakers and the American government.

If the Japanese are not dumping for predatory pricing's

sake, why are they dumping at all? There must be some reason for anything as silly as selling something below cost.

There is indeed a reason, and it is hardly as sinister as the protectionists would have us believe. According to one observer, "Japanese companies were accused of selling below what the anti-dumping laws call 'fair market value,'" which is based on "average rather than marginal costs."[10] Say that company A spends $100 million to build a plant and another $100 million on R&D for the basic chip design. It then produces 50 million chips a year, each costing $1 to make (raw materials, labor, etc.). What is the cost to be used for fair market value calculations? If the initial investments are depreciated over 5 years, it would cost $90 million ((100+100)/5+50) per year to produce 50 million chips, an average cost of $1.80 each.

Unfortunately, though company A may have definitively calculated the "fair market value" of a chip at $1.80, it may have a hard time getting the market to agree. Prices are, of course, determined not just by the supply curve but also by the demand curve; if the customers are not willing to pay more than $1.25 for each chip, the company will be hard put to make them pay more (unless, of course, it can get the government to enforce a Semiconductor Trade Agreement).

What is more, there is nothing unfair or unreasonable about selling each chip for $1.25. The firm still makes a profit of $.25 on each chip sold, because it only costs $1 to produce that chip. It may take more time to recoup the original investment this way, but as long as the price is higher than the marginal cost, it is a sound business decision to keep selling. (Prices below average cost might call into question the soundness of the original decision to get into the business in the first place, but it is too late to do anything about that once the fixed costs have been paid.)

Other perfectly good reasons can be supplied for selling chips at below what one might think to be the "cost." Boom-bust conditions, endemic in the industry, drive prices down below average cost;[11] chip obsolescence, which happens every few years, does the same. Another reason for below-cost sales is to liquidate large surpluses--products that are already on the shelf and that must be gotten rid of at any price, even below marginal cost.[12]

The bottom line is that "dumping" is just a pejorative name for a variety of perfectly sound, fair business practices that are beneficial to American consumers.

Japanese Governmental Subsidies

A more serious fairness issue that has been raised by critics is that the Japanese chip producers supposedly enjoy governmental subsidies that U.S. chipmakers do not have. Therefore, U.S. chipmakers cannot possibly compete without matching subsidies of their own, whether they be direct payments or some sort of artificial price supports.

One would not want to argue that the Japanese subsidies were a good thing. In fact, one of the troubles with subsidies is that they tend to reproduce at an amazing rate, with each nation creating subsidies to offset other nations' subsidies and each industry demanding subsidies of its own whenever it is seen that the government is willing to subsidize some other industry.

However, the questions we must ask are (1) What exactly has the scope of Japanese subsidies been? and (2) Are Japanese governmental subsidies really bad for America?

In the recent debate over protectionism and industrial policy, the name of Japan's Ministry of International Trade and Industry (MITI) has acquired an almost mythical status. Both industrial policy advocates and protectionists have sought to explain much of Japan's economic success as a result of MITI's intervention--the former to justify a comparable American industrial policy and the latter to justify American retaliation in the name of "fairness."

The facts, however, do not justify this point of view. According to David Henderson, former senior staff economist with the president's Council of Economic Advisers, "The idea that central planning is responsible for Japan's success is a myth. MITI has made no contribution to many of Japan's biggest industrial successes."[13]

In fact, in the late 1970s, only 28 percent of Japanese R&D expenditures (including defense) was paid for by the Japanese government; at the same time, 48 percent of U.S. R&D was government-funded.[14] In the computer industry, Japan spent $127 million in the 1976-82 period while the United States spent $279 million in the shorter 1978-82 period. The Japan Development Bank's low-interest loans to the electronic machinery industry in 1982 were equivalent to less than 0.5 percent of the total plant investment by the industry.[15] The Semiconductor Industry Association's report indicates that in 1978 (the last year for which it provides figures), MITI's semiconductor industry subsidies were $45.7

million--but equipping a single production facility can cost up to $75 million.[16]

Note that the Defense Science Board's report recommends that the Department of Defense (DOD) spend $400 million per year to stimulate the U.S. semiconductor industry.[17] According to one study, "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."[18] The very existence of the vast U.S. defense establishment (much bigger than Japan's) guarantees that much high-technology research would be subsidized by the DOD. Our slate is hardly clean in the area of government subsidies, especially when one considers how small MITI's and the Japan Development Bank's aid to Japan's semiconductor industry has really been.

In fact, whatever subsidies the Japanese government has provided in the past have had hardly the effect that the protectionists and the subsidy enthusiasts claim. It is certainly not clear that the subsidies actually helped Japan's economy; in fact, the evidence points to the contrary.

If the Japanese government chooses to give, say, $100 million to the Japanese semiconductor industry, there is no doubt that the industry will be helped. By using that $100 million to pay for what would otherwise be $300 million of semiconductors, the industry can now profitably sell them for, say, $250 million (while at the same time, even equally productive American competitors would have to charge $350 million to make the same profit).

