CHAPTER 11

U.S. Trade Policies and Their Effects

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Overview

All trading nations develop policies dealing with imports and exports. On the import side, such policies are usually intended to control flows of incoming goods judged harmful to the domestic economy. Formalized export policies, as a general rule, are less numerous and typically intended to encourage overseas sales. To the extent that international commerce is restricted to trade and its financing, countries must export to be able to import, and vice versa. Over time, exports will therefore approximately equal imports. For such reasons, trade policies seldom have first-order effects in determining *overall* levels of imports and exports, but tend to guide and regulate trade—influencing, for example, the composition of a nation's imports. Policies can also be adopted to encourage exports so that needed imports—e.g., oil—can be paid for. Most common remain import controls serving to limit threats faced by domestic industries.

In recent years, the governments of industrialized nations have, as matters of official policy, generally taken the position that unrestricted trade—or at least trade with minimum impediments in the form of tariffs or similar restrictions—benefits all countries. Although a principle often honored in the breach, nations usually assume that relatively open trade is in their self-interest. Countries import goods which they themselves cannot produce as efficiently, and export products in which they have a comparative advantage (ch. 5). In theory, everyone is better off.

But while the benefits of open international trade are spread widely across society, the costs against which they are arrayed tend to be concentrated. Individual companies, their employees, the cities and regions in which they are located, bear the brunt of shifting patterns of trade and competition. When imports rise, the injured parties are more vocal than the beneficiaries—many of whom do not realize they are paying less for some of the goods and services they purchase. Because of this imbalance, governments often raise barriers for political reasons, sometimes creating serious disruptions. The familiar example is the Smoot-Hawley Trade Bill, adopted by the United States in 1930, which raised the average U.S. tariff to more than 50 percent and was one cause of a steep decline in world trade. More recently, Japan has utilized a wide variety of tariff and nontariff barriers to protect developing industries, including electronics.

Near the end of World War II and afterwards, the United States took the lead in efforts to establish a liberal world trade order. This commitment has continued uninterrupted to the present day. American leadership has been a major force in negotiations among trading nations aimed at moderating tariff and, more recently, nontariff barriers to trade. These efforts have taken place largely within the structure of the General Agreement on Tariffs and Trade (GATT], an organization now comprising some **80** nations. GATT provides a forum for negotiations together with mechanisms for resolving conflicts.

While trade negotiators have made considerable progress in reducing tariffs, nontariff measures are proving less tractable—within GATT or on a bilateral basis. As more nations develop industrial policies nominally for domestic reasons, the trade arena has taken on a new complexion: indirect and nontariff barriers have risen as tariff walls have declined. The result has sometimes been termed "the new protectionism. " In essence, negotiators are struggling to fit the policy framework from an earlier era—GATT mechanisms have roots in the 1940's—to a radically different setting. International corporations now compete in some parts of the world, cooperate in others,

ship goods between subsidiaries located in dozens of countries, and take advantage of national industrial policies where they can. Governments design policies to attract foreign investment and technology under some circumstances, to keep it out under others. Trade-related complaints by U.S. firms embrace not only the old-style unfair practices—dumping or export subsidization to boost trade balances, predatory practices aimed at building monopolies or cartels—but asymmetries in the "rules of the game." The claim is that the industrial and trade policies of other nations tilt the rules in their favor. Trade negotiators will be faced, for years to come, with adapting rulemaking and adjudicating procedures to these new realities,

This chapter briefly reviews the environment for international trade in electronics under GATT, then discusses the trade policies of the United States, particularly as these relate to the electronics industry. Only limited attention goes to other countries, The chapter illustrates impacts of trade policies and discusses policy directions that may be important in the future.

On the whole, the U.S. electronics industry has been helped by the Federal Government's trade initiatives during the postwar period. Semiconductor and computer firms, in particular, have benefited from the opening of international markets. Much of their success has been due to a global perspective and worldwide operations—neither of which would have been possible without the open environment for trade and investment created since World War II. To be sure, foreign countries have often adopted policies intended to restrict inflows of American-made electronics products. But in most though not all cases, such restrictions have had effects that were marginal or indirect or both. While trade barriers have sometimes encouraged U.S. firms to establish overseas manufacturing facilities, for many years American electronics companies had such advantages in technology and cost that they would have been potent competitors virtually regardless of the trade policies adopted by other nations (the principal exception has been Japan). Still, these advantages have gradually diminished over time.

Where technological change is less rapid and labor costs more significant, trade policies carry more weight. In such products as television receivers, CB radios, and passive components, U.S. firms have not been able to maintain advantages in technology or manufacturing cost. Here, liberal U.S. trade policies have made it more difficult for American firms to compete effectively—most notably in the domestic consumer electronics market.

Tariffs; the Multilateral Trade Negotiations

The General Agreement on Tariffs and Trade provides the basic context for negotiations among nations concerning trade, and, where needed, for adjudicating disputes. Other bodies, including the Organization for Economic Cooperation and Development (OECD) and the United Nations, play more limited roles —e.g., collecting statistics. GATT is the primary vehicle for multilateral trade negotiations (MTNs), the latest of which–the so-called Tokyo Round, concluded in 1979—resulted in an agreement which will be the principal framework for international trade over at least the rest of the decade (another round of multilateral trade negotiations before the end of the 1980's is unlikely). This Multilateral Trade Agreement was implemented in the United States by the Trade Agreements Act of 1979.[1]

Earlier negotiations under GATT had focused on tariffs; although the Tokyo Round MTN resulted in further cuts, negotiators concentrated on such matters as quotas, customs procedures, product standards, and public sector procurement practices. Examples of Tokyo

[1]Public Law 96-39, July 26, 1979.

Round topics of special relevance for trade in electronics include:

- A revised subsidies code, intended to provide a framework for dealing with national industrial policies having the indirect effect of subsidizing exports or otherwise affecting trade flows (as by giving domestic products advantages over imports).
- Staging of tariff reductions for semiconductors, accelerated by Japan in 1981 after extensive bilateral negotiations with the United States, a similar acceleration of Japanese tariff reductions on computers following *a* year later.
- An agreement on government procurement, where again negotiations between the United States and Japan concluded, at the end of 1980, in a bilateral accord more liberal than that arrived at under the MTN framework,

In the United States, passage of the Trade Agreements Act of 1979 was accompanied by a reorganization of trade-related activities carried out by executive order, As discussed below, responsibility for dumping and countervailing duty investigations moved from the Department of Treasury to Commerce, while a new Foreign Commercial Service was established in the Department of Commerce in place of the commercial officers attached to the Department of State, At the same time, the Office of the U.S. Trade Representative was given the job of coordinating international trade negotiations on a continuing basis. This reorganization followed mounting criticism of the fragmentation and diffusion of responsibility for trade matters within the executive branch.

Tariff Effects

As taxes on imported goods, tariffs directly affect price competitiveness. From the viewpoint of the country imposing them, tariffs can serve multiple purposes. One effect is normally to raise domestic prices; tariffs permit local firms to manufacture at higher costs while remaining competitive in the marketplace, protecting domestic industries from foreign rivals. Alternatively, governments impose tariffs to counter unfair trade practices such as dumping or export subsidies, or to retaliate against restrictions by other nations.

The impacts of tariffs on trade patterns are not always so straightforward as the nominal percentage rate would indicate; "real" rates of protection may exceed nominal rates by significant amounts. Table 81 gives a hypothetical but not unrealistic example—a product (which might be something like a computer terminal) with a nominal production cost of $1,000, purchased components constituting 80 percent of this, final assembly the remainder. The table compares two cases: 1) final assembly overseas, with the complete system imported and subject to a tariff of 10 percent; and, 2) final assembly in the United States, with components imported at a tariff rate of 5 percent. In both cases, the components are assumed to be purchased abroad at the same cost. (Transportation costs are ignored.) As shown, assembly in the United States gives a cost advantage of $60. The real protective effect with respect to the operations carried out domestically—the "effective rate''—would then be $60/$200, or 30 percent. This percentage can be interpreted as the amount by which domestic costs of as-

Table 81.—Hypothetical Example Illustrating Tariff Effects on a Product With Nominal Manufacturing Costs of $1,000

	Foreign assembly	U.S. assembly
Cost of components	$ 800	$ 800
Tariff on imported components (5°/0)	—	40
Cost of assembly	200	200
	$1,000	$1,040
Tariff on imported system (10°/0)	100	—
Total cost in the United States	$1,100	$1,040

SOURCE Off Ice of Technology Assessment

sembly could exceed foreign costs before American firms would begin to lose competitiveness. As a result, even where nominal tariff rates are identical, protective effects can differ; each case must be considered individually, The example in table 81 is not atypical in that tariffs on parts and components are generally lower than tariffs on final products; where this is the case, effective tariffs are always higher than nominal tariffs.

Tariff Changes in the Tokyo Round MTN and After

Nominal tariff levels on electronics products vary a good deal, with the Tokyo Round resulting in significant changes for microelectronic devices and computers. As mentioned above, tariffs on both semiconductors and computers were the subject of bilateral negotiations between the United States and Japan subsequent to the multilateral agreement itself, In 1981, Japan agreed to reduce its tariffs on integrated circuits (ICs) to 4.2 percent as of the beginning of 1983. Originally, they were to have dropped in stages, reaching the 4.2 percent level only in 1987. U.S. tariffs on ICs went from 6 to 4.2 percent in 1982. Somewhat later, as part of a larger package of trade concessions, the Japanese Government announced a parallel reduction in tariffs on computers. The cuts, from 7 to 4.9 percent—the U.S. level—went into effect at the beginning of 1983, rather than in 1987 as again originally scheduled.[2]

As part of the Tokyo Round, the United States granted a variety of tariff concessions on imports of electronic products, but these cuts will not have much impact because most U.S. tariffs were already low. The reductions—seldom amounting to more than a few percentage points—will make little difference in landed costs of imports. For example, the average level of tariffs on components (including passive devices such as resistors and capacitors, as well as semiconductors) and telecommunications equipment will decline from 6.6 to 5 percents Staging—the sequence of stepwise reductions—varies by product; the most common pattern is yearly cuts over the period 1979-87 of about one-eighth the total negotiated concession. Likewise, duties on office and computing equipment will fall from an average of 5.4 to 3.6 percent. In certain cases, the United States did not grant reductions. Not surprisingly, these were generally products where imports have caused problems for domestic manufacturers. Tariffs on color TVs, for example, will remain at the current level of 5 percent. Indeed, for items subject to section 201 escape clause findings (discussed below), of which this was one, U.S. negotiators had no authority to offer concessions.

Tariff reductions agreed to by countries which have been important export markets for American electronics firms were generally somewhat larger—though with important exceptions, Many nations have maintained considerably higher tariffs than the United States; shipments of ICs into the European Community (EC), for instance, have been taxed at 17 percent—a duty that the Europeans declined to reduce.[4] The tariff wall has been steep enough that both American and Japanese firms

2]. Robertson, "Japan Offers To Speed Up Tariff Cuts," *Electronic News,* May 31, 1982, p. 1.

[3] *MTN Studies, Vol. 6, Part 5, Agreements Being Negotiated at the Multilateral Trade Negotiations in Geneva— U. S. International Trade Commission Investigation No. 332-101,* Subcommittee on International Trade, Committee on Finance, U.S. Senate, August 1979, p. 251, Computer parts, as well as peripheral equipment, can be imported duty-free from some countries as a result of the Generalized System of Preferences (GSP), under which the United States, the European Economic Community, and Japan have agreed to give preferential tariff treatment to products manufactured in developing nations. However, imports of such products into the United States under the GSP are expected to remain small. Of those that do enter this country, many originate in American-owned facilities such as Texas Instruments' plant in El Salvador.

4 A group of nations that did not join the European Community—including Austria, Switzerland, Portugal, and several of the Scandinavian countries-have formed the European Free Trade Association, EFTA. In contrast to the EC—which has common tariffs on imports-each EFTA member sets its own duty levels. Once inside an EFTA country, however, goods can move freely within either EFTA or the EC *without* further tariffs. To keep exporters from channeling all goods through the EFTA member with the lowest duties, the Association has adopted a complex set of rules of origin. U.S. firms have sometimes charged that these rules are significant trade barriers. See *Consumer Electronics Market in Europe* (London: Frost & Sullivan, Inc., 1978), p. 95.

have built plants within the EC to avoid it. European countries did cut tariffs on a variety of other electronic components and on communications equipment—but for communications especially, nontariff barriers remain a strong impediment to trade. Average EC tariffs on office and computing equipment will drop from 6.9 to 4.9 percent. Overall, the Community's reductions will have little effect on competitiveness because American electronics products generally had significant price (or technology) advantages in the European market even at the old tariff levels. The European case is a general one: reductions in tariffs by other countries will seldom have large net effects on U.S. exports of electronics, if only because nontariff barriers have usually been more significant (nontariff measures and their impacts are discussed in more detail in a later section).

