
VERs, VIEs, and Global Competition

MOTOSHIGE ITOH AND SADA0 NAGAOKA

With the rapid industrialization experienced by countries around the world, especially in the economies of East Asia, foreign competition has become a more important factor for industrial firms in developed countries, and even for those in the United States and the European Union that once worried mostly about competing with domestic firms. However, strong import competition has often hurt domestic import-competing industries, leading to the introduction of trade restrictions. One favorite form of such restrictions has been voluntary export restraints (VERs), which have not only nullified the effects of the tariff cuts promoted by successive rounds of the General Agreement on Tariffs and Trade (GATT) but also undermined basic GATT principles (i.e., nondiscrimination and general prohibition of the use of quantitative restrictions). Consequently, it was agreed in December 1993 as part of the Uruguay Round agreement on safeguards that existing VERs be phased out and future use be banned. This chapter will evaluate the safeguards rule and suggest complementary reforms based on our examination of the causes and consequences of VERs.

In addition, a new form of discriminatory, quantity-fixing trade intervention has emerged recently: voluntary import expansions (VIEs). The US government has strongly pressured Japan in bilateral trade talks to commit to setting import targets in sectors in which the US government perceives barriers to market access. The US Japan semiconductor agreements (in 1986 and 1991) were the first consequence. Some US scholars (e.g., Tyson 1992) argue that, whereas VERs restrict trade and

Motoshige Itoh and Sadao Nagaoka are economics professors at, respectively, Tokyo University and Hitotsubashi University.

competition, VIEs promote both. This chapter will also assess the validity of this argument.

The Effects of VERs

Who Is Using Them and Who Is Targeted

Among the exporting countries, Japan and South Korea have most frequently restrained their exports through VERs (and not always voluntarily, despite what the name would imply). As table 1 shows, each of these two countries, accounts for slightly more than 10 percent of all VER cases. According to the GATT (1992), 12.5 percent of Japanese exports were subject to VERs in 1989. As table 2 shows, among the importing countries the European Union and the United States have most frequently restrained their imports through VERs. The European Union and the United States account for 50 percent and 26 percent of all the cases, respectively. Clearly, VERs have typically been used to protect the industries of the largest economies from serious competition from the fastest-growing economies.

Textiles, steel, and agricultural products have been most frequently restrained. Many exporting countries have been subject to the restraints in these sectors. On the other hand, in the more technology-intensive sectors such as automobiles, electronics, and machine-tool industries, the restraints have been concentrated in Japan, South Korea, and Taiwan.

Protections for particular sectors, once initiated by VERs, tend to be long-lived. The first VER for the US textile sector was introduced with respect to Japan in 1957, and that sector is still being protected from international competition through the Multi-Fiber Arrangement (or MFA; see table 3 for major VERs restraining Japan). The MFA now covers most importing and exporting countries. The VER for the US steel sector was introduced in 1969. After a series of revisions, the VER agreement expired in March 1993, but the US steel industry filed extensive antidumping and countervailing duty petitions in 1992 before the expiration of the agreement, with the result that steel trade has not yet been fully liberalized.

Why VERs Have Been Used

Voluntary and Involuntary Restraints

VERs have typically been used to avert alternative trade restrictions. They can be characterized as voluntary or involuntary, depending on whether the restrictions to be averted are consistent with GATT rules. When they are used as a substitute for trade restrictions that are con-

Table 1 Number of VERs by industry and exporting country

Industry	EFTA	Canada	EC	Japan	South Korea	China	Taiwan	US	Other	Total
Steel	7	3	6	4	7		2		34	63
Machine tools		1		4			2		1	8
Electronics				8	5		1		3	17
Footwear			1	1	5	1	4		3	15
Textiles					6	6	1		72	85
Agriculture	4	2	3		3	1		4	42	59
Automobiles				16	2					18
Other	3	3		4	6	1			7	24
Total	14	9	10	37	34	9	10	4	162	289

EFTA = European Free Trade Association.

Table 2 Number of VERs by product and importing country

Industry	EFTA	Canada	EC	Japan	Austria	Australia	Switzerland	Former Soviet	US	Total
Steel	1		21			1			40	63
Machine tools			3						5	8
Electronics			14						3	17
Footwear	1	3	10						1	15
Textiles	18	7	21	11	2		7		19	85
Agriculture	3	1	45	4	1		2	1	2	59
Automobiles	1	2	13						2	18
Other	1		18			1			4	24
Total	25	13	145	15	3	2	9	1	76	289

EFTA = European Free Trade Association.

Source: OECD (1992).

Table 3 Major Japanese VERs

Sector/ importing country	Duration	Affected exports (billions of 1991 dollars)	Cause	Initial tightness of the restriction and reduction from previous year	Development since initial restriction
Automobile US	May '81-March '94 (originally 3 years)	21	Section 201 petition failed but imminent threat of quota.	-7.7 (from \$1.82 million to \$1.68 million)	The level of quota was increased to \$2.3 million in 1985 but then reduced to \$1.65 million in 1992. Quota unfilled since 1987. Significant local production (\$1.2 million in 1992).
EC	July '91-Dec. '99	10	To eliminate five national restrictions.	No export growth is forecasted until 1999.	Binding. Reduction of the restraint from \$1.26 million in 1991 to less than \$1 million in 1993.
Machine tools US	Jan. '87-Dec. '93 (originally 5 years)	0.54	Section 232 investi- gation conducted.	-20	Withdrawn.
EC	Jan. '81-	0.54	To avoid trade frictions, including dumping disputes.	A floor pricing system for exports and an import monitoring system.	
Color TVs US	July '77-June '80	n.a.	Section 201. (Serious injury found.)	-41 (from \$2.96 million to \$1.75 million)	A large-scale switch to local production, while the US industry shifted overseas.

