

Policy Discussion Paper

INTERNATIONAL MONETARY FUND

**IMF PAPER ON POLICY ANALYSIS
AND ASSESSMENT**

© 1994 International Monetary Fund

This is a *Paper on Policy Analysis and Assessment* and the author(s) would welcome any comments on the present text. Citations should refer to a *Paper on Policy Analysis and Assessment* of the International Monetary Fund, mentioning the author(s) and the date of issuance. The views expressed are those of the author(s) and do not necessarily represent those of the Fund.

PPAA/94/5

INTERNATIONAL MONETARY FUND

The New Protectionism in Industrial Countries: Beyond the Uruguay Round

by

Douglas A. Irwin, Research Department 1/

February 1994

Abstract

This paper presents a broad overview of trade protection in industrial countries from the 1970s to the present. The emphasis of such measures has shifted from the protection of agriculture and basic manufacturing industries, where many industrial countries had lost (or never had) comparative advantage in the 1970s and 1980s, toward the protection and promotion of high-technology sectors in recent years. The new forms of protection--particularly subsidies and antidumping rules--have not necessarily contravened GATT rules, and the Uruguay Round fell short of reigning in such interventions. While these more recent trade interventions might in principle have an economic justification under certain conditions, theoretical, empirical, and practical considerations call for great skepticism about the desirability and efficacy of such policies. The next challenge for world trade negotiators is to contain the pressures for intervention in these areas.

JEL Classification Number:

F13

1/ The views expressed in this paper do not necessarily represent those of the International Monetary Fund or its member countries. When this paper was written, Douglas Irwin, Assistant Professor of Business Economics in the Graduate School of Business of the University of Chicago, was a consultant in the World Economic Studies Division of the Research Department.

Table of Contents

	<u>Page</u>
I. Introduction	1
II. Backsliding to Protection in the 1970s and 1980s	3
III. Trade Policy in the 1990s	12
IV. Conclusions	21
 <u>Text Tables</u>	
1. Antidumping Actions in the United States and European Community	5
2. Imports Covered by Hard-Core NonTariff Barriers	8
References	23

I. Introduction

The post-war world trading system enshrined in the General Agreement on Tariffs and Trade (GATT) was founded on two fundamental principles: nondiscrimination, embodied in the unconditional most-favored nation (MFN) clause and the idea of national treatment; and trade liberalization, undertaken through negotiated multilateral reductions in tariff and non-tariff barriers on international commerce. Over the past fifteen years, both principles have been compromised to some degree by trade policy developments in major industrial countries. In a retreat from the objective of non-discrimination in trade, regional and bilateral trade agreements have emerged to play a significant role in commercial policies. While such agreements have established preferences by reducing trade barriers among participants, thereby furthering trade liberalization among a limited set of nations, and although these arrangements do not necessarily contravene GATT rules, they may constitute little more than a superficial freeing of trade and risk jeopardizing the multilateral framework of trade relations. 1/

The focus of this paper is on the backsliding toward greater protection in the industrialized countries during the 1970s and 1980s and the outlook for the 1990s. This backsliding has consisted mainly of GATT-legal antidumping duties that have restricted trade in broad categories of goods, or "voluntary" trade restrictions not explicitly covered by the GATT. The

1/ Preferential trading arrangements originated partly with the lagging pace of the GATT in extending rules to trade in services and international investments. Such arrangements are most overtly protectionist in their stringent rules of origin, which tend to ensure that trade and investment remains within the confines of the trading area. See de Melo and Panagariya (1993) for a recent discussion of regional arrangements and Krueger (1993b) on how rules of origins can act as protectionist barriers.

resurgence in protection has undercut some of the progress made in multilateral trade liberalization during the 1950s and 1960s and, like regional trade arrangements, has raised questions about the future of the liberal world trading system.

This paper assesses the causes of this protection and the consequences for international trade, and examines the emerging new trends in trade policy intervention in the early 1990s. The findings can be summarized as follows. The demands for protection in the United States, the EC, and to some extent Japan originally arose in older sectors (such as basic-technology manufactures) that had lost comparative advantage to newly industrializing countries. While demands for protection appear to have peaked in the mid-1980s, there is little evidence that the protection that has been granted is being dismantled.