Reductions in Japan's tariffs must also be kept in perspective, The protective barriers that shielded the Japanese computer industry during its earlier years have been coming down for some time. In *1978,* duties on mainframe computers were cut from **13.5** to *10.5* percent, tariffs on peripherals from 22.5 to 17.5 percent. The further reductions to which Japan agreed are no surprise given that Japanese computer manufacturers are now highly competitive in their home market. Likewise, accelerated staging for ICs is evidence of the domestic industry's strength; Japan's Government was therefore willing to grant concessions in order to reduce trade frictions with the United States. EC countries did not feel they had this option.

Although both the EC and Japan have lowered some of their tariffs on consumer electronics—but not on color TVs—this will have little effect on U.S. exports, which have not been large. In Japan, prospective importers of color TVs face, in addition to tariffs, a commodity tax levied on 17 categories of consumer goods—including automobiles, home appliances, and cameras—that adds 15 to 20 percent to the cost of imported as well as domestically produced TV receivers.

Secondary Effects of Tariffs

In addition to raising the costs of imports compared with domestic goods, tariffs can have a variety of less direct impacts on trade and production; for instance, they may stimulate local investment by foreign manufacturers seeking to avoid the extra costs borne by imports. The complex patterns of U.S. direct investment in electronics have been shaped by tariffs among many other factors. Foreign electronics firms have also invested in the United States, particularly in the consumer sector; European and Japanese firms hold majority or partial ownership positions in U.S. electronics companies ranging from producers of color TVs (Magnavox, Quasar) to those designing and manufacturing sophisticated ICs (Advanced Micro Devices, Fairchild) and computer systems (Amdahl).

Tariff barriers are seldom the sole cause of foreign investment—and may be minor factors compared with the desire to locate R&D and/or production facilities closer to markets, or to acquire state-of-the-art technical knowledge. Still, tariffs can sometimes be a major consideration, In 1978, Nippon Electric Co. (NEC) opened a semiconductor plant in Ireland specifically to be within the European Community.[5] production from this factory is not subject to the 17 percent EC duty; semiconductors can also be sold in European Free Trade Association (EFTA) nations free of tariffs. NEC, like the many American firms that had made earlier European investments, took advantage of what is in essence a single market in Western Europe. The opportunity to reduce costs in such a market, combined with the investment incentives provided by the Irish Government—which was seeking jobs—sufficed to attract NEC. Ironically, while both U.S. and Japanese firms have been able to treat Europe as. one large market, local manufacturers have seldom been able to manage this. The rather parochial attitudes of both corporations and governments

[5]R. H. S i] i n, *The Japanese Semiconductor Industry: An Overview* (Hong Kong: Bank of America Asia, Ltd., January 1979], p. 161.

within the EC have hindered indigenous development. The Japanese case is quite different. There, relatively high tariffs on imports of electronics were combined with restrictions on foreign direct investment—imposed by the Foreign Investment Law of 1950 as well as stringent exchange controls—to protect the local industry, o

Secondary effects also arise when imports subject to tariffs are incorporated into final products. While intended to shield domestic manufacturers, say of components, these tariffs may have the unintended consequence of raising costs for firms making the final product—perhaps harming their competitiveness and eventually leading to demands for further protection. Protection extended to the American steel industry, for instance, has increased costs for U.S. automobile companies.

In the electronics industries of some countries tariffs and other trade barriers have created incentives for internal production and vertical integration. When selecting vendors, companies weigh prices along with such factors as quality and delivery schedules. High product manufacturers to integrate backward, particularly where domestic suppliers have been protected because they were too weak to compete effectively, Such factors have been at work in both the EC and Japan, where many firms whose primary end products have been computers or communications systems have established internal semiconductor operations. The tendency has been especially pronounced in Japan, where American semiconductor products were not as freely available as in Europe,

In the longer term, vertical integration—where semiconductor facilities produce for internal as well as external sales—could lead to scale economies that smaller U.S. merchant firms may not be able to match. While American firms have had the advantage in flexibility compared with their integrated Japanese competitors, and in products where innovative design has been critical for market success, they-have not fared so well in mass-produced commodity-like products such as memory circuits. To the extent that such patterns continue, they will imply that the tariff walls which protected Japanese semiconductor manufacturers for so many years contributed to their eventual competitive success by making it expensive for these companies to import for their own needs.

On the other hand, price competition fueled by imported components has probably benefited U.S. electronics firms that manufacture final products. Sectors like consumer electronics and computers have gained from lower cost and better quality components—the consequences of heightened competition. Widespread foreign sourcing of components by American manufacturers points to the potential conflicts of interest with respect to import restrictions that often arise between purchasers and suppliers.

Tariff Treatment of Offshore Manufacturing

American-made components incorporated in imported goods have been exempted from tariffs for almost 200 years. The current version of the law is embodied in items 806.30 and 807.00 of the Tariff Schedules of the United States. Under specified conditions, shipments from overseas plants benefit from duty-free treatment of the value of materials or parts sent abroad for processing or assembly and then returned to the United States. Without this provision, re-imports after offshore assembly would be subject to tariffs on their full value. Because the tariff exemptions in items 806 and 807 lower the cost of overseas production relative to the no-exemption case, they implicitly encourage American corporations to split production between domestic and foreign plants. U.S. electronics firms began investing in production facilities in developing countries as early as the 1950's. While central to cost competition among TV and semiconductor manufacturers, offshore production has been a secondary element in the strategies of U.S. firms making computers and business machines. Although labor unions have tended to oppose 806/807 on grounds that they encourage "exports" of jobs, the evidence concerning the actual extent to which this occurs remains ambiguous (see app. B).

[6]*United States—Japan Trade: Issues and Problems* (Washington, D.C.: Genera] Accounting Office, September 1979), p. 27.

The 806 and 807 provisions differ in scope. Item 806.30 is restricted to metallic articles, sent abroad for processing, which undergo still more processing after their return to the United States. Silicon wafers qualify under the typical manufacturing sequence outlined in chapter 6. Item 807.00, on the other hand, requires neither that the articles be metallic, nor that they be further processed upon their return. However, there are three other conditions, not required under 806, 30: 1) the items must have been exported in a state ready for assembly, with no additional fabrication needed; 2) they must not lose their physical identity; and 3) they must not have been advanced in value or improved in condition except through the assembly process.[7] By value, the largest category of 807 imports consists of automobiles incorporating parts originating here. Other major items include clothing made from fabrics cut in the United States. Under both 806 and 807, tariffs are levied at rates equal to those for equivalent articles made wholly overseas but are based only on the value added abroad.

Of the two statutes, 807 accounts for the greater value of imports by far, in electronics as in other product categories. Total value of all 807,00 imports in 1980 was $13.8 billion, compared with $237 million for 806,30.[8] Total value of 806.30 electronics imports in 1980 was only $55 million, continuing a steep decline from more than $250 million 3 years earlier.[9] The major electronics imports under both statute items are semiconductors and parts, some of which qualify under either provision, Item 807.00 imports of semiconductor devices increased nearly threefold during the period 1978-80, reaching $2,45 billion—something over three times the value of color TV shipments entering under 807.[10] Imports under 806.30 are being replaced by those under 807.00 because of the 806 requirement for further processing, Offshore plants owned by American semiconductor firms have been extending their operations downstream, shipping completed rather than semifinished ICs back to the United States.

Semiconductor devices and TVs are not the only electronic products to enter under 806 and 807. Modest volumes (in dollar terms) of capacitors and vacuum tubes come in under 806.30, Under 807,00 the list is much longer; it includes office machinery, communications apparatus, watches, stereo and high-fidelity equipment, and many types of components.

As the size of **806/807 flows** indicates, the tariff exemptions have had significant impact on the global structuring of the American electronics industry. Companies have rationalized production by shifting manufacturing to parts of the world where costs are lower. In only a few cases have the tariff exemptions been deciding factors, but they have certainly made it easier for U.S. firms to move abroad. As discussed in chapter 9 and appendix B, the effects on employment of such transfers are difficult to evaluate, Depending on the assumptions, they can be negative or positive. Even so, in at least some cases the choice may not be production here versus production there, but production there or no production at all.

In any event, much of the electronics industry today is globally integrated-a trend to which items 806.30 and 807.00 have contributed. The consequences span a considerable range, U.S. firms have retained competitiveness in product lines where they would otherwise face marked cost disadvantages. Less-developed countries have been helped to industrialize, while outward flows of American technology have been accelerated. Some domestic employment opportunities may have been sacrificed. From a policy perspective, many of the impacts by now appear irrelevant, The laws have been on the books in one form or another for decades, and are not likely to be rescinded, As tariff levels continue to come down, such exemptions become more marginal to decisions on production locations; indeed, wage levels rather than tariff exemptions have nearly always been the determining factor.

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[7] *Imports Under items /?06.30 and* 807. *00 of the Tariff Schedules of the United States, 1977-80 (Wash* ington, I). (.:U. S. I nternal tional Trade Commission Publication 1170, July 1 981], p.4.

[8] Ibid., p. B-2.

[9] Ibid., pp. B-46, B-48. The duty-free values run about two-thirds of the total value.

[10] Ibid., pp. B-15, B-17. (Color 'rv imports under item 807.()() can be found in ch. 4, table 14.

Other Tokyo Round Agreements

Ten distinct understandings—comprising the Multilateral Trade Agreement (MTA)—came from the Tokyo Round negotiations. Some of these, each covering a particular subset of trade issues, are irrelevant to electronics—e.g., that on dairy products. In other cases, little of substance is changed under the new language; this is the case for the antidumping and subsidies/countervailing duty provisions discussed in later sections.

Other MTA provisions pertinent to international trade in electronics deal with:

- government procurement,
- technical barriers to trade, and
- import licensing procedures.

These agreements *could* yield dividends in the form of increased exports by U.S. electronics manufacturers, but are not likely to have much effect on imports of electronics products. "Could" because the rather general nature of the MTA makes infractions difficult to pinpoint. A series of test cases is likely, focusing at first on more blatant departures from the intentions of the codes.

The first of the three provisions listed above, that covering *government procurement,* calls in essence for nondiscriminatory treatment of foreign firms seeking access to government purchases. That is, foreign and domestic bidders are to be treated the same. Exceptions related to military sales and national security will doubtless be interpreted broadly. The stipulations—which cover purchases above about $200,()()()-are" rather far-reaching; they include, for example, state and local as well as national governments. On the other hand, developing countries are not bound by this part of the MTA, and virtually none have signed it.

The government procurement agreement also addresses matters such as technical specifications and notification of bidders, which have considerable impact in practice. Technical specifications are, where possible, to be based on international performance standards, Bidding is to be opened to the broadest possible group of qualified suppliers, the agreement stating that invitations to bid should allow adequate time for foreign companies to respond, Obviously, considerable latitude remains for hindering foreign respondents, but grievance machinery is to be established for handling the complaints of parties alleging discrimination.

The MTA procurement code could have far-reaching effects if it functions as written. The governments of industrialized nations are major customers for many types of goods; if the provisions are fully implemented, these markets would be opened to foreign suppliers. In actuality, this is not likely to happen very rapidly, Imagine the repercussions in the United States if the General Services Administration bought 5,000 Toyotas for the Federal motor pool.

The second of the listed agreements—that relating to technical *barriers* to trade—tackles, or presumes to tackle, the collages of policies used by governments in many countries to reduce import volumes via discriminatory technical standards or regulations. This code is *not* tightly written, and leaves a number of loopholes that could easily be employed to evade meaningful compliance, For instance, governments can promulgate regulations or product standards different from international standards for national security reasons, to prevent deceptive practices, to protect health and safety, to preserve the environment, and finally to help with "fundamental technological problems." Such rationales have been marshaled in the past to defend regulations that discriminate against foreign firms and, without much question, will continue to be so used in the future. This agreement, it is fair to say, is long on rhetoric but short on substance.

With the exceptions noted above, technical regulations and standards are to be written so as not to discriminate among potential suppliers or be undue impediments to international trade. Where a country's regulations cannot be harmonized with international standards, GATT and other interested parties are to receive full notification of differences. Likewise, laboratory or other testing procedures should not place foreign manufacturers at a disadvantage, Such provisions indicate that the

parties to the MTA were at least in principle willing to accept the notion of relatively free access for foreign suppliers.