Steel					
US	July '69-Mar. '92 (a series of agreements, the most recent from May '85)	3.23	Section 201. (Serious injury found in 1984 and legislative proposal for quota.	Multilateral restraints.	Currently not under the restraint, but antidumping petition filed in August 1992. MSA under negotiation.
EU	1972-74, 1976-90	n.a.	To avoid trade frictions.		Withdrawn.
Textiles					
US	1957- (VER, STA, LTA, VER, and VER)	0.60	To avoid trade frictions.	Multilateral restraints.	End of the bilateral agreements based upon MFA in 1991 for US and in 1977 for EC.
EC	1955- (GATT membership of Japan initially restricted by nonapplication provisions of GATT	0.45	To avoid trade frictions.		
Semiconductors					
US	1986-96 (originally 5 years)	N/A	To prevent dumping of exports.	Collection of price and cost data.	
EU	1990-	N/A	To prevent dumping of exports.	Price surveillance undertaking on DRAMs under EU antidumping procedures.	

n.a. = not applicable.

N/A = not available.

Source: Constructed by the authors. Main information is from *Trade Policy Reviews* (of Japan, the United States, and the European Union), 1992, and General Agreement on Tariffs and Trade (GATT).

sistent with GATT, such as safeguard and antidumping measures, VERs are voluntary for the countries involved. When used to forestall GATT-inconsistent restrictive measures or as a compromise to phase out such measures, such VERs are involuntary for the exporting country. Let us illustrate how these two motivations were involved in three major VER cases involving Japan.

In the case of a 1976 petition by the US industry to restrict color television imports under the safeguards clause, the US International Trade Commission decided that the imports had seriously injured the US industry, and it recommended a substantial tariff increase to provide import relief. The US government, instead of levying a tariff, asked Japan for a VER—specifically, a reduction of Japanese exports to roughly 40 percent of the unrestrained level. Later, South Korea and Taiwan were also included. In this case, the VER was a clear substitute for the safeguard action. Since the safeguard requires the importing country to be nondiscriminatory in its import restriction and since importing countries can be required to render compensation to avoid the exercise of the GATT rights of retaliation by the exporting countries, the VER arrangement has often been found, as in this case, to be more attractive for the importing country. The exporting country also finds VERs preferable because they do not represent a unilateral measure by the importing country, and they leave quota rents to the exporting country.

In the case of a 1980 petition for restricting automobile imports based upon the safeguard clause, the ITC decided that there had been no serious injury. As a result, there was no GATT-consistent measure available under which the US government could restrict the imports. However, faced with increased layoffs in the US automobile industry, the US Congress prepared a bill for restricting the import of the Japanese automobiles through quotas. Once the US government explained the clear risk that the bill might become law, the Japanese government decided to impose the VER for three years, beginning in 1981, in order to forestall protectionist moves by the Congress.

In the case of a 1983 petition to restrict the import of machine tools for national security reasons, the US government conducted the investigation but did not choose to restrict the imports based upon section 232 of the 1962 Trade Expansion Act. Rather, in 1986 the president asked for VERs from the four major exporting countries: Japan, West Germany, Taiwan, and Switzerland. In this case, it was not clear whether the US government could legitimately restrict trade. Although Japan and Taiwan agreed to the restraints, West Germany and Switzerland declined.

Legal Status

Since VERs restrain international trade as well as competition in the import country's market, many have questioned whether VERs could

ever be considered consistent with GATT obligations and with the anti-trust law of the importing country. In our view, VERs are not consistent with GATT, because GATT Article XI generally prohibits the use of trade-restricting measures other than duties, taxes, and other charges, whether by exporting countries or by importing countries, with exceptions limited only to those explicitly sanctioned by the other GATT articles.¹ GATT Article XIX (on safeguards) does allow countries to adopt import-restricting measures under certain conditions, but such measures have to be administered in a nondiscriminatory manner (GATT Article XIII). VERs do not satisfy these conditions.

However, VERs have not been challenged in the GATT and had remained as gray-area measures until the Uruguay Round agreement on December 1993 explicitly prohibited their future use. There are two reasons for the absence of such challenges. First, VERs are not unilateral measures but are explicitly or implicitly agreed to both by the exporting and importing countries. Second, although VERs do affect third countries, it is not clear whether these countries lose anything from them. In fact, the third country that imports the good affected by the VER should see gains due to lower prices. The import-competing industry in such a country may still complain and demand that its government control the trade diversion. However, when political pressures for restrictions rise, the standard response of the third-country government has been to demand a similar VER from the exporting country rather than to demand the dismantling of the original VER, presumably because import restriction by the importing country through one measure or another is regarded as inevitable. A third country that exports the good affected by the VER gains because the VER expands its export opportunities to the importing country. On the other hand, the third country would clearly lose if a nondiscriminatory import restriction was substituted for the VER.

In many industrialized countries, including the United States, the European Union, and Germany, antitrust law is regarded as applicable to restraints on trade made by foreign exporting firms when such restraints significantly harm domestic competition. However, when a VER is organized at the request—or at least with the consent of—the government of the importing country, that country's competition policy authority has refrained from bringing antitrust suits. If such a suit were brought,

1. This applies not only to quantitative restrictions but also to such measures as the minimum import price system and the minimum export price system. This was demonstrated by the ruling of the GATT panel in 1988 that the administrative guidance from Japan's Ministry of International Trade and Industry with respect to the monitoring of the semiconductor export prices was inconsistent with Japan's GATT Article XI obligations, even though such guidance was issued with a view to preventing dumping in third countries, as agreed in the US-Japan semiconductor agreement.

the importing-country government would obviously face a marked contradiction. But sovereign compulsion doctrine, which relieves the exporting firms of the legal responsibility of their joint actions for restraining exports if such actions are forced by the exporting country's government, has been used in the United States in order to avoid such a contradiction.²

Anticompetitive Effects

The Static Effects

VERs constrain the competitive behavior of exporting firms, thus reducing and distorting competition in the importing country's markets. The exact manner in which competition and welfare is affected, however, depends upon the strategic nature of competition and market structure, as well as which competitive behaviors VERs constrain. Here, we focus on the case in which VERs restrict quantities (VERs that restrict pricing decisions would have effects similar to antidumping measures).