If adhered to, the recent conclusion of the Uruguay Round promises to end the use of "voluntary" restraint agreements, reduce agricultural subsidies and protection, and clarify antidumping rules. This would contain many of the aforementioned problems in trade policy. More recently, however, the thrust of government intervention in trade has shifted away from easing adjustment in established sectors of the economy toward promoting the expansion of sectors employing new technologies. These promotion efforts have tended not to rely on trade policy instruments per se (that is, tariffs or quotas, although export subsidies are employed), but have nevertheless had an impact on the pattern of trade. Furthermore, at the insistence of the United States, the use of subsidies to promote

domestic research and development and technology-intensive industries was expanded under Uruguay Round rules. The new emphasis on export promotion in high technology sectors has the potential to be just as costly as delaying the reallocation of labor and capital away from traditional sectors, and may foster a further deterioration in trade relations among industrial countries.

II. Backsliding to Protection in the 1970s and 1980s

Successive rounds of trade negotiations after World War II conducted under the auspices of the GATT succeeded in bringing down average tariffs in most industrial economies to historically low levels. The completion of the Tokyo Round in 1979 saw the average MFN tariff rate reduced to less than 10 percent for most industrial countries, with higher rates on agricultural goods. In 1989, for example, the average effective MFN tariff imposed by the United States was estimated at 7.0 percent, with an average tariff of 6.7 percent on industrial products and 8.6 percent on agricultural goods (GATT, 1992, pp. 73-74). Similarly, the average effective MFN tariff in the European Community (EC) was estimated to be 7.3 percent in 1988, with 6.4 percent on industrial products and 12.4 percent on agricultural goods (GATT, 1991, p. 92). In Japan, the average tariff on manufactures (excluding chemicals) was 5.7 percent in 1989, with an average levy of 9.7 percent on agricultural goods (IMF, 1992, p. 119). These low average tariffs result in part from large duty-free categories of imported goods, and mask significant spikes in the tariff code--wool fabrics face a

30 percent ad valorem tariff in the United States, for example, and tariffs on footwear are about 20 percent on average.

However, the binding nature of tariff reductions negotiated under the GATT ensured that once duties had been reduced, they remained low in the 1970s and 1980s. In contrast to the inter-war experience, which the GATT was designed to avoid, dramatic revisions in tariff codes have not been a feature of the postwar period. The GATT has also ensured that the new protection has not manifested itself in the unilateral imposition of import quotas. The GATT forbids the use of quantitative restrictions, although certain quotas--particularly in agriculture--pre-date the GATT's formation in 1947 and have remained untouched by its rules. 1/

Instead of formal tariffs or quotas, the new protection has taken principally two forms: the increasing application of GATT-legal "fair trade" laws, particularly antidumping duties (ADs); and the proliferation of voluntary restraint agreements (VRAs)--including voluntary export restraints, orderly marketing arrangements, industry-to-industry agreements, and another measures--which operate outside GATT rules. AD laws allow tariffs to be temporarily imposed to offset price discrimination by foreign exporters (that is, when foreign firms charge a lower price on exports than on home sales). VRAs are negotiated settlements of trade disputes prompted when import-competing firms file a complaint with their government against

1/ The most egregious use of quotas is the system of global quotas on textiles and apparel known as the Multifiber Arrangement, which operates outside of the GATT.

one or more exporting countries. These agreements almost always result in market share ceilings for foreign exporters or quantitative limits on their exports to the market in question.

