

Tariffs and Quotas in an Endogenous Policy Model: Are Tariffs Still Better than Quotas?

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Abstract

Conventional models of international trade show that if foreign trade must be restricted, tariffs can accomplish the task at a lower welfare cost than "equivalent" quotas. But both the choice of trade restriction and the level of protection are the result of endogenous economic and political forces. Precisely because welfare effects differ, "equivalent" tariffs and quotas are not "politically-equivalent." Therefore, tariffs and quotas should be compared using an endogenous policy model. Simulation of the model verifies that prohibiting quotas while permitting tariffs could actually lower welfare, thus bringing into question the generality of policy prescriptions based on conventional trade models.

I. Introduction

In recent years we have seen increased use of non-tariff trade barriers, especially selective quotas and voluntary export restraints (VER's). This shift in trade policies has stimulated renewed interest in the relative welfare costs of tariffs and quantitative trade restrictions.

Conventional models of international trade are commonly used to show

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that, if foreign trade must be restricted, tariffs are preferable to quantitative trade restrictions such as quotas and VER's. But these models are unrealistic because they implicitly assume that the level of protection is, in the words of Magee, Brock, and Young [1989], "exogenously determined by political processes beyond our understanding."¹ Recent contributions to endogenous tariff theory and the public choice approach to economic policy suggest, however, that both the choice of trade restriction and the level of protection are endogenous to the policymaking process.

This article reexamines the relative welfare costs of tariffs and quotas using an endogenous trade policy model. The model's explicit recognition of political forces that influence trade policy is especially appropriate for analyzing VER's, the most blatantly political of all trade measures. Given the complexity of political influences, the model does not permit us to rank tariffs and quantitative restrictions on the basis of theoretical reasoning alone. Interestingly, it is possible under certain plausible circumstances to reverse conventional wisdom and rank quantitative restrictions ahead of tariffs.

II. The Traditional Arguments in Favor of Tariffs

The following comparison of tariffs and quotas is quite representative of the international trade literature:

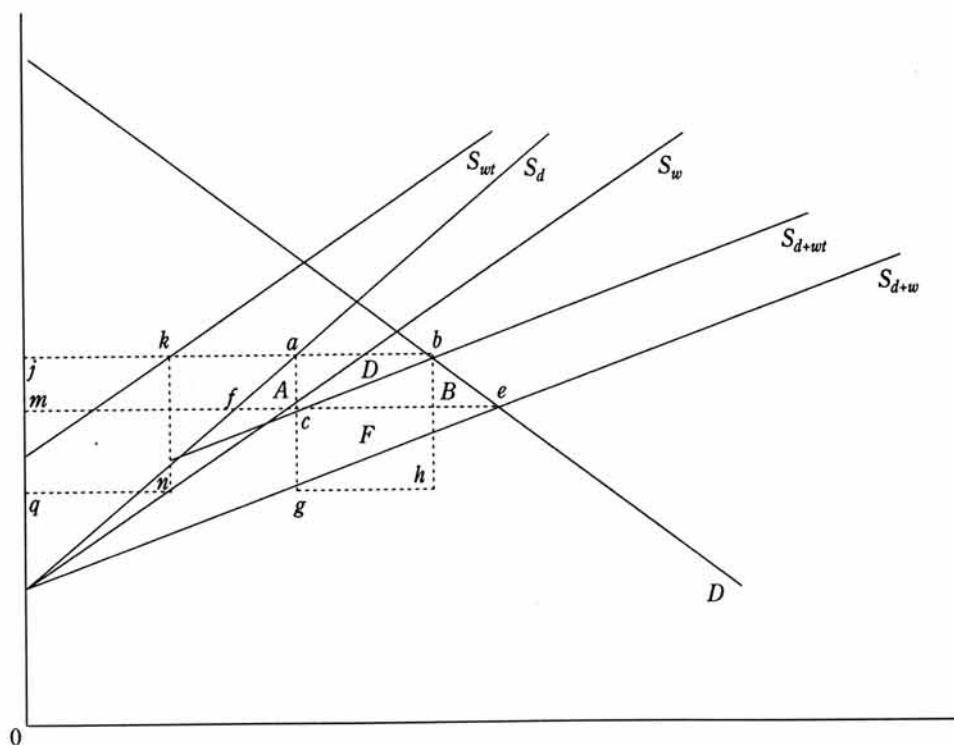
... from the point of view of the importing country, it [the VER] is probably economically the most costly procedure that could be followed. Unlike the tariff, the export restraint does not give the government any revenue to offset some of the general welfare economic costs of the import restraints. Indeed, it generally appears that the exporting country, or at least the exporting industry, can reap substantial "monopoly rents" through the process.²

To prove this point, Figure 1 illustrates a partial equilibrium model for a "large" country. The total world supply curve is upward-sloping, as is S_{d+w} , the sum of the domestic and world supply curves S_d and S_w . A specific tariff t raises the foreign supply curve to S_{wt} and the total supply curve to S_{d+wt} .

