Liberalizing Tariff-Rate Quotas

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TRQ liberalization, or reform, can increase market access and reduce the risk of trade bias. The analysis derives rules for liberalizing TRQs when expanding market access is the objective. It then considers TRQ "rents" and the risk of trade bias. Reducing the risk of biased trade complicates the "market access only" reforms. Tailoring reforms to individual TRQ fill-rates can expand market access and reduce trade bias.

Introduction

The Uruguay Round Agreement on Agriculture (URAA) created over 1,300 tariff-rate quotas (TRQ) for agricultural products. The new TRQs replaced quantitative trade restrictions—that is, bans and absolute quotas. Quantitative restrictions can result in rationing and cause greater trade distortions than tariffs. TRQs have tariff and quota elements and can be viewed as an intermediate step in converting quantitative restrictions into tariffs. Ideally, the URAA would have converted quantitative restrictions directly into tariffs, as tariff reform is relatively straightforward. In contrast, liberalizing quantitative restrictions is complicated, particularly if it causes rationing. Because TRQs combine tariffs and quotas, TRQ liberalization can be problematic.

Liberalizing TRQs is generally viewed as a means of increasing market access; little or no attention is paid to the increasing risk of biased trade that results in the entry of relatively inefficient suppliers. This paper explains how TRQ liberalization, or reform, can increase market access *and* reduce the risk of trade bias. It first provides background information on TRQs, particularly related to the tariff and quota elements of a TRQ. It examines how liberalizing the tariff and quota elements of a TRQ can expand market access. The analysis leads to a set of simple rules for liberalizing TRQs when market access is the only concern. The paper then shows how TRQs can create "rents," how rents provide incentives for trade bias, and how TRQ administrative methods influence the distribution of rents and the risk of trade bias. It also surveys the various TRQ administrative methods. Including the risk of biased trade in the analysis complicates the simple "market access only" rules for TRQ liberalization.

What Is a TRQ?

A tariff-rate quota is a quota for a volume of imports at a particular tariff rate. Once the quota is filled, a higher tariff is applied on additional imports. At first glance the TRQ differs little from the earlier "absolute" quota. Under an absolute quota, however, it is legally impossible to import more than the applied quota level. Under a TRQ, imports can exceed the TRQ level but a higher, over-quota tariff is applied on the excess. In principle, a TRQ provides more market access to imports than a quota. In practice, however, many over-quota tariffs are so high that they effectively exclude imports in excess of the quota. Thus, it is possible to design a TRQ so that it reproduces the volume of trade of an absolute quota.

A TRQ has four components: an in-quota tariff; a quota defining the maximum volume of imports charged the in-quota tariff; an over-quota tariff; and a method of quota administration. WTO member country tariff schedules define the values of the first three components. If the TRQ is scheduled for reform, the schedule also specifies the rates at which the quota is to increase or the tariffs are to decrease. Tariff schedules do not typically define the method of quota administration. Considerable differences exist among WTO member countries concerning the interpretation of "good" TRQ administration.

Figures 3-1, 3-2, and 3-3 illustrate how TRQs affect the incentives faced by importers. The two-level tariff results in a stepped import supply function. Imports within the quota are charged the lower tariff (t), and over-quota imports are charged the higher tariff (T). This results in a vertical step when the quota volume (Q) is filled.

The level of domestic demand for imports and the world price jointly determine which of the TRQ elements constrains imports.[1] Figure 3-1 plots three import demand curves. If there is no demand for imports at the world price, none of the TRQ elements constrains imports: there would be no imports even with free trade — D1. Similarly, if there is no import demand at the in-quota tariff rate (1+t), domestic demand remains the binding constraint — D2. A small reduction in the in-quota tariff will not increase imports, but a large reduction could make the in-quota tariff binding. When import demand intersects the in-quota tariff — illustrated by D3 — a volume of M(t) is imported and the domestic market price equilibrates at 1+t. In-quota tariff revenue equals t times the volume of imports, as shown in the shaded rectangle.