The widespread use of AD statutes in the first half of the 1980s is illustrated on Table 1 (although not shown, the corresponding figures are significantly lower for the 1970s). The United States and the EC rank among the leaders in AD imposition, although Australia and Canada are also heavy

Table 1. Antidumping Actions in the United States
and European Community 1/

	<u>United States</u>		<u>European Community</u>	
	Investigations	Actions	Investigations	Actions
1981	15	5	22	13
1982	50	48	36	22
1983	40	8	26	33
1984	46	33	33	23
1985	61	28	34	22
1986	63	25	23	18
1987	41	40	17	9
1988	31	22	30	9
1989	25	29	29	9
1990	24	64	16	28

Source: GATT, *Basic Instruments and Documents*, various years.

users of such duties. Japan imposed its first ADs in early 1993, on ferro-silico-manganese (a steel-making material) imports from China. From the standpoint of domestic firms facing import competition, the appeal of ADs arises from the ease with which import relief can be acquired: in the United States, for example, all that needs to be shown is that price

discrimination occurs and that some form of material injury to the domestic industry is a consequence. Indeed, the popularity of AD law--any firm can file a petition, thereby obviating the need for an industry to overcome the free-rider problem--has made them the "weapon of choice" of the new protectionism. So great has been the proliferation of AD investigations and of threatened AD petitions that major exporting firms and multinationals in the industrialized countries have been adversely affected. This has provided some impetus for the GATT to reach an international agreement on the control of ADs.

Though AD duties and VRAs are distinct trade barriers, their use is closely interrelated. In many instances, AD investigations do not lead to the imposition of duties, but instead to negotiated voluntary restraint agreements. Given that antidumping investigations almost invariably find the existence of dumping in the United States--even if domestic and foreign prices are equal at all points on time, the Commerce Department's "averaging" methodology virtually guarantees a finding of dumping--and the high probability that AD duties will be imposed, foreign exporters have an incentive to negotiate a solution to the trade dispute. ^{1/} By agreeing to limit the volume of exports or by accepting a ceiling on market share, foreign exporters reap a quota rent on their exports, maintain a larger market share than if more stringent ADs had been imposed, and may even be able to collude more effectively with other exporters. ADs and VRAs are also complementary in that they appeal to different segments of the economy

^{1/} For an analysis of this phenomenon, see Prusa (1992).

that face import competition. Lacking political visibility and clout, small industries--ranging in the United States from mushrooms to copper pipe--seek the procedural protectionism of the antidumping law. Sectors of greater economic importance, on the other hand, are able to persuade political leaders to negotiate VRAs with other countries. The most prominent and long-standing negotiated restraints impede imports of steel, autos, and textiles and apparel into the United States and the EC.

The proportion of imports subject to these new restrictions has increased considerably over the past two decades. Between 1966 and 1986, Laird and Yeats (1990) report that the percent of total imports covered by some form of non-tariff barrier--from VRAs to nonautomatic licensing requirements to local content restrictions--rose from 15 to 58 percent in the EC, from 34 to 50 in percent Japan, and from 27 to 57 percent in the United States. Table 2 indicates the percent of imports covered by "hard-core" non-tariff measures, meaning variable import levies, quotas, prohibitions, and VRAs. These percentages suggest that the coverage of protectionist measures has increased in the United States and EC but not Japan, although the figures fail to indicate the extent of their restrictiveness. Many of these barriers existed for agricultural goods prior to the 1980s, particularly in Japan, and the change in these percentages sheds more light on increases in protection of manufactured goods producers.

The underlying source of the demand for protection has been shifts in comparative cost advantages across countries in the postwar period. Since

the 1960s, newly industrializing countries have acquired considerable advantages in the production of labor-intensive manufactured goods and simple assembly operations. This structural change in the world economy has forced many older sectors--particularly heavy industry or labor-intensive manufactures such as steel, shipbuilding, automobiles, footwear, and textiles and apparel--to confront greater import competition in the U.S., the EC, and, more recently, Japan. Organized labor and management in sectors facing this import competition have sought to slow or delay the process of shifting resources out of those sectors.

Table 2. Imports Covered by Hard-Core NonTariff Barriers

(In percent)

	1981	1983	1986
United States	11.4	13.7	17.3
European Community	13.4	24.5	24.3
Japan	24.4	24.5	24.3

Source: Laird and Yeats (1990).