1. Magee, Brock, and Young [1989], p. 30.

2. Jackson [1992], p. 180.

Figure 1
The Partial Equilibrium Model of Foreign Trade for a Large Country



The tariff generates revenue equal to the area $jknq = abhg$, or D plus F , where F is effectively paid by foreigners in the form of a lower foreign price caused by the reduction in total demand. Deadweight losses are represented by acf and bde , or A and B , and producers gain the area $jafm$. A tariff-equivalent quota equal to the distance between a and b will cause the domestic price to rise to the same level as in the case of the tariff t , and producer surplus will increase by the same area $jafm$. But this “equivalent” quota will cause a greater welfare loss (or smaller gain) if any or all of the rent, D plus F , accrues to foreigners. Hence, quotas and VER’s are more costly.

Additional theoretical arguments favoring the use of tariffs over quotas or VER’s follow from the above reasoning.³ First of all, when domestic supply or demand curves shift price changes are smaller with a tariff because the

3. See for example, Bhagwati [1969] and Anderson [1988].

tariff-inclusive total supply curve is more elastic than the quota-augmented total supply curve. In the case where demand for imported products grows over time, a quota or VER will eventually result in much higher domestic prices and greater welfare losses. Secondly, if domestic producers are not perfectly competitive a quota-augmented total supply is less elastic, which allows domestic producers and importers to reap larger monopoly profits. The imperfectly-competitive economy thus suffers greater deadweight losses if it is "protected" by a quota or VER.

III. The Endogenous Nature of Trade Policy

The previous arguments comparing tariffs and quotas effectively begin by assuming some amount of trade protection has been decided upon "exogenously" and then proceed to show which type of policy, a tariff or a quota, can accomplish the task at the lowest welfare cost. Endogenous tariff theory and the theory of public choice suggest, however, that the selection of the type of trade restriction does not take place separately from the decision on whether and how much to restrict trade.⁴ Trade policies are the result of political pressures, the direction and intensity of which depend on the expected economic gains or losses. Therefore, if the gains and losses are different for tariffs and quotas, the politically-expedient alternative to a given tariff, which we might call the "politically-equivalent" quota, is almost certainly distinct from the "equivalent" quota discussed in the previous section.⁵

The non-equivalence of politically-equivalent trade policies can be illustrated using an endogenous trade policy model. Below we present a model that specifies how the various gains and losses from tariffs and quotas, rep-

4. See, for example, Magee, Brock and Young [1989], Baldwin [1985], and McKenzie [1988].

5. McKenzie [1988] makes exactly this point when he asserts that, if tariffs are less costly in terms of welfare losses, they will actually be enacted more frequently and at more restrictive levels than would be the case for quotas. This paper makes essentially the same point, but it does so on the basis of a specific model that permits the measurement of the welfare effects of trade policies applied under a variety of political circumstances.

resented geometrically in Figure 1, influence policy decisions when (1) policymakers seek to maximize votes, (2) interest groups exhibit rent seeking behavior, (3) voters are imperfectly-informed and can be influenced by political campaigns paid for by organized interest groups, and (4) foreign governments can be pressured by foreign exporters to retaliate against harmful foreign trade policies.

The assumption that policymakers maximize votes is in accordance with Magee, Brock, and Young [1989], who state that "*endogenous policy* is that level of a policy that maximizes the votes to the party sponsoring the policy."⁶ Producers, consumers, government, and importers find that their welfare increases or decreases with protection, and they react by (1) voting for or against the party sponsoring the trade policy in question and, possibly, (2) contributing money to the party which favors their interests. Campaign contributions allow political parties to employ real resources to promote their candidates. This type of rent-seeking, or "lobbying," is effective because voters are imperfectly informed.

Voter support of course depends on how each voter perceives his or her welfare to be affected by the policies of the politicians. But as Robert Baldwin writes, "Probably the most important reason for the divergences between what is economically most efficient and what actually occurs in the political marketplace is the lack of perfect information and the fact that acquiring and disseminating information is costly."⁷ Thus, voter support also depends on campaign funds that can be used to influence imperfectly-informed voters.

