AUCTIONING U.S. IMPORT QUOTAS,
FOREIGN RESPONSE, AND ALTERNATIVE POLICIES

Robert C. Feenstra

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ABSTRACT

In this paper we quantify the potential revenue available to the U.S. from auctioning import quotas, and the resulting drop in foreign producer surplus relative to free trade. Previous estimates of auction revenue are in the range of $3.7-5.15 billion for 1986 or 1987. Using simulation results from computable partial or general equilibrium models, we find that this revenue gain would be at the expense of a large drop in foreign producer surplus. Ignoring textiles and apparel, the potential auction revenue is $1.3-2.15 billion, and the foreign loss is $0.5-0.7 billion relative to free trade. One alternative to auction quotas is a system of tariff-rate quotas, which are designed to keep supplier countries welfare equal to that in free trade. We calculate that the tariff-rate quotas could raise $0.67-1.55 billion in revenue for the U.S. While this amount is less than available through auction quotas, it could still fund a significant program of worker adjustment, and would mitigate the foreign response.

Robert Feenstra
Department of Economics
University of California
Davis, CA 95616

Auctioning U.S. Import Quotas and Foreign Response

1.   Introduction

The increased use of "voluntary" export restraints (VERs) on international
trade, rather than tariffs, has allowed supplying nations to capture the quota
rents through higher prices for their exports. Recent policy proposals in the U.S.
have called for the auction of U.S. import quotas, or their conversion to tariffs,
allowing the U.S. government to obtain the auction or tariff revenues.[1] Bergsten
et al (1987) estimate potential auction revenues from U.S. quotas on textiles
and apparel, steel, machine tools, sugar and dairy as $5.15 billion, while lower
estimates of $3.7-4.7 billion are provided by the Congressional Budget Office
(1987) for 1987-89. At a time of high budget deficits in the U.S., this potential
source of revenue has attracted Congressional and media attention.[2] The
auction or conversion of U.S. import quotas is usually thought of as part of a
broader plan, whereby the revenue obtained could be used to encourage
relocation of workers out of protected industries, with the goal of reducing and
eventually eliminating the protection (Hufbauer and Rosen, 1986; Lawrence
and Litan, 1986).[3]

Advocates of the auction quotas recognize that there could be some
foreign response. For example, the Congressional Budget Office (1987, p. 2)
states:

> The revenue estimates assume that foreign governments do not
> alter their behavior in response to the change in the system of
> allocating quota rights. Foreign governments often are willing to
> enter into VERs with the United States because VERs allow them
> to allocate the higher profits on imports created by the quota to
> their own producers. Taxing these rents--by auctioning the quota
> rights--causes foreign suppliers to lose their profits. ...Unilateral
> import quotas [by the U.S.] could induce foreign retaliation in the
> form of restrictions to U.S. exports in other sectors, which would
> lower U.S. government revenues obtainable in those sectors.

Bergsten et al (1987, p. 145) argue that:

> ... the unilateral imposition of auction quotas could provoke GATT disputes and foster demands that the United States compensate the affected exporting countries or face the threat of retaliation against U.S. exports. In the most important cases, steel and textiles and apparel, bilateral agreements would be violated. If those agreements were subsequently abrogated by either party, new U.S. legislation would be necessary to impose the auction import quotas. Unless such action was coupled with firm commitments by the United States to liberalize its long standing quotas, the unilateral imposition of auction quotas in these cases could seriously compromise the ability of the United States to conclude new multilateral trade agreements.

Despite these concerns, neither of the above studies consider any methods to mitigate the reaction of trading partners, beyond a U.S. commitment to liberalize trade. Lawrence and Litan (1986, chapter 5) appear to be alone in proposing actual compensation to exporting countries, using one-half of auction revenues in the first three years and one-third of tariff revenues subsequently as compensation.

Whether or not the U.S. should be concerned about the position of its trading partners under a system of auction quotas is open to debate. The international order established after World War II, including the General Agreement on Tariffs and Trade (GATT), generally precluded the use of policies which would harm trading partners except under specific circumstances. While some believe that this international order is now breaking down (see the contributions to Frieden and Lake, 1987), it is still prudent for the U.S. to consider the foreign response to auctions quota. For goods which are imported from Europe, the European response could involve retaliation.[4] For other countries, actions taken by the U.S. can affect their willingness to bargain in the current Uruguay Round of GATT negotiations. With this perspective in mind, our paper makes two contributions. First, we shall quantify the loss in foreign

producer surplus due to auction quotas, relative to a free trade situation. Second, we shall consider alternative policies that are designed to raise revenue for the U.S. and reduce protection over time, but without harming trading partners.