Because these underlying structural changes have been ongoing for several decades, protection aimed at prolonging or avoiding restructuring has been longstanding. Limits on imports of textiles and steel in the United States and EC date from the 1950s and 1960s. In the past decade, even Japan--which had been a major post-war exporter of those goods--has faced a contraction in domestic output of these and other sectors such as shipbuilding. Temporary protection in these areas, ostensibly to ease adjustment, has evolved into permanent protection in the face of clear

shifts in comparative advantage. In the case of more sophisticated manufactures, competitive pressure from imports arrived later. In automobiles, for example, new competition emerged from Japan in the 1970s and prompted trade restrictions in the late 1970s in the EC and in 1981 in the United States.

Poor macroeconomic performance and high rates of unemployment in industrialized countries in the early 1980s also contributed to demands for relief from import competition. ^{1/} In the United States, for example, the appreciation of the dollar in the early 1980s stimulated greater import competition and squeezed traded-goods sectors. With economic recovery taking hold from the mid-1980s in the United States and Europe, the demand for protection subsided, as is evident from the decline in AD petitions shown in Table 1.

The consumer costs of the trade barriers that were imposed or reinforced in the 1980s have amounted to tens of billions of dollars annually. In the case of textiles and apparel, calculations by Trela and Whalley (1990) indicate that the cost of the Multifiber Arrangement (MFA), which consists of globally negotiated quotas on textile and apparel imports, amounts to \$12.3 billion (1986 dollars) in the United States and about \$2.2 billion in the EC. Most of the economic loss--roughly two-thirds of the total cost to the United States, according to some estimates--arises

^{1/} Dornbusch and Frankel (1987) discuss the macroeconomic sources of protectionism.

from the quota-rent transfer to other countries. 1/ This rent transfer benefits those firms that have acquired the right to import, but is often insufficient to compensate fully countries excluded from the markets for the loss of market access. Aside from the substantial domestic and international redistribution of income, these policies have severely distorted the pattern of trade. It is estimated that the value of imports of textile and apparel goods, primarily from developing countries, would rise by over 300 percent in the United States and by nearly 200 percent in the EC in the absence of the MFA. 2/

There is little economic justification for this protection, which has been rationalized not as a counter to foreign industrial targeting or unfair trade practices, but merely as an offset to the acquisition of an undisputed comparative advantage by developing countries in textile manufactures. Protection was initially justified as providing a short period of relief from imports to allow the industry to restructure in the face of new competition or to smooth the transfer of resources out of the sector. Yet protection has evolved into an entrenched, permanent policy. A simple comparison of the present discounted value of lost worker's earnings (after accounting for displacement due to import competition and for eventual reemployment in other sectors at a different wage) with the consumer costs of higher prices on both domestic and imported goods reveals the gross inefficiency of these trade barriers as social policy. In the cases

1/ See the discussion in de Melo and Tarr (1992).

2/ Krueger (1993) examines the impact of these and other trade restrictions on exports from developing countries.

considered by de Melo and Tarr (1992), trade restraints generated consumer costs that exceeded workers' higher earnings by a factor of nearly 30.

By some measures, the demands for protection and the costs of protection in industrial countries peaked in the mid-1980s. This is certainly the case in agriculture, where the drop in farm prices in the early and mid-1980s--which brought about a yawning gap between market prices and government target prices--has been partially reversed. 1/ In the case of the United States, the voluntary export restraint (VER) on imports of automobiles from Japan was no longer binding by 1987, eliminating a major, costly trade barrier. The VRAs on steel in the United States were also set to lapse in the early 1990s, although they have been replaced by a plethora of ADs. Although trade patterns have been severely distorted by these measures, direct investment (particularly in the case of the Japanese auto producers) and third-country sourcing of imports have reduced the overall costs of protection. Japanese exports of videocassette players to Europe, for example, dropped 34 percent between 1982 and 1985 after the imposition of a VER, but sizeable Japanese direct investment in videocassette production in Europe and imports from Korea mitigated the cost of this trade restraint. 2/

1/ See Tyers and Anderson (1992). In Japan, agricultural trade liberalization has occurred in several sectors, notably beef and citrus fruits.