Just as domestic interest groups have political influence, foreign interest groups are assumed to exert political pressure on their respective government policymakers. When a "large country" increases protection, producers in other countries perceive a loss of welfare. The affected foreign producers will then often press their governments for some type of retaliatory action to restore foreign markets.⁸ Retaliatory foreign trade restrictions, if they

6. Magee, Brock, and Young [1989], p. 31.

7. Baldwin [1985], p. 9. The assumption that voters are imperfectly informed is supported by Downs [1957], who shows that the rational voter facing real costs of acquiring information will indeed be imperfectly informed.

occur, show up in the home country as a decline in foreign demand for exports, causing producer surplus losses that exceed consumer surplus gains in the affected domestic markets. These losses and gains must be added to the losses and gains illustrated in Figure 1.

An endogenous policy model should recognize that interest groups are not all equally effective in lobbying policymakers nor equally likely to alter their voting behavior as a result of changes in trade policy. Olson [1965] showed how some groups are better than others at organizing to promote their interests. For example, a small group of domestic producers is more likely to lobby for trade restrictions than a large group of dispersed consumers is to lobby against the proposed trade restrictions.⁹ Secondly, voters support or oppose political candidates for a large number of reasons, and trade policy weighs more heavily in some voters' decisions than in others'. Few consumers remember quotas on imported clothing when they enter the voting booth, but protection from foreign competition will be foremost on the minds of workers in the clothing industry.

Caves [1976] suggests that elected officials tend to take a position favorable to the largest number of voters who are most concerned about the issue because the officials know they cannot satisfy every voter on every issue. Thus, the larger the number of concerned workers in an import-competing industry, the more likely that policymakers will favor protection for that industry. Finally, Olson [1983] hypothesizes that some sort of shock may be necessary before a group organizes to lobby effectively. For example, the automobile industry in the United States only began to lobby in earnest for protection when the recession and the rapid increases in imports from Japan drastically reduced the industry's sales and employment in the early 1980's.

8. Foreign retaliation varies depending on whether it is incited by tariffs or quotas since the foreign repercussions are different for each type of trade restriction. The effects of retaliation on the welfare costs of tariffs as opposed to quotas is dealt with by, for example, Bhagwati [1989], Deardorff [1987], Kaempfer *et al.* [1987], and Godek [1991].

9. Pincus [1975] points out that a widely dispersed group finds it more costly and difficult to monitor its members, which reduces its ability to lobby effectively.

IV. An Endogenous Trade Policy Model

Our formal model consists of two equations, one to determine the politically-optimal tariff and the other to determine the politically-optimal quota. Each translates the gains and losses from Figure 1, plus the gains and losses caused by foreign retaliation, into increases or decreases in votes for the policymakers.

Votes are equal to

$$V_t = K + b_1 P^c + b_2 G^g + b_3 (A + B + P + D)^f + b_5 (PS_t)^j + b_6 (CS_t)^k \quad (1)$$

in the case of tariffs and

$$V_q = K + b_1 P^c + b_4 s R^h + b_3 (A + B + P + D)^f + b_5 (PS_q)^j + b_6 (CS_q)^k \quad (2)$$

in the case of quotas. V_t and V_q are the respective vote totals, K is the total number of votes that would be cast for the government officials if no tariff or quota were levied on the particular commodity in question, P is producer surplus (area $jafm$ in Figure 1), A and B are the deadweight losses from Figure 1, G and R are tariff revenue and quota rent, respectively ($D + F$ in Figure 1), and D is the portion of the tariff revenue or quota rent ceded by domestic consumers. PS and CS are the changes in producer and consumer surplus in one or more other home markets as a result of foreign retaliation, the b 's, c , f , g , h , j , and k are function parameters, and s is the proportion of quota rent that accrues to domestic importers rather than to foreigners.¹⁰

Vote-maximizing policymakers find the maximum votes obtainable with a tariff or a quota by setting the partial derivatives equal to zero:

$$\begin{aligned} \partial V / \partial t = & cb_1 P^{c-1} \partial P / \partial t + gb_2 G^{g-1} \partial G / \partial t + fb_3 (A + B + P + D)^{f-1} \partial (*) / \partial t \\ & + jb_5 (PS_t)^{j-1} \partial PS / \partial t + kb_6 (CS_t)^{k-1} \partial CS / \partial t = 0. \end{aligned} \quad (3)$$

$$\begin{aligned} \partial V / \partial Q = & cb_1 P^{c-1} \partial P / \partial Q + hb_4 s R^{h-1} \partial R / \partial Q + fb_3 (A + B + P + D)^{f-1} \partial (*) / \partial Q \\ & + jb_5 (PS_q)^{j-1} \partial PS / \partial Q + kb_6 (CS_q)^{k-1} \partial CS / \partial Q = 0. \end{aligned} \quad (4)$$