First, consider the case in which firms compete on price, unconstrained by supply capacities unless VERs constrain export quantities. As demonstrated by Itoh and Ono (1984), Harris (1985), and Krishna (1989) in the context of duopoly competition, VERs enable the domestic and foreign firms to jointly raise prices, even if the export quota is set at the free trade level. This is because, on the one hand, the domestic firm can raise its price without worrying that the affected consumers will buy imports instead of the domestic good. The more concentrated the domestic industry, the stronger this price effect would be. On the other hand, the foreign firm can also profitably raise its price because the VER has ensured that the domestic firm will raise its price, causing excess demand for the products of the foreign firm. Thus, the VER has the effect of constraining price competition, even if it does not directly constrain the pricing behavior of firms. This effect also arises where there is competition between constrained and unconstrained exporters.

The increased prices of both domestic and imported goods imply reduced global welfare. The domestic firm's supply of the good can actually decline after the imposition of a VER due to its increased market power when the VER is not too restrictive. The sharply increased profits of the US automobile industry, unaccompanied by significant output expansion, that occurred just after the imposition of the 1980 VER (Crandall 1987) is consistent with this theoretical prediction. When the VER is not

2. Foreign sovereign compulsion requires the government of the exporting country to establish the legal instrument to force the exporting firms to abide by the restraints (US Department of Justice 1988 and 1994).

too restrictive, the exporting firm also gains, thanks to its higher export price; this also happened after the 1980 VER was imposed (Collins and Dunaway 1987). But in this case, the welfare of the importing country declined more than the foreign firm gained.

This sharply anticompetitive effect depends upon the specific assumption that only price matters in competition. When nonprice dimensions of competition are important, the result has to be modified. Thus we will consider two nonprice dimensions of competition: quality and supply, or output capacity. We will later analyze the effect of VER upon dynamic competition (i.e., competition through cost reduction).

A number of empirical studies suggest that VERs prompt the exporting firm to make significant improvements in quality (Feenstra 1988; Boorstein and Feenstra 1991). When the firm's exports are restricted by a VER, the firm will try to circumvent it by improving the quality of its exports if a higher quality good can simply deliver more services per unit. In this case, the domestic firm will find it difficult to raise its price despite the VER. The quality upgrades may also take place when the VER causes the marginal consumer, who values quality less than the average consumer, to drop out of the market for the export firm's goods (Das and Donnenfeld 1989). In either case, a price increase can be partially accounted for by the quality improvement and should not be fully attributed to the anticompetitive effect of the VER.

Next let us turn to supply capacity. When price competition is constrained by supply capacities, the market can be modeled as a Cournot-Nash equilibrium, in which a firm takes its rival's output as fixed and acts accordingly to supply the rest of the market. In this case, the VER would artificially reduce the foreign firm's supply in the importing country's market and would encourage the domestic firm to build up its capacity. Unlike the case of price competition (a Bertrand-Nash equilibrium in which firms take their rivals' prices as given), the domestic firm always raises its supply capacity in response to the imposition of the VER but not to the extent that it compensates for the reduced import supply. This is because the larger market share of the domestic firm makes it less aggressive. Consequently, the VER is anticompetitive in this context, too, because it reduces the total supply and raises the market price. The foreign firm subject to the restraint always loses. The domestic firm gains, but by less than the combined losses of domestic consumers and the foreign firm (see Smith and Venables 1991 for the empirical analysis of the VER on the Japanese car producers in the European car market).

Moreover, when the VER sets import share rather than import quantity as the ceiling for the imports, its anticompetitive effect is magnified. As is the case in Bertrand-Nash competition, the supply of the domestic firm may also decline when it is monopolistic. This is because the domestic firm can expect that if it can credibly reduce its supply, the exporting firm will be forced to reduce its supply, too, in order to keep

its market share within the limit set by the VER. In this case, both the domestic supply and import supply decline due to the VER.

The Tightness of Restraints

All VERs are not created equal: the tightness of the restraint is crucial in determining its effects on competition and welfare. The tighter the restraint, the more restricted is competition in the importing country's market and the less the global welfare.

How do governments determine how tight these restraints should be? From the point of view of bargaining theory, it depends on the outside opportunities of the exporting and importing countries that are negotiating the VERs. Let us assume that the governments (i.e., the trade policy authorities) of both the exporting and importing countries are mainly concerned with securing producers' interests. (For the exporting country, protecting its export industry's interest is equivalent to maximizing national welfare if it does not take into account the effect of possible compensations associated with safeguard measures by the importing country. In the importing country, the government is under strong political pressures for import restriction from the import-competing industry.) We also will assume that firms compete in a Cournot-Nash manner.³ In this case, when the importing country requests a VER backed up by a credible threat of an alternative restriction that would be more damaging to the exporting firms, the restrictiveness of the VER should be relatively great.

This prediction seems consistent with the tendency of the VER to be more restrictive when the government of the importing country has established a clear legal right to restrict trade. Let us illustrate this point with the three Japanese VERs mentioned earlier. In the case of the color televisions, where the ITC sanctioned the strong safeguard action based upon section 201 of US trade law, the US government initially requested the reduction of exports by as much as 60 percent (that is, a reduction to between 1.2 million and 1.3 million sets per year from the 3.0 million sets exported in 1976) and then settled for 40 percent. In the case of the VER on machine tools, where no clear international standard has yet been established on how extensively trade can be restricted based upon national security reasons, the two governments agreed to reduce exports by 20 percent. In the case of the VER on automobiles, where ITC found no serious injury, the Japanese government settled on a reduction of about 8 percent.