2/ However, the EC implicitly imposes local content requirements on direct investments, thereby raising the costs of production in Europe.

The successful conclusion of the Uruguay Round promises to begin the process of dismantling some of the existing protectionist measures, although the pressures to impose new import restrictions have not diminished. Yet, the focus of interventionist trade policies has shifted toward promoting potential export sectors. Trade policy in developed countries now seeks to influence the future course of comparative advantage in modern, technologically-intensive sectors. This trend may bring industrial countries once again into conflict with one another.

III. Trade Policy in the 1990s

The emphasis on export promotion in technologically-advanced industries took prominence in the trade policies of developed countries in the 1980s. While the EC and Japan have long had explicit trade and technology policies designed to facilitate the acquisition of comparative advantage in several sectors, these policies aimed primarily to accelerate technology transfer and to attain the same state of technological development as in the United States. In the early postwar period, the United States agreed to have a benign view of these policies, but in the 1970s and 1980s, they began to create direct competition for U.S. high-technology industries. In addition, government support of civilian research and development increased in the 1980s: EC funding of civilian R&D spending, for example, rose from \$400 million in 1985 to \$2 billion by 1991. In many sectors, Japan and the EC attained technological parity with the United States and even began to establish a lead in new commercial applications of technology.

In contrast to the protection of the 1970s and 1980s, which had little economic justification apart from seeking to delay adjustments to shifts in the pattern of trade, trade policies that encourage modern or "strategic" sectors may have an economic rationale under certain, highly restrictive assumptions. ^{1/} While several theoretical situations exist in which such promotion can be shown to be desirable, industries worthy of such policies tend to fall into two broad categories: industries where profits are higher than under perfect competition, owing to barriers to entry such as high R&D costs or economies of scale; and industries where social gains from domestic production exceed private gains, indicating external economies or spillover benefits across sectors.

In the first case, national welfare can be increased by ensuring that economic rents received by firms in imperfectly competitive international markets accrue to domestic firms. A commonly cited example is the competition between Boeing and Airbus Industrie over the world market for wide-bodied aircraft. If economies of scale are so pronounced in the production of wide-bodied aircraft that global demand can profitably support production by only one firm, that firm will reap substantial profits which cannot be usurped by a new entrant (which, at least initially, would face much higher production costs). Both the United States and the EC would prefer to see the firm from its country in this position. Targeted government policies, however, could commit one nation's firm to enter the market for a new generation of aircraft and thereby deter the entry of other

^{1/} See Grossman (1990) for a survey of these arguments.

nations' firms. In principle, the gain to the domestic firm (in profits) from deterring entry by rivals (or in merely contracting their output) could exceed the cost of the government subsidy, thereby increasing national welfare.

The second case in which recent economic theories appear to lend some support for interventionist policies is when external benefits arise from domestic production. These arguments--thought to apply to many high technology sectors--take three forms: learning-by-doing, in which costs of production fall with cumulative past output, perhaps leading to first-mover advantages in international markets; external economies, in which production in one industry generates spillover benefits for producers in other sectors; and technological lock-ins, in which setting international technology standards may give domestic firms an advantage in producing complementary, compatible products.

Like the Boeing-Airbus illustration of the profit-shifting argument, theories of external benefits are usually motivated with specific examples that are designed to illustrate the applicability of the theory. Learning by doing has been well documented as a characteristic of the semiconductor industry. "Intergenerational spillovers" in semiconductor production--that is, experience in producing one generation of semiconductor chips lowers the cost of producing the next generation--are also purported to exist. If this is so, early assistance to one country's semiconductor firms not only allows them to reduce costs in current production, but may yield permanent advantages that persist for many generations of products. Assistance may

also be justified by the difficulty of appropriating the full value of high technology products or knowledge produced by one industry or firm, because incomplete appropriation would lead to underinvestment in the production of such technology. Finally, it has been argued that one country could establish a lead in the technology destined to become an industry standard, thereby imparting advantages in developing and producing complementary goods embodying that technology, an idea which has motivated substantial government involvement in the international competition to set the technology standard in high-definition television.