The variable Q is defined as $M - q$, where q is the size of the quota and M is

10. For simplicity we assume that foreigners cannot lobby effectively. They of course cannot vote. All foreign influence is assumed to be directed at their home governments and appears in the model in the form of retaliatory trade restrictions.

the quantity of a commodity imported under free trade.¹¹ It should be apparent that, depending on the parameter values, protectionist measures may increase or decrease total votes for the government. The vote-maximizing policymaker selects either a tariff or quota, or neither, whichever delivers the most votes.

Policies that increase P , G , and R bring increases in votes (1) directly by those whose welfare is improved and (2) indirectly through increased campaign contributions by those whose welfare is improved. On the other hand, a loss of consumer surplus ($A + B + P + D$) will reduce votes for the same reasons. Producer surplus in the market(s) where foreign retaliation is felt, PS , will decrease, while consumer surplus, CS , will increase; that is, $PS < 0$ and $CS > 0$.¹² The exponential parameters permit increasing or diminishing returns to lobbying as well as non-linear direct voter responses to changes in welfare. For example, if campaign spending exhibits diminishing returns then $0 < c \leq 1$, $0 < g \leq 1$, $0 < j < 1$, and $0 < h \leq 1$, and the second derivatives, $\partial^2 V / \partial P^2$, $\partial^2 V / \partial G^2$, $\partial^2 V / \partial R^2$, and $\partial^2 V / \partial PS^2$, are all zero or negative.¹³ In the case of consumers, however, an increasing function is more likely. Consumers may have some difficulty perceiving the negative welfare effects of small changes in tariffs and quotas, but it should become progressively easier to grasp the welfare effects of trade policies as those welfare effects become larger. In such a case, $f > 1$ and $k > 1$ so that $\partial^2 V / \partial (A + B + P + G)^2 > 0$ and $\partial^2 V / \partial CS^2 > 0$, and the first derivatives become increasingly more negative as protection increases.

The derivatives $\partial P / \partial t$ and $\partial P / \partial Q$ must be positive so long as the domes-

11. This means Q increases as quota protection increases and the signs of $\partial V / \partial t$ and $\partial V / \partial Q$ are more easily comparable.

12. It is not obvious that consumers would be very conscious, in most cases, of gains resulting from foreign import curbs. But Destler and Odell [1987] point out that domestic exporters are clearly aware of the dangers of foreign retaliation, and they often actively lobby against domestic trade restrictions.

13. That the returns to campaign expenditures (in terms of votes) might be decreasing, at least beyond some point, should not be difficult to accept, but within the framework of our partial equilibrium analysis a case can be made that the marginal effect of campaign expenditures funded by contributions from lobbyists in a single industry should be approximately constant. We thus assume that the returns to campaign expenditures are simply non-increasing rather than diminishing without any loss of generality.

tic supply curve is upward-sloping. Also, $\partial(A+B+P+G)/\partial t$ and $\partial(A+B+P+R)/\partial Q$ must be negative since the demand curve is downward-sloping and consumer surplus loss increases the more trade is restricted. Foreign retaliation causes a fall in the domestic prices of the affected products; hence, $\partial PS/\partial t$ and $\partial PS/\partial Q$ are negative while $\partial CS/\partial t$ and $\partial CS/\partial Q$ are positive. The derivatives $\partial G/\partial t$ and $\partial R/\partial Q$ have ambiguous signs; an increase in the tariff (decrease in the quota) will increase revenue (increase rent) at first, but at higher tariffs (smaller quotas) tariff revenue (quota rent) declines with tariff increases (quota reductions).

The tariff level that maximizes votes will lie somewhere between zero and the "prohibitive" level at which all imports cease, inclusively. An intermediate solution for a tariff, for example, will result if $\partial V/\partial t > 0$ at a zero tariff and $\partial V/\partial t < 0$ at the prohibitive tariff.