We may concede that American chipmakers will not like this state of affairs (just as they would not like it if the Japanese managed to sell chips for $250 million without any government help). However, the buyers naturally have an entirely different opinion. The $100 million Japanese government subsidy actually goes directly into the American chip buyers' pockets. Without the subsidy, the American buyers would have had to pay $350 million. With the subsidy, they only have to pay $250 million. The Japanese manufacturers still make the same $50 million profit, with the Japanese taxpayer footing the bill--and there are more American companies buying computer chips than making them.

On a macroeconomic level, the picture with subsidies is the same as with dumping. Americans acquired $350 million of wealth for $250 million cash; the Japanese acquired $250 million cash but had to give up goods that cost them $300 million to produce. It appears that the United States is the real beneficiary here, not Japan; in fact, if these are the real terms of our trade, then the answer to Secretary Baldrige's question--"who has the most to lose" from a cutoff of trade?--is emphatically the United States.

Government subsidies are not a good idea, either for the Japanese or the Americans. Though they do indeed help those being subsidized (which includes both Japanese producers and American consumers), they are economically foolish for the subsidizing government and are cruelly unfair to those trying to compete on their own.

However, in our quest for "fairness" we should neither overestimate the level of Japan's subsidies (which is relatively small) nor ignore the money that the U.S. government is pouring into the American semiconductor industry through lucrative defense contracts (many of which cannot even be bid on by foreigners). Neither should we ignore practical political considerations. What subsidies the Japanese government does provide are--like all subsidies--politically entrenched and thus very difficult to remove. Imagine for a moment that a foreign competitor demanded that the U.S. government stop subsidizing its farmers. The U.S. government, American consumers, and foreign competitors would all benefit from abolition of subsidies, but the chances of this are slim. In fact, if we impose our own subsidies to "counteract" Japanese subsidies, we will surely have as hard a time removing them as we would convincing the Japanese to remove theirs.

Japanese Import Restraints

One other thing that the Japanese have been accused of doing is shutting their markets to American exporters. To the extent that the Japanese do this--and they do--their protectionism is every bit as counterproductive as that which is now being proposed for the United States. However, the key questions are, first, whether there really are import restraints in the semiconductor industry, and, second, how large a role they play in the troubles of U.S. chipmakers.

The Semiconductor Industry Association's 1983 report discusses alleged Japanese import restraints as well as Japanese government subsidies. One of its recommendations, in fact, is that

> 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 . . . 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. The Japanese government should establish programs to see that this result is achieved. (Emphasis added)[19]

However, while the report produces evidence that U.S. semiconductor firms do not have a large market share in Japan, it offers no evidence that this is caused by Japanese government restrictions on imports. Consider the report's limp analysis:

> [T]his low share [12 percent of the market], coupled with Japan's history of import restrictions, suggests that barriers to sales of foreign semiconductors remain.[20]

Neither the SIA report nor any subsequent publications have documented substantive import barriers, i.e. real, government-enforced barriers, rather than individual preferences (however irrational) on the part of Japanese consumers. Furthermore, the measures proposed by the report are futile almost to the point of being dangerous. The "affirmative action program" recommended by the report--and then echoed in the 1986 Semiconductor Trade Agreement, which "called for . . . U.S. chip makers to get more than their current 10 percent share in the Japanese market"[21]--is not something that is easily forced on a sovereign ally. How exactly do we force Japanese chip purchasers--not "Japan," but private citizens, free to buy what they please--to buy American chips simply in order to boost American companies' market share? This "affirmative action" is one of the most irrational economic policy proposals imaginable. It requires massive government interference in corporate purchasing decisions and guarantees sales to firms that have been unable to earn them; all in all, a very poor incentive system.

In fact, there are a lot of good reasons why in a market free from government import restraints American producers might fail to make headway. First, even discounting transportation costs, salesmanship does not travel well. Obviously, a Japanese salesman will do better at selling to Japanese just because he knows the market better (incidentally, the

years of American trade superiority have undoubtedly taught the Japanese salesman to know even the American market better than Americans know the Japanese). Second, many Japanese companies consume more of their own chips than do most American "merchant suppliers."[22] Finally, there is, no doubt, some simple chauvinism at work. But considering the recent campaign in the United States to "Buy American"--a campaign supported by state and federal legislation, not just private bias--can we really be outraged? And, even if we are, what can the Japanese government do about it?

What is more--and perhaps the most injurious thing to American pride--there does not even seem to be a very good reason for the Japanese government to restrict American DRAM and EPROM imports. The U.S. government certainly does not restrict American chip sales, and still the Japanese seem to be able to outcompete American firms in the United States itself. This being the case, it seems pretty obvious why U.S. chip manufacturers have only a 10 percent market share in Japan and why it is quite unlikely that they will ever get anything higher, at least until they can compete better in their home market. In other words, in those areas where American chipmakers hurt most--and where calls for trade reform are loudest--opening up the Japanese market (if it is indeed closed) will help least.

