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# Tariff Rate Quota Implementation and Administration by Developing Countries

Philip Abbott and B. Adair Morse

Tariff rate quota administration and implementation are empirically evaluated for the fourteen developing countries notifying the WTO of the use of TRQs. FAO trade data, UNCTAD data on applied tariffs and the WTO notifications permit us to assess underfill of quotas, discrimination among exporters, use of state trading as an implementation mechanism, and the extent of protection under these TRQs. Substantial liberalization was found, generally due to use of low MFN tariffs rather than through TRQs permitting greater market access. High tariff bindings and endogenous quotas allow these countries to pursue flexible trade regimes within their WTO commitments.

Fourteen developing countries have notified the World Trade Organization (WTO) that they utilize tariff quotas for imports of over 180 agricultural commodities.<sup>1</sup> Those notifications include reports on the mechanisms by which tariff quotas are implemented and administered, the quotas in force, and the