Export Quota Allocations, Export Earnings, and Market Diversification

Taeho Bark and Jaime de Melo

Countries facing voluntary export restraints (VERS) often adopt a two-tier allocation system for export licenses to the restricted market: (1) a "basic" allocation related to export shares to the restricted market; and (2) an "open" allocation based on export shares to the nonrestricted market. Such a two-tier allocation system increases exports to the nonrestricted market beyond the levels which would exist under a single-quota allocation system and has an efficiency cost as it results in some sales being made at less than marginal cost. The history of VERS negotiations provides a rationale for such a policy and suggests that the recent increase in antidumping cases may be partly associated with the adoption of two-tier quota allocation systems.

Nontariff barriers (NTBS) present a growing threat to a liberal world trading system and slow the relocation of mature industries from developed to developing countries. Among NTBS, voluntary export restraints (VERS) are proliferating and constitute a major element of the "new protectionism."

Besides measuring the incidence of NTBS, research has concentrated on three aspects of VERS: the welfare cost to the imposing country, their attraction for both exporters and importers, and their "inefficacy." Analysis of the first issue has shown that because the exporting country operates the VERS, there is a rent transfer from the importing country to the exporting country which is often larger than the distortionary costs associated with an "equivalent" tariff. Second, research indicates that VERS have endured because exporting countries receive the rent transfer, whereas for importing countries VERS can be imposed quickly and lack transparency and therefore attract fewer objections than outright subsidies to the industries seeking protection (see, for example, Bhagwati 1986).

Third, because VERS are typically negotiated bilaterally for specific product categories, they allow exporters to alter the product, the export route, or even the place of production to avoid the restriction. Quality upgrading is such a response which has been amply documented for differentiated products like...
automobiles. For undifferentiated products, such as footwear and steel, transshipment has been observed (see, for example, Crandall 1987). If there are low start-up costs, investment and production will shift to adjacent third countries not afflicted by VERs. Thus the possibility to bypass such restrictions has led Baldwin (1982) to write on the "inefficacy" of trade restraints, particularly NTBs.

There is another implication for maneuvering by exporters, because negotiations typically involve only a few of the exporting countries' trading partners. It has been observed frequently that importing countries which are not currently party to a VER agreement often follow suit and enter into such an agreement. This feature of bilaterally negotiated trade restraints has been documented for footwear by, among others, Hamilton (1986b), who refers to it as a "domino" effect. Exporting countries may wish to prepare themselves for this eventuality by actively promoting export diversification toward nonrestricted countries as a precautionary measure against future restrictions.

The implications of this export diversification motive have not been analyzed in the literature, and we examine them here. In the next section we briefly describe how export diversification is typically achieved. In section II we set up a simple model that analyzes the implications of the two-tier quota allocation rule described in section I. We also draw implications for policy actions by nonrestricted countries and suggest that the recent increase in antidumping cases may be linked to this two-tier quota allocation practice.

I. TWO-TIER QUOTA ALLOCATION SYSTEMS

If a government wishes to maximize foreign exchange earnings and to encourage diversification of export markets for a product which is subject to a VER, it can be expected to rely on two criteria for the allocation of export licenses to the restricted country. These are (1) the unit value of a firm's exports in local currency, as the criterion for the "basic" allocation, and (2) the firm's export volumes to nonquota countries, for the "open" allocation. In a previous paper (Bark and de Melo 1987), we show that taking into account the unit value of firms' exports is consistent with a government's objective of maximizing foreign exchange revenues and will usually lead to quality upgrading. The second criterion, export volumes to nonquota countries, is often used to encourage export diversification.

Table 1 shows how the Republic of Korea, for example, implemented the allocation criteria for various VERs in 1984 (Rhee 1984). What is striking is the uniformity of criteria across commodities subject to VERs. Rhee also documents unofficial statistics of exporters' associations, suggesting that the open quota is usually 15 to 20 percent of the total quota. A two-tier quota allocation mech-

1. Conditions for product mix upgrading have been analyzed by Fahey (1979) and Rodriguez (1979). Quality upgrading for automobiles and footwear have been shown by Feenstra (1985) and Aw and Roberts (1986).
Table 1. *The Export Quota Allocation System in Korea; Selected Cases as of 1984*