In section 2 we present a simple theoretical model of import quotas, contrasting the cases where the U.S. is a "small" or "large" importer. Estimates of the amount of auction revenues are reported in section 3, and the foreign producer surplus losses are given in section 4. These figures are obtained from computable partial or general equilibrium models. We find that possible foreign losses due to U.S. quotas are surprisingly high: in textiles and sugar the drop in foreign producer surplus due to quotas may equal or exceed the quota rents, while in several other industries the producer surplus loss is a large fraction of the quota rents. These results indicate that auction quotas can impose a substantial loss on U.S. trading partners relative to free trade. This leads us to consider alternative policies in section 5: allowing above-quota imports at a tariff which would diminish over time; or a system of tariff-rate quotas which would implicitly compensate exporters for the trade restriction. We calculate that tariff-quotas could raise $0.67-1.55 billion in revenue for the U.S., while keeping imports at their current level and foreign welfare equal to that in free trade. Conclusions are given in section 6.

2.   Effects of Import Quotas

The effects of a U.S. import quota are shown in Figure 1. Consider first the case where the U.S. is a "small" country, facing an infinitely elastic world excess supply curve at P_0 (ignore S^* for now). U.S. import demand is D, and imports of this good under free trade are M_0. An import quota of $\overline{M}$ raises the U.S. price to P_1, and the resulting quota rents are area A. If the quota is

"voluntarily" applied by the exporting countries then they earn the quota rents, which is a windfall gain over free trade. If instead the U.S. auctions the quota, or applies a tariff of P_1-P_0, then it could obtain A as revenue. In this case the exporters are not significantly better or worse off than with free trade, since it is assumed that they can divert the forgone U.S. sales elsewhere with a negligible effect on the world price.

Thus, while exporters lose the quota rents under the auction scheme, they are not substantially harmed relative to free trade. In this case it may well be that trading partners could be appeased by a U.S. commitment to lower protection in the future, as suggested by Bergsten et al (1987). However, the results are very different when the U.S. is treated as a "large" importer.

Suppose now that the U.S. faces the world excess supply S^*, where P_0 and M_0 still denote the free trade equilibrium. With a quota of $\overline{M}$ "voluntarily" applied by exporters, the U.S. price rises to P_1 while the supply price (marginal cost) falls to P_2. Supplying countries obtain quota rents of A+B but suffer a fall in producer surplus of B+C . On net, the exporters are better off due to the "voluntary" trade restraint if and only if area A exceeds the triangle C, which need not occur if the quota is sufficiently low. A switch to auction quotas means that the U.S. obtains the revenue A+B, with the trading partners losing surplus B+C relative to free trade. The outcome is the same as with a tariff of (P_1-P_2) applied by the U.S., which would be a "beggar thy neighbor" policy.

Empirical studies of trade policy commonly assume that the U.S. is a "small" importer, facing fixed world prices. However, this may be simply an assumption of convenience, since available evidence is thin. For example, the annotated bibliography of price elasticities in international trade by Stern et al (1976) devotes over 300 pages to demand, but only eight pages to supply.[5] Estimates of export supply and import demand in a simultaneous equations

framework have found upward sloping rather than horizontal supply curves.[6] We shall rely on simulation results from computable general equilibrium (CGE) and partial equilibrium (PE) models to determine the effect of U.S. trade policies on foreign prices and welfare.

In CGE models, a quota $\overline{M}$ can lead to lower marginal costs (moving down S^*) due to changing factor prices in exporting countries. In PE models, an estimate of the elasticity of S^* is used. In both cases, the effects of trade policy can be calculated with multiple exporting and importing countries, and market clearing in many goods. The studies we cite in section 4 show that U.S. trade policy can have a significant effect on the supply price of its imports (i.e. on its terms of trade). We should note, however, two limitations of the studies. First, many of the studies rely on the Armington assumption, under which domestic and imported varieties of a good are treated as imperfect substitutes in U.S. demand. Several authors have argued that this assumption may exaggerate the effects of trade policy on the terms of trade, and therefore overstate the potential drop in foreign producer surplus due to a quota.[7] Second, the studies we use assume perfect competition. Recent literature has argued that the effects of trade policy are sensitive to the market structure (see the contributions to Krugman, 1986), while Krishna (1988) has analysed how potential auction revenues depend on the type of competition. Extending the topic of this paper to imperfect competition is an important area for further research.