Whether or not the MTA code on technical barriers will have significant effects on commercial practices remains to be seen, In terms of U.S. exports, the extent to which standards and regulations elsewhere impede shipments has not always been clear—leaving aside such well-known examples as the procurement practices of NTT (Nippon Telegraph and Telephone) in Japan, U.S. exporters, in electronics as in other industries, have generally attempted to sell goods abroad that are as close to their domestic production as possible. In some cases, exports have been stifled not by foreign standards but by the unwillingness of American firms to cater to foreign market conditions.

The third agreement relevant to trade in electronics is that on *import licensing*. The text sets forth rather general stipulations intended to simplify procedures associated with permits and licenses, making it more difficult to use licensing procedures as nontariff barriers—and especially to single out and discriminate against particular countries. Because import quotas or Orderly Marketing Agreements frequently involve licensing requirements, companies attempting to gain or hold market share when such quotas are in effect have a special interest in equitable treatment, Perhaps the most important provision in the import licensing code states that any enterprise fulfilling the importing country's legal requirements "shall be equally eligible to apply and be considered for a license. " The only exception relates to applicants in developing countries, who are given preference, Governments signing the MTA also agree, in awarding licenses, to take into account: 1) economic order quantities or lot sizes, 2) past import performance of the applicant, and 3) "reasonable" distribution of licenses to new importers.

This brief review of MTA provisions points out the central difficulty now faced by international trade negotiators—nontariff barriers. The Tokyo Round was the first to comprehensively address such questions. As a result, the MTA is wide ranging—not surprising given the immense complexity and diversity of nontariff barriers in various parts of the world-and should be regarded as no more than a first step. It represents an attempt to broaden the common ground among participating nations, moving beyond questions of tariffs and other direct impediments to trade while holding to the premise that has guided negotiations since the original Reciprocal Trade Agreements Act, before World War II—that free and open trade is good for all concerned, with the distribution of benefits improved by concessions to less-developed nations.

The ultimate impact of the Tokyo Round on nontariff barriers, and on future trading patterns, remains to be seen. As a statement of intentions, the agreements—including the new subsidies code—are commendable. From an operational perspective, the verdict is less clear. Governments seeking politically acceptable reasons for eliminating some of their regulatory clutter can begin; countries intent on maintaining trade protection will not find themselves severely constrained. The course of the world economy will also play a role; governments are loathe to reduce nontariff barriers during periods of stagnation.

In the context of electronics, the Tokyo Round agreements have already had some effect. For example, the U.S. Government has been able to convince Japan to soften its stand on exempting NTT from the provisions of the new procurement code. NTT, a major purchaser of high-technology communications and switching equipment, is not—strictly speaking—an agent of the Japanese Government. But its exclusion from the government procurement agreement created a whirlwind of protest from spokesmen for U.S. industry, who believed the exemption to be symbolic of continuing efforts by Japan to evade the intent of the MTA while subscribing to its language, After prolonged discussions, the Japanese Government persuaded NTT to open its procurements to foreign bidders.[11] Thus far, there

[11]See, for example, T. J. Curran, "Politics and High Technology: The NTT Case," *Coping With U.S.-Japanese Economic Conflicts*, I. M. Destler and H. Sato (eds.) (Lexington, Mass.: Lexington Books, 1982), p. 185; U.C. Lehner, "U.S.—Japan Phone Gear Pact Totters," *Wall Street Journal*, July 27, 1983, p. 26.

have been few foreign sales to the communications giant.

In electronics and other industries, the eventual consequences of the MTA for nontariff barriers will depend on factors such as awareness among exporting firms of the possibilities opened by the agreements, Without this awareness, and without the pressure on foreign governments that such awareness can generate, the agreements will have less effect. Equally important will be attitudes of officials in importing countries who have responsibilities for monitoring and enforcement.

Dumping

The practice of dumping—selling goods in export markets at less than their home market price, or under some circumstances at less than cost—is one of the unfair trade practices restricted by GATT. In essence, dumping is a form of price discrimination; it is proscribed in export markets for the same reasons as in domestic markets—because price discrimination can be used to drive out competitors and construct monopolies, In recent years, as American industries have faced stiffer competition from imports, the number of dumping complaints has climbed—from 11 in 1974 to 44 in 1982.[12]

In electronics, most of the dumping cases have involved consumer products; there have been lengthy proceedings concerning TV receivers, as well as products like CB radios. Antidumping complaints were among the first attempts by American TV manufacturers to stem the rising tide of imports in the late 1960's and early 1970's. As other portions of the industry face increasing import competition–not only from Japan, but in lower technology products from developing countries–the number of filings may continue to grow. In recent years, American semiconductor firms have frequently accused Japanese manufacturers of dumping, but have not filed formal charges.

The Law and Its Administration

U.S. antidumping law is now contained in two statutes: the Revenue Act of 1916 and the Trade Agreements Act of 1979. While the 1916 Act contains strong sanctions against predatory dumping—that intended to eliminate competition and increase market power—its application is narrowly circumscribed. An action filed in consumer electronics under this statute remained before the courts for some years, but more generally the stipulation that the plaintiff demonstrate predatory intent makes it unlikely that the Revenue Act of 1916 will form the basis of future dumping findings.[13] This leaves the Trade Agreements Act of 1979 as the primary mechanism for antidumping enforcement. The 1979 Act modified U.S. law to conform to the revised GATT antidumping code negotiated during the Tokyo Round.[14] Although the Antidumping Act of 1921 was repealed and the Tariff Act of 1930 amended, with a few exceptions the substance of the changes was minor.

According to U.S. law, dumping is the sale of foreign goods in the United States at less than "fair value. " The 1979 Act transferred responsibility for less than fair value determinations to the Department of Commerce; earlier, the Department of the Treasury had investigated dumping complaints and made fair value determinations. The new act also shortened the timetable for investigations, and changed the definition and determination of fair value somewhat; fair value had formerly been defined as foreign market value–basically

[12] Information from Department of Commerce, International Trade Administration. During 1982, 136 countervailing duty cases were filed as well.

[13] *U. S, Administration of the An tidumping Act of 1921* (Washington, D. C.: General Accounting Office, Mar. 15, 1979).

[14] "The Agreement on the Implementation of Article IV of the General Agreement on Tariffs and Trade, " *Agreements Negotiated Under Section 102 of the Trade Act of 1974 in the Multilateral Trade Negotiations Submitted on June 19, 1979, for Approval by Congress* (Washington, D.C.: U.S. Government Printing Office, July 1979).

the selling price in the country of origin, or, where such information was not available (the goods might not be sold at home), the selling price in third countries. Prices formed the basis of comparison; the law allowed sales at less than cost provided the manufacturer also sold below cost elsewhere. If goods were sold *only* in the U.S. market, the old law specified that a "constructed value" based on estimated production costs be determined, In essence, current law extends the use of cost-based constructed values to cover fair value determinations where goods are being sold below cost either at home or in third-country markets.[15] Foreign firms that, for whatever reasons, sell below cost at home cannot do so in the United States without risking dumping convictions, even under circumstances where this would not otherwise be judged an unfair competitive tactic—e.g., when cash flows remain positive even though full costs might not be covered. Earlier, sales at less than cost constituted dumping only in narrower circumstances, This provision of U.S. trade law, which is not consistent with definitions of dumping in most other countries, has meant that the Department of Commerce—now responsible for antidumping enforcement—often finds itself estimating overseas production costs, an exercise fraught with uncertainties and possible distortions.[16]

Statutory relief is available only when sales in the United States at less than fair value are found to cause or threaten to cause "material" injury to a U.S. industry, or to materially retard the establishment of a domestic industry.[17] Responsibility for establishing injury or threat of injury rests with the U.S. International Trade Commission (ITC)--an independent agency of the Government—which weighs factors such as actual or potential declines in output, sales, market share, profits, and employment. In the usual course of events, the ITC staff prepares an analysis based on such considerations, after which the six commissioners (appointed by the President and confirmed by the Senate for 9-year terms) vote—each making their own judgments as to injury or threat of injury. Commissioners, singly or jointly, prepare written opinions that explain their reasoning, If a majority of Commissioners find injury, the remedy is assessment of a special dumping duty intended to equalize prices between home country sales and those in the United States. These antidumping duties are assessed and collected by the Department of Commerce (formerly Treasury).

The Color Television Case

The long and complex history of antidumping complaints in consumer electronics—still not fully resolved—was no doubt one of the reasons for provisions in the Trade Agreements Act of 1979 transferring responsibility for enforcement from the Department of Treasury to Commerce; advocates of stricter administration of the law felt that Treasury officials had been less than diligent, in part because of the Department's traditional commitment to open trade.

Complaints that Japanese firms were dumping TVs in the United States began in 1968 with a filing by the Electronic Industries Association (EIA). This initiated what has perhaps been the lengthiest case in the history of U.S. antidumping law.[18] The EIA complaint alleged that the Japanese were able to maintain low prices in the United States for predatory purposes because prices in Japan were kept artificially high by import barriers. The Japanese manufacturers acknowledged that retail prices were higher in Japan, but held that the differences were caused by higher taxes and by a complex and costly system of marketing and distribution.

It took 3 years for the Department of Treasury to complete its investigation, finding—in March 1971—that the Japanese had indeed

[15] Section 773, Trade Agreements Act of 1979. Also see J. Sklaroff, "[Jn ited States Antidumping Procedures Under the Trade Agreements Act of 1979: A Crack in the Darn of Nontariff Barriers," *Boston College International and Comparative Law Review*, vol. 3, winter 1979, p. 223,

[16] "'(ommerce, ITC officials Discuss Continuing Problem Areas in Cases," *U.s'. Import Weekly*, Sept. 29, 1982, p. 800.

[17] Section 731, Trade Agreements Act of 1979.

[18] The events are summarized in *Television Receiving Sets From Japan* (Washington, 11.(; ,: U.S. International Trade Commission Publication 1153, June 1981), pp. A-4 to A-12.

Photo credit RCA

Color TVs undergoing long-term tests

dumped TVs in the American market. The case then went to ITC for determination of injury. Later that year, ITC returned a positive finding, concluding that the dumped TVs had injured the U.S. industry and clearing the way for the assessment and collection of antidumping duties–at that time still the responsibility of Treasury. Importers of TVs from Japan were required to post a 9 percent bond toward these duties.

Fixing the size of the antidumping duties—intended to elevate prices of imports to the level of TV prices in Japan–proved another lengthy process. The wholesale price information provided by Japanese manufacturers was judged inadequate and in some cases false, leaving Treasury without a means of calculating the duty rate. Eventually, the Department resorted to constructed value estimates based on commodity taxes collected by the Japanese Government.

An extraordinary number of claims and counterclaims accompanied the efforts of Treasury and the Customs Service to determine and collect these duties. Not only were American manufacturers of TVs and components involved, but also the unions representing their employees. Arrayed on the other side were the Japanese manufacturers, their U.S. representatives, and the American firms which had been importing TVs from Japan—mostly large retailers such as Sears and J. C. Penney. The protracted course of the disputes also mirrored conflicts within the Federal Government—e.g.,

between the Customs Service and other parts of the Treasury Depart ment.[19] By 1980, only about $13 m i 11 i o n i n dumping duties had been collected. Moreover, assessment of duties for 1975 and later years has never been completed, pending final resolution of disputes covering earlier periods. Not only have duties been at issue, but also civil penalties for alleged illegal rebates to importers as a means of circumventing the added duties.

With the transfer of antidumping enforcement to the Department of Commerce in 1980, a new agreement was negotiated with importers. Commerce agreed to accept a total of about $75 million, rather than pursuing in the courts duties which the Department estimated at nearly $130 million for the period 1971-79. The EIA—original plaintiff in the dumping proceedings—and its allies then claimed that the actual dumping liability was $700 million or more, and challenged the Commerce Department's proposed settlement in the courts; a 1981 decision allowing the settlement to stand was appealed to the Supreme Court. Late in 1982, the Supreme Court denied the appeal; evidently Commerce's negotiated settlement can now proceed.[20]

This 15-year history—which has still not come to an end, and during which the complexion of the American consumer electronics industry changed irreversibly—dramatizes the inadequacies of U.S. antidumping procedures as a means of relief from "unfair" import competition. The lessons hold for other industries as well-witness the example of steel. Not only is enforcement slow, complex, and susceptible to delay by various parties, but the legal definitions of dumping–which, in the United States as in many other countries, predate GATT--seem remote from the realities of business competition, No one argues that predatory practices should not be outlawed, but what relevance, for example, does the relationship of home market price to export price have to predatory pricing? Would Japanese firms for a dozen years or more willfully cut the prices they charge in the United States below those the market would otherwise set because in some still longer term they seek to monopolize the market? Does selling imported goods at less than cost—now effectively prohibited by the 1979 Trade Act—always constitute an unfair business practice? Still, regardless of how these questions are viewed, the fact is that Japanese firms were found under U.S. law to have dumped TVs. Injury to the domestic industry was established. *American manufacturers of TVs have been entitled to trade protection but have not received it.* The uncertainty and confusion created by the these long and convoluted proceedings has probably done more damage to the industry than the dumping itself.