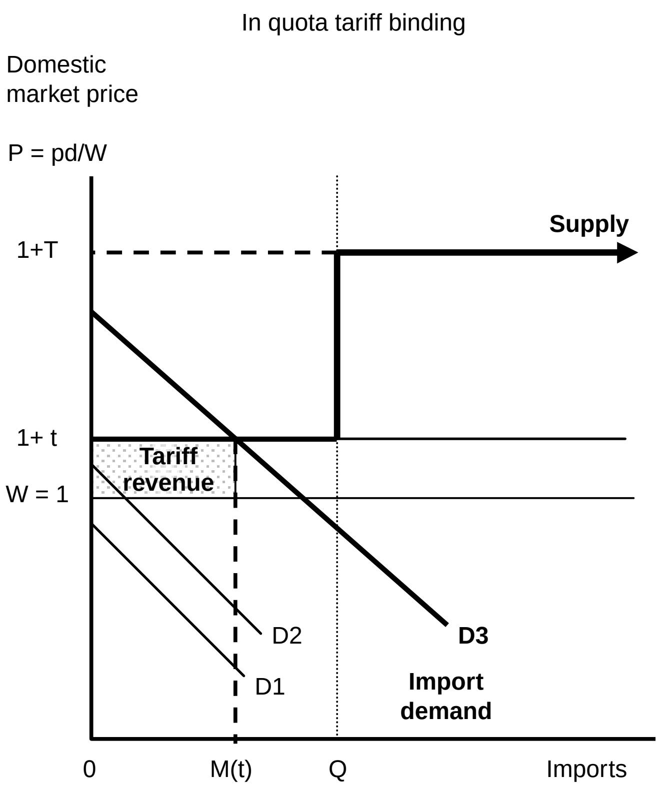
[1] The figures and text express all prices in terms of the world price. All prices are divided by the world price (W). Thus, the world price always equals 1=W/W, and the domestic price (Pd) is expressed as P = Pd/W. This normalization assumes that all tariffs are ad valorem tariffs.

Figure 3-2 illustrates import demand constrained by the quota. When the quota determines imports, the import volume is Q and the domestic price is 1+t+r (r represents the unit quota rent). The rent is the difference between the domestic price (the price an importer can sell the product in the domestic market) and the world price inclusive of the in-quota tariff (what it costs an importer to purchase the product on the world market and pay the tariff).

Figure 3-3 illustrates over-quota imports. The over-quota tariff determines the volume of imports at M(T) and the domestic price equals 1+T. When there are over-quota imports, imports within the quota are charged the in-quota tariff and imports beyond the quota are charged the over-quota tariff. Thus there are two shaded rectangles of tariff revenue in figure 3-3. In-quota imports can be imported for (1+t) and sold on the domestic market for (1+T) so the per unit quota rent equals (T-t). The shaded rectangle labeled “quota rent” represents the total value of quota rents.