3. Revenue from U.S. Auction Quotas

In Table 1 we show estimates of the revenue available from auctioning existing U.S. import quotas. The estimates are obtained from two sources: the Institute for International Economics (IIE), reported by Bergsten et al (1987, Table 4.1); and the Congressional Budget Office (1987, Table 1). These studies

report auction revenue for the steel, textile and apparel, machine tools, sugar and dairy industries, for the years 1986 or 1987. The figures in column 1 of Table 1 are lower than those reported earlier by the IIE (see Bergsten et al, 1987, Table 3.3), because the earlier estimates of potential auction revenues reflected quota rents going to covered and uncovered foreign suppliers.[8] That is, with an import quota or VER restricting sales from some countries, the higher U.S. price which results can be obtained by all supplying countries. We believe this phenomenon is itself evidence that the U.S. should be treated as a "large" importer, since exporters not covered by a quota who obtain higher U.S. prices must be moving up their supply (marginal cost) curves.[9]

Remaining differences between the IIE and CBO estimates in Table 1 are small, and can be attributed to differing treatment of exchange rates and estimates of the tariff equivalent to quotas (see Bergsten et al, 1987, pp. 49-50). The potential revenue of $3.7-5.15 billion represents the U.S. gain and foreign loss from an auction, as compared to the current system whereby exporting countries obtain the quota rents.[10] However, we feel this monetary transfer is not a good indication of the true foreign loss from an auction, since the quota rents now earned abroad are a windfall gain to foreign exporters. In the next section we estimate the foreign loss relative to free trade, and in section 5 discuss policies to minimize this loss. (The remainder of Table 1 is discussed in section 5).

4. Foreign Producer Surplus

In Table 2 we report the loss in foreign producer surplus, relative to free trade, from the auction of import quotas by the U.S. In the first column we show the ratio Loss/Rent, which equals $(B+C)/(A+B)$ in Figure 1. Note that a value of unity for this ratio means that exporting countries would gain as much from

quota rents due to a VER as they lose in producer surplus, and would therefore be indifferent between the VER and free trade. However, a quota at the same level which was auctioned would lead to a foreign loss relative to free trade. In column 2 of Table 2 we compute the $Loss by multiplying the Loss/Rent ratio with the estimates of auction revenue from Table 1. This approach assumes that auction quotas would only be applied against suppliers which are presently covered by quotas.[11] We also list in Table 2 the source study for calculating Loss/Rent. Below we provide details on the studies for each industry, which use either a computable general equilibrium (CGE) or a partial equilibrium (PE) model.

Steel

Tarr (1987) constructs a three-region PE model with exports of steel from Korea and other supplier countries to the United States and European Economic Community (EEC), calibrated to 1984. Using the "best estimates" of parameters, the U.S. and EEC import quotas transfer $41.9 million in rents to Korea, which obtains a net gain of $32.4 million relative to free trade. Auctioning the U.S. and EEC quotas would therefore lead to a $41.9-32.4 = $9.5 million drop in Korean welfare compared with free trade, so Loss/Rent = 9.5/41.9 = 0.2. We assume that these estimates of the Loss/Rent ratio apply to all countries constrained by the U.S. import quotas (i.e. to all the potential auction revenue in Table 1) when calculating the range of $Loss in Table 2. Note that Tarr also examines whether there are elasticity parameters which would give Korea a net loss from the existing quotas (meaning that Loss/Rent > 1), but finds that these elasticities are implausible.