The modifications to U.S. antidumping law incorporated in the Trade Agreements Act of 1979 address some of the procedural problems illustrated by the TV case. Not only has responsibility for dumping determinations and the assessment of duties been transferred from Treasury to Commerce (by Executive Reorganization Plan No. 3, effective Jan. 1, 1980), but the ITC injury investigation now begins immediately, rather than awaiting a positive finding of dumping. The concurrent investigations —for which the act sets relatively short time schedules—are intended to speed the process. If future dumping investigations are shorter because of the 1979 Act, this will limit uncertainties and disruptions, reducing costs for both defendants and plaintiffs. This would also make it more difficult for domestic firms to use dumping proceedings in "strategic" fashion to deter foreign competitors from entering U.S. markets; dumping complaints can discourage market entry through the threat of future penalties as well as by imposing legal costs on defend ants.

Prospects for Dumping Actions Elsewhere in Electronics

Antidumping proceedings-and other trade a ctions discussed later—have bee n m a j o r events in U.S. consumer electronics markets

[19]R. Wightman, "Charges U.S. Blocks $400M Duty on Japan TVs: Government Infighting Seen," *Electronic News*, Aug. 17, 1978.

[20]"Review is Denied in Zenith's Action Challenging TV Dumping Duty Settlement," *U.S. Import Weekly*, Oct. 20, 1982, p. 72.

but rare in semiconductors or computers. The single case involving semiconductors, in 1972, led to a finding of dumping but not injury. Imports of computers into the United States have been at low levels, leaving little reason to expect complaints. If computer imports were to rise and dumping to be alleged, less than fair value pricing would be difficult to establish, at least for large systems. The complexity of such systems, the difficulty of establishing comparability in performance, and the high R&D expenses that must be borne, complicate pricing comparisons. Moreover, selling prices for data processing systems often include service or software charges that are hard to isolate. pricing structures in the computer market—particularly the establishment of "quality-adjusted" pricing—have already created formidable difficulties in purely domestic antitrust actions where predatory pricing has been at issue.[21] Less than fair value determinations based on foreign market prices or constructed values would be still more troublesome, at least for mainframes. The problems are not so intractable for small systems and peripherals, where significant import penetration is in any event more likely, while personal computers sold at retail could be treated much like other consumer products.

The characteristics of the semiconductor industry also work against antidumping proceedings. Large-scale ICs—including computer memory chips, where import sales have increased rapidly—experience relatively short product lifetimes, Coupled with the large economies of scale in IC production, and the importance of yields, deep market penetration—

[21]See, for example, R. Michaels, "Hedonic Prices and the Structure of the Digital Computer Industry," *Journal of Industrial Economics*, vol. 28, March 1979, p. 263,

Photo credit Perkin-Elmer

Plasma etching system used in semiconductor fabrication

with resulting cost advantages from the learning curve—might well occur before dumping proceedings could be resolved, even under the accelerated timetable of the 1979 Act; moreover, the same factors lead to advance pricing—which is not in general illegal. Therefore, while antidumping actions may continue to be filed in more mature sectors of the electronics industry—e.g., consumer products, where the technology is relatively stable and price competition based on low production costs intense—dumping allegations in high-technology sectors seem less likely to escalate from verbal attacks on imports to formal complaints. *In high-technology industries, products can be obsolete by the time dumping actions have been resolved.*

Subsidies and Countervailing Duties

Where along the spectrum from advertising a country's goods to giving rebates to exporters does promotion turn into subsidy? Or is that no longer a relevant question? Export subsidies in the form of credits or guarantees extended to purchasers through institutions such as export-import banks have become accepted tools of industrial and trade policy. International

agreements limit interest rates—to levels that can be below the market rate but not too far below. " In such forms, export subsidies have become one of the most common nontariff measures affecting international trade; subsidies with domestic objectives also have consequences for exports,

Although important in capital goods industries, neither export financing nor export promotion have played major roles in electronics outside of telecommunications. 's In contrast, subsidies with ostensibly domestic objectives have become a major tool by which governments promote their electronics industries; these have less direct and visible effects than export credits, making them difficult to countervails or to negotiate over, While revisions to the GATT subsidies code were a central item on the agenda for the Tokyo Round negotiations, little progress was made; the changes were basically matters of procedure. Distinguishing export from domestic or internal subsidies—the latter of many forms but universally employed—is central to a workable code but fraught with practical difficulties, Measures adopted by governments that have the effect of subsidizing domestic electronics industries range from grants for basic research to regional development incentives. Because *any* such policy, even relocation assistance for displaced workers, could in principle help firms to export–by cutting costs, raising profits, or improving technical capability—the dividing line between measures that most people would agree are domestic subsidies (e. g., R&D support) and what are clearly export subsidies (e. g., low-interest loans to foreign purchasers) will always be ambiguous. As nations pursue increasingly sophisticated industrial policies, it becomes still more difficult to draw that line.

Countervailing Duty Law and Its Administration

GATT and U.S. law provide remedies paralleling those for dumping where American firms and industries are injured by export subsidies. In dumping cases, private firms set the prices at issue, while prices are distorted by direct or indirect government action in the case of subsidies. Importing nations then impose countervailing duties for essentially the same purpose: to eliminate price differentials created by the unfair trade practice. In principle, the countervailing duty is set at a level that balances the effect of the subsidy. In practice, the administration of countervailing duties in the United States is even more problematic than for antidumping duties,

U.S. countervailing duty legislation is found in two statutes—the Tariff Act of 1930 and the Trade Agreements Act of 1979. As in the case of antidumping law, responsibilities in countervailing duty cases are split—the Department of Commerce investigates foreign export subsidies (this responsibility was again lodged with Treasury until 1980); ITC determines injury. If ITC votes any of three findings—injury to a U.S. industry, threat of injury, or impediments to the establishment of a new U.S. industry—then a countervailing duty equal to the net value of the subsidy is to be imposed on the imports.

Under the 1979 Act, the test turns on "material" injury—including actual or potential declines in output, sales, market share, cash flow, profits, productivity, capacity utilization, employment, wage levels, or the ability to raise capital.[24] In earlier years, U.S. law did not require that injury be found before countervailing duties could be imposed; the existence of

[22]When Canada proposed a financing package for New York City subway cars at an interest rate of 9.7 percent—well below the agreed international minimum of 11.4 percent—the Canadian Government defended this as necessary to meet France's offer. See "Reagan Decides U.S. Should Not Match Financing on New York Subway Car Sale," *U.S. Import Weekly*, July 14, 1982, p. 448.

[23]For a discussion of export financing, see R. E. Shields and R. C. Sonksen, *Government Financial Institutions in Support of U.S. Exports* (Washington, D.C.: Center for Strategic and International Studies, Georgetown University, September 1982). A more general review of U.S. export policies is *Report of the President on Export Promotion Functions and Potential Export Disincentives* (Washington, D.C.: Department of Commerce, September 1980). Also see the discussion of alternative industrial policies for the United States in the next chapter, where questions of export promotion and their effects on trade competitiveness are discussed in more detail.

[24]Section 771, Subtitle D, Trade Agreements Act of 1979

subsidies was enough. Although differing from GATT language, this provision had preceded the establishment of GATT and been retained under a grandfather clause. The original law had been passed before the turn of the century, but no countervailing duty was imposed by the United States until 1967.

The Question of Indirect Taxes

What then is a "subsidy" under GATT and/or U.S. law? As might be expected, the definitions have been controversial. There has been a major legal action in consumer electronics, the case hinging on whether exemptions or rebates of indirect taxes on exported goods constitute a subsidy, Both the old and new GATT subsidies codes permit indirect taxes—e.g., value-added taxes—to be rebated, but not direct taxes. (Direct taxes—such as corporate income taxes—are levies based on factors of production like capital or labor, indirect taxes are those levied on the product itself.) The assumption underlying this rule is that indirect taxes can be easily included in prices and passed along to consumers, while direct taxes cannot (they depend, for instance, on annualized profit levels). If the full indirect taxis passed through to the purchaser, profits to the seller are unaffected. Under these circumstances, a rebate or exemption of such taxes on export sales would not constitute a subsidy under the usual definitions.

Compared with its trading partners, the United States relies less heavily on indirect levies—sales, excise, and value-added taxes—and more heavily on direct taxation, primarily of corporate and personal income. Many European nations impose a value-added tax (VAT) at each stage of the production process. In Japan, consumption taxes of 5 to 30 percent apply to items such as automobiles, electrical appliances (including TVs), and a variety of luxury goods, while excise taxes apply to other classes. [25] Under GATT rules, countries that levy such taxes can exempt or rebate them as they wish. The United States has less latitude than nations with extensive arrays of indirect taxes.

After the Trade Act of 1974 had been passed, Zenith challenged rebates of Japan's commodity tax on exported TVs under the act's provisions. The American manufacturer sued the Department of Treasury, claiming that rebated indirect taxes in Japan constituted subsidies and that Treasury had failed to properly interpret the new law.[26] Treasury countersued, claiming that decades of acceptance by all parties of its past practices had effectively ratified these practices, Four years later, in 1978, the Supreme Court upheld Treasury's position, ruling that rebated commodity taxes do not constitute subsidies under U.S. law.

Countries with commodity or value-added taxes generally levy them on imports as well as domestic production. Thus, within a country having indirect taxes the impacts are, at least in principle, neutral: both imports and domestic goods are subject to a tax based on their value. However, matters are not really this simple. Exports *from* a nation like the United States that relies on direct taxation may be burdened with higher selling prices reflecting higher corporate taxes, thus at a disadvantage in markets where indirect taxes are the rule (countries with substantial revenues from indirect levies normally tax personal and corporate income at correspondingly lower rates). Furthermore, foreign manufacturers shipping to the United States may reap benefits: after receiving rebates on indirect taxes at home, such firms face no compensating border tax adjustments when their goods enter the United States—though they generally must pay tariffs. They are free to sell in a market where the prices charged by domestic firms may well have to cover higher corporate taxes. As a result, *nations that rely heavily on indirect taxes can be presumed to have advantages in international* trade—although the size and

[25] *Export Stimulation Programs in the Major Industrial Countries: The United States and Eight Main Competitors,* Congressional Research Service, prepared for the Committee on International Relations, [J, S. House of Representatives, Oct.6, 1978, p. 66.

[26] D. A. De Rosa, J. M. Finger, S. S. Golub, and W. W. Nye, "What the 'Zenith Case' Might Have Meant, " *Journal of World Trade Law,* vol. 13, January-February 1979, p. 47.

significance of the advantages can be difficult to judge,

VAT systems have sometimes been suggested for the United States, in part because of their potential for stimulating exports (assuming corporate taxes were reduced at the same time). The effects of such a shift in U.S. tax policy on specific firms and industries would depend on factors such as:[27]

- compensating reductions in income taxes, as well as the overall tax liabilities (and profitabilities) of the firms in question;
- the extent of vertical integration characteristic of the industry, along with the place of particular firms in the chain of production;
- fractions of revenues stemming from exports;
- price elasticity of demand for each product affected; and
- design and implementation of the system for collecting the VAT or other indirect tax and (optionally) rebating it for exported goods,

While the merits of VATS have thus far not been seriously debated in this country, since 1971, U.S. law has provided a mechanism—the Domestic International Sales Corp. (DISC)—intended to put American exporters on a more even footing with manufacturers in countries having indirect taxes. DISCs—subsidiary corporations whose activities are confined to selling goods in export markets—permit U.S. firms to defer a portion of tax liabilities from profits on overseas sales. Several thousand DISCS have been established, primarily by larger American corporations with substantial volumes of export business. In recent years, more than half of all U.S. exports have been channeled through DISCs.[28] For exports of electronics, however, the proportion is much lower—perhaps in the range of 10 percent.[29]

Other countries have registered complaints with GATT against the DISC mechanism, arguing that it functions as an export subsidy but does not qualify as an exemption from indirect taxes.[30] Despite a finding by GATT that DISCS do constitute subsidies, no country has yet imposed countervailing duties on U.S. exports, nor has the United States offered to repeal the legislation that permits DISCS. (Recently, the Reagan administration has proposed an alternative to DISCS, as pointed out in the next chapter.)