Figure 3-1

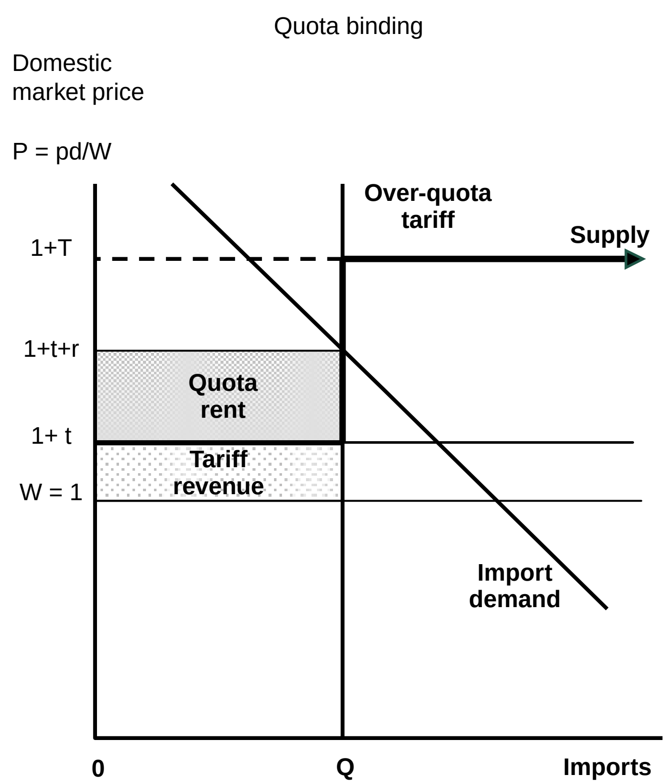
TRQ and import demand



Source: USDA, Economic Research Service

Figure 3-2

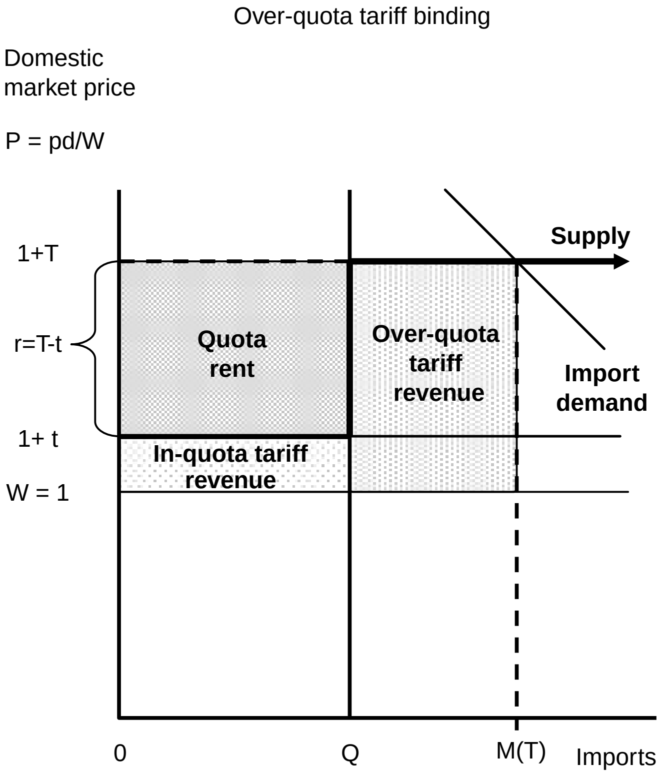
TRQ and import demand



Source: USDA, Economic Research Service

Figure 3-3

TRQ and import demand



Source: USDA, Economic Research Service

Liberalization and Market Access

What is the best way to liberalize TRQs? That is, which TRQ element or elements should be reformed so as to effect the greatest increase in nondiscriminatory market access? The three elements (t, T, Q) largely determine market access. Producing the greatest gain in market access depends on which of the three elements currently constrains imports and which element or elements are likely to constrain imports in the future.

Table 3-1 shows the links between the binding constraint and TRQ liberalization actions. The table includes one row for each potential liberalization action, and one column for each of the four potential binding constraints. For example, reducing t increases market access when t is binding, thus "+"; otherwise it has no effect, thus "0." Relaxing any one of the three elements, alone or in combination with the other elements, either increases market access or has no effect. In no case does liberalization reduce market access. Figures 3-1, 3-2, and 3-3 verify this result: A shift of the tariff or quota constraint reveals how it changes (or does not change) the intersection with the demand curve. TRQ liberalization from a market-access perspective is an uncomplicated process.

Quota Rents, Biased Trade, and TRQ Administration

From the perspective of a trader, a quota rent is a profit opportunity; but from the perspective of economic efficiency and unbiased trade, rent is a four-letter word. Quota rents bias trade by providing incentives for relatively inefficient suppliers to enter the market and displace more efficient suppliers. This section explains how quotas can create rents and how rents distort market incentives.

Rents and biased trade

TRQ administration involves distributing the rights to import at the in-quota tariff. Whoever obtains such rights can make a risk-free profit equal to the domestic price less the world price inclusive of the in-quota tariff. Rents indicate that the demand to import within the quota is greater than the supply of quota: thus the necessity to ration or administer the TRQ.