To summarize the issue of Japanese import restrictions: (1) where they exist, they are undoubtedly bad, and should be abolished forthwith; (2) they do not seem to exist in the semiconductor industry; and (3) even if they did, they would not be very relevant as long as American chipmakers cannot even compete in their home market.

Semiconductors and National Security

The preceding discussion has been strictly concerned with economic issues, concentrating on the pocketbooks of chip consumers and chip producers more than anything else. National security, however, is a horse of a different color. Few would argue that for the sake of lower chip costs we should endanger American security. If American defense requires American-built chips, there is no doubt that American industry should be protected at all costs.

In February 1987, the DOD's Defense Science Board released its ominously titled "Report of the Defense Science Board Task Force on Defense Semiconductor Dependency." Its conclusions were "that a direct threat to the technological superiority deemed essential to U.S. defense systems exists"

and that "U.S. defense will soon depend on foreign sources for state-of-the-art technology in semiconductors," considered by the board to be "an unacceptable situation" (emphasis in original).[23]

To avoid this "unacceptable situation," the Board recommended a vast DOD- and industry-funded research program, focusing on the establishment of a Semiconductor Manufacturing Technology Institute (costing the taxpayers a projected $1 billion over 5 years) plus various other spending in universities, the DOD, and industry (amounting to an extra $160 to $350 million per year).[24]

Conspicuous by its absence from the report was any recommendation of import restrictions, whether tariffs or anti-dumping agreements. Although governmental support of Japanese industry, "allegedly explicit and implicit trade barriers," and dumping were all mentioned as possible causes of Japanese leadership, they were largely discounted. According to the report, "changes in these policies by themselves will not solve the problems that beset the U.S. semiconductor industry."[25]

The report's refusal to recommend import restrictions, however, is the only reasonable thing about it. In its main thrust--that Japanese leadership in the DRAM and ROM sectors of the semiconductor industry somehow threatens American national security--the report is an utter failure. In fact, none of the 100-odd pages of evidence that it presents actually support this position.

The key point that the report seeks to make is not that the U.S. defense industry uses semiconductors extensively--in this day and age of high technology, that much is beyond doubt--but that domestic production is somehow inherently superior to foreign production in meeting the needs of the defense industry. In other words, if we can build our missiles and fighter planes equally well with Japanese chips as with American chips--a plausible assumption, since the laws of physics and electronics work equally well for Japanese and Americans--then there is no reason why we should prefer more expensive American goods to cheaper, more efficient foreign goods. In fact, the report admits as much:

> Finding 2.6. Acquisition of specific devices or materials for foreign sources for defense applications is not a critical problem as long as the U.S. has the knowledge and resources to substitute domestic sources in a timely fashion should the supply of foreign

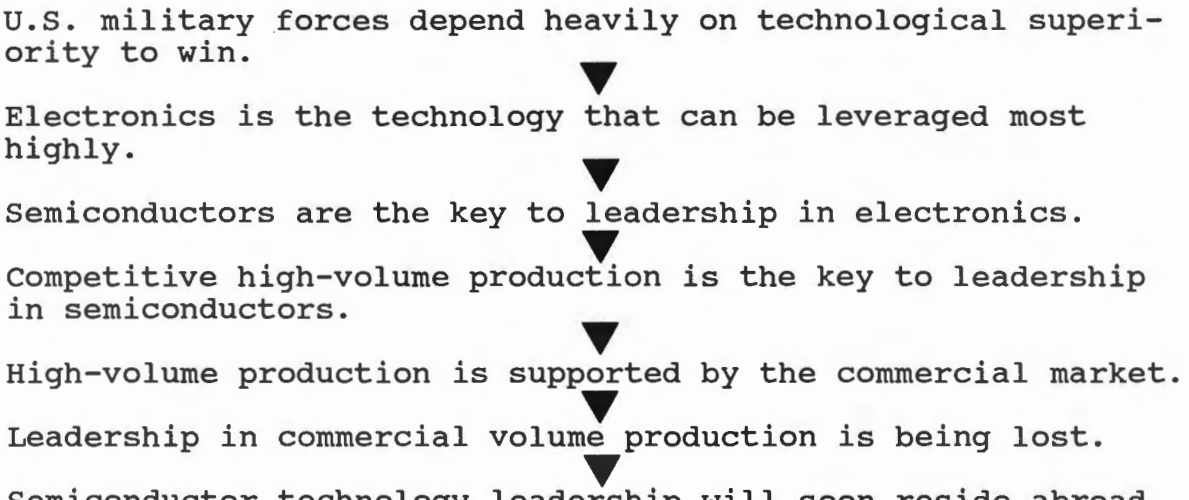
> products and technology be interrupted. However, this substitution is possible only if it can in fact be accomplished within the time available and does not impoverish U.S. capabilities in other important areas.[26]

Readers will search in vain for any evidence that substitution of domestic production for interrupted foreign production cannot be reasonably accomplished; the report certainly produces no such evidence. In fact, not only are chips a manufactured good (unlike oil and strategic metals), which can be produced by anybody who has the knowledge, but there is also plenty of American industrial capacity (and expertise) that can be easily converted to producing DRAMs and ROMs.