Other Unfair Practices

Section 337 of the Tariff Act of 1930—which was amended in 1979 but has seldom been used—deals with unfair competition in international trade not already covered by anti dumping or countervailing duty laws. Most of the complaints filed under section 337 have concerned patent infringements, as in Apple's complaint to ITC over counterfeit computers, but in yet another case concerning imported TV receivers, two American manufacturers accused Japanese firms of illegal predatory pricing practices—specifically, of cutting prices in the United States below costs in an effort to drive American firms from the market.[31] When imports are involved, price-cutting complaints are usually filed under antidumping or countervailing duty statutes, but section 337 actions can also be brought if conspiracy or intent to monopolize is alleged. In this instance, ITC proceeded with a section 337 investigation even though the Department of Treasury

[27] See *A Value-Added Tax for the U. S. ? Selected Viewpoints (New* York: The Tax Foundation, Inc., 1979).

[28] *Export Stimulation Programs* in *the Major Industrial Countries, op.* cit., p, 319,

[29] This estimate is based on a survey of 325 member firms by the American Electronics Association. Because most of the members of the Association are smaller companies, it probably understates the actual fraction for electronics. See *Capital Formation, Part 1,* hearing, Senate Select Committee on Small Business, Feb. 8 and 10, 1978, p. 53.

[30] See J. M. McGuire, "The GATT Panel Report on Domestic International Sales Corporations: Illegal Subsidy Under GATT," *International Trade Law Journal,* vol. 3, 1978, p. 387,

[31] ITC Investigation 337-TA-2 3, filed Jan. 15, 1976.

claimed exclusive jurisdiction under countervailing duty law. The theory behind the complaint was that assistance given Japanese TV manufacturers by their government—though not necessarily bounties or grants within the definitions of countervailing duty statutes—might still constitute a conspiracy to restrict trade, an unfair practice under section 337. The case was terminated when ITC issued consent orders prohibiting predatory pricing and special purchase inducements for color TVs. Future section 337 complaints by American electronics firms are perhaps most likely as attempts to expedite relief, given the slow pace of past antidumping and countervailing duty investigations.

Quantitative Restrictions and the Escape Clause

Over the past two decades, tariff levels have been reduced by international agreement to the point that, for many goods and in many advanced economies, they are no longer a major factor in market outcomes. Nowhere is this movement plainer than in electronics. With tariffs largely closed off as a legitimate vehicle for protection, industries exposed to the rigors of international competition—together with their employees and political supporters—have sought other forms of relief. Along with many other nations, the United States has increasingly fallen back on import quotas. By whatever name—Orderly Marketing Agreement, Voluntary Restraint Agreement—quotas limit shipments originating in particular countries. Under GATT, unilaterally imposed quotas are explicitly disallowed except to correct persistent balance of payments deficits, and then are to be temporary. Nonetheless, quotas have proliferated—typically on a negotiated bilateral basis–with the path often cleared by "escape clause" actions permitted under GATT. An outline of the escape clause mechanism in U.S. law—section *201* of the Trade Act of 1974—follows the discussion below of quotas on color TVs.

Orderly Marketing Agreements for Color Television Imports

The only direct quotas on U.S. electronics imports have been termed Orderly Marketing Agreements (OMAs). Like the earlier Voluntary Restraint Agreements on steel shipments, or the Japanese automobile quota—in appearance, the result of unilateral action by Japan rather than negotiations between two governments—exporting nations have entered into OMAs of their own volition.

The United States negotiated its first OMA covering imports of color TV receivers in 1977 with Japan, Under the conditions, Japan agreed to limit shipments of color TVs to this country for a 3-year period; no more than 1,560,000 complete sets and 190,000 incomplete sets were allowed each year. Except for being the outcome of bilateral negotiations, the color TV OMA was equivalent to a quota of the type outlawed under GATT.

The stop-gap nature of this first OMA—covering a single troublesome exporter—was illuminated when Taiwan and South Korea took up the slack (ch. 4). It quickly became necessary to extend quotas to these two countries if the U.S. industry was to be effectively shielded. OMAs were negotiated with Taiwan and South Korea late in **1978,** to expire at the same time as the Japanese quota—June 30, 1980. Imports from Taiwan were limited to roughly half a million units, plus twice as many incomplete sets (without picture tubes), over the year-long period beginning July 1, 1979. Korean shipments were restricted to about 300,000 TVs.[32] This extension to other countries illustrates a common failing: when initially directed against a single exporter, quotas must often be widened as new competitors step in—the series of bilateral agreements under the umbrella Mul-

[32] *Television Receiving Sets From Japan,* op. cit., p. F-2. Several adjustments were made over the course of the agreements.

tifiber Agreement being the classic case. Note that table 14 in chapter 4 shows imports from Mexico more than doubling over the period 1976-80—during which time the OMAs with Japan, Korea, and Taiwan took effect—while shipments from Singapore increased more than seven times. Virtually all the imports from Mexico enter under item 807.00 of the Tariff Schedules–meaning they are shipments by American-owned firms—while both 807 and non-807 imports from Singapore have gone up sharply; Singapore now ships more TVs to the United States than Korea did at the time the OMA with that nation was negotiated (table 14). Might there be pressure for quotas with Singapore at some future time? Or other Asian countries? If so, could unrestricted Mexican shipments be justified simply because they are intracorporate transfers of U, S.-based multinationals?

As expected by the American negotiators, Japanese manufacturers responded strategically to the OMA. To avoid the new restrictions, they not only invested in Taiwanese and South Korean manufacturing facilities but opened assembly plants in the United States—a desirable consequence from the viewpoint of the Federal Government because these plants would help maintain domestic employment, diffusing some of the pressure from labor unions. As these U.S. plants came onstream, Japanese shipments of color TVs (but not of subassemblies) diminished. By 1980, Japan's exports of completed and nearly completed sets were no longer considered a threat, and the OMA with Japan was allowed to expire on schedule, Of course, the possibility of a new quota continues to shape business decisions by Japanese exporters.

OMAs with Taiwan and Korea, on the other hand, were renegotiated to cover the period through June 30, 1982 at new levels (Taiwan: 400,000 sets in the first year, 425,000 in the second; Korea: 385,000 sets in the first year, 575,000 in the second), after which they too were allowed to end.[33] One consequence, again predictable, were decisions by Korean and Taiwanese firms to follow the Japanese lead in establishing assembly operations in the United States.

[33] See "CIT Judge Denies Government Motion To Dissolve TV Settlement," *U.S. Import Weekly*, July 7, 1982, p. 422, Since the expiration of these OMAs, imports from both countries have again jumped, leading to dumping complaints by U.S. interests—R. D. Hershey, Jr., "TV Import Charges Are Filed: Korea, Taiwan Dumping Seen," *New York Times*, May 3, 1983, p. D13.

Escape Clause Proceedings in Color Television

Why have the United States and other nations resorted to quotas? Partly because quantitative restrictions are administratively clean—simple to monitor. More important, for a harried government, quotas may seem the best choice among a set of generally unattractive alternatives. The color TV case illustrates the political dilemmas that often foster such decisions,

The OMA with Japan followed a series of legal actions initiated by the U.S. industry in attempts to stem rapid increases in imports. As discussed earlier, dumping charges against the Japanese came first, but for a variety of reasons duty collection was repeatedly postponed. American firms together with labor unions representing their employees continued to press for import relief via other avenues—one being Zenith's countervailing duty suit, mentioned earlier and destined ultimately to fail. The avenue that finally proved successful began with an appeal filed in October 1976 by a group of companies and unions for relief under the escape clause, section 201(b) of the Trade Act of 1974. This provision, following article XIX of GATT, permits trade restrictions—independent of questions concerning fairness—if imports are found to be causing serious injury or threat of injury to domestic producers. The purpose is to allow a temporary respite or escape from import competition while industries adjust to new conditions. The protective measures adopted in such cases, termed safeguards, need not be quotas—higher tariffs are one alternative.

In terms of the color TV OMAs, two features of the escape clause mechanism are noteworthy. First, remedies depend solely on demonstration of injury—not on any allegation or proof of unfair or discriminatory practices by exporters. Second, the Trade Act of 1974 removed earlier provisions in U.S. law requiring that increased imports be associated with trade

liberalization. Without this change, protection for the American industry via the escape clause would almost certainly have been precluded.

Another feature new to the 1974 Act—concerning the role of ITC in the investigation of injury—bore on the ultimate outcome of the color TV case. Under earlier law, when injury was found ITC recommended remedies to the President, who could either accept or reject them. The 1974 Act added a time limit, stipulating that the President respond within 60 days to an ITC injury finding. Further—and most significant—the act provided that whatever action the President took could be overridden by a simple majority of Congress, * Thus, the options available to the executive branch had been narrowed, the hand of those advocating import relief strengthened. The threat of reversal by Congress greatly increases pressures on the Executive, for whom the color TV case posed a dilemma. The ITC Commissioners determined that the U.S. industry had suffered injury, and—with only one dissenting vote—recommended a large tariff increase, If the President took this course, an international trade dispute of major proportions would almost certainly have been precipitated. On the other hand, rejecting the ITC recommendation would bring with equal certainty the prospect of reversal by Congress—even more embarrassing. Under these circumstances, the White House finessed the entire problem by negotiating with Japan for voluntary restrictions. Discussions carried out between the (then) Office of the Special Trade Representative and the Japanese Ministry of International Trade and Industry (MITI) led to the OMA.

What have been the consequences for the U.S. TV industry? That the political victory had any very substantial impact on its competitive vitality can be questioned. Imports were cut back, and the frontal assault by Asian firms arrested, The specter of U.S. manufacturers being totally overridden, which underlay the appeals by industry and labor (though the industry did not in fact stand together on this), receded. But the OMAs also accelerated a process begun earlier—the establishment of U.S. operations by Japanese TV manufacturers, and later Taiwanese and South Korean firms. Sony had initiated the trend in 1972; since then, many others have followed—as described in chapter 4—sometimes by taking over the plants of ailing American rivals. Wholly owned Japanese subsidiaries now supply perhaps one-third of the U.S. market (table 10). If American manufacturers expected to recapture the domestic market, or if they anticipated a slackening in price competition, they were disappointed.

The full range of consequences provides other causes for reflection. OMAs did not stop the transfer of U.S.-owned production facilities to foreign countries, a movement that had begun earlier. Zenith, for instance, continued to shift TV manufacture to offshore plants in Mexico and Taiwan. Still, if the industry does not appear to have gained materially from the quotas, it is likely that further losses were avoided.

That competition did not abate is shown by price data collected by ITC over the period of the initial agreement with Japan; retail prices for color TVs (19 inch and smaller) remained essentially constant during a period of severe inflation in the U.S. economy.[34] Even for large-screen sets, where U.S.-owned firms continued to dominate the market, prices increased only about 6 percent, While price stability also mirrors cost-cutting improvements in both product and process technologies, it seems clear that competitive responses by Far Eastern manufacturers were the chief cause. During the same period, many household appliances rose in price by 50 percent and more.

Nor did profits recover. While OMAs reduced import market shares–in the 18- and 19-inch categories, penetration declined from about 30 to 10 percent during the first year—

*A Supreme Court decision in June 1983 ruling legislative vetoes unconstitutional has, for the moment, rendered this provision of the act moot.