Textiles and Apparel

Trela and Whalley (1988) construct a CGE model covering bilateral quotas on exports of textiles and apparel from 34 developing countries to the U.S., Canada and the EEC, calibrated to the mid-1980's. They find that the vast majority of supplying countries would gain from the elimination of quotas, despite the resulting loss in their quota rents. With their central parameters, they find that the elimination of import quotas into the U.S., Canada and the EEC would give a gain of $4.8 billion to all supplying countries. While the same experiment is not performed for just the U.S., they report that eliminating quotas and tariffs in the U.S. raises supplying countries welfare about one-half as much as eliminating quotas and tariffs in the U.S., Canada and EEC. We conclude that the U.S. import quotas yield a net loss for supplying countries of about $2.4 billion, despite the quota rents they receive which are $2.9 billion in the study. Auctioning the U.S. quotas would therefore lead to a $2.4 + 2.9 = $5.3 billion drop in supplier welfare compared with no import quotas, so Loss/Rent = 5.3/2.9 = 1.8. The $Loss in Table 2 is calculated using the range of potential auction revenues in Table 2, resulting in a $4.3-$5.4 billion loss for developing countries. These figures are large due to the restrictiveness of recent quotas: previous estimates by Trela and Whalley using quotas from early 1980 showed that only some of the supplying countries would gain from elimination of quotas.

Sugar

Leu, Schmitz and Knutson (1987) construct a PE model of U.S. sugar imports, allowing for an upward sloping world excess supply with elasticity 2.37. Calibrating the model to 1983-84, they consider alternative estimates of the quota price premium, reflecting shifting world supply. With quota premiums of 7¢ and 10¢ per raw pound they report quota rents of $619 and $885 million,

respectively.[12] For the data provided, the drop in foreign producer surplus in these two cases is calculated as $681 and $702 million, so that Loss/Rent = 681/619 = 1.1 and 702/885 = 0.8, respectively. These figures show that the loss in foreign producer surplus roughly equals the quota rents, so that supplying countries are not gaining from existing quotas. As the authors note (p. 597): "Interestingly, while countries holding sugar quotas once favored a restrictive U.S. sugar policy which generated high quota rents, in lobbying activities related to the 1985 farm bill, they joined with sugar user and consumer groups in support of lower sugar price support as a means of maintaining a market for sugar in the United States."

Dairy

Webb et al (1987) describe the effects of trade liberalization in a PE world trade model with 8 regions and 13 agricultural commodities. A special run of this model was performed to calculate the effects of eliminating U.S. price supports and import quotas in dairy, for 1986.[13] The simulations show an increase in world prices for cheese, butter and milk powder of 14%, 13% and 10%, respectively, with a reduction in U.S. domestic prices of 16.8%, 33% and 5.5%. Of these three products, imports of cheese account for over 95% of total import quantity. The simulations indicate a quota premium (difference between initial U.S. and world prices) of 14 + 16.8 = 30.8% for cheese, and so the change in world prices relative to the quota premium is 14/30.8 = 0.45. This is an estimate of $(P_0-P_2)/(P_1-P_2) = B/(A+B)$ in Figure 1, and is therefore an underestimate of the Loss/Rent = $(B+C)/(A+B)$ ratio.

Considering the overall results in Table 2, the Loss/Rent ratios show a wide variation across industries. These ratios depend on the extent to which U.S. imports affect world prices, and on the restrictiveness of existing quotas.

Summing across industries, we obtain a foreign loss of $4.8-6.1 billion relative to free trade due to the auction of U.S. import quotas.[14] This range exceeds the potential auction revenues available, illustrating that the revenue gain to the U.S. is at the expense of foreign producer surplus. The magnitudes are, however, dominated by the textile and apparel industry. Omitting that industry, the potential auction revenue from Table 1 is $1.3-2.15 billion, and the foreign loss is $0.5-0.7 billion relative to free trade. In this case the gain to the U.S. is about three times higher than the foreign loss, but the auction quotas would still be acting as a "beggar thy neighbor" policy. In the next section we shall consider alternative policies to raise revenue for the U.S. and reduce protection, but without harming trading partners.

5.   Alternative Policies

One policy option for the U.S. would be to allow above-quota imports at specified tariff rates. The tariffs could initially be set approximately equal to the existing quota premium or higher, resulting in little or no additional imports. Over time the tariff could be reduced, together with possible growth in the quota, moving the market towards free trade. This type of policy has been advocated by Cline (1987) and Sampson and Takacs (1988) for world trade in textiles and apparel.

From the foreign perspective, this policy is much preferable to auction quotas. The possibility of above-quota imports subject to a tariff could be seen as better than strict quota limits, even though the additional imports would lower U.S. prices and erode quota rents. From the U.S. perspective the main drawback is that revenue obtained would be much lower than with auction quotas. However, as imports grow above the quota then tariff revenue would rise, and it could still be targetted for worker relocation and assistance.