Remember, the leadership that the Japanese have is mostly in production of mass-market general-purpose memory chips. For economic purposes, we may draw distinctions between the "merchant" production that the Japanese have a lead in and the "captive" production by domestic companies such as AT&T and IBM for internal use; however, the fundamentals of chip production and design are the same in both cases. In time of war, AT&T and IBM can certainly be convinced to sell their chips to others; it is just that in time of peace, they choose not to for economic reasons.

Not finding any direct evidence that interruption of foreign supplies will not be easily remediable when it occurs, the report had to grasp for more tenuous straws such as "technological leadership." The issue of leadership centers on the premise that if we "lose" DRAM and ROM manufacturing to the Japanese, we will lose not only that particular segment, but also many (if not all) other portions of the electronics industry. Figure 1, taken from the Defense Science Board's Report, makes this point and relates it to national security.

Figure 1
Summary of the Basic Findings of the Defense Science Board Task Force



This argument, like all good fallacious arguments, is 90 percent correct. It is true that U.S. military forces depend on technological superiority; it is true that competitive high-volume production is the key to leadership in merchant DRAM and ROM production; it is true that merchant DRAM and ROM production leadership is already residing abroad. What are questionable are two key points: (1) that merchant DRAM and ROM leadership is equivalent to semiconductor technology leadership, and (2) that "semiconductors are the key to leadership in electronics."

On the surface this seems like a pretty good record (only two errors out of seven assertions and six implications). Unfortunately, these are fatal errors, and betray either a misunderstanding of (or a desire to mislead about) the way computers and the computer industry work.

A computer system consists of two distinct parts: the software, the programs that tell the machine what to do; and the hardware, the pieces of electronic equipment that actually execute the instructions provided by the software. It is easy to overemphasize the importance of hardware, because it is "real"--it can be seen, touched, weighed, and measured--whereas software is merely a set of electronic encodings, bits that are turned on or off. However, software costs

have risen from 20 percent of the total cost of a computer system in the mid-1960s to 80 percent of the total system cost by the mid-1980s. When a cruise missile looks down on a piece of terrain and decides whether or not it should drop a bomb on it, only a small fraction of the work is done by the hardware (the cameras, the chips, the detonation devices, etc). The majority of the image recognition and analysis is done by the software.

Hardware itself can be divided into two components: semiconductors and everything else. "Everything else" includes disks, disk drives, tape drives, terminals, and printers. While semiconductors can legitimately be called the "smarts" of hardware, they are by no means the only component. A personal computer certainly would not do much if it were made of semiconductors alone.

Finally, semiconductors themselves fall into two categories: memory chips and logic chips. Memory chips, such as the DRAMs and ROMs, are the subject of today's protectionism debates. They allow the computer to store and access data. Of all the functions of the computer, they implement two: "remember a piece of information" and "recall a piece of information." Logic chips implement all the other functions of the computer. The Motorola 68000, the 8080, 6502, Z80, etc. (just to name a few of the more widely known ones) are all logic chips and can truly be considered the smarts of the computer, or at least of the hardware side.

The key factor in logic chips is not cost but design; both the speed of operation and the ease of programming of the computer are largely determined by the quality of the logic chip design. To its credit, the Defense Science Board's report admits that the United States still has a lead in "design-intensive custom logic and microprocessors,"[27] though it claims that the U.S. lead is being reduced by Japanese advances. No evidence for this decline is presented beyond Table 1 of the report, which merely states that the United States has a lead that is perceived to be declining.[28] Furthermore, the major recommendations of the report emphasize subsidies of memory chip manufacturing, not logic chip design.

There is no doubt that all of the above-mentioned components--software, non-semiconductor hardware, logic chips, and memory chips--are necessary for any computer system; no computer system will run without all four ingredients. However, the "leadership" argument states that memory chips are not just necessary but are vital to continuing superiority in all (or most) of the other fields.

This is simply wrong. The place of memory chips in the computer industry is well defined--they store and retrieve data. The Japanese may make them cheaper; the trend in today's technology is to make them more compact; with luck, they can even be made faster (a substantial consideration for today's computers). They will not, however, be made smarter; it takes logic chip advances and, especially, software advances, to add new smarts to computer systems. When the Defense Science Board's report says that "electronics is the technology that can be leveraged most highly,"[29] the technological advances that provide the leverage will come mostly from logic chips and software.

Memory chip production has become a manufacturing issue, not a design issue. As one observer points out, "A company's competitive position in the production of memory chips depends primarily on its manufacturing capabilities, whereas its competitive position in logic chips depends more on its design and engineering skills."[30] Perhaps in automobile and steel production--mature industries where the basic design has been long settled--manufacturing capability is indeed the key to leadership. In the computer industry, however, it is design advances in fields such as artificial intelligence, software engineering (to maximize software quality and minimize maintenance costs), and execution speed (partially a memory speed issue but mostly a logic chip and especially software issue) that are important.