V. Policy Implications

Within the framework of our endogenous policy model it is not immediately obvious whether a tariff or a quota is the lower cost trade measure. We must compare the welfare effects and the vote totals generated by the politically-optimal tariff and the politically-optimal quota in order to verify whether the lower-cost policy is also the policy selected by vote-maximizing policymakers.

Total welfare losses resulting from the imposition of a tariff is given by

$$LOSS_t = A + B + r_1 P + r_2 G + r_3 (A + B + P + D) + PS + CS, \quad (5)$$

where r_1 is the proportion of producer surplus used up in resource-using rent seeking, r_2 is the proportion of tariff revenue that is used up in revenue seeking, and r_3 is the proportion of consumer surplus devoted to rent seeking activity. In the case of quotas,

$$LOSS_q = A + B + r_1 P + r_4 s R + (1-s)R + r_3 (A + B + P + D) + PS + CS, \quad (6)$$

where r_4 represents the proportion of quota rent dissipated by rent seeking activity, s is the proportion of quota rent captured by domestic, as opposed to foreign, importers, and all remaining parameters are the same as in (1) and (2). PS and PC are the changes in producer surplus and consumer sur-

plus, respectively, in the markets affected by foreign retaliation. We should expect $PS < 0$, $PC > 0$, and $(PS + CS) < 0$. Rent seeking is assumed to be absent in the markets affected by retaliation.¹⁴ Note that the loss equations (5) and (6) and the vote equations (1) and (2) do not contain identical sets of variables. Therefore, votes and welfare costs are not determined by the same factors.

VI. Simulating the Model

Repeated simulations of the model reveal how the welfare effects of a politically-motivated trade policy vary according to alternative parameter values. The model is given a specific structure by assuming, arbitrarily, that the supply curves S_d and S_w are linear and have identical slopes of one and intercepts at price 25, and the demand curve has a slope of minus one-half with the intercept at 100. Retaliation is assumed to be of the tit-for-tat type such that the lost producer surplus PS is equal in size to the producer surplus P gained by the protected industry as a result of the original tariff or quota. Retaliation does not take place if rent accruing to foreigners is high, say greater than P . The increase in CS is assumed to be half the value, in absolute terms, of PS .

Table 1 summarizes the results of all the simulations, in which 15 of the parameters each take on one of two possible values and one takes on three alternative values. Thus 98,304 simulations were run to cover every parameter combination. Two contrasting simulations of the model are illustrated in detail in the Appendix. For each combination the simulation program found the tariff and quota which generated the highest vote totals. Then, comparing the welfare costs of the politically-optimal tariff and the politically-optimal quota, it found whether the highest-vote policy was also the least costly of the two. In each case, therefore, it becomes apparent whether society would have been better off restricting policymakers' options to either tariffs or quantitative restrictions.

In 20.3% of the cases the parameter combinations are such that special

14. This does not reduce the generality of the model because the effects of retaliation already depend on assumptions about the form of retaliation applied by foreign governments.

Table 1
Simulation of the Endogenous Policy Model
16 Variables, 98,304 Iterations

Alternate Values of the 16 Parameters		
$b_1 = 0.2, 1.0$	$c = 1.0, 1.2$	$r_1 = 0.0, 1.0$
$b_2 = 0.2, 1.0$	$f = 1.0, 1.2$	$r_2 = 0.0, 1.0$
$b_3 = 0.2, 1.0$	$g = 1.0, 1.2$	$r_3 = 0.0, 1.0$
$b_4 = 0.2, 1.0$	$h = 1.0, 1.2$	$s = 0.0, 0.5, 1.0$
$b_5 = 0.2, 1.0$	$j = 1.0, 1.2$	
$b_6 = 0.2, 1.0$	$k = 1.0, 1.2$	
Simulation Results		
	number of occurrences	% of total
no tariff or quota	19,960	20.3
quota correctly selected	15,077	15.3
quota incorrectly selected	6,443	6.6
tariff correctly selected	30,692	31.2
tariff incorrectly selected	11,324	11.5
quota and tariff equally acceptable politically	14,808	15.1

interests are unable to induce self-interested politicians to institute either tariffs or quotas. In 15.1% of the parameter combinations policymakers find it equally rewarding to institute a quota or a tariff.¹⁵ The remaining four outcomes are the most interesting. Quotas are enacted in 21.9% of the cases, but in three out of every ten of these cases the quotas lead to a greater welfare loss than if policymakers had chosen the politically-optimal tariff. On the other hand, in over one-fourth of the cases in which tariffs are selected, the politically-optimal quota would have been less costly.