[34] *Color Television Receivers: U.S. Production, Shipments, Inventories, Imports, Employment, Man-hours and Prices, 4th Calendar Quarter, 1979* (Washington, D, C.: U.S. International Trade Commission Publication 1036, February 1980), p. A-8.

in terms of the competitive position of the U.S. industry, this apparent benefit was partly offset by the output of Japanese firms assembling TVs here. Capacity utilization rates of domestic firms improved but profitability did not follow. The ratio of net operating profits before taxes to net sales, which had declined from 8.7 percent in 1972 to a loss in 1974 of 1.2 percent, has been running at less than 2 percent in recent years, as pointed in chapter 4. While *OMAs helped preserve domestic employment opportunities, they provided no more than modest relief from competitive pressures.*

Effects of Quotas and Other Nontariff Restrictions

Many nations have utilized restrictions other than tariffs to regulate trade in electronics. Japan–a major beneficiary over the past three decades of vigorous advocacy by the United States of open international trade—has employed nontariff restrictions frequently and effectively as part of its economic development strategy. Among the more blatant nontariff barriers created by the Japanese has been MITI's definition of domestically produced computers. These are confined to systems manufactured by firms in which majority ownership is Japanese.[35] Machines built within Japan by American-owned firms are "foreign' '-despite the fact that IBM-Japan, for instance, employs some 13,000 Japanese and only a handful of Americans. MITI has preferred that purchasers of computers chose "domestic" equipment, using controls over foreign exchange to help enforce its wishes; although exchange controls were dismantled in 1975, MITI continues to monitor the market, and reportedly advises customers to buy Japanese computers.[36]

That nontariff restrictions appear to have been more effective in achieving their ostensible goals in Japan than in most nations illustrates once again that evaluating industrial policy measures is seldom straightforward. One lesson of the Japanese experience appears to be that restrictions may work better in protecting what are essentially infant industries, at least if combined with other policies supporting industrial development. In the United States, on the other hand, quotas intended to protect mature industries—not only color TV, but automobiles or steel—have had ambiguous outcomes.

Could quantitative restrictions effectively shield other portions of the U.S. electronics industry should imports surge as they have, say, in semiconductor RAMs (random access memory circuits)? Probably not. Early in 1982, amidst consternation created by heavy import penetration figures for 64K RAMs, Hitachi, Fujitsu, and NEC all announced accelerated timetables for assembly in the United States. These moves were clearly aimed at heading off formal complaints. If dumping or escape clause proceedings had been instituted, the parallels with color TV would probably have been replicated still further. As for color TVs, Japanese firms already have enough volume in the U.S. IC market to attain the scale economies needed for standardized products. *In general, quotas are not a promising route to improved competitiveness for high-technology American industries like electronics.*

The Escape Clause

As mentioned above, GATT permits governments to come to the aid of domestic industries threatened by imports. But before protection can be extended under the escape clause provision in section 201 of the 1974 Trade Act, ITC must return a finding that "an article is being imported into the United States in such increased quantities as to be a substantial cause of serious injury, or the threat thereof, to the domestic industry producing an article like or directly competitive with the imported article."[37] Fairness or unfairness is not part of the text. The rationale is to provide a time interval during which the threatened industry and its workers can adjust to the (new) competitive circumstances associated with imports. Permanent protection or relief is not the intent.

[35] E. J. Kaplan, *Japan:* The *Government-Business Relationship* (Washington, D. C.: Department of Commerce, 1972], p. 85.

[36] *United States-Japan Trade.. Issues and problems,* op. cit., p. *28.*

[37] 19 *u* .S.C. *sec.* 2251(b).

Revisions to U.S. law in the 1974 Act made it considerably easier for an industry to demonstrate injury and thus qualify for protection. As noted above, relaxation of the provision that relief be contingent on a rise in imports stemming from tariff concessions or other forms of trade liberalization by the United States was instrumental in the color TV action. Furthermore, previous incarnations of the escape clause required that increased imports be a *major* cause of injury. The 1974 version changed the adjective to *substantial,* defined as "important and not less than any other cause, " This standard is considerably weaker, and all else equal makes it easier for beleaguered industries to secure protection.[38]

Other than the color TV case, only one successful escape clause action involving electronics products has been advanced since the passage of the 1974 Trade Act. This was filed in late 1977 after a fourfold increase in imports of CB radios. ITC worded its findings strongly: " ., . serious injury is clearly imminent and threatens the domestic industry with extinction unless remedial action is taken to enable U.S. producers to compete on more equal price terms."[39] The president responded by raising import duties from 6 to 21 percent. After the first year, the duties decreased in increments, reverting to their original level at the end of the third year, The impact of this period of tariff protection on the CB radio industry is difficult to judge, largely because sales dropped precipitously—from around 5 million units in 1978 to only 2 million the next year—as the CB fad tapered off. Nonetheless, imports captured the vast majority of 1979 sales.[40]

Despite questionable effectiveness in past cases in electronics, the escape clause remains a tempting vehicle for portions of the U.S. industry that find themselves harassed by shipments from overseas. First and foremost, it does not require that imports be linked to unfair behavior—a condition that has often proved difficult to satisfy in dumping or countervailing duty actions. Furthermore, injury can be defined in terms of narrow product categories. The law requires only that injury be demonstrated in "that portion or subdivision of the producer which produces the like or directly competitive article;" the market in which such injury occurs can be limited to "a major geographic area of the United States."[41] The implications can be appreciated by recalling the typical competitive strategies of Japanese exporters. In both consumer electronics and semiconductors, exporters selected specialized market niches where American manufacturers seemed vulnerable, the intent being to gain a substantial market share within this niche and then diversify. Thus Japanese semiconductor manufacturers concentrated on 16K RAM chips, taking advantage of a shortfall in U.S. production capacity to quickly gain some 40 percent of the American market, Under the provisions of the Trade Act of 1974, an export strategy of this type could be subject to trade restraints.

[38] W.R.Cline, *N,* Kawanabe, T. O. *M.* Kronsjo, and T. Williams, *Trade Negotiations* in *the Tokyo Round: A Quantitative Assessment* (Washington, D. C.: Brookings Institution, 1978), p. 203.

[39] *U.S. Import Weekly— Reference File* (Washington, D. C.: Bureau of National Affairs, 1979), p. 58:0106.

[40] *Electronic Market Data Book 1980* (Washington, D. C.: Electronic Industries Association, 1980), p. 49.

[41] 19 U.S.C. sec. 2251(b). Dumping and countervailing duty statutes invite complaints on a narrow product line basis as well; during 1982, more than 120 separate investigations in carbon steel products alone were undertaken by ITC.

Prospective Effects of U.S. Trade Policy on the Electronics Industry

To what extent, then, might the panopoly of U.S. trade laws be exercised against imports in the future? The answer depends not only on the course of international competition, but also on the attitudes of Federal agencies charged with enforcing these statutes. One

result of transferring responsibility for antidumping and countervailing duty provisions from Treasury to the Department of Commerce has been a more sympathetic hearing for American business—and as a consequence, the filing of more complaints. Much also depends on the complexion of ITC, which shifts as Presidentially appointed commissioners come and go. Changes in the definition of injury have made protection at least in principle easier to obtain; these too, in the ordinary course of events, serve to encourage demands for trade restrictions. Thus far in electronics, trade actions have centered on consumer products; as Japanese manufacturers step up their price competition in semiconductors and computer equipment, there may be filings in these product categories. Furthermore, complaints by the U.S. industry are increasingly centered on subsidies and other tools of national industrial policy—e.g., Japan's R&D programs. By and large, trade negotiations and the GATT have proved unable to deal with such issues.

Certainly protectionist sentiment has been rising over the past half-dozen years. Is a turning point in the American attitude toward trade a real possibility? For some 50 years, the United States has taken the lead in international negotiations to lower barriers to trade. From the first Reciprocal Trade Agreements Act in the 1930's to the Tokyo Round MTN, U.S. policies have supported liberalization as being in the Nation's long-term interests. Both major political parties have for the most part accepted the underlying premise of these policies: open trade leads to an efficient allocation of global resources, as a result of which the American people will, more often than not, find themselves better off. Other nations have benefited as well. The export-based economic growth of West Germany and Japan owes much to the openness of the large and affluent U.S. market, while American consumers have gained access to a greater variety of products, as-well as lower prices resulting from foreign competition, On the other side of the ledger are the costs of dislocation and adjustment that follow upsurges of imports. These costs tend to fall most heavily on a few firms and their employees; they stand out sharply, whereas the benefits are visible mostly in the aggregate. Is it possible that the U.S. economy is *too* open, given changes in the international marketplace? Does the absence of effective import controls in electronics make the domestic industry overly vulnerable to inroads by foreign industries?

Consumer Electronics

International competition has generated continuing pressures for trade protection in consumer electronics, yet the current situation of the U.S. industry is partly a consequence of domestic competition. Today, two American-owned firms, Zenith and RCA, account for roughly 40 percent of U.S. color TV sales—as they have, rather consistently, for many years. Although import penetration increased dramatically during the 1970-77 period, the brunt of the sales losses were borne by other manufacturers. In a single year, Magnavox and Motorola each saw their domestic TV sales drop by more than 15 percent. These market declines led rather directly to the sale of their TV operations—to North American Philips and Matsushita, respectively. While only four domestically owned producers remained in *1983* (compared with 17 in **1970),** they have been joined by more than 10 foreign companies manufacturing or assembling sets here. Concentration has not increased significantly and no one firm-American or Japanese—has come close to dominating the market. Policy decisions by the U.S. Government stimulated the influx of foreign capital, although OMAs probably influenced timing more than decisions to invest. Foreign-owned plants in the United States—together with continuing imports from Japan and other Far Eastern nations–created relentless pressures on American TV manufacturers, even while quotas were in force. U.S. firms shifted production abroad to reduce costs, at the expense of jobs here—but consumers have benefited via low prices and high-quality products. Still, only the largest and strongest American manufacturers managed to stay in business.

For other consumer goods, Federal policies have rarely come into play–and seem unlikely to, at least in a manner similar to events in the TV industry. Far Eastern firms are today the unchallenged leaders in most other consumer electronic products; there is virtually no U.S. manufacturing left to protect when it comes to portable radios, monochrome TVs, stereo/high fidelity equipment, the simpler pocket calculators, or electronic watches. More important for the future, the United States has lagged in the development of new products such as video cassette recorders (VCRs). At every step, Japanese manufacturers lead in product development or are working in parallel or in cooperation with American firms, the primary exceptions being electronic toys and games and home computers. If products like video disk players achieve mass-market success, the Japanese will be early and formidable competitors.

Under such circumstances, protection for American manufacturers would have to come through legal provisions that have not in the past been exercised. When applying the injury standard in antidumping proceedings, ITC examines whether imports are harming a domestic industry, are likely to damage it, or are *preventing such an industry from being established*. The last of the three possibilities has seldom been relevant because existing industries have normally sought dumping investigations. But in principle, the clause could be a basis for relief–if imports were priced at less than fair value—for products that are not even being made in the United States, such as VCRs.

On the other hand, the escape clause injury standard would have to be considerably stretched. Here, there are only two possibilities: an existing industry must be seriously injured or threatened. Given product leadership overseas, with imports achieving a sizable market share from the outset, serious injury to an existing industry probably could not be demonstrated (assuming new types of products) unless the standard was applied in a novel and unintended way. Given the general ineffectiveness of antidumping and countervailing duty remedies, it therefore appears unlikely that existing U.S. trade policies could shield domestic firms producing the consumer electronic products of the foreseeable future. Indeed, cost pressures will probably continue to drive a good deal of production by American entrants offshore.

Semiconductors

Unlike consumer electronics, where the efforts of U.S. manufacturers have been largely confined to the domestic market, production and sale of semiconductors is carried out on a global basis by the major U.S. merchant firms, as well as by Japanese and—to a far lesser extent—European producers. U.S. leadership has meant that domestic manufacturers have not, as yet, sought direct Government assistance in combating imports. For many years, sales expanded rapidly; American suppliers were often hard pressed just to keep pace. The number of domestic companies serving the market tripled during the 1960's, while imports were until recently almost entirely the interdivisional shipments of U.S. multinationals (ch. 4).

The picture began to change at the end of the 1970's. Aggressive competitive tactics and market successes by Japanese firms have had impacts in many parts of the world, but from the perspective of U.S. policy makers the domestic market has been the focus, Japanese companies are providing the first real competition from abroad in the experience of most of the American industry—competition that has driven them to seek the attention of the Federal Government. The most publicized examples of Japanese inroads have been the 16K and 64K RAMs sold in large numbers to manufacturers of computers and microprocessor-based systems. In 1980, Japanese manufacturers captured about 40 percent of the U.S. and world market for 16K chips, partly because of inadequate capacity in American plants, By 1982, the Japanese share of next-generation 64K RAM sales was running at about 70 percent. More than any other event, the rapid inroads of Japanese RAMs have led the American industry to seek counters.