The logic of the economic analysis and the apparent existence of real-world examples relating to these cases appear, at first, to lend support to some form of targeted subsidies. The correction of externalities by government action may be desirable for domestic reasons, quite apart from international trade ramifications. However, there are many reasons to be skeptical about the advisability of such policies. One compelling reason for skepticism is the lack of any solid empirical evidence on the existence of either rents or spillover externalities. Interested groups that have the ear of policymakers, such as industry associations and business councils, will not hesitate to proclaim one sector or another as "strategic" or "crucial" for the economy on some dimension. Actual demonstrations of the validity of such claims, however, are rarely undertaken.

In fact, empirical evidence sometimes contradicts assertions about rents or spillovers. Irwin and Klenow (1993) recently examined learning-by-doing spillovers in the semiconductor industry using firm-level data on

dynamic random-access memory (DRAM) production. Much of the learning was found to be internal to the firm, meaning that firms have the right incentives to invest in cost reduction themselves. While there was evidence that learning does spill over to other firms, this externality was entirely international in nature and was not found to differ between countries. Thus, a country that subsidizes its producers provides an international public good that does not enhance the efficiency of domestic vis-à-vis foreign firms. Furthermore, no evidence was found to support the idea of intergenerational learning-by-doing spillovers. With each generation of DRAM chips having a product cycle of 3 to 5 years before obsolescence, any possible gains from industrial policies that promote semiconductor production must therefore be extremely short-lived. Such findings reinforce the need for proponents of trade intervention to provide empirical evidence to support their claims before policy actions are formulated or put in place.

In addition, three standard conceptual arguments to counter the case for government trade intervention are: (1) retaliation, (2) information, and (3) politics. If other governments retaliate against one country's targeted policies, the gains from pursuing those policies may be undermined or erased. Similarly, if all countries recognize the same possibility for gain and subsidize their industries, no country will reap an advantage. In many instances, the theoretical argument for government intervention depends on unilateral action unencumbered by a foreign reaction.

Second, these policies often call for specific and precise policy interventions to correct some market failure or distortion. To implement them the government is required to isolate and identify specific externalities or spillovers, but the information requirements for doing so are formidable. Because the government often relies on the industry that might receive the subsidies as the key source of its information, firms in a targeted industry have an incentive to provide misleading information to enhance the amount of assistance they receive. Even if the government has independent access to information, intervention often contributes little to overcoming the coordination failure which justifies the action, and other policies--such as loosening restrictions on joint ventures or licensing--might achieve greater success more easily.

Third, subsidies and other trade interventions are determined not by economic cost-benefit analysis, but by political considerations. Political considerations often result in policies that deviate substantially from those that would theoretically be welfare improving. 1/

The qualifications to the recent arguments for trade intervention are more profound, however, than these three arguments suggest. Although a case for subsidies is a logical possibility, the economic logic itself is subject to numerous qualifications, and each particular case has its own pitfalls. In the case for promoting profitable industries, for example, numerous underlying assumptions about the nature of competition and economic behavior

1/ On the distortions that use of public funds to promote technology entail, see Cohen and Noll (1991).

are required to demonstrate the ability of government policy to improve welfare. 1/ Even slight changes in these assumptions have been found to reverse the conclusions about optimal policy. It is also difficult to design a subsidy that does not just transfer income to recipient producers without changing the market outcome to one country's favor. Finally, these policies are often undesirable from the standpoint of world welfare--in a beggar-thy-neighbor fashion, they improve national welfare only at the greater expense of other countries.