The above policy amounts to the use of tariff-rate quotas, or tariff-quotas, which specify a quota and a tariff for above-quota imports.[15] Supplying countries earn rents on sales up to the quota, while the U.S. would collect revenue on sales under the tariff. Varying the quota limit allows different allocations of the revenue/rents across countries. Feenstra and Lewis (1987) propose that the quota should be set so that the supplying countries receive rents _exactly equal_ to their producer surplus loss, leaving them in the _same_ welfare position as free trade. In Figure 1, the quota M' and tariff (P_1-P_2) would be set such that (P_1-P_2) M' = area (B+C). This means that Loss/Rent = $(B+C)/(A+B) = (P_1-P_2)$ M'/$(P_1-P_2)\overline{M}$ = M'/$\overline{M}$, which is the fraction of total trade not subject to the tariff.[16] In addition to the neutral effect of this policy on foreigners, Feenstra and Lewis argue that it has beneficial incentive effects at home: under this policy the domestic government has no incentive to overstate or understate the political pressure for import protection, since it now must "pay" for protection with a portion of the revenue/rents.

We can illustrate the tariff-quota policy for the industries included in this study. In order for supplying countries to be left in the same welfare position as free trade, they should receive compensation (B+C) in Figure 1. Expressed as a _fraction_ of total revenue/rents, the compensation is (B+C)/(A+B) = Loss/Rent as shown in Table 2. This leaves [1 - (Loss/Rent)] available to the U.S. as tariff revenue on above-quota imports. To illustrate, in Figure 1 the tariff revenue is $(P_1-P_2)(\overline{M}-M')$, and dividing by total revenue/rents of (P_1-P_2) $\overline{M}$ we obtain [1 - $(M'/\overline{M})$] = [1 - (Loss/Rent)]. These fractions are shown in the third column of Table 1, and indicate the portion of total revenue/rents which the U.S. could retain under the tariff-quota plan. In the case of textiles and apparel we have that [1 - (Loss/Rent)] is negative, meaning that the U.S. would have to transfer _more_ than the total revenue/rents to supplying countries to offset their producer

surplus loss. Since such an action would not be politically feasible, we impose a lower bound of zero on [1 - (Loss/Rent)].

Multiplying the third column in Table 1 by the first or second gives the estimate of revenue available to the U.S. through the tariff-quota plan, in column four. Summing across industries we find that $0.67-1.55 billion in tariff revenue on above-quota imports could be obtained, while keeping foreign welfare equal to free trade (except in textiles and apparel).[17] While this estimate of U.S. revenue under the tariff-quota is much less than potential auction revenues, the neutral effect on foreigners would mitigate their response. In addition, the revenue available could still be sufficient to fund a significant program of worker adjustment and assistance. For example, Lawrence and Litan (1986, Table 5-1) use outlays of $0.8-1.6 billion per year for worker compensation. The U.S. Trade Bill of 1988 proposes a 0.15% import duty to finance benefits under the Trade Adjustment Assistance program, and this duty is intended to raise $0.8 billion in revenue.[18] Our calculations show that this amount or more could be available by the conversion of existing U.S. import quotas to tariff-rate quotas, designed to keep foreign welfare equal to that in free trade. The tariff-rate quotas could also be applied to industries in which new protection is called for. In either case the policy should be viewed as temporary, with a declining tariff over time moving the market towards liberalized trade.

6. Conclusions

As the members of the General Agreement on Tariffs and Trade (GATT) enter into the Uruguay Round of trade negotiations, methods are being sought to restrict the use of bilateral agreements such as VERs. Proposals to auction U.S. import quotas, or more generally substitute tariffs for quotas, seem to move in that direction by being more transparent than VERs and not

discriminating against supplier countries. From the U.S. perspective, these policies have the advantage of raising substantial revenue. However, from the foreign perspective these actions can affect the terms of trade and lower welfare. Under Article XIX of GATT, tariffs and quotas would be subject to foreign retaliation. As argued by Bergsten et al (1987), the auction of import quotas could compromise the ability of the U.S. to conclude new multilateral trade agreements.