The percentages for each of the hypothetical cases have no general significance since the values of the parameters and the assumed supply and

15. These cases involve prohibitive tariffs and zero quotas, for which welfare losses are identical for the tariff or quota.

Table 2
Partial Derivatives of Parameter Values
on Welfare Levels and Vote Totals

The Effect Of	On: Total Welfare	Tariff Level	Quota Level	Votes with Tariff	Votes with Quota
b_1	?	?	?	+	+
b_2	?	?	○	+	○
b_3	?	—	—	—	—
b_4	?	○	?	○	+
b_5	?	—	—	—	—
b_6	?	?	?	+	+
s	?	○	?	○	?
r_1	?	○	○	○	○
r_2	?	○	○	○	○
r_3	?	○	○	○	○

Notes: + ; positive derivative

— ; negative derivative

○ ; no effect detected

? ; both positive and negative derivatives occur

demand curves are entirely arbitrary. The critical result is that the percentages are greater than zero. The simulations thus show that, under plausible assumptions, it is possible to generate a complete range of outcomes. Neither tariffs nor quotas are generally welfare superior.

The partial derivatives associated with the above simulations also underscore the complexity of the relationships that determine trade policy and its welfare effects. Table 2 presents the changes in total welfare, vote totals, and restrictiveness of the trade policies with respect to each of the parameters. Some of the parameter changes result in unambiguous changes in vote totals and restrictiveness of trade policy, but every partial derivative of total welfare is ambiguous.

VII. Conclusions

Within the framework of an endogenous trade policy model the compari-

son of "equivalent" tariffs and quotas is not a useful exercise. Precisely because the welfare effects of tariffs and quotas are different, politically-optimal policy choices are generally made between non-equivalent tariffs and quotas. Therefore, directing politically-motivated policymakers to abolish all quotas and use only tariffs will not necessarily improve welfare. The ambiguity of the endogenous model's policy prescriptions brings into question the generality of comparisons between tariffs and quotas based on traditional models of international trade.

The welfare ranking of tariffs or quotas depends entirely on the values of the model's parameters. Small changes in just one or two parameters can reverse the ranking of tariffs and quotas. The difficulty in determining the values for the model's many parameters, which represent complex political influences as well as economic forces, seriously limits the models's practical application in setting trade policy.

It is worthwhile recalling Paul Krugman's conclusion to his now-classic article "Is Free Trade Passé?" [1987], in which he examines the practicality of applying strategic trade policies. Krugman asserted that domestic politics and foreign retaliation, combined with the difficulty of determining the appropriate strategic trade policy interventions, still make free trade a "useful rule of thumb." The same appears to be true for attempts to finesse trade policy by specifically limiting policymakers to one particular type of trade measure. The difficulty in determining the parameters of an endogenous trade policy model makes such "fine tuning" of trade policy quite hazardous. A better approach would be to strengthen institutional arrangements that limit all forms of protection.

The completion of the Uruguay Round appears to be, generally, a step in that direction. However, among the measures negotiated as part of the new GATT agreement is the tariffication of agricultural quotas. This is not necessarily a positive development. As the endogenous trade policy model illustrates, converting to tariffs could actually prolong restrictions on agricultural trade! Tariffication will only guarantee welfare gains if the conversion is followed by strict adherence to a schedule of tariff reductions leading to their complete elimination.

Appendix

Figures 2 and 3 illustrate two specific simulations of the endogenous policy model. Fourteen of the variables have the identical value in both cases. Only two of the variables change values between Case I and Case II: b_3 and r_2 , the parameters for consumer surplus and revenue-seeking, equal 1.0 and 0.75, respectively, in Case I and .2 and 0.25 in Case II. Yet the results are distinctly different. In case I (Figure 2) a tariff is selected by policymakers because it brings more votes, $V_t > V_q$. The higher vote total is due in large part to the fact that the tariff provides revenue for the domestic government while the quota merely provides rent, half of which (in this case) accrues to foreigners who cannot vote and do not lobby. But the tariff causes a greater welfare loss than the politically-optimal quota, $WL_t > WL_q$, because (1) the