Each of the arguments relating to external effects also have distinct weaknesses or qualifications. For there to be a net benefit from government activism in the case of learning by doing, the cost of subsidies must be matched by a greater payoff at some future point--market dominance in later generations must actually be achieved and exploited to generate a positive return. The case of external economies hinges on whether technology spillovers are international in nature, in which case a domestic subsidy does not necessarily impart a national advantage (indeed, there is an incentive to free ride on other countries' technology policies), or local in nature, in which case vertical integration or joint ventures among up- and down-stream producers might capture the relevant spillover. 2/ In the case of technical standards, uncertainty about which standard is the most efficient and which will be adopted universally are important questions to be answered before the government commits to a substantial outlay of

1/ This point is discussed in Grossman (1986).

2/ Coe and Helpman (1993) provide empirical evidence on the extent of international R&D spillovers.

resources. Moreover, a technical standard alone is unlikely to deter the entry of foreign competitors.

The difficulties in successfully implementing these targeted policies are formidable, and the actual experience with such policies is not promising. The twenty-year effort by the EC to create a viable aircraft producer has failed to the extent that Airbus has reportedly never achieved a profit, despite receiving \$12 billion in subsidies since 1970 according to the office of the U.S. trade representative. Japan's promotion of DRAM semiconductors succeeded in achieving a sizeable market share only in "commodity" chips, where profit margins are exceedingly small. Even this achievement may prove transitory as Korea and Taiwan begin to produce these chips at still lower cost. Indeed, Samsung recently replaced Toshiba as the world's top DRAM producer, suggesting that in this line of semiconductors "first-mover advantages" are simply unsustainable. External economies are by their nature extremely elusive and the benefits of policies directed toward them are difficult to appraise. This is illustrated by the apparent failure of EC and Japanese efforts to promote through subsidies particular versions of high definition television technology. The United States, in contrast, rejected calls for \$1.35 billion in subsidies to the domestic industry in 1989. Instead, an impartial panel was set up to determine under open and competitive conditions which of the several possible technologies merited adoption. The leading technologies are now produced by private U.S. firms (in some cases in partnership with non-U.S. firms), not the subsidized

EC or Japanese firms which, in the event, appear to have chosen the wrong (non-digital) technology. 1/

Therefore, the modern case for trade interventions deserves deep skepticism both on empirical, theoretical, and practical grounds. Trade disputes are created, however, when governments actually do interfere with the market in an attempt to exploit or create an advantage for their own firms. These policies produce aggrieved parties elsewhere in the world, and offended trading partners respond by invoking "fair trade" laws. The frequent temptation is to come to some agreement to limit the adverse impact of this trade friction through some sort of "managed trade" arrangement. The problem with managed trade is that it tends to diminish competition and facilitate collusion and the formation of cartels. 2/ When the United States enforced an anti-dumping, minimum-export-price provision against Japanese semiconductor exporters, the result was an export cartel arrangement and dramatically higher prices to U.S. industries that used semiconductors. At the same time, Japanese semiconductor users benefitted from low domestic prices.

Managed trade, like any trade restriction that raises prices, undermines the competitive position of downstream industries: firms using protected goods as inputs are hampered in competing with rivals whose input

1/ See the discussion in Beltz (1991).

2/ Irwin (1993) shows in a simple Cournot duopoly model that "voluntary import expansions"--such as the 20 percent market share guaranteed foreign semiconductor producers in the Japanese market as a result of the U.S.-Japan semiconductor agreements--are a "facilitating practice" that foster collusion rather than competition.

costs are much lower. Managed trade may have the unintended effect of undermining the competitive position of the protected industry. Restraints on Japanese auto imports created more competition for domestic U.S. producers because the VER induced quality upgrading which shifted the mix of exports toward larger, more profitable, and more expensive autos in which U.S. producers had had an advantage. The semiconductor agreement (like the auto VER) boosted profits on Japanese export sales dramatically and enabled them to plough these funds back into R&D on the next generation of integrated circuits.