We can also predict that substituting a VER for a safeguard measure based on a tariff will further restrict competition and output. Under a

3. Collusion among domestic and foreign firms is assumed to be infeasible, due to anti-trust and other constraints.

Cournot-Nash equilibrium, the level of the profit of the export industry declines as the restraint becomes tighter. Moreover, for the same level of export, the VER yields more profit for the export industry than tariff, since the VER leaves quota rent to the export firms. Consequently, the export industry is willing to accept a lower level of export when it is constrained by quota rather than tariff.

The Dynamic Effects

How do VERs affect competition in terms of firms' investments to reduce costs? Let us consider this problem in the framework of a two-stage game, with cost-reducing investment in the first stage and determination of output in the second stage. The incentive for cost-reducing investment rests on the three determinants: size of the market supplied by a firm, its competitor's response to cost reduction, and the policy response to cost reduction.

A VER interferes with all three. It reduces the global supply of the industry, even if it may increase the supply of the domestic firm. Therefore, even if the incentive for cost reduction increases for the domestic firm due to the larger market the VER secures for itself, it tends to decline more for the exporting firm. It also reduces the competitor's negative sales response to cost-reducing investment by each enterprise. In particular, if the VER specifies an import share as a ceiling, the cost-reducing investment by the domestic firm enables the exporting firm to expand its supply because the lower production cost of the domestic firm increases its incentive to expand supply, which in turn allows the foreign firm to export more. Finally, it makes the policy response to cost reduction perverse, unless the VER is credibly temporary. Therefore, the VER is very likely to impede the cost-reducing efforts of the industry as a whole. It is therefore anticompetitive in a dynamic context, too.

VERs as a Safeguard and Adjustment Assistance Mechanism

The preceding discussion has ignored the issue of adjustment difficulties in the import-competing industry. In reality, many VERs have been introduced to reduce unemployment in the industries affected by import surges and to assist the restructuring of these industries.

If a VER can significantly reduce unemployment in the import-competing industry, it may improve welfare. When contraction of output in the import-competing industry leads to more unemployment in that country, the social opportunity cost of production of the import-competing firm can be significantly lower than that of the exporting firm. If this is the case, the VER-induced shift of global demand toward the domestic firm may improve global welfare, with the positive effect of lower unemployment potentially dominating the anticompetitive effect of the VER.

However, there are three major limitations of VERs as a safeguard mechanism. First, a VER may have to be very restrictive to save jobs. As demonstrated earlier, a weak VER may actually reduce the domestic firm's output and the number of domestic jobs because the VER enhances the market power of the domestic firm. Weak substitutability between domestic and imported goods and high production costs of the domestic firm also increase the cost of VERs. A number of empirical studies suggest that consumers' costs per-job-saved is very large (OECD 1985, 1992).

Second, the VER may worsen the labor market distortion, which contributes significantly to unemployment. It is widely recognized that the high wages obtained by strong unions in the US auto and steel industries have exacerbated the unemployment problem in these industries. The VER enhances the monopoly power of such unions and thus allows more aggressive wage demands, since the elasticity of demand for labor declines (Lawrence and Lawrence 1985).

Third, the VER is not the least-cost method for restricting imports, since it is bilateral and discriminatory in nature.

Does a VER aid the adjustment efforts of the import-competing industry? Let us assume that there is significant room for cost reduction by the industry. As pointed out earlier, the incentive for cost reduction by the import-competing industry may or may not increase as a result of the VER. First, output of the domestic industry may decline due to the VER. Second, even if the domestic industry's output expands, the weaker supply response of the foreign competing industry and the perverse policy response of the government to the domestic industry's cost reduction may still reduce the cost-reduction incentive. It is important to note that the net effect on the cost-reduction incentive is more likely to be negative for the more monopolistic domestic industry.

Under certain circumstances, VERs may improve the capacity of the domestic industry for cost reduction. First, if the domestic industry is in a state of financial distress, the VER-induced financial improvement may help the domestic industry to pursue long-term efforts to improve efficiency, although such bailout creates moral-hazard problems. Second, the VER may improve the incentive for technology transfer by the foreign export industry when foreign direct investment by the export industry in green fields is costly. An extensive investment by the Japanese steel industry in the US steel industry may reflect such an incentive.

However, the productivity performance of the industries protected by the VERs has not been encouraging. As Crandall (1987) points out, the productivity performance of the US automobile and steel industry did not improve after the introduction of VERs. A comparison with the performance of other manufacturing sectors of the US economy also suggests that the productivity performance of these two sectors is not particularly high relative to that of other sectors.

Spillover Effects

Competition in the Importing Country's Market

As we discussed in the previous section, VERs have a strong anticompetitive effect. However, this analysis was based on a two-country model, in which third countries are neglected and firms do not have wider options, such as direct investment and local production. Once we introduce these elements, the story becomes more complicated. However, consideration of these complications is necessary because, as we will discuss, spillover to other markets and to other instruments such as direct investment can be observed in various industries.

Foreign Direct Investment

When the amount of exports is regulated by VERs, firms can increase their shares in foreign markets only by producing in those markets. Indeed, many industries have increased foreign direct investment (FDI) after the introduction of VERs.

For example, after VERs were introduced in 1977 for color television exports from Japan to the United States, Japanese companies increased their direct investment to the United States, and local production in the United States by the subsidiaries of the Japanese manufacturers replaced exports from Japan. In 1978, only one year after the start of the VER, the amount of local production exceeded the amount of exports, and in the 1980s, the share of exports in total sales by Japanese firms in the United States was less than one-third.