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Countries</th>
<th>Quota allocation criteria&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Basic quota</th>
<th>Open quota</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textiles</td>
<td>United States, Canada, European Community, Sweden</td>
<td>Last year's export volume</td>
<td>Unit export price in local currency</td>
<td>Last year's average unit export price</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Last year's average unit export price</td>
<td>Last year's average unit export price</td>
<td>Last year's export volume to nonrestricted countries</td>
</tr>
<tr>
<td>Silk fabric</td>
<td>Japan</td>
<td>Last year's export volume</td>
<td>Last year's average unit export price</td>
<td></td>
</tr>
<tr>
<td>Cotton yarn</td>
<td>Japan</td>
<td>Last year's export volume</td>
<td>Last year's average unit export price</td>
<td></td>
</tr>
<tr>
<td>Athletic leather footwear</td>
<td>United States</td>
<td>Last year's export volume</td>
<td>Unit export price in local currency</td>
<td>Last year's average unit export price</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Last year's average unit export price</td>
<td>Last year's export volume to nonrestricted countries</td>
<td></td>
</tr>
<tr>
<td>Footwear</td>
<td>United Kingdom</td>
<td>Last year's export volume</td>
<td>Unit export price in local currency</td>
<td>Last year's average unit export price</td>
</tr>
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<td></td>
<td></td>
<td>Last year's average unit export price</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Footwear</td>
<td>Ireland</td>
<td>Last year's export volume</td>
<td>In the order of application</td>
<td></td>
</tr>
<tr>
<td>Stainless steel flatware</td>
<td>United States, Belgium, Luxembourg, United Kingdom, Fed. Rep. of Germany</td>
<td>Last year's export volume</td>
<td>Basic quota allocation</td>
<td>Last year's export volume to nonrestricted countries</td>
</tr>
<tr>
<td>Black and white television</td>
<td>United Kingdom</td>
<td>Last year's export volume</td>
<td>Basic quota allocation</td>
<td>Last year's export volume to nonrestricted countries</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Last year's average unit export price</td>
<td>Last year's average unit export price</td>
<td></td>
</tr>
<tr>
<td>Carbon and certain alloy steel products</td>
<td>United States</td>
<td>Last year's export volume</td>
<td>Export volume of new commodity</td>
<td>Small and new firms</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Last year's export volume</td>
<td></td>
<td>Last year's export volume to nonrestricted countries</td>
</tr>
</tbody>
</table>

<sup>a</sup> Specific weights given to each criterion vary across commodities. For all items, some portion of the basic quota licenses are transferable while the open quota licenses are not transferable.

anism is also among the criteria used for allocating rights to export clothing in Malaysia. Given that the Multifibre Arrangement is so widespread, there is not much scope for diversification toward nonrestricted markets.

II. The Model

We assume that output is produced domestically by identical firms in perfect competition; this assumption is appropriate for many industries subject to VER, such as clothing and footwear, though not for others such as steel. For simplicity it is assumed that all output is exported and that firms produce at constant marginal costs over the relevant output range. We also assume that unit export values are fixed, thereby excluding the possibility of quality upgrading. A more complex model with increasing marginal costs is available on request from the authors, but the main qualitative results are not affected by this assumption.

The world market for the product subject to the VER is viewed as comprising four countries: two net suppliers, one of which (the home country) negotiates a VER, and two net importers, one of which (the restricting country) enters into a VER with the home country. The second supplier produces a good which is an imperfect substitute for the good produced by the home country. Transport costs and rules against transshipment segment the two markets for the home country.

In figure 1, $A_h$ is the home country's export supply curve. It faces two demand curves, $D_R$ on the restricted market and $D_N$ on the nonrestricted market. Under free trade $R$ would be sold on the restricted market and $N$ on the nonrestricted market. It is assumed that the government of the home country does not impose the export taxes that would improve its terms of trade in line with the theory of optimum trade taxes. As it is not exploiting this monopolistic power, in the absence of foreign retaliation, some trade restriction can be expected to increase its real income.

Let negotiation of the VER between the home and the restricting country reduce exports to that market to $R'$. As noted above, it is common for the governments of exporting countries facing VERs to adopt a two-tier allocation: $BR'$ is the basic quota allocation that is divided equally among all firms; and $B$ is an "open" quota that is allocated to firms in proportion to their exports to the unrestricted market. (We give some consideration below as to why this formula might be chosen.) With exports of $R'$ to the restricted market, price on that market will be $P_R$. Price on the unrestricted market cannot be determined until the incentive for firms to export to that market is specified more...
Figure 1. A Two-Tier Quota Allocation System

Note: $A =$ free-trade price; $AS =$ free-trade export supply curve; $BR' =$ "basic" quota allocation; $DN =$ demand curve of nonrestricted market; $DR =$ demand curve of restricted market; $N =$ free-trade level of exports to nonrestricted market; $N' =$ exports to nonrestricted market after quota imposition; $B =$ "open" quota allocation; $P_N =$ price in nonrestricted market; $P_R =$ price in restricted market; $R =$ free-trade level of exports to restricted market.

fully; for the moment assume that exports to that market are $N'$ so that the price is $P_N$.