In this paper we have quantified the potential auction revenues available to the U.S., and resulting drop in foreign producer surplus relative to free trade. Estimates of auction revenue are in the range of $3.7-5.15 billion for 1986 or 1987. Using simulation results from computable partial or general equilibrium models, we have found that this revenue gain would be at the expense of a larger drop in foreign producer surplus. Ignoring textiles and apparel, the potential auction revenue becomes $1.3-2.15 billion, and the foreign loss is $0.5-0.7 billion relative to free trade. In this case the gain to the U.S. is about three times higher than the foreign loss, but the cost to supplier countries relative to free trade is still substantial.

One alternative to auction quotas is a system of tariff-rate quotas, or tariff-quotas, which are designed to keep supplier countries welfare equal to that in free trade. The tariff-quotas allow an allocation of the revenue/rents between the exporters and importer, avoiding the extremes of VERs (all rents to the exporters) or tariffs (all revenue to the importer). We calculate that for the industries now subject to import quotas, $0.67-1.55 billion in tariff revenue could be raised by the U.S., while keeping imports at their current level and foreign welfare equal to that in free trade (except in textiles and apparel). This revenue is much less than available through auction quotas, but could still fund a significant program of worker adjustment and assistance.

The preference of trading partners for tariff-quotas over auction quotas would make it easier to conclude multilateral trade agreements, allowing trade liberalization to proceed.

Footnotes

[1]The idea of auctioning import quotas has previously been analyzed for some developing countries (see Kafka, 1956, and Bhagwati, 1962), and has been used in Australia and New Zealand (Bergsten et al, 1987, chap. 7).

[2]Media examples are Newsweek, January 12, 1987, p. 40; The Wall Street Journal, February 6, 1987, p. 40; and Business Week, March 9, 1987, p. 27. Congressional discussion of auction quotas is summarized in Bergsten et al (1987, chap. 1).

[3]A theoretical model in which tariff revenues are used to reduce lobbying pressure for import protection is analyzed in Feenstra and Bhagwati (1982).

[4]The European Community is usually quick to respond to U.S. trade actions affecting them, and have threatened to initiate a GATT challenge to a U.S. import quota on machine tools (see Bergsten et al, 1987, p. 134). In contrast, Japan often does not respond to U.S. restrictions given the existing trade surplus with the United States.

[5]This observation is due to Haynes et al (1986, note 2).

[6]For example, Goldstein and Kahn (1978) and Haynes and Stone (1983). Since studies of this type often consider aggregate imports for a country, the results cannot be used to analyze trade policy in specific commodities.

[7]See Deardorff and Stern (1986, p. 61), Melo (1986) and Brown (1987).

[8]Earlier estimates of potential auction revenues also included the automobile industry, but the recent appreciation of the yen and loosening of the export restraint with Japan means the quota rents are now small.

[9]Under imperfect competition, uncovered suppliers could be raising their prices strategically. Evidence for the automobile industry is presented in Dinopoulos and Kreinin (1988), who estimate that the U.S. prices of European cars rose by one-third due to the VER with Japan.

[10]Dairy imports are an exception since the quota rights are now given to U.S. importers (Bergsten et al, 1987, p. 40). An auction quota would therefore transfer the rents from U.S. firms to the government.

[11]This assumption is also made by Bergsten et al (1987).

[12]They also use a quota premium of 15¢ per raw pound when world supply is very high (so the quota is more restrictive relative to free trade), but they consider this an extreme case.

[13]Actually, the simulation involved the liberalization of all U.S. agricultural imports, but we do not expect the feedback from other sectors to dairy to be large.

[14]To be precise, the foreign producer losses are relative to a situation of no import quotas, but due to existing MFN tariffs, that situation is not free trade.

[15]As analyzed by Sampson and Takacs (1988), below-quota imports could be subject to existing MFN tariffs. They also consider now the quota licenses could be reallocated over time to promote efficient supply.

[16]Figure 1 illustrates the case where the foreign compensation (P_1-P_2) $M' = (B+C)$ is less than the total revenue/rents $(A+B)$, so that $M' < \overline{M}$ and a tariff-quota can be used to keep foreign welfare equal to free trade. For very restricted trade however, the required foreign compensation $(B+C)$ can exceed the tariff revenue $(A+B)$, as discussed below for textiles and apparel.

[17]The qualification in footnote 14 still applies.

[18]Summary of the Conference Agreement on H.R. 3, "The Omnibus Trade and Competitiveness Act of 1988," April 19, 1988, Government Printing Office: Washington, D.C.