A similar phenomenon could be observed in automobiles. After a VER was in place, most Japanese manufacturers built subsidiaries in the United States for local production. In 1993, the local production exceeded exports from Japan.⁴

Why do Japanese firms invest abroad when they face VERs? The most important reason seems to be competition among Japanese firms. The export cartelization through VERs does not allow each firm to expand its share of export markets. Thus, each firm must choose whether to stick to the existing voluntary export restraints and obtain a fixed share of cartel profits or to expand its share by making foreign direct investment. In the case of the color television and auto VERs, competition pushed the Japanese firms to choose the latter.

Theoretically, both cases are possible, and the choice between the two depends on various factors. Several factors promote FDI. One is the

4. The amount of automobile exports in 1993 was 1.45 million units; the amount of local production was 1.52 million units—three times the volume it was seven years before. In 1986, 2.42 million units were exported, and local production was only about 510,000 units.

number of competing firms, and another is the asymmetry in costs among firms, under which firms with more efficient technology will have a stronger incentive to expand their market shares. Another factor that might be important for understanding the behavior of automobile firms is the perceived growth of profit opportunities. When firms perceive an expanding market, they often engage in aggressive share-taking and growth-maximizing behavior. This is consistent with long-run profit maximization.

The question then arises as to whether the increased direct investment further distorts the allocation of resources beyond that of the simple two-country model, which did not take the FDI option into account. Again, the answer to this question depends on many elements. It is true that the anticompetitive effect of VERs is weakened by expansion of local production. However, even if FDI restores some competitiveness to the market, it is at the cost of substantial outlays of FDI.

Spillover Effects on Third Countries

VERs are usually arranged on a bilateral basis. However, this arrangement may have spillover effects on other countries. When exports to one country are restricted, how is a third country affected?

In an oligopolistic setting, the answer to this question depends on the cost structure of the firm as well as many other factors. When a large portion of production costs are already incurred, and in that sense, sunk, the firms whose exports face the VER restriction in one country will try to recover their production level by expanding exports to third countries. This case can arise when there has been a substantial amount of capital investment before the VERs were instituted and/or when it is difficult to cut the number of workers in the face of the VERs, as is generally the case in Japan because Japanese firms rely less on layoffs and are under stronger pressure to maintain employment levels than are firms in other countries.

Even in a simple static cost function model, if marginal costs are increasing, then restriction of exports to one country will decrease a firm's marginal costs and therefore induce it to take a more aggressive export position with the third country. The opposite would be true under a situation of decreasing marginal costs.

All the cases discussed above are only theoretical possibilities. However, in the real world, when a VER arrangement is made between two countries, it is quite often the case that the third country raises concerns about possible spillover effects of more-aggressive export behavior.

Of course, more-aggressive export behavior directed toward the third country is typically welfare-enhancing for the importing country, since consumers or firms purchasing the products can enjoy lower prices. However, firms in the importing countries that are competing with the imported

goods and criticize a VER because of its possible spillover effects have a political impact. Thus, it is possible that a bilateral VER arrangement could spark the forming of another VER arrangement with the third country. For instance, the VERs between Japan and the United States triggered similar arrangements between Japan and European countries in such industries as automobiles.

Competition in Exporting Countries

The effect of VERs on competition in the domestic markets of the exporting countries is similar to the effect on third countries. As with third countries, cost structure is an important indicator of how the behavior of firms in their domestic markets changes under VERs.

When the firms are committed to maintaining their production levels, domestic competition will be intensified. This seems to have actually happened in the Japanese market when the Japanese automobile producers faced VERs in the US market. Furthermore, when the allocation of export quotas among the exporting firms depends on their shares in the domestic market, competition for larger shares in that market may be intensified.

We cannot make any definite general statement about the effects of VERs on competitiveness in the domestic market. However, it appears that only rarely does cartelization through VERs in the firms' export markets actually induce similar cartel behavior in the domestic market.

Voluntary Import Expansions

So-called "voluntary import expansions" (VIEs) have received increased attention since 1986, the year of the semiconductor trade agreement between Japan and the United States. Although there is a dispute between the two governments about what kind of commitment was implied by the agreement—namely, whether achieving import expansion of a certain amount was an obligation of the Japanese government or just an expectation of US industry—we understand that a target was set (in this case, a 20 percent share of the Japanese market) so that imports would exceed this target by the voluntary action of Japanese firms. The success of expanding the share in the Japanese semiconductor market through a VIE encouraged the US industry and the government to use VIEs for other industries such as automobile parts and automobiles, based on the view that the low shares of the US industry in these Japanese markets were due to their import or entry barriers.⁵

5. See appendix I for an explanation of how market share comparisons can be misleading in evaluating trade barriers.

The implication of VIEs for competition is similar in some respects to that of VERs: they distort resource allocation. By forcing either buying or selling firms in importing countries to expand the sales of products of exporting countries that are not otherwise competitive, VIEs give rise to the anticompetitive reallocation of resources in the market. This is easy to understand if we imagine a closed economy in which several firms are competing. If the government forces some buying or selling firms to expand the sales of a particular group of suppliers, the resulting market allocation will be distorted considerably. What the US government asked of the Japanese government and industry is similar: to expand the sales of American products in Japan.

VERs and VIEs differ in some respects. While a VER restricts supply, a VIE may not. Thus it is possible, as the US government often claims, that such an arrangement could actually enhance competition in the importing market if there are substantial import barriers and if import goods are highly substitutable for domestic goods. However, even if such barriers exist, the theory of the second best tells us that it is quite possible global welfare would decline under a VIE, although the exporting country can always gain from terms of trade improvements and rent shifting. In order to improve global welfare, it is essential to correct any existing barrier.