What we have here is a crude sort of "Not Invented Here" syndrome, an attitude that "we can only make a good computer if we make every single one of its components." The Defense Science Board's chapter on "Effects on Downstream Industries" (where "downstream industries are those which use the products of the semiconductor industry," presumably including computer makers and defense contractors) puts it bluntly:

> A strong domestic semiconductor industry is a prerequisite to a strong position in these downstream industries since the ability to perform competitive services and sell competitive products depends upon access to the most advanced semiconductor devices.[31]

As any good entrepreneur will tell you, any company that tries to do everything itself will lose to one that buys its expertise from those most competent to provide it. IBM bought the operating system for its wildly successful IBM PC from Microsoft, Inc.; Apple bought the logic chips for its MacIntosh from Motorola. Neither sacrificed "technological leadership"; in fact, they enhanced their leadership

by focusing on those areas that they are best at. Economists know this as Ricardo's "comparative advantage"; businessmen know it as just plain good business.

Other findings of the report are as suspect as the "interrupted foreign supply" issue and the "technology leadership" issue. A very interesting one is Finding 2.7:

> Even more critical is the possible movement of electronic device and system capabilities to overseas locations from which the Soviet Union can readily access the technology. In that case, the U.S. could lose the considerable margin of advantage it holds over the U.S.S.R. in this critical area of technology--and upon which it relies to offset quantitative military disadvantages.[32]

In other words, it is not enough that the United States produce all of its own semiconductors--Japan must not be allowed to produce any. Production and design capabilities do not "move"; they replicate. Even if the United States regains a competitive advantage over Japan, Japan will still have its own, constantly improving, semiconductor industry, every bit as accessible (or inaccessible) to the Soviet Union as it is now. The only possible solution to the concern of Finding 2.7 is a preemptive strike against all foreign producers of semiconductors. Only by making sure that nobody except the United States can make semiconductors can we prevent the Soviets from stealing the technology.

Where the findings of the report vary from the implausible and unproven (that interruption of foreign semiconductor supplies will damage the United States in case of war or mobilization) to the implausible and vague (that some sort of "leadership" is being lost in the entire computer industry because of uncompetitiveness in memory chips) to the irremediable and downright silly (that any foreign production is a risk to the United States because the Soviets might steal it), the report's recommendations are almost innocuous:

1. "Support the establishment of a Semiconductor Manufacturing Technology Institute which would develop, demonstrate, and advance the technology base."[33] Projected cost: $250 million from industry, plus $200 million per year over five years from the DOD. "The principal and most crucial recommendation of the Task Force is that an Institute be

established by a consortium of U.S. firms . . . to jointly advance the state-of-the-art in generic semiconductor manufacturing technology. An appropriate objective would be the development of the manufacturing technology needed for the 64 megabit DRAM." [Emphasis in original.][34]

2. "Establish at Eight Universities Centers of Excellence for Semiconductor Science and Engineering."[35] Projected cost: $50 million per year from the DOD.

3. "Increase DOD spending for research and development in semiconductor materials, devices, and manufacturing infrastructure."[36] Projected cost: $60 million in the first year, rising to $250 million in the fourth and final year (paid by the DOD).

4. "Provide a source of discretionary funds to the DOD's semiconductor suppliers to underpin a healthy industrial research and development program."[37] Projected cost: $50 million per year (paid by the DOD).

5. "Establish under the DOD a Government/Industry/University forum for semiconductors."[38] Projected cost: $200,000 per year (paid by the DOD).

After all the problems elucidated by the report, the recommendations seem almost a relief: only $2 billion of taxpayer money over five years--small change to the DOD, smaller yet to the federal government.

Ignore for a moment that the ostensible reason for this funding--the bugaboo of "dependency on foreign supplies"--appears to be fictional. It is admitted that one of the reasons that Japan is doing better than the United States in memory chip manufacture is more R&D expenditure (according to the report, 13 percent sales vs. 10 percent in 1970-85).[39] So, the report suggests, pump in some R&D money. Even if the subsidy is not vital for national security, it might help a slumping industry, and besides, it won't really hurt anything.

But $2 billion invested in such research is $2 billion not invested in something else--perhaps something more profitable for investors and for the nation. As one analysis states the problem, "The government directly funds some 775 research laboratories across the country, employing some 80,000 people (about one-sixth of the nation's scientists and engineers) and gobbling up about half of the annual $123 billion that goes to pure and applied research nationwide. . . . But the work they do . . . does almost nothing for the country's broader economic competitiveness. Since the 1950s, only 5% of the government's 28,000 patented inventions have been licensed for commercial use."[40]

There are several good reasons for this condition. For one, government-funded bodies, lacking a profit incentive, are plagued with vast economic inefficiencies (witness the Pentagon's penchant for $600 toilet seats) and thus provide far less bang for the investment buck. The government, by monopolizing half the national research budget and one-sixth of the nation's scientists, is consigning both of these valuable resources to a much less economically productive life than they would otherwise lead.