The tempest over 64K RAMs in the spring of 1982 may prefigure future trade disputes in the high-technology products of this and other industries. As publicity mounted over inroads by Japanese imports, the Departments of Commerce and Defense began examining the implications for national security. At the time, only Texas Instruments and Motorola among U.S. merchant firms were producing 64K chips in quantity. prices had been dropping rapidly, driven not only by declining manufacturing costs, but by recessionary pressures leading to price cutting in the Japanese market as well as here. Worldwide production capacity for 64K RAMs may have exceeded demand for a time,

When the Semiconductor Industry Association—and Motorola specifically—accused the Japanese of dumping, though without filing complaints, the Japanese responded by announcing plans to move some production to the United States. Meanwhile, the Commerce/Defense study had begun, evidently at the instigation of the latter agency. Among the possible outcomes of the Commerce/Defense study, three appeared at the time to be among the most likely:

1. A dumping complaint against the Japanese, self-initiated by Commerce.
2. A section 232 investigation, based on the national security implications of U.S. dependence on Japanese ICs.
3. A complaint through GATT, probably concerning issues of reciprocal market access.

The section 232 alternative is noteworthy for illustrating the variety of instruments that governments can bring to bear in trade-related matters. Part of the Trade Expansion Act of 1962, this rarely used statute permits the President to limit imports—e.g., by tariffs or quotas—where such shipments "threaten to impair the national security. " No section 232 proceeding was started in this case, but a recent investigation of ferroalloy imports by the Commerce Department, which recommended restrictions, may point to greater use of this provision by industries suffering from foreign competition.[42] Nor were antidumping proceedings initiated for 64K RAMs. Later in the year, growing demand caused prices to firm, defusing allegations of dumping and redirecting lobbying by domestic semiconductor firms toward reciprocity legislation. Nonetheless, following this turn of events, Japan got another unpleasant surprise: the Justice Department began an investigation of six Japanese semiconductor manufacturers, premised not on price-cutting but on restricting shipments to the United States in order to *raise* prices.[43] To considerable extent, such episodes illustrate the inability of the traditional tools of trade policy to deal with events in a fast-moving, technologically based industry like microelectronics; they also illustrate the multiplicity of actors populating U.S. trade policy and enforcement—a multiplicity that some would characterize as leading to confusion and disarray .44

In any case, the U.S. merchant semiconductor industry has not thus far sought direct protection. Rather, American firms and their trade association(s) have continued pointing to features of Japanese industrial policies and business practices they feel are unfair, urging the U.S. Government to exert pressures aimed at ending them.[45] In addition, industry executives have sought Federal actions that would improve their own ability to compete—lobbying in favor of R&D tax incentives and reductions in capital gains taxes, as well as calling attention to engineering manpower shortages. Many

[42] See "Specialty Steel Industry Attacks Draft Report by Commerce on Ferroalloy Study, " *U.S. Import Weekly,* July 21, 1982, p. 478. Ferroalloys are used in making steels. The investigation was requested by a trade association of U.S. suppliers. Past applications of sec. 232 have been restricted to petroleum imports.

[43] A. Pollack, "Inquiry puzzles Chip Makers, " *New York Times,* July 7, 1982, p. D9.

[44] Two dozen or more Federal agencies exercise some degree of responsibility over foreign trade and investment policies—"Opening Statement of Senator Roth, " *Government Organization for Trade,* hearing, Committee on Governmental Affairs, U.S. Senate, June 4, 1981, p. 2.

[45] See, for example, "The Effect of Government Targeting on World Semiconductor Competition, " Semiconductor Industry Association, Cupertino, Calif., January 1983.

of the tax changes advocated by semiconductor firms were in fact implemented by the Economic Recovery Tax Act of 1981 (ch. 7). Industry leaders have also asked the Federal Government to negotiate for easier access to the Japanese market, claiming that sales in Japan are virtually impossible except for products that local companies do not make. The U.S. industry's position is that asymmetries vis a vis Japan result in a competition in which the two sides are playing by different rules, with the advantage to the Japanese.

As in earlier export thrusts, Japan's semiconductor shipments have been concentrated in a few product types. The choice has been memory circuits—particularly dynamic MOS RAMs —in part because of the close coupling between Japanese efforts in microelectronics and computers. Worldwide, Japan's RAM sales have increased more rapidly than those of American firms, with European manufacturers the big losers. At the end of 1979, just four companies—two Japanese, two American—produced nearly two-thirds of the total world merchant output of 16K RAMs. Two years later, a pair of U.S. firms confronted six Japan producers in the battle for worldwide market share in 64K RAMs; while other American manufacturers were ramping up production or preparing to enter with their own designs, Japanese companies were investing heavily in additional production capacity.

Still, except for Mostek-–which is rapidly diversifying its product line–RAMs have not dominated the sales mix of any American company. Thus, while Japanese incursions have had drastic impacts on the RAM market-–affecting prices and profits, as well as market shares—similar shocks have not yet been felt in other products. A major concern of U.S. producers is that this experience will be repeated elsewhere, denying them the learning and scale economies so important for competitiveness, and cutting into the profits they need to generate cash for expansion. Moreover, MITI-sponsored R&D efforts like the VLSI project are seen as, first, activities that would be illegal here, and second, major subsidies. This program—and the difficulty American firms have faced in gaining access to patents and other technical results—is viewed as further evidence of asymmetries favoring the Japanese. In sum, U.S. semiconductor manufacturers believe that a closed market shelters Japanese competitors, leading to economies of large-scale production that translate into low prices. Investments in production facilities within Japan are one way the U.S. industry sees to counter the threat.

As the discussion above implies, trade outcomes depend on complex sets of competitive relationships. Consider, as an example, the question of scale economies—a matter more complicated than sometimes implied. A portion of the cost savings associated with production scale come via learning curve effects; he who gains an early edge in market share enjoys lower costs—perhaps permanently. The Japanese, in the simplest view, "learn" by producing for the domestic market, then penetrate foreign markets based on low costs and low prices. But learning economies are not quite so straightforward. Some cost reductions are functions of cumulative production volume; others depend on time as well.[46] In the latter case, obtaining a large early market share would not confer the same cost advantages. The extent to which market penetration results in lower costs, therefore, may be product-specific; for some types of ICs, cumulative volume might matter much more than for others. The limited evidence available suggests that costs for logic circuits depend more heavily on time, memory costs more on scale.[47] As a consequence, the advantages of access to the U.S. market could be considerably greater for products such as RAMs than for at least some other types of ICs—perhaps one reason Japan's exports have been so heavily weighted toward memory devices (the comparatively straightfor-

[46] D.W. Webbink, *The Semiconductor Industry: A Survey of Structure, Conduct and Performance* (Washington, D. C.: Federal Trade Commission, Bureau of Economics, January 1977), pp. 49ff.

[47] "Management Committee Report to the Management Review Committee-CD Assessment Report, IBM, October 25, 1971 (PX 391 AZ-142)," cited in G. Brock, *The United States Computer Industry A Study of Market Power* (Cambridge, Mass,: Ballinger, 1975), p. 3.

ward design of RAMs and other memory circuits is also a major factor).

Even so, patterns linking design and development, manufacturing, and marketing tend to repeat fairly consistently from product to product (see app. C on the 4K RAM). Technology dominates production and marketing strategies in the early phases, because the first to offer a new chip design may possess a near-monopoly—whether the chip is an innovative product or simply an incremental advance. After introduction, prices decline slowly as firms recoup R&D costs by selling to customers willing to pay premium prices for leading edge devices. Eventually, other manufacturers enter the market, forcing prices down—sometimes to a point below production costs. The final phase in the product cycle finds prices low, with many of the earlier participants unable or unwilling to compete; as a consequence, prices may even begin to rise once more.

The competitive dynamics of the industry revolve around such factors, Some companies attempt to be leaders, bringing innovative products to market early and capitalizing on the higher prices they command; in the United States, Intel has become known for this strategy, which depends on heavy expenditures for design and development—as well as abandoning products when they begin to mature and margins fall. Other firms manufacture a diversified line of more mature devices, concentrating on process technologies as a route to low costs. For such companies—National Semiconductor has been an example—market penetration is vital; as a result, they are particularly vulnerable to import strategies that also emphasize market position, Still other entrants participate largely as a byproduct of internal operations. Semiconductors may account for only a small fraction of their business, but if they use substantial quantities in their other end products—as do Japanese manufacturers such as Fujitsu or Hitachi—they may be able to sell outside at low prices. Net revenue gained by putting otherwise idle capacity to work then makes a contribution *to* profits.

The vulnerability of the U.S. semiconductor industry to foreign competition is therefore a function first and foremost of technology. American firms with the ability to be consistently early to market with new products have generally had less to worry about. Thus far, most imports have been standard circuits—a situation that could certainly change if semiconductor manufacturers in Japan or elsewhere begin to design more innovative devices. At the same time, there are real limits to a technology-based strategy. Incremental payoffs from R&D may diminish over time. Although new types of microelectronics products could still open new mass markets, signs of technological slowdown have begun to appear. Inevitably, the industry will mature, with greater competition from imports a predictable consequence: slower rates of technological change make it easier for foreign firms to catch up and keep up.

Industry structure is also important, The high-volume merchant manufacturers in the United States have coexisted with a fairly large number of small firms for many years, the latter typically specialists filling market niches of less interest to bigger companies, Structural changes are underway in the domestic industry, partly in consequence of heightened international competition, partly because the capital requirements of advanced circuits make pursuit of VLSI difficult for small companies. The changes are of two types, as discussed in previous chapters, First, diversified American corporations are purchasing or merging with formerly independent semiconductor firms. Second, foreign enterprises are continuing to take ownership positions in U.S. manufacturers, Such marriages have occurred, on the one hand, because foreign electronics manufacturers want quick access to evolving technologies, and on the other hand, because the U.S. partners have needed infusions of capital,

How will these structural shifts affect competition? As American semiconductor manufacturers become larger and more diversified–in the extreme, merely divisions of powerful multinational corporations—they will be less vulnerable to price competition in particular

lines of business. Such companies have the flexibility to shift resources internally, to meet the competition on a price basis, to invest more heavily in R&D and in production equipment. To the extent that American semiconductor firms have had difficulty in financing expansion, with possibly harmful effects for U.S. competitiveness, consolidation should help, Multinationals also tend to have "free trade" perspectives because they depend on doing business overseas, and are less likely to press trade complaints. On the other hand, some observers believe large firms to be less entrepreneurial and more cautious, and that consolidation will reduce the probability of innovation, making technical leadership more difficult to maintain. While small firms will continue to exist—many new ones have been started recently—structural shifts of the type visible in semiconductors have characterized the maturation of many industries; rather than focusing on the supposed virtues and liabilities of small and large firms, it is perhaps more pertinent simply to observe that they have different strengths and weaknesses in a given competitive context.

More to the point in terms of trade policy, what are the implications of greater numbers of foreign manufacturers with active semiconductor design and production facilities in the United States? This tendency—particularly evident in recent investments by Japanese firms to mitigate trade frictions-combined with universal foreign involvement by the larger American producers, has made semiconductor manufacture one of the more international of the world's industries. Attitudes toward trade and investment shaped by the traditional concerns of domestic firms and their workers may not fit the realities of such an industry. In microelectronics and computers, the notion of "our" firms versus "theirs" is an oversimplification when so many companies operate on a global scale. Corporations engaged in bitter trade disputes in one part of the world may establish joint ventures elsewhere; cross-licensing is the rule; firms cooperate with one another where they see advantages to be gained, compete fiercely under other circumstances. Such factors have no doubt contributed to the reluctance of American semiconductor manufacturers to press formal trade complaints against Japanese exporters.

The old ways—erecting trade barriers to shield domestic industries—can damage U, S,-based companies quite aside from any possibility of retaliation by foreign governments. Texas Instruments produces 64K RAMs in Japan for export to the United States. In consumer electronics, the OMA on color TVs from Taiwan restricted shipments by RCA and Zenith, both of which had substantial investments there. Japanese semiconductor manufacturers would quickly shift production to export platforms—in many cases, the same offshore sites favored by American firms—in the event of restrictions on shipments of ICs from Japan. They would also move more production here. When those affected include U.S.-based multinationals along with foreign firms having significant interests in the United States, traditional protective measures become less practical, Such dilemmas have arisen, or are likely to, in other industries as well—automobiles, computers, possibly aircraft, chemicals, energy, pharmaceuticals. Increasingly, firms in such industries are tied by a multitude of co-production and joint venture agreements, irrespective of the locations of their headquarters, As a consequence, the "inside-outside" or "good guy-bad guy" distinction becomes a difficult one for policy makers to draw; *in such a world, trade policies directed to an older order may simply be overrun by events.*

In any event, the American semiconductor industry has not attempted direct action to staunch the flow of imports, much less withdrawn to a protected position in the United States. Instead, while continuing to lobby the Federal Government, U.S. merchant firms have moved boldly to maintain their competitiveness worldwide. This is one reason the industry's leaders have been more vociferous over what they view as unfair domestic subsidies by the Japanese Government—and over impediments to their own attempts to sell or to manufacture in Japan—than over purely trade matters, such as dumping.