It must also be emphasized that a seemingly competition-enhancing VIE that has its effect through forced import expansion may actually have anticompetitive effects just like those of a VER (see appendix II). This is particularly so if the shares of imports are fixed. When the share of US exports to Japan is fixed, and when the Japanese industry and government make commitments to that share, the incentives for US firms to set lower prices will be weakened. They may even raise prices. Facing this less-competitive behavior from exporters that are protected by VIEs and being obliged to help exporters reach the target share, domestic firms will have less incentives to behave competitively or will be constrained from doing so.

More important is the fact that the process of import expansion itself is anticompetitive. Voluntary import expansion is not actually “voluntary.” In fact, it is a form of intervention by the government in sales activities. It is also true that firms must coordinate action to successfully expand imports; in other words, there has to be concerted behavior among firms. This does not necessarily imply cartel behavior, but it certainly risks inducing anticompetitive concerted behavior among firms in other activities.

In any case, under normal competitive conditions, it is difficult to effectuate a voluntary import expansion only by the voluntary behavior of firms. Thus, some kind of government intervention, such as allocating import shares among importing firms, is necessary. And this kind of government intervention certainly contradicts the basic idea of free trade.

Directions of Policy Reform

Uruguay Round Agreement on Safeguards

Elimination of VERs

The Uruguay Round Agreement on Safeguards aims at reestablishing multilateral control over safeguards and eliminating measures that escape such control, VERs in particular. The agreed text prohibits and eliminates VERs and sets rules for the application of safeguard measures; these rules are more lenient than would be a stricter interpretation of GATT Article XIX.

Implementation of the agreement will bring about three things, the relative significance of which is hard to judge at this stage. First, in those cases in which imports cause serious injury, the GATT-consistent safeguard measures will be more actively used than they were in the past. Unlike VERs, the measures must follow the explicit rules set out in the agreement and will be monitored by a multilateral committee. But there is a danger that GATT-consistent safeguards replicate the problems of VERs substantially, which we evaluate in a subsequent section.

Second, antidumping and other unilateral measures will be more extensively used because VERs will not be able to forestall activation of such measures. The more active use of these unilateral measures can reduce and distort global competition more than the VERs do, as we will examine later in detail.

Third, free trade may be maintained in the future even in those cases in which GATT-consistent protective measures are unavailable but VERs might have been used in the past. Since the safeguard clause explicitly prohibits both seeking and instituting VERs, free trade may be maintained, even if political pressures mount for protection in importing countries. This, of course, is the most desirable outcome.

Evaluating Agreed Safeguard Rules

The Agreement on Safeguards reflects the three basic principles of the GATT Article XIX: serious injury is a necessary condition for import relief, import restrictions for such relief must be nondiscriminatory, and exporting countries affected by the measure can suspend equivalent concessions for the importing country. However, the agreement reduces the cost to the importing country of using safeguards in three ways:

- An importing country may allocate quotas selectively, departing from the past proportions held by traditional suppliers in the market to deal with disproportionate increases from certain exporting countries.

- An importing country may take a provisional safeguard measure, based upon a preliminary determination of serious injury.
- Affected exporting countries cannot suspend equivalent concessions for the first three years.

The above provisions clearly make safeguards easier to use. In particular, allowing countries to target certain suppliers in quota allocations may induce them to use the safeguards rather than other measures. The European Union had criticized the prohibition against selective import restrictions as well as the necessity of compensation as being rigid. These former constraints on the use of safeguards also prompted the US government to use VERs instead of safeguards in the past. However, the new, selective safeguard measure based upon quotas has exactly the same problems as VERs have: it distorts and reduces global competition by penalizing the most competitive firms, and therefore it is not efficient. Moreover, the restrictions on retaliation will increase the use of trade restrictions as a whole.

However, there is one significant advantage of the Uruguay Round safeguards over VERs. It is rule-based and transparent. The proposed code sets out the following conditions for the safeguard measure:

- The period of a safeguard measure cannot exceed four years. Although extension is feasible upon satisfying certain conditions, the total period cannot exceed eight years.
- The safeguard measure has to be progressively liberalized.
- The quantitative restriction cannot be so restrictive as to reduce imports below the average level of imports in the last three years.

These disciplines, if properly applied, will help correct the past situation, in which VERs dragged on almost indefinitely.

Three major problems with the safeguard code still exist. First, eight years of import protection can significantly retard the adjustment of the domestic industry. Conditions for the extension of the safeguard measure can be further tightened so that the measure can be applied in a disciplined manner. Second, the use of quotas as a safeguard measure, besides being more likely to be discriminatory, has a strong anticompetitive effect, especially when the market structure of the importing country is concentrated. As pointed out earlier, quotas also tend to constrict imports more than tariffs do, although the proposed agreement sets the floor for the level of the quota restraint. The most important constraint for switching quotas to tariffs would be compensation for the exporting country. One solution might be to restrict the use of quotas as a safeguard measure in exchange for tight disciplines on the level and period

of the tariff protection. Third, the elimination of existing VERs is allowed to take place slowly, over a period ending in 1999.

Tighter Disciplines on Antidumping and Other Unilateral Measures

There is a serious danger that prohibition of VERs will lead simply to more active use of antidumping and other unilateral protectionist measures. Antidumping can be worse than VERs in reducing and distorting global competition. In particular, antidumping measures often result in a complete ban of exports, since they force exporters to price their exports above both artificially calculated production costs and home-market sales prices. In contrast, VERs secure at least some level of exports for the exporters. Moreover, antidumping measures, once set, can last a long time, especially in the United States. It is reported that more than one-third of the current antidumping measures on Japanese exports in the United States have lasted for more than 10 years; for example, those on color televisions have lasted more than 22 years (MITI 1993). Despite these problems, the Uruguay Round has made only small progress in tightening the discipline on antidumping.