IV. Conclusions

Every generation of economists has the opportunity to write about the "new protection." Several decades of post-war trade liberalization exposed older but large manufacturing sectors in the industrialized countries to new import competition. This triggered a "new" protectionist reaction in the 1970s that evaded GATT rules through ADs and VRAs. While this wave of import protection appears to be cresting, if not diminishing, the direction of trade policy in industrial countries has shifted to new sectors where the pattern of trade is still being determined. This "new" source of trade disputes promises to generate at least as much friction between developed countries as has been seen over the past decade. Only the policy instruments--subsidies, procurement, and standards rather than tariffs and quotas--and the sectors--high technology rather than basic industry--will be different.

The Uruguay Round achieved great progress in eliminating VRAs. Unfortunately, the recently concluded Uruguay Round negotiations in their final form expanded the permissible role of subsidies in these areas beyond what had been called for in earlier negotiating documents. Successful harnessing of these measures by future international trade negotiators may not come until, as has been the case in agriculture and other sectors, international trade conflict in this area has escalated considerably. In the meantime, one must hope that the Uruguay Round's strengthening of the GATT's dispute settlement mechanism will help limit the proliferation of domestic interventions that have significant trade repercussion.

References

- Anderson, Kym, and Rodney Tyers, *Global Effects of Liberalizing Trade in Farm Products* (Hemel Hempstead, U.K.: Harvester Wheatsheaf for the Trade Policy Research Centre, 1991).
- Beltz, Cynthia A., *High-Tech Maneuvers: Industrial Policy Lessons of HDTV* (Washington, D.C.: The AEI Press, 1991).
- Coe, David T. and Elhanan Helpman, "International R&D Spillovers," IMF Working Paper 93/84, November 1993.
- Cohen, Linda, and Roger Noll, *The Technology Pork-Barrel* (Washington: Brookings Institution, 1991).
- Dornbusch, Rudiger, and Jeffrey Frankel, "Macroeconomics and Protection," in Robert Stern (ed.) *U.S. Trade Policies in a Changing World Economy* (Cambridge: MIT Press, 1987).
- Feenstra, Robert C., "How Costly is Protectionism?," *Journal of Economic Perspectives*, Vol. 6 (Summer 1992), pp. 159-178.
- General Agreement on Tariffs and Trade, *Trade Policy Review: United States* (Geneva, 1992).
- General Agreement on Tariffs and Trade, *Trade Policy Review: European Community* (Geneva, 1991).
- Grossman, Gene M., "Promoting New Industrial Activities: A Survey of Recent Arguments and Evidence," *OECD Economic Studies*, Vol. 14 (Spring 1990), pp. 87-125.
- _____, "Strategic Export Promotion: A Critique," in Paul R. Krugman (ed.), *Strategic Trade Policy and the New International Economics* (Cambridge: MIT Press, 1986).
- International Monetary Fund, *Issues and Developments in International Trade Policy* (Washington, August 1992).
- Irwin, Douglas A., *Voluntary Import Expansions: Another Bad Trade Policy Idea* (forthcoming 1994, American Enterprise Institute).
- _____, and Peter J. Klenow, "Learning-by-Doing Spillovers in the Semiconductor Industry," unpublished working paper, University of Chicago, August 1993.
- Krueger, Anne O., *Economic Policies at Cross Purposes: The United States and Developing Countries* (Washington: Brookings Institution, 1993).
- _____, "Free Trade Agreements as Protectionist Devices: Rules of Origin," NBER Working Paper No. 4352, April 1993 (b).

Laird, Sam, and Alexander Yeats, *Quantitative Methods for Trade Barrier Analysis* (New York: New York University Press, 1990).

Melo, Jaime de, and David Tarr, *A General Equilibrium Analysis of U.S. Foreign Trade Policy* (Cambridge: MIT Press, 1992).

Melo, Jaime de, and Arvind Panagariya (eds.), *New Dimensions in Regional Integration* (New York: Cambridge University Press, 1993).

Prusa, Thomas J., "Why Are So Many Antidumping Petitions Withdrawn?" *Journal of International Economics*, Vol. 33 (August 1992), pp. 1-20.

Trela, Irene, and John Whalley, "Global Effects of Developed Country Trade Restrictions in Textile and Apparel," *Economic Journal*, Vol. 100 (December 1990), pp. 1190-1205.