From the viewpoint of American companies that purchase semiconductors, the outcomes of intensified competition have been beneficial: a wide range of product offerings, low prices, high quality. Would these benefits have followed even if U.S. producers had chosen strategies of trade protection? This must remain an open question—but to the extent that other industries offer parallels, the benefits would have been smaller and slower to arrive.

As the technological leads of U.S. microelectronics firms narrow, and competition continues to mount, the industry's support for open trading relationships may diminish. Yet American semiconductor producers cannot back too far away from a free trade stance without jeopardizing their own overseas interests. Formulating equitable trade policies will continue to be difficult, with a wide range of interests to be balanced. A large fraction of U.S. exports and imports of semiconductor products will continue to be transfers between divisions of multinational corporations. Links among U.S. and foreign firms will certainly persist and may well strengthen. Trade policies dealing with dumping or countervailing duties are unlikely to be very relevant, if only because of the pace of technological change—which can render the products in question obsolete before the proceedings have run their course.

Computers

The picture is similar in the computer industry. U.S. firms have been undisputed leaders, with subsidiaries engaged in manufacturing and marketing around the world. Imports have been at low levels, even for personal computers and peripherals-although this could

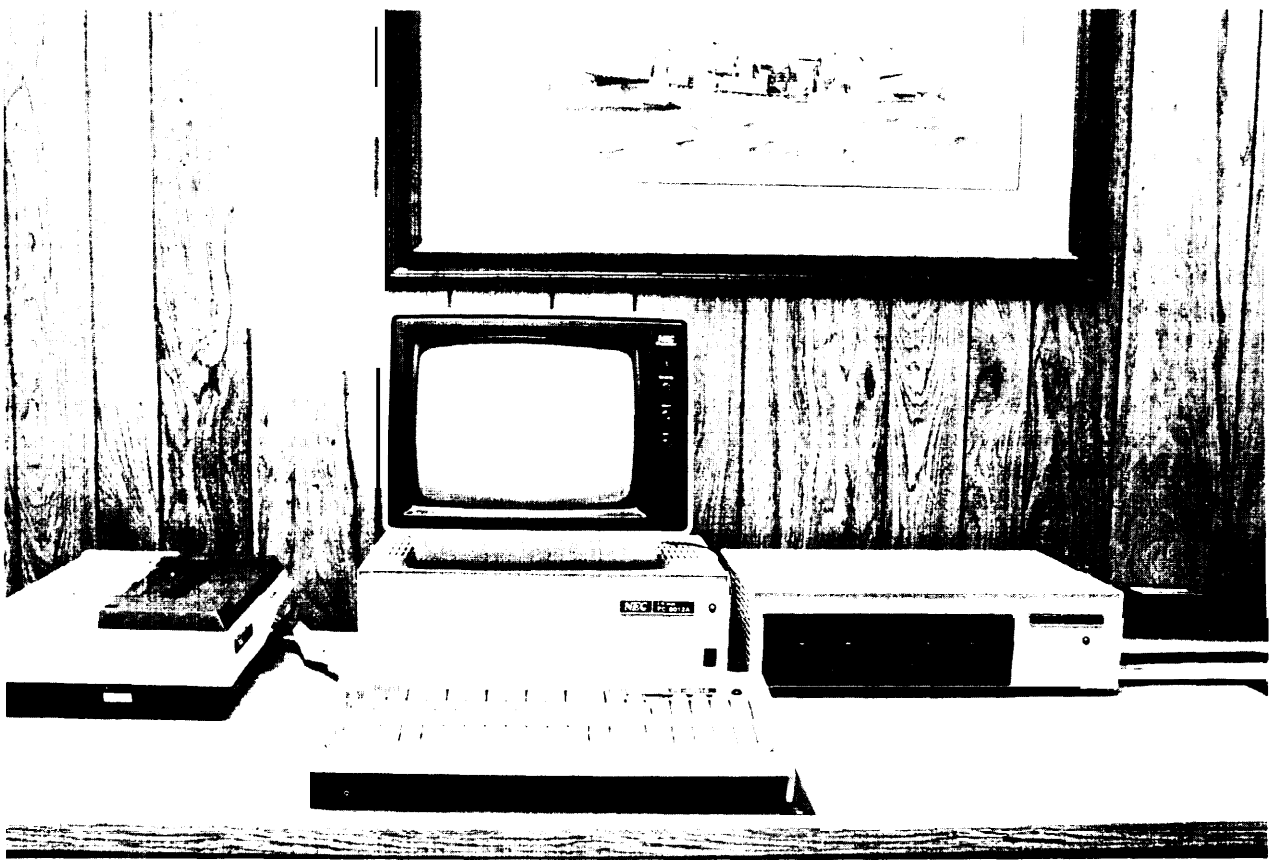

Photo credit Nippon Electric Co

Desktop computer made in Japan

certainly change. The consequence has been, until quite recently, a virtual absence of concern by executives of American computer firms with U.S. trade policy except as it supports an open international trading environment or affects transfers of components and subassemblies among subsidiaries. American manufacturers wish to see items 806.30 and 807,00 of the Tariff Schedules preserved, but dumping or escape clause provisions have seldom attracted their attention.

Yet here too the competitive picture is changing. Foreign governments, viewing information processing as vital to national interests, have found a variety of methods for subsidizing local firms, as well as an array of carrots and sticks for encouraging American corporations to transfer technology to local computer manufacturers.[48] And again as in semiconductors, foreign manufacturers have taken equity positions in American computer companies, in part to acquire technical knowledge, The technology gap between U.S. and foreign firms has diminished in both hardware and software, with several Japanese manufacturers beginning to ship mainframe machines to the United States either directly or in partnership with American firms.

What impact will such developments have on trade flows and on U.S. trade policy? Given that competition depends on much more than fast, reliable hardware, it is too early to make predictions. Manufacturers must be closely attuned to user needs; foreign computer firms lag well behind American companies in their ability to seek out and satisfy customer applications (ch. 5). This deficiency has not gone unrecognized; other nations are devoting substantial efforts to software, often aided by government subsidies. Furthermore, countries like Britain have always been good at software and may provide a resource that firms elsewhere can tap. The U.S. lead in software seems bound to narrow, following that in hardware. The fluidity of market structures emphasized in chapter 5 will leave room for aggressive foreign competitors.

As a result of the subsidies for computer technology that virtually all industrialized countries have employed, it is not hard to envision a scenario in which these subsidies—as well as the preferential treatment many governments have extended to local producers—become the targets of countervailing duty complaints. If a foreign firm benefiting from government largess were to establish a significant market position in the United States, can there be much doubt that American manufacturers would seek remedies under U.S. law? After all, the subsidies extended to foreign computer industries—albeit often rationalized on national security grounds—have been even more visible than in microelectronics. What, then, might be an appropriate response on the part of the U.S. Government?

The issue raised—and repeated in semiconductors, communications equipment, and other high-technology products—is that the existing *structure of national and international trade laws and agreements evolved in another era; it was not designed with current varieties of national industrial policies and subsidies in mind.* Countervailing duties were intended to offset export subsidies such as rebates or other payments contingent on sales to overseas customers, Subsidized financing via export-import banks has strained the system, Domestic subsidies with indirect effects on exports scarcely fit it. Indeed, U.S.-based companies maybe among those benefiting from industrial policies in other nations. Antidumping laws were drafted to counter explicit price discrimination by foreign monopolists, often involving governments and/or cartels that encouraged exports by charging higher prices to domestic than to foreign customers. Until recently, antidumping legislation was seldom called on where price-cutting was extended to all customers, domestic as well as foreign. Today, when France subsidizes the development of commercial aircraft, is it "unfair" if an American carrier selects such planes over those made by

[48]Overseas governments have used investment incentives to attract American firms more actively in electronics and electrical machinery than in any other industry. See *The Use of Investment incentives and Performance Requirements by Foreign Governments* (Washington, D. C.: Department of Commerce, Office of International Investment, October 1981), p. 6.

Boeing? Or, more subtly, is U.S. support of research into solid-state electronics as part of military and space programs unfair—research that, after privately funded follow-ens, eventually results in commercial applications? Many other examples, in any number of countries, could be cited.

For computers or communications, governments have seldom proffered financial assistance simply to foster exports, although this has been one motive–a strong one in Japan. Rather, governments have targeted the information industry as vital to a multiplicity of national interests. Subsidies have been generalized, directed at industrial development over the longer term. *The question for trade policy becomes: As governments increase their involvement in economic affairs—and indeed in the actual operation of business enterprises—what types of trade policies and agreements will be needed so that participants can agree that the terms of competition are reasonably fair?* This will remain a central matter for international trade negotiations over the current decade and beyond, While the Tokyo Round trade negotiations addressed such questions, the substantive changes in procedures embodied in the new subsidies code are small, and unlikely to have much effect.

Summary and Conclusions

U.S. trade policy has been rather consistently oriented toward open international trade and investment over the last half-century, In the postwar period especially, the United States took the lead in eliminating both tariff and nontariff barriers—by reducing its own restrictive measures and pressing its trading partners to do the same. Some parts of the electronics industry, notably manufacturers of consumer goods like TVs and CB radios, have suffered as a result. But if import competition has hurt the manufacturers of such products, other sectors of the U.S. economy benefited from freedom to export and invest overseas. U.S. trade policy has helped American semiconductor and computer firms become leaders in markets all over the world. The exception has been Japan; barriers imposed by European nations have proved far less substantial, On the whole, the open trading environment resulting from successive rounds of multilateral negotiations has helped the competitiveness of the U.S. electronics industry.

More narrowly, trade policy impacts in consumer electronics have centered on longstanding complaints over unfair practices brought by American firms against competitors in the Far East, primarily Japan. The response of the Federal Government has been marked by delays and interagency conflicts. Fifteen years after the initial antidumping actions, the situation remains unresolved, duties uncollected. The uncertainty created by this long and convoluted history has made life difficult for both domestic firms and importers. To considerable extent, as the shape of the industry has altered, complaints over trading practices have become moot. Orderly Marketing Agreements—negotiated as an upshot of escape clause proceedings unrelated to unfair trade practices-accelerated what would probably have been widespread eventual movement by foreign firms toward assembly here. Plants owned by foreign interests have replaced failing domestic TV manufacturers. Meanwhile, the remaining U.S. producers have moved some of their assembly operations to low-wage offshore locations, helped by provisions of items 806.30 and 807,00 of the U.S. Tariff Schedules. These provisions —which allow tariffs on re-imports to be computed only on foreign value added—have been a target of labor interests. But if in some cases offshore assembly can be considered equiva-

lent to the export of jobs, in others transfers offshore have been necessary to retain any domestic jobs,

As tariff walls in many parts of the world have slowly come down, the attention of both private firms and governments has turned to indirect and nontariff barriers. Ranging from implicit subsidies for domestic firms to uncooperative customs inspectors, such barriers pose much more complex subjects for international negotiations—as the Tokyo Round demonstrated. Some progress has been made, but it is too early to tell how trade in electronics may be affected over the longer term.

Among nontariff and indirect measures, subsidies for economic and industrial development ostensibly aimed at domestic objectives are perhaps the most difficult case, along with government procurement. As discussed in the previous chapter, many nations have used both types of measures consistently and aggressively as elements of industrial policy—especially in electronics. While progress has begun in opening up government procurements, subsidies will remain thorny issues for years. More and more governments, for example, are resorting to R&D incentives to support local electronics manufacturers; inevitably, these *function* to some extent as export subsidies, even if this is not the primary or avowed intent. While direct impacts on international trade tend to be small, the visibility of programs such as Japan's joint R&D efforts, or West Germany's spending on computer technology, draws frequent attacks by businessmen and political leaders in other parts of the world. The nations mounting these programs consider them vital for economic development; they will not disappear. As has been the case with complaints over unfair trade practices in consumer electronics, negotiations concerning indirect supports and subsidies are being overtaken by events; subsidies may in some respects function like other nontariff and indirect barriers to trade, but governments seldom institute them for such purposes. Nor do they view them as elements of trade policy. They are seen as vital tools of industrial policy—policies developed in response to an economic environment in which domestic and international dimensions can seldom be isolated,

Negotiations aimed at reducing such subsidies will make slow progress at best—indeed, although necessary, they may finally be rather beside the point. So long as governments regard high-technology industries like electronics as essential to industrial development and economic growth, supports and subsidies seem more likely to increase than decrease.