A similar danger of increased abuse exists for countervailing duty measures and import restrictions based upon national security reasons. In addition to the abuse of these GATT-consistent unilateral measures, GATT-inconsistent unilateral measures, such as the one proposed in the import quota bill for Japanese automobile exports in 1981, may be used to restrict imports. Consequently, it is important to make further multilateral efforts to significantly tighten the discipline on antidumping and other unilateral measures as complements to the prohibition of VERs.

Can Competition Policy Substitute for Trade Restrictions?

Can competition policy intervention properly substitute for trade restrictions in providing safeguard and adjustment assistance? Such intervention may include policy changes favoring more lenient attitudes toward mergers and cartels among domestic firms. If successful, this could help the domestic industry restructure more quickly under the pressure of unrestricted international competition.

However, there is a major limitation on the use of competition policy as a safeguard measure. It is very unlikely that relaxation of competition policy, unlike trade restrictions, will reduce unemployment. It is more likely to have a perverse effect, since the increased market power of the domestic firms results in the contraction of its output and, therefore, in demand for workers. Thus, relaxation of competition policy only provides financial relief for industry, unlike trade restrictions, which protect jobs as well as industries.

Flexible competition policy responses toward restructuring, based upon an adequate assessment of the strength of import competition, could promote industrial adjustment. Mergers and increased specialization through acquisitions and sales of some divisions of firms could help domestic industry enhance its productivity and efficiency, as long as overall competitive pressures remain strong. Such restructuring would help achieve economies of scale and scope and increase the appropriability of cost-reducing investment.

The challenge for competition policy is that the standard market-share criteria, such as those based upon the Herfindahl-Hirschman index of industry concentration, can be biased against such restructuring when the competitive position of the domestic industry is declining rapidly. This is because, while market shares are calculated based upon historical data, such shares can change dramatically over a short period when import competition becomes strong. Therefore, the results of standard market-share analysis should be applied cautiously in the case of the industries subject to intensifying import competition, provided that international trade remains unrestricted so that industrial restructuring to improve efficiency can take place smoothly.

On the other hand, production and sales cartels do not strengthen incentives for cost reduction. On the contrary, they reduce competitive discipline and do not increase the appropriability of cost-reducing investment. Cartels may further lead to the creation of import barriers when domestic firms taken together have a large degree of market power, even if imports remain unrestricted by trade policy. Therefore, it is not clear whether competition-policy changes to provide financial relief to industry is less costly in terms of competition and long-run effects than is relief based on trade policy. This is especially the case when trade relief is provided by nondiscriminatory and credibly temporary tariffs. On the other hand, cooperation in research and development, as well as in other efforts to improve technology and efficiency, can play a positive role, as long as competitive discipline from imports remains strong.

In sum, it is unlikely that competition policy can substitute for trade policy in providing safeguards. However, competition policy can correct potential biases against industrial restructuring and against cooperative efforts to improve technology when the competitive position of domestic industry is eroding.

Conclusion

VERs are typically introduced to contain large economies' threats of alternative trade restrictions, some of which are GATT-consistent and some of which are not. The stronger such a threat is, the more restric-

tive the VER becomes. VERs are anticompetitive in both static and dynamic contexts. They tend to reduce global output, as well as global efforts for higher efficiency. Anticompetitive effects are stronger the more monopolistic the import-competing industry is.

VERs have spillover effects both in the importing country's market as well as in the exporting country's market. Both FDI and the growth of third-country exports in the importing country's market tend to undo the anticompetitive effects of VERs, but only imperfectly and with substantial costs. VERs may actually enhance domestic competition in the exporting country's market, since capacity constraints become less restrictive and punishment against deviation from implicit cartels becomes less effective. Nevertheless, a possible negative, anticompetitive spillover has to be prevented through vigorous antitrust policy.

VIEs are also anticompetitive. When the target is defined in terms of market share and the exporting industry is monopolistic, the VIE reduces global output as well as global efforts for higher efficiency, just as VERs do.

Elimination of VERs, as agreed in the Uruguay Round, is a critical step for enhancing global competition. However, if such a step is to truly enhance competition and improve welfare, multilateral disciplines over unilateral trade restrictions, including antidumping measures, have to be tightened. Moreover, the agreed safeguard rule has to be employed in a disciplined manner. GATT-consistent safeguards could replicate the problems of VERs substantially, since the major constraints on the safeguard actions (i.e., nondiscrimination and retaliation) seem to have been relaxed by the new rules and protection is allowed to persist for eight years. Competition policy is not likely to substitute for trade policy in providing safeguards, but it can correct potential biases against industrial restructuring and against cooperative efforts to improve technology in order to promote adjustment.

Global competition policy objectives provide hardly any justification for VIEs. International dialogue and negotiations over the improvement of market access should focus upon import and entry barriers in a truly economic sense but not upon the results of commercial transactions. Thus, VIEs should also be banned multilaterally.

Appendix I: Do Low Market Shares in a Foreign Market Signify Closedness?