The risk that TRQ administration can bias trade requires an examination of the supply side of the rationing problem. For example, two types of firms can supply a market: least-cost and higher-cost. Least-cost firms have a cost of production less than or equal to P_L. Higher-cost firms have a cost of production greater than P_L. If there is no quota on trade, least-cost firms supply the entire market at the price P_L. Higher-cost firms will not enter the market; they either shut down or re-employ their resources. When a binding quota is imposed the demand price increases to P_H. At P_H, it is profitable for higher-cost firms to enter the market. The administration of market access determines which firms supply the quota-rationed market. If access restrictions allow only least-cost firms to supply the market, then a subset of least-cost firms would fill the quota and gain a rent of P_H-P_L on each unit sold. If

Table 3-1—TRQ liberalization and market access

Action	Binding constraint on imports: Demand	In-quota tariff	Quota	Over-quota tariff
Reduce t	0	+	0	0
Increase Q	0	0	+	0
Reduce T	0	0	0	+

Source: Economic Research Service, USDA.

market access is granted to whoever sells first, that is, on a first-come, first-served basis, the distribution of sales by type of firm will depend on being "early" rather than on being least-cost. In terms of economic efficiency, production by higher-cost firms is an inefficient use of resources and reduces global welfare. Global economic welfare is higher when only low-cost firms supply the market.

In terms of welfare analysis, it does not matter which least-cost firms or countries gain market access within the TRQ. *Random* displacement of one least-cost supplier by another does not reduce global welfare. In an international trade context, displaced least-cost suppliers can export to other markets at the world price. If rents are not fully absorbed through auction, tariff, or other means, higher-cost suppliers have an incentive to enter the market and can displace lower-cost suppliers.

TRQ liberalization and rent creation

Any TRQ reform that increases quota rents can also increase the risk that high-cost suppliers will displace low-cost suppliers. Table 3-2 shows the displacement risks. Reducing the in-quota tariff t has a positive influence on market access and competition when the in-quota tariff is binding (fig. 3-1). But when Q or T are binding, reducing t increases displacement risk (figs. 3-2 and 3-3). Similarly, increasing the quota Q increases the probability that the in-quota tariff will be the binding constraint. This improves market access and import competition. However, when Q or T are binding, increasing the in-quota volume can increase rents and risk trade bias. When Q is binding, expanding the quota can increase rents if import demand is sufficiently elastic. If import demand is inelastic, quota expansion can reduce rent. When T is binding, quota expansion must increase rents. The one unambiguously positive action is reducing the over-quota tariff. If T is the binding constraint, that is, if there are over-quota imports, then reducing T increases market access and does not further bias trade shares. If Q is binding, a large reduction in T can make T the binding constraint. Even a small reduction in T reduces the size of potential future rents and reduces the probability that Q will be binding in the future. Similarly, if t is the binding constraint, a reduction in T has no immediate effect, but it reduces the size and of future rents and thus the probability of future displacement of low-cost suppliers. Thus, a reduction in T is either an immediate improvement or a potential future improvement, but, importantly, it can do no harm.

Table 3-2—TRQ liberalization and rent creation

Actions	Change in quota rents		
	In-quota tariff	Quota	Over-quota tariff
Reduce t	0	+	+
Increase Q	0	?	+
Reduce T	0	0	-

Source: Economic Research Service, USDA.

TRQ administration

TRQ administration can influence trade. The WTO has identified several generic methods of TRQ administration. Table 3-3 defines these administrative methods along with the percentage distribution of TRQs by administrative method.

Of the 137 WTO members, 37 countries notified a total of 1,368 TRQs to the WTO Secretariat in 1999.[2] Forty-seven percent of notified TRQs are administered as simple applied tariffs, that is, the over-quota tariff is not applied and there is no effective quantitative limitation on imports at the in-quota tariff. TRQs administered as applied tariffs do not pose a current administration problem. But they pose a potential trade problem because the member country can, at any time, choose to enforce them.

Norway, Poland, and Iceland have notified 431 TRQs, or one-third of all notified TRQs. Over 85 percent are applied as tariffs — many at high in-quota rates; but only 63 are actually enforced as TRQs (table 3-4). In terms of enforced TRQs, countries with relatively developed economies with historically protectionist agricultural policies — the EU, Hungary, South Korea and the United States — account for over one-third of the total.