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Table 1

Revenue Available from U.S. Auction Quota
or Tariff-Quota (million dollars)

Industry	Auction Revenue (IIE)[a]	Auction Revenue (CBO)[b]	$1 - \dfrac{Loss}{Rent}$ [c]	Tariff-Quota Revenue[d]
Steel	1,330	700	0.8	560-1,060
Textiles and Apparel	3,000	2,400	0	0
Machine Tools[e]	320	100	n.a.	0-320
Sugar	300	300	0-0.2	0-60
Dairy	200	200	0.55	110
Total	5,150	3,700		670-1,550

n.a. = not available.

<u>Notes</u>

a.   From Bergsten et al (1987, Table 4.1), estimates for 1986 or 1987.

b.   From Congressional Budget Office (1987, Table 1), estimates for 1987.

c.   From column 1, Table 2, and imposing a lower bound of zero.

d.   Equals columns 1 or 2 times column 3.

e.   A range of 0-1 is used in column 3 when calculating column 4.

Table 2

Foreign Producer Surplus Loss
due to U.S. Auction Quota

Industry	Loss[a] / Rent	$Loss[b] (million)	Method and Source
Steel	0.2	140-270	Tarr (1987)
Textiles and Apparel	1.8	4,320-5,400	Trela and Whalley (1988)
Sugar	0.8-1.1	240-330	Leu et al (1987)
Dairy[c]	0.45	90	Webb et al (1987)
Total		4,790-6,090	

Notes

a.   (Loss/Rent) = (B+C)/(A+B) in Figure 1.

b.   Equals column 1, Table 2 times columns 1 or 2, Table 1.

c.   For dairy, the figures shown are the foreign loss due to U.S. auction quotas or under the present system, since the quota rents now go to U.S. importers.
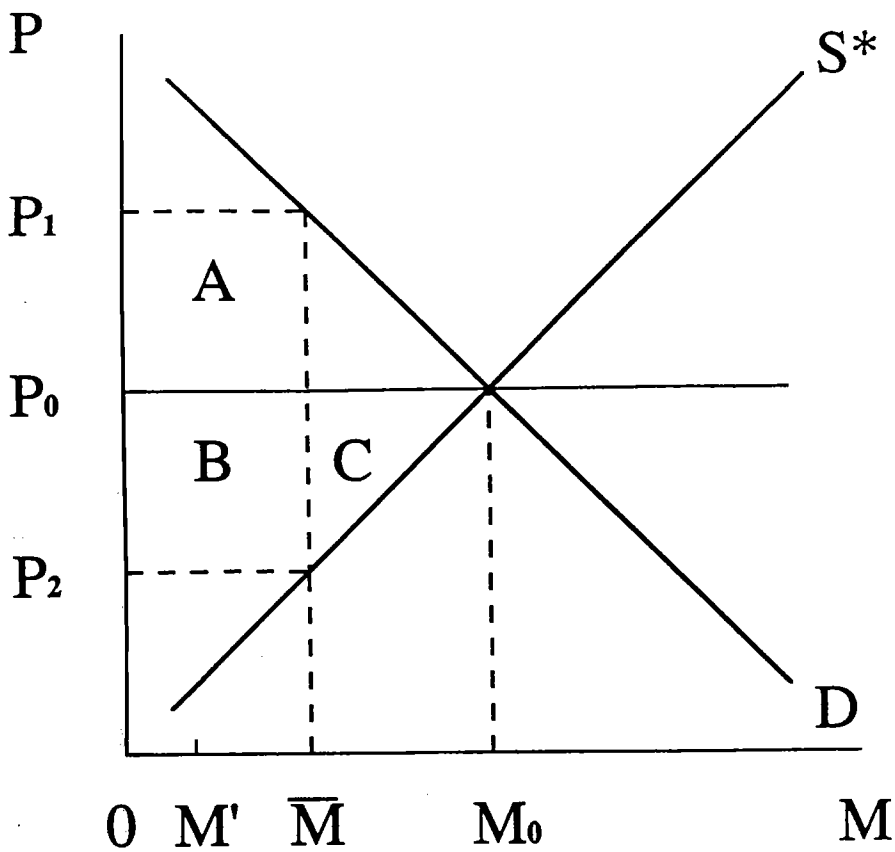
Figure 1