Second, the investment decisions themselves, being made for fundamentally noneconomic reasons, often ignore economic realities and subsidize the impractical or unprofitable. The Defense Science Board's report says that "The principal policy difference [between Japanese and American subsidies] is . . . that Japan has elected to focus its subsidies on emerging, leading edge industries, whereas the U.S. has to a considerable degree elected to subsidize sunset industries."[41] This praise of MITI's business acumen is largely unwarranted. As Katsuro Sakoh writes, "It seems clear that most of the funds disbursed by [Japanese] policy-implementation financing institutions are allocated by political or social considerations, rather than for consciously planned targeting of specific manufacturing industries."[42] In Japan, agriculture, coal mining, and shipbuilding have received vast government aid; automobiles and consumer electronics have gotten virtually none. Agriculture is now a massive budget drain, domestic coal production has decreased from 54 million metric tones in 1962 to 19 million metric tons in 1978, and shipbuilding is operating at 35 percent of capacity; automobiles and consumer electronics are, of course, Japan's great success stories.[43] Even in Japan, the government-invested dollar (which goes where privately invested dollars fear to tread) provides an inadequate rate of return.

Finally, note that nobody is better than the government at throwing good money after bad. What will happen when the

$2 billion runs out five years from now? Will American semiconductor companies be willing to dig into their own pockets to continue this high level of R&D investment? Or will they run to the DOD asking for another two or three billion dollars?

All in all, it seems that the $2 billion that the DOD proposes to invest would be much better kept in the hands of the private sector, which is known for making generally sounder economic decisions than the government. By taking $2 billion out of the private sector's hands, the DOD may actually hurt American technological leadership by depriving other industries of funds that would have otherwise been invested in them. Five years from now, those industries will in turn be hurting, and the Defense Science Board will perhaps recommend governmental subsidies for them too because for some mysterious reason these industries were not sufficiently funded in the past.

Americans can sleep securely tonight, knowing that our alleged "dependency" on Japanese semiconductors is unlikely to lose us world War III. Semiconductor manufacturers, however, cannot sleep securely, because they are in a bad spot profit-wise. Their predicament is quite likely caused by the low levels of R&D expenditure by American industry, and should perhaps be remedied by higher levels of R&D expenditure <u>by American industry</u>. Why the DOD should get involved in this is not clear; what is clear is that DOD involvement will not help the American economy as a whole.

<u>The Economic Costs of Protection</u>

An important question alluded to in the discussion above was this: even if we decide that something ought to be done about various Japanese trade practices (fair or unfair), what alternatives do we have? Can we make sure that our actions do not cause more harm than good?

One of the points that the above arguments tried to establish is that dumping and Japanese government subsidies actually have highly desirable effects for American chip consumers and, perhaps, for American as a whole. On the other hand, there is no doubt that the effects on American producers are quite damaging and can lead to a variety of costs. One could readily claim that, although cheap chips are good for the United States, their advantages are more than offset by the dislocation and suffering caused by declines in native chipmaking industry. Certainly protection of American workers should also be given some weight.

Alas, protecting the American worker is easier said than done. According to a report on trade protection in the United States published by the Institute for International Economics (IIE), the costs of saving American jobs by protectionism are literally staggering. Some 640,000 jobs were preserved in the U.S. textile industry by protectionist action in the years 1957-86.[44] Each job saved was estimated to cost the U.S. consumer from $22,000 to $42,000.[45] The recent spate of protection of the auto industry saved an estimated 55,000 jobs between 1981 and 1985, at a cost of $105,000 per job [46]; in carbon steel production, protectionism saved about 7,000 to 9,000 jobs between 1969 and 1986, at a cost of $240,000 to $750,000 per job saved.[47] In fact, the lowest cost per job saved among the 31 cases studied by the IIE was in the fisheries industry, where 27,000 jobs were saved at a cost of $21,000 each.

These numbers may at first seem so high as to be implausible, but upon reflection they are actually quite logical. Restrictions on cheap imports coupled with the removal of competitive pressures on domestic producers will certainly raise prices dramatically. In fact, price increases are exactly what any producer wants, even if he pretends that he just wants to save workers' jobs. The only thing that is surprising is just how much of a price increase is seen for so little job savings.

Self-defeating side effects are also not uncommon. According to the IIE study:

> An important factor in the difficulties of the textile industry during the 1950s was the protection benefiting United States cotton growers. This permitted foreign cotton textile manufacturers to obtain their raw material at much lower prices than their United States competitors.[48]

Is it so unlikely that, if American computermakers are not allowed to buy cheap foreign chips, they will soon be seeking protection because foreign computermakers can successfully undercut them?

The 1986 U.S.-Japanese Semiconductor Trade Agreement

The 1986 Semiconductor Trade Agreement between Japan and the United States was actually implemented with price increases very much in mind. A worldwide minimum price for Japanese chips was established, allegedly to counteract Japan-

ese "dumping" effects. According to the Wall Street Journal, "Assigned prices for 256-kilobit D-rams, for example, ranged from about $3 to $7.50, compared with a $2.25 average price before the agreement."[49] 256-kilobit EPROMs that sold for $2.53 in Japan cost $3.95 in the United States. Before the agreement took effect, it was estimated that it would cost American consumers an estimated $568 million a year.[50]

By early 1987, it was fairly clear that the Japanese were not meeting the terms of the agreement. The agreement called for:

1. The Japanese government to prevent Japanese firms from selling chips either to U.S. companies or to anybody else (besides the Japanese themselves) at less than "fair market value"; and,

2. The Japanese government to promote U.S. chip sales to Japan and ensure that U.S. firms' share of the market rose significantly above the 10 percent level; if needed, the Japanese government would force Japanese companies to curtail their own production.