TRQ administration and biased trade

The most common forms of applied TRQ administration are "license on demand" and "first-come, first-served." The license on demand method requires potential traders to apply for a license to import in-quota. If demand for licenses exceeds supply, licenses are rationed. Many countries reduce all license requests proportionately until supply equals demand. The first-come, first-served method charges the in-

[2] The data reported here and in tables 3-3 and 3-4 are from country notifications to the WTO for 1999. All data are from WTO (2000).

Table 3-3—Methods of allocating right to import within quota

Method of TRQ administration	Explanation	Percent of all TRQs
Applied tariff	Unlimited imports are allowed at the in-quota tariff rate: that is, the quota is not enforced.	47
License on demand	Licenses are required to import at the in-quota tariff. If demand for licenses is less than quota, Q, the system operates like a first come, first served system. If demand exceeds Q, import volume requested is reduced proportionately among all applicants.	25
First come, first served	The first Q units of imports to clear customs are charged the in-quota tariff; all subsequent imports are charged the over-quota tariff.	11
Historical	Right to import at in-quota tariff is allocated in proportion to import market shares in a base period.	5
Auction	Right to import at in-quota tariff is auctioned.	4
State trader or producer group	Right to import in-quota is granted wholly or primarily to a state trading organization or an organization representing domestic producers of the controlled product.	2
Mixed	Describes a combination of two or more of the six methods above.	4
Other, or not specified	Includes methods that do not correspond to any of the seven methods above and are not specified in WTO notifications.	2

Source: WTO (2000).

Table 3-4—Top ten countries notifying and enforcing TRQs

Countries ranked by number of notified TRQs			Countries ranked by number of enforced TRQs		
Country	TRQs notified	TRQs enforced	Country	TRQs enforced	TRQs applied as tariff
Norway	232	19	EU	87	0
Poland	109	35	Hungary	68	2
Iceland	90	12	South Korea	63	1
EU	87	87	United States	54	0
Bulgaria	73	45	Bulgaria	45	28
Hungary	70	68	Poland	35	74
Colombia	67	34	Colombia	34	33
South Korea	64	63	South Africa	25	28
Venezuela	61	2	Czech Republic	24	0
United States	54	54	Slovakia	24	0
Subtotal	907	419	Subtotal	459	166
All others	461	307	All others	267	476
Total	1,368	726	Total	726	642

Source: WTO (2000).

quota tariff on the first Q units to clear customs. All subsequent imports are charged the over-quota rate. This method can create a surge of imports when the quota period opens. Both of these methods of TRQ administration can attract high-cost suppliers, and both risk generating a biased distribution of trade.

Many politically sensitive TRQs are allocated based on historical market shares and are nontransferable (e.g., the sugar TRQs of the United States and the European Union). Many high-cost suppliers are guaranteed a market for their exports under this system, but this guarantee comes at the price of denying market access to lower-cost, more efficient suppliers.

Table 3-5—Additional conditions on TRQ allocation

Additional condition	Total number	License on demand	Mixed	Applied tariff	All others
Limits on TRQ shares	119	91	14	1	13
Past trading performance	78	71	3	0	4
Domestic purchase requirement	48	35	11	1	1
Export certificates	24	19	0	0	5
Past trading performance and limits on TRQ shares	3	2	1	0	0
Export certificates and past trading performance	1	0	0	0	1
Total	273	218	29	2	24

Source: WTO (2000).

“Additional conditions” are placed on many TRQs. The WTO identifies four basic types of additional conditions, which are usually enforced singly but in a few cases jointly. Table 3-5 shows the number of TRQs with additional conditions. Of the 273 TRQs, 80 percent are administered by license on demand and 10 percent by mixed methods. Only 2 of the 273 are for applied tariffs.

Limiting the market share of the TRQ that a particular trader (or sometimes supplying country) may obtain is the most common restriction. Such limitations prevent one trader or a ring of traders from cornering the market.

Past trading performance is the second most common additional restriction. The general rationale for allocation by past trading performance is twofold. It perpetuates the traditional distribution of trade and it disciplines quota use. If a trader obtains quota rights but fails to use them, the rights can be reallocated to other traders.