Figure 2
Simulation of Case I

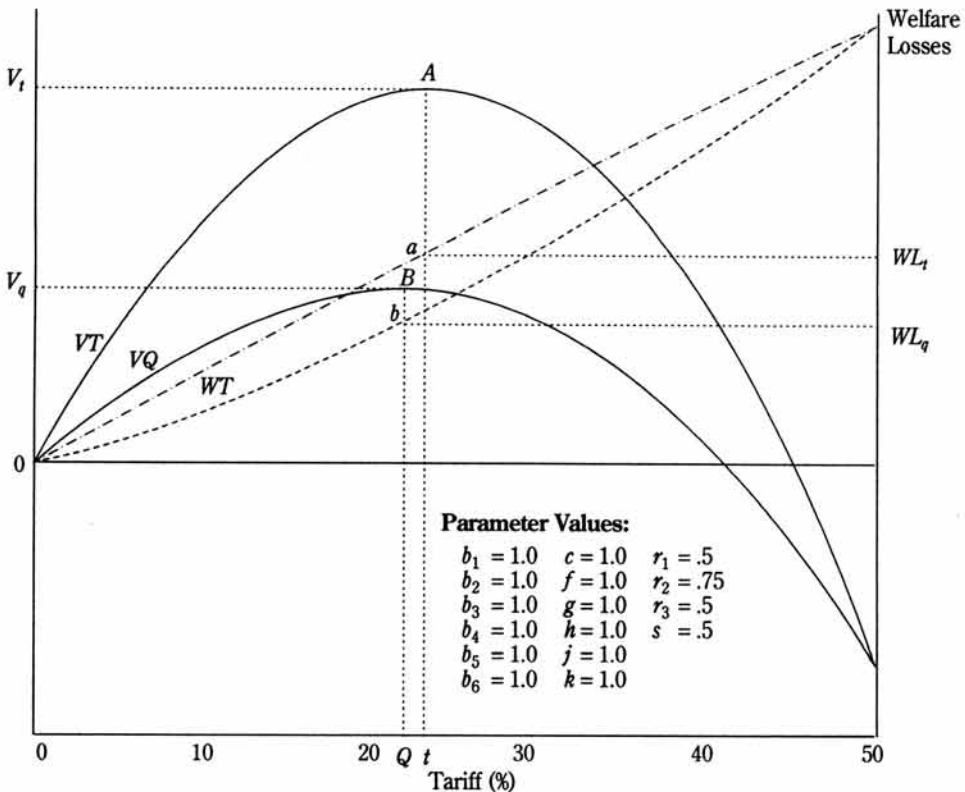
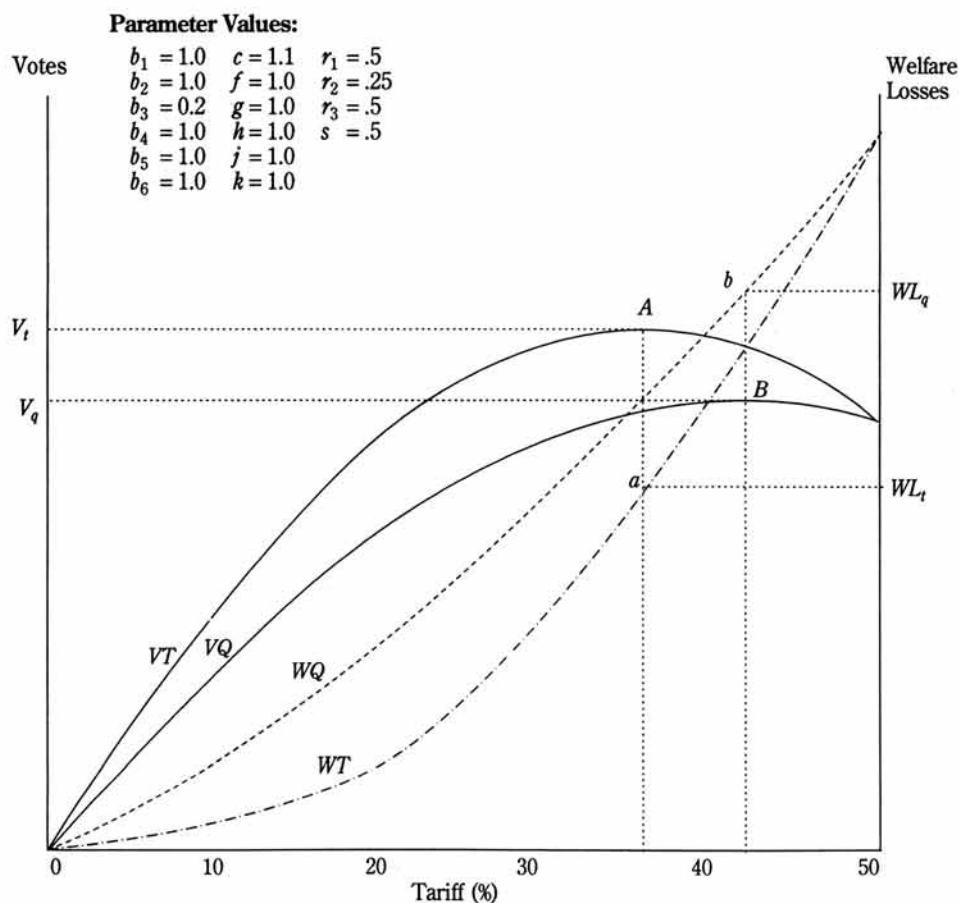