In April 1987, with neither goal being met, the United States slapped a 100 percent punitive tariff on $300 million of Japanese consumer imports such as televisions, computers, and power tools.[51]

Now, it is never a good thing when trade agreements--or any other kind of international agreement--are violated, even when they were bad agreements to start with. Unfortunately, reality makes fools of us all, and this agreement was made seemingly in ignorance of certain economic and political realities. As Fortune magazine put it, "the agreement has produced every perverse effect a free-trader could imagine."[52]

Like any trade restriction, the semiconductor accord begat a flourishing "gray market." "Chip brokers" smuggled chips out of Japan to other Asian countries, plugged them into dummy circuit boards (chips wired into circuit boards are not covered by the agreement), and sold them to U.S. companies at 20 to 40 percent below the prices set by the agreement. "Suitcase brigades" would fly with suitcases full of chips to the United States, Hong Kong, South Korea, Taiwan, or Singapore, relying on the easy portability of the chips (tens of thousands, worth hundreds of thousands of

dollars, could fit into a bag) and lax customs checking (customs agents being loath to check every business traveler's suitcase). "'We aren't doing it deliberately', contends Tomihiro Matsumura, a senior vice president of NEC who heads the corporation's semiconductor group. It happens anyway, he says, because assigned prices in the U.S. 'go against the fundamental principles of business.' 'No matter what you do,' he explains, 'what is cheap is going to flow to where it's expensive.'"[53]

The gray market, which would have arisen anyway because of the American shortage of cheap chips, was exacerbated by the corresponding Japanese glut. As U.S. demand for the now-overpriced Japanese chips fell drastically, the Japanese began to face a vast oversupply. "'Prices just cratered', says Wilfred Corrigan, the president of LSI Logic Corp., a Milpitas, California concern that makes chips in the United States and Japan. 'They had to do something with all those chips they could not sell over here.'"[54]

Needless to say, with the glut caused by the first goal (stopping "dumping"), the second goal (increasing American market share in Japan) became virtually impossible to meet. If Americans had a hard time competing with preaccord prices in Japan, they would have a much harder time competing with the lower postaccord prices. On the other hand, Japan's legitimate export business was further hurt by the extended waiting period that MITI imposed for export licenses in order to stop the gray marketeers.

Squeezed by these restrictions, Japanese companies pushed even harder in markets not covered by agreements, and also moved to buy American companies. This did not sit well with American protectionists, either; for instance, Fujitsu's planned acquisition of Fairchild Semiconductor Corp. was vetoed by the Reagan Administration in March of 1987 for fear of "giving away precious technology" to foreigners.[55]

In light of all this, it is not surprising that the Japanese--who only reluctantly accepted the agreement in the first place--should be equally reluctant to fully enforce it. Naturally, while Americans see the Japanese as the trade villains, the Japanese do not agree. Japan is beginning to have unemployment woes of its own, with some experts predicting 6 percent unemployment rates in a country used to rates of less than 3 percent.[56] Now their export industries--financed to a large extent by high Japanese saving rates, representing the sacrifices of the Japanese consumer--are, in Japanese minds, being made to pay for their own efficiency.

The complaints that the United States makes about Japan can easily be reversed in the minds of the Japanese. The Americans say that the Japanese spend "too little" and save "too much"--but some of former prime minister Nakasone's Japanese critics argue that it is rather the Americans who save too little and spend too much.[57] Americans complain about Japanese willingness to take short-term losses in order to obtain higher market share (which is exactly what the allegations of "dumping" mean), but the Japanese can easily put the blame on the American companies so obsessed with the bottom line that they avoid necessary short-term sacrifices.

Perhaps the worst aspect of the 1986 agreement is that it essentially requires the Japanese government to exercise dictatorial powers over its own citizens, a people as enamored of liberty as Americans are. As one observer has explained the demands placed on the Japanese government by the agreement,

> To increase the U.S. share of the Japanese memory chip market, the Japanese must somehow compel private Japanese companies to purchase American products. . . . If it is to prevent dumping in either the United States or other markets by Japanese companies, the Japanese government must closely monitor exports by its computer firms and enforce strict price controls.[58]

Note that if the agreement called merely for elimination of overt import tariffs, the Japanese government could do that by a simple unilateral action; if the agreement attempted to prevent dumping to the United States alone, the American government could simply intervene at the border. Instead, the agreement calls for far broader restrictions, which require the Japanese government to take steps to coerce Japanese companies to do what the Americans want. Recall the vast opposition that America's own "affirmative action" policies and price controls have met with; imagine what the Japanese must feel when a foreign government tries to require such intrusive controls of citizens' daily business lives.