The two remaining additional conditions — domestic purchase and export certificate — may face some challenges, either in the WTO or in bilateral disputes. A domestic purchase requirement makes the right to import in-quota contingent on purchasing a specified amount of a domestic product. For example, to import 1 ton of beef in-quota, a trader must purchase X tons of domestic beef.

Export certificates are usually employed to ensure that the product imported is the domestic product of the exporting country. For example, an export certificate ensures that sugar exported from Barbados is actually produced in Barbados and not in some third country. Of the 24 export certificate TRQs, the EU accounts for 21, the United States for 2 — raw cane sugar and flue-cured tobacco — and Canada for 1 — beef and veal. Export certificates allow the importing country to determine which exporting countries gain in-quota access as well as individual in-quota market shares. This provides a means of discriminating among competing exporters not on the basis of price or the quality of the traded good, but rather on the basis of country of origin, which is not in keeping with the WTO principle of nondiscrimination.

Despite the TRQ administration methods’ obvious inefficiencies, with and without additional conditions, they persist. Historical allocation, for example, is often defended as a form of foreign assistance or compensation. The apparently conflicting goals of transferring rents to foreign governments and unbiased trade are not necessarily incompatible. One may allocate the right to import within the quota arbitrarily, but if the right can be sold, a secondary market will emerge. Low-cost suppliers will have the opportunity to purchase the quota rights from higher-cost suppliers who received the initial allocation. Allowing the resale of quota rights creates a decentralized market. Some high-cost suppliers may persist in exporting within the quota, but risk of displacing low-cost suppliers is substantially reduced.

The importing country creates a primary market in quota rights if it auctions TRQ rights. Auctioning relies on markets to allocate scarce rights and it is the administrative method most favored by economists. An auction absorbs all quota rents, and the winning bid or bids are prices. If there are no quota rents there is no risk of higher-cost suppliers displacing least-cost suppliers. Thus, auctioning quota rights means that TRQ liberalization cannot increase the risk of biased trade. Auctions result in a liberalization matrix identical to table 3-1. Few countries employ auctions, in fact, only 4 percent of all TRQs are allocated by auction.

Adding It All Up

It is possible to determine the trade-off that might exist between greater market access and a higher risk of biased trade discrimination, at least in theory.

One interpretation of the General Agreement on Tariffs and Trade (GATT) — particularly of Article XIII — is that policies that bias trade violate the principle of nondiscrimination, one of the fundamental pillars of the GATT. Three ways of dealing with the conflict between market access and nondiscrimination have been identified. The two polar cases are (1) market access is all that matters, violations of nondiscrimination should be ignored; and (2) nondiscrimination must not be violated, any action that increases the risk of discrimination must not be taken. The third approach is to accept a trade-off between the two factors — market access and nondiscrimination — after first determining the appropriate weights for the two factors.

Table 3-6 summarizes these three interpretations. The market access-only interpretation reproduces the market access matrix. Similarly, the strict nondiscrimination interpretation reproduces the rent creation matrix. The signs are now reversed on the rent creation matrix. An increase in rent increases the incentive for higher-cost suppliers to enter the market and increases the likelihood of biased trade and a reduction in global welfare. The market access and nondiscrimination matrixes can be combined by adding corresponding cells.

To evaluate the impact of a particular reform action, one reads *across the relevant row*. For example, evaluation by both factors of reducing the in-quota tariff results in one plus and two minuses. These pluses and minuses are qualitative measures, not quantitative measures. Without some quantitative information (and the trade-off weights) it cannot be determined whether the plus outweighs the minuses. These signs or values must also be weighted by the probability of each of the constraints being binding. This weighting is further complicated because changes in the tariff quota instruments cause the probabilities to change. So, beyond

Table 3-6—How TRQ reforms affect market access and nondiscrimination

Actions	Binding constraint		
	In-quota tariff	Quota	Over-quota tariff
	Market access only		
- t	+	0	0
+ Q	0	+	0
- T	0	0	+
	Nondiscrimination only		
- t	0	-	-
+ Q	0	?	-
- T	0	0	+
	Both factors		
- t	+	-	-
+ Q	0	?	-
- T	0	0	+

Source: Economic Research Service, USDA.

the fact that lowering the over-quota tariff always leads to a welfare improvement or at least causes no harm, little can be said about the other two instruments without considerable empirical research, a formidable if not intractable task.