Assume that one unit of exports to the unrestricted market entitles the exporter to export $k$ units to the restricted market under the open quota. Given competition, the profit from open quota sales must be equal to the loss on unrestricted market sales, that is, $ab = cd$ in figure 1, as long as the open quota is fully taken up (not to do so would be inefficient from a national point of view). The entitlement ratio $k$ is equal to $b/d$; it is thus also equal to $(c/A)/(a/A)$ or the ratio of the per-unit subsidy for exports to the unrestricted market to the per-unit profit on open quota sales, both expressed as proportions of the free market price, $A$.

It can be seen that $k$ depends on the size of the open quota, the elasticities of demand on the unrestricted and restricted markets, and the price on the restricted market. As drawn, it is clear that if $k = 1$, the full open quota of $B$
would not be taken up, for the loss on exports to the unrestricted market would exceed the profit on the open market. Indeed for demand for the open quota to equal the supply, with \( k = 1 \), the open quota has to be such that \( P_R - A = A - P_N \). It is clear then that \( k \) and the open quota cannot be set independently of each other.

As optimum export taxes had not been imposed before the VER, the home country will gain from the reduction of its exports to the restricted market, up to the point where marginal revenue on that market is equal to marginal (and average) costs. On the unrestricted market, the expansion of exports beyond \( N \) involves a loss to the country. Under the two-tier scheme it is understandable that firms would wish to sell more than \( N \)—it is necessary to do so in order to export, under the open quota, to the other market. It is analogous to rent-seeking, incurring real costs from society’s point of view in order to capture rents. But why should governments wish to induce this behavior, which they do, when it would appear to incur deadweight losses? One answer could be that governments seek increased export revenue as an objective, either because the exchange rate is not at an equilibrium level (in which case shadow prices should be used in assessing costs and benefits in figure 1), or because they are ill advised. Another answer is that VERs appear to be contagious, and that by diversifying exports into markets that may be restricted in the future, governments may be able to stake claims for favorable treatment in those markets should they later come to be restricted.

Some support for the latter view may be drawn from experience with VERs on footwear. Shortly after the United States negotiated its “orderly marketing arrangements” with the Republic of Korea and Taiwan in June 1976, several members of the European Community (EC) and other developed countries followed suit, in many cases extending VERs to all footwear exporters (Yoffie 1983, chap. 3; Hamilton 1986a).

Given such a pattern, the home country could expect a restriction of its exports to the hitherto unrestricted market in the future. It could then make sense to use a two-tier allocation system to encourage export diversification early so as to negotiate a future VER from a larger share in the unrestricted market. Such a policy should be tempered by the possibility that selling at less than cost in the unrestricted market may provoke the importing country into imposing the VER. This introduces the question of endogenous uncertainty (see Bhagwati and Srinivasan 1976)—the exporting country’s government would have to weigh the increased probability of imposition of a VER by the hitherto unrestricted market plus the present costs of stimulating exports at a loss, on the one hand, against the expected benefits in the future of having a sizable market position if a VER were to be imposed, on the other.

Two further aspects of the two-tier quota allocation system may be noted. First, cross-subsidized exports to the nonrestricted market are amenable to antidumping action according to the General Agreement on Tariffs and Trade’s (GATT’s) antidumping code. Antidumping actions by the EC and United States
have increased in recent years, and the share of developing countries in these cases has risen. It is quite possible that part of this increase is due to precautionary diversification of exports under two-tiered allocation systems in the presence of VERS. Second, if the wedge between the unit selling price in the restricted and nonrestricted markets gets too large, there are incentives for arbitrage by, for example, violating or circumventing transshipment rules (see Baldwin 1982).

III. CONCLUSION

We have shown that a two-tier quota allocation system for export licenses to restricted markets can achieve export diversification toward unrestricted markets and simultaneously fill the established quota. But this diversification has a cost in that it generates sales at below marginal cost. The two-tier allocation rule thus results in a resource waste similar to that identified in the literature on rent-seeking. A rationale for the pursuit of such a policy can be found in the recent history of VERS negotiations where the bilateral negotiation of VERS between major exporters and one of their principal trading partners spreads to other trading partners as well. But in encouraging exports to an unrestricted market at less than costs, the probability that the government of that market will then retaliate with antidumping actions or a VERS may be increased. The precautionary measures taken to diversify in case a VERS is imposed may make further VERS more likely.

REFERENCES


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