The U.S. government essentially strong-armed the Japanese into setting up a cartel, a cartel which was against the interest of American consumers, which was not practically enforceable by the Japanese government, and which, curiously enough, would have been criminal under U.S. antitrust law if two American producers had tried it. It is a well-known economic fact that people always break cartel agreements (witness OPEC) because cheating is so tempting, being to the benefit of both the cheating producer and the consumer. It

should hardly be surprising, then, that such a misguided trade agreement would inevitably fail; the laws of economics and politics are not easily overturned with a stroke of a pen. Rather than using the agreement's failure as an excuse to exacerbate trade tensions, perhaps we should instead learn from it the mischief that protectionism can cause.

Conclusions

Several conclusions may be drawn from the evidence assessed here:

1. Japanese "dumping"--a reasonable and proper business practice labeled "unfair" by rather specious reasoning--is actually a boon to American consumers of chips. American chip consumers, like all consumers, love cheap products and use them to become more competitive themselves. American chip producers object to "dumping" for an obvious reason: nobody likes competition, especially efficient competition.

2. Japanese government subsidies, while hardly something to be approved of, have in effect been subsidies to American consumers just as much as to Japanese producers. Subsidies always distort the international trade picture, but these subsidies have not been remarkably large (nor is the American slate clean here, considering the volume of U.S. high-tech subsidized by the Defense Department).

3. Import restrictions against the American chips in question are largely mythical, hypothesized solely on America's low share of the Japanese market (a rather arrogant argument, implying that the Japanese can outcompete Americans only if they have import restrictions working in their favor). Import restrictions in other areas are present and should be removed; however, this is only likely to help those American industries that have proven able to compete well at home.

4. Japanese superiority in DRAM and EPROM production hardly threatens U.S. national security, either directly (by threat of cut-off of strategically vital supplies) or indirectly (as a loss of some sort of "industrial leadership"). In fact, the best way to preserve American leadership in high technology as a whole is to ensure maximum supplies of the best and cheapest goods available, regardless of where they come from.

5. Even if we wanted to protect our market against the Japanese, it would cost us truly vast amounts of money. Historically, trade restraints in various industries have cost tens of thousands of dollars per job saved; these costs, incidentally, may be a measure of just how much benefit American consumers derive from the absence of these restraints.

6. It is hardly a surprise that the Japanese violated the Semiconductor Trade Agreement. Part of the agreement established a goal--increased American market presence--that was made virtually impossible to achieve by the other part, which drove down Japanese domestic chip prices. Both aspects (anti-"dumping" and increased American market presence) called for the Japanese government to impose controls on private Japanese citizens that few Americans would tolerate from their own government.

7. Finally, before we panic about our "loss of technological leadership," we must not automatically assume that what is good for the chipmakers is good for the United States. By modern standards, DRAMs and EPROMs are remarkably low-tech; in fact, it is their consumers--who would be most hurt by increased protectionism--that are on the true forefront of technological development.

As usual, good solutions are hard to come by. In the years after World War II, when all our would-be competitors were lying in ruins, the United States enjoyed an unprecedented period of superiority in a vast number of industries. Much as we would like to retain this superiority, it is easier said than done. Protecting American industries hurts America as well as foreign competitors; better solutions need to be found. Perhaps they lie in lower interest rates or higher savings rates; perhaps we have something to learn from the Japanese zaibatsus, which (in a manner quite offensive to American antitrust laws) unite many diverse companies in diverse industries into a stronger, more competitive whole.

What seems clear is that a new round of protectionism and trade warfare will help no one, neither our competitors nor ourselves.

FOOTNOTES

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[8] Business Week, May 23, 1986, p. 90.

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[11] For the boom, see "Raking in the Chips," Time, October 22, 1984, p. 74. For the bust, see "Slump Still Plagues U.S. Semiconductor Market," Electronics Week, May 20, 1985, p. 18.

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[17] "Report of the Defense Science Board," pp. 11-13.

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[22] Bro Uttal, "How Chipmakers Can Survive," Fortune, April 13, 1987, pp. 89-92.

[23] "Report of the Defense Science Board," p. 2.

[24] Ibid, pp. 11-12.

[25] Ibid., p. 6.

[26] Ibid., p. 3.

[27] Ibid., 8.

[28] Ibid.

[29] Ibid., p. 26.

[30] Becker, p. 2.

[31] "Report of the Defense Science Board," p. 10.

[32] Ibid., p. 3.

[33] Ibid., p. 11.

[34] Ibid., p. 84.

[35] Ibid., p. 12.

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[38] Ibid., p. 13.

[39] Ibid., p. 6.

[40] Malcolm Gladwell, "A National Interest in Global Markets," Insight, June 29, 1987, pp. 13-14.

[41] "Report of the Defense Science Board," p. 80.

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[44] Gary Clyde Hufbauer, Diane T. Berliner, and Kimberly Ann Elliott, Trade Protection in the United States: 31 Case Studies (Washington: Institute for International Economics, 1986), p. 16.

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