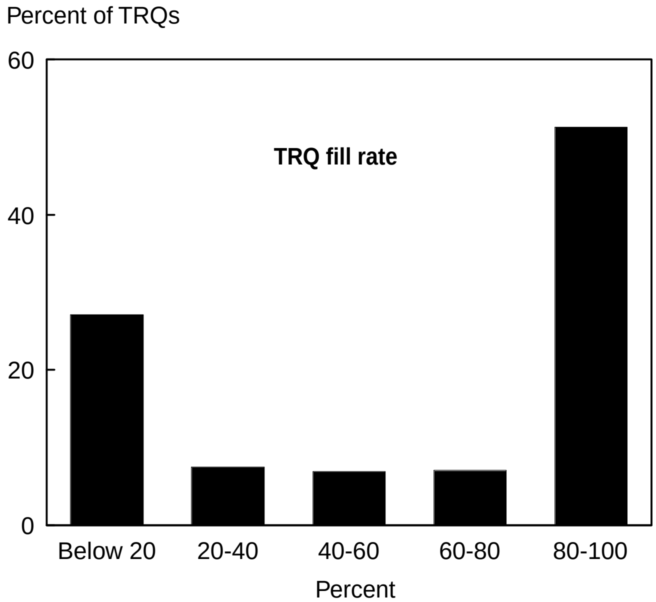
The problem may be much less formidable than it seems. The search has been for simple rules to liberalize all TRQs, a "one size fits all" approach. Because TRQs come in different sizes, the only universal prescriptions are to reduce over-quota tariffs and to employ auctions or allow resale of quota rights. As shown in the next subsection, custom tailoring TRQ liberalization may provide an attractive option.

TRQs come in three sizes

The distribution of TRQ fill is bimodal: Most TRQs fill at either a high level or a low level. Figure 3-4 shows the distribution of fill rates for all TRQs reported to the WTO in 1995-99. There were a total of 4,152 TRQ fill rate notifications. Over half of all TRQs reported are high-fill — at least 80 percent, and over one-quarter are low-fill rate — less than 20 percent. Thus, less than one-quarter are medium-fill — between 20 percent and 80 percent.

TRQ fill rates may be treated as a "Markov Process." The basic idea is that year-to-year changes in fill rates are, in part, random. They result from a combination of changes in supply and demand in the importing country and the sum of changes in supply and demand in all other countries. For agricultural commodities,

Figure 3-4
Distribution of TRQ fill rates



Reported to WTO 1995-99, N=4152.
Source: WTO (2000).

weather is a significant and random source for changes in supply. Demand tends to be relatively steady but is subject to macro-financial and exchange rate shocks.

The TRQ fill notifications filed with the WTO provide 3,026 observations of TRQs reporting fill rates for 2 consecutive years. These 3,026 pairs of fill rates can be classified by whether they are low-, medium-, or high-fill the first year and low-, medium-, or high-fill the second year (table 3-7A). The probability that a low-fill TRQ in the first year remained low-fill the second year is 610/796, or 77 percent. This is calculated by dividing the number of observations in the low-low cell by the total of observations in the "low" row. The row sum is the number of TRQs that were low-fill in the first year. The probabilities that a low-fill TRQ "migrates" to medium-fill or high-fill status can be calculated by dividing the relevant cell by 796. The probabilities for the other rows are calculated in the same manner. A low-fill TRQ this year has a 77-percent chance of remaining low-fill next year, a 15-percent chance of being medium-fill, and a 9-percent chance of being high-fill (table 3-7B).[3]

[3] The probabilities reported in table 3-7.B are based on the changes in fill rates observed in 1995-99. The probabilities for 2001 will only resemble past rates to the extent that the future is not dramatically different from the recent past. A second caveat is that the probabilities are for the entire set of TRQs; they do not necessarily apply to any single TRQ.