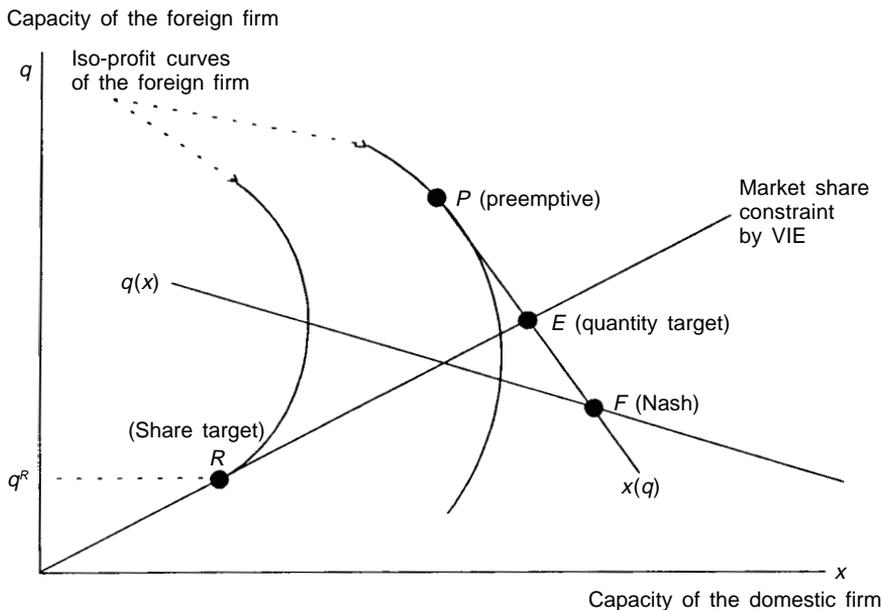
The fact that an industry in country A has a lower market share in country B than in the rest of the world has sometimes been used as proof of the closedness of country B's market. For example, Bergsten and Noland (1993, 134-35) argue that "the 20 percent market share [the

target set by the Semiconductor Trade Agreement] appears to have been a lower-bound estimate of what the foreign producer market share would have been if the Japanese market were like markets elsewhere in the world"; as evidence they cite that "in 1986, US firms had a 40 percent share of the European market and a 66 percent share of the world market excluding Japan." They then take a permissive view of the VIE approach as the "second-best" solution.

However, such an argument, based upon a simple market-share comparison, is not well-grounded and can be highly misleading, since it ignores a number of critical factors influencing international differences of market shares of a particular industry. In the case of the semiconductor market, the neglect of the following factors makes the comparison a dubious one.

- **International differences in demand structure.** The semiconductor market covers a number of highly heterogeneous products, the structure of demand for which varies significantly across countries. For example, final use of semiconductors for consumer products accounted for 40 percent of the Japanese market but only 5 percent of the US market and 16 percent of the West European market in 1992. Moreover, the industry of a particular country has comparative advantages in those products for which its home market is important (i.e., there is home-market bias in comparative advantage, presumably because the home-market influences the product development efforts of a firm more than the foreign market does). Thus, the Japanese industry has more market shares in the Japanese market, as does the US industry in the US market.
- **Trade barriers in comparator countries.** The issue could be that the market shares of US industry in the US market are too high rather than that the shares of the US industry in the Japanese market are too low. In the US and EU markets, antidumping regulations have been powerful deterrents to the rapid expansion of exports by foreign firms. While the practice of "forward pricing" is regarded as a normal business practice if exercised by domestic firms, it is regarded as dumping if exercised by foreign firms and can be subject to high duties. The antidumping duties determined by the US Commerce Department for 256K DRAM exports by Japanese firms in 1985 amounted to 109 percent. Tariff rates for semiconductors are higher in the European Union and the United States (generally 14 percent and 4.2 percent, respectively) than in Japan (0 percent).
- **Foreign direct investment.** Trade barriers in the EU market have favored the US industry more than the Japanese industry, since the US industry made direct investments in the EU market much earlier and much more significantly than did the Japanese industry.

Figure 1 Effects of a voluntary import expansion



■ **Transportation and communication costs.** Local firms have competitive advantages over foreign firms in supplying local markets, due to transportation and communication costs.

Appendix II: A Simple Economic Analysis of VIEs⁶

Let us analyze the effect of VIEs in the framework of duopoly competition. The foreign and domestic firms are assumed to compete in supply capacities (i.e., Cournot-Nash competition). If unconstrained, neither firm has the first-mover advantage, so that the equilibrium is a Nash equilibrium (point F in figure 1). However, if a VIE is imposed on the domestic firm, the foreign firm gains the first-mover advantage, since the domestic firm now cannot unilaterally decide its capacity.

First, let us assume that the target of the VIE is given in terms of market share. It is clear that the foreign firm now has the strategic incentive to reduce its export supply, because if it reduces its supply, the domestic firm is also forced to reduce its supply. In figure 1, the equilibrium is now at point R instead of the point F ; q^R , which is located on the iso-profit line just tangent to the VIE constraint forced on the

6. This section had been written before Irwin (1994) was available. He analyzed the VIE in the case of market share target and reached a similar conclusion.

domestic firm, becomes the choice for the foreign firm if it produces more profit for the foreign firm than the strategy of preemptive capacity expansion (point *P*).

When point *R* is realized as the equilibrium, it is clear that while the foreign firm's market share increases, its supply, as well as the total supply in the domestic market, declines. Thus, a VIE can reduce trade and competition just as a VER can, contrary to the analysis by Tyson (1992).

The foreign firm gains on the following two accounts. First, it can gain more market share for each level of the total supply—that is, the rent-shifting effect. Second, it can reduce the total supply and increase the price level—this is the market-power effect. The domestic firm may or may not gain, depending on the dominance of the market-power effect over the rent-shifting effect. The welfare of the foreign country always increases, while the welfare of the importing country always declines since the loss of the domestic firm dominates any existing consumer gains. Thus, a VIE is a beggar-your-neighbor policy.

Next let us consider the case where the VIE target is in terms of import quantity. In this case the equilibrium is now given by point *E* in figure 1. The domestic firm's supply declines compared with the Nash equilibrium *F*, but the total supply increases, since the smaller market share of the domestic firm makes it more willing to accept the lower profit margin due to its supply expansion. Thus, a VIE expands output and trade in this case.

However, efficiency (the sum of the producers' surplus and the consumers' surplus) can still decline, since the VIE shifts production from the low-cost firm to the high-cost firm, assuming that the foreign firm seeking the VIE has a higher supply cost in the domestic market than does the domestic firm. The foreign firm and the foreign country always gain from a VIE; the domestic country necessarily loses when efficiency declines (the loss of the domestic firm surpasses the consumer welfare gain).

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