Figure 3
Simulation of Case II



politically-optimal tariff is slightly more restrictive than the quota, and (2) the tariff revenue is largely used up in resource-using revenue seeking activity.

Figure 3 illustrates Case II, for which revenue seeking is lower and consumer surplus changes are politically less important than in Case I. Now $V_t > V_q$ and $WL_t < WL_q$. Both the tariff and quota are substantially more restrictive than in Case I because there is less consumer resistance. Policymakers again select the politically-optimal tariff, but now the tariff has the lower welfare loss because revenue seeking is lower. In this case, vote-maximizing policymakers appear to have been led to make the efficient policy choice.

References

- Anderson, James [1988], *The Relative Efficiency of Quotas*, Cambridge, Massachusetts: MIT Press.
- Baldwin, Robert E. [1985], *The Political Economy of U.S. Import Policy*, Cambridge, Massachusetts: MIT Press.
- Bhagwati, Jagdish [1969], *Trade, Tariffs, and Growth*, Cambridge, Massachusetts: MIT Press.
- Bhagwati, Jagdish [1989], *Protectionism*, Cambridge, Massachusetts: MIT Press.
- Bhagwati, Jagdish, and T. N. Srinivasan [1980], "Revenue Seeking: A Generalization of the Theory of Tariffs," *Journal of Political Economy* 88; pp. 1069-1087.
- Deardorff, Alan [1987], "Why Do Governments Prefer Nontariff Barriers?," *Carnegie-Rochester Conference Series on Public Policy* 26; pp. 191-216.
- Destler, I. M., and John S. Odell [1987], *Anti-Protection: Changing Forces in United States Trade Politics*, Washington, DC: Institute for International Economics.
- Downs, Anthony [1957], *An Economic Theory of Democracy*, New York: Harper and Row.
- Godek, Paul [1991], "Foreign Profits and the Political Economy of Quotas," *Cato Journal* 11; pp. 123-134.
- Jackson, John [1992], *The World Trading System*, Cambridge, Massachusetts: The MIT Press.
- Kaempfer, William H., Stephen H. Marks, and Thomas D. Willet [1987], "On the Governmental Preference for Quantitative Trade Barriers," *The Claremont Center for Economic Policy Studies*, December.
- Krugman, Paul R. [1987], "Is Free Trade Passé?," *Economic Perspectives* 1; pp. 131-144.
- Magee, Stephen P., William A. Brock and Leslie Young [1989], *Black Hole Tariffs and Endogenous Policy Theory*, New York: Cambridge University Press.
- McKenzie, Richard B. [1988], "The Relative Restrictiveness of Tariffs and Quotas: A Reinterpretation from a Rent Seeking Perspective," *Public Choice* 58; 85-90.

- Olson, Mancur [1971], *The Logic of Collective Action*, Cambridge, Massachusetts: Harvard University Press.
- Olson, Mancur [1983], "The Political Economy of Comparative Growth Rates," In D.C. Mueller (ed.), *The Political Economy of Growth*, New Haven: Yale University Press.
- Pelcovits, M.D. [1976], "Quotas Versus Tariffs," *Journal of International Economics*, 16; pp. 335-43.
- Pincus, J. [1975], "Pressure Groups and the Pattern of Tariffs." *Journal of Political Economy*, 83; pp. 757-778.
- Tullock, Gordon [1980], "Efficient Rent Seeking," Chapter 6 in James M. Buchanan, Robert Tollison and Gordon Tullock (eds.), *Toward a Theory of the Rent-Seeking Society*, College Station, Texas: Texas A&M University Press.
- Tumlir, Jan [1985], *Protectionism: Trade Policy in Democratic Societies*, Washington, D.C.: American Enterprise Institute.
- Young, L. and J.E. Anderson [1980], "The Optimal Policies for Restricting Trade under Uncertainty," *Review of Economic Studies* 46; pp. 927-32.