Table 3-7—The relative stability of TRQ fill rates: 1995-99

A: Observations

	Fill rate next year			
A	Low	Medium	High	Sum
Low	610	117	69	796
Medium	138	368	183	689
High	82	179	1,280	1,541
Sum	830	664	1,532	3,026

B: Probabilities

	Fill rate this year			
B	Low	Medium	High	Sum
Low	0.77	0.15	0.09	1.00
Medium	0.20	0.53	0.27	1.00
High	0.05	0.12	0.83	1.00

Low < 20%; 20% < Medium < 80%; 80% < High

Source: WTO (2000).

Because low-filling TRQs are likely to remain low filling and unlikely to be high filling in the subsequent year, reducing the in-quota tariff rate for low-filling TRQs is not likely to create rents. Such a discipline allows a potential increase in market access with a low risk of rent creation. Similarly, increasing the quota for a low-fill TRQ will not increase rents, particularly if there is no accompanying in-quota tariff reduction.

Table 3-7B also shows that high-fill TRQs have an 83-percent chance of remaining high filling in the next year, so a large reduction in the in-quota tariff for consistently high-fill TRQs is likely to increase rents. Similarly, increasing the quota for a high-fill TRQ is likely to increase rents.[4]

Middle-fill TRQs tend to remain middle-fill 53 percent of the time. The probability that they migrate to high-fill is 27 percent, and the probability that they migrate to low-fill is 20 percent. So, there is at least a 73-percent chance that a small reduction in the in-quota tariff will not create rents and a less than 27-percent chance that it will. Requiring medium-fill TRQs to reduce moderately the in-quota tariff will increase market

[4] Fill rates above 80 percent are commonly viewed as "filled" TRQs because it is often practically impossible to reallocate all unused import licenses to willing importers. There is little incentive for the holder of the unused portion of an import license to surrender it earlier than absolutely necessary. Thus it is possible for there to be quota rents when the fill rate is less than 100 percent. Clearly, stronger enforcement of existing disciplines on licensing allocation and reallocation would, by itself, liberalize many TRQs.

access with a minor risk of rent creation. A moderate increase in the quota volume would reduce the already minor risk of rent creation.[5]

The three types of TRQs, as measured by fill rates, lead to three distinct liberalization prescriptions (table 3-8). The liberalization actions for low-fill and medium-fill can increase market access with very little risk of rent creation and trade bias.

Conclusion

Liberalizing TRQs within the framework and spirit of the GATT-WTO requires consideration of two areas: market access and trade bias. If the right to import in-quota is allocated by auction or if unrestricted re-sale of in-quota rights is allowed, then there is little risk of trade bias. Thus, any of the three liberalizing actions — reducing t or T or increasing Q — leads to an unbiased expansion of market access. If in-quota import rights are allocated by other means, then only one liberalization action that can be applied to all TRQs leads to an unambiguous expansion of potential market access with no increased risk of bias: the reduction of the over-quota tariff T. The other liberalizing actions cannot be applied universally: Reducing the in-quota tariff t or increasing the quota Q, can increase quota rents and the risk of discrimination.

The bimodal distribution of TRQ fill rates presents an opportunity for creating additional market access with little or no risk of trade bias. One may reduce in-quota tariffs and increase quota volumes for TRQs that exhibit persistent low-fill rates. The same liberalization prescription could also be applied to TRQs with persistent medium-fill, but with some risk of rent creation.

Finally, market access could be enhanced if existing WTO disciplines on TRQ administration and on import licensing were better enforced. If the lack of current enforcement stems from a lack of clarity in existing disciplines, then clarification of the rules is needed.

[5] In theory, the percentage increase in quota needed to prevent an in-quota tariff reduction from creating quota rent is proportional to the price elasticity of import demand.

Table 3-8—Individual TRQ reform prescriptions based on fill rates

	TRQ fill rate		
TRQ reform	Low	Medium	High
In-quota tariff	Large reduction	Modest reduction	Small or no reduction
Quota	Increase	Modest increase	0

Source: Economic Research Service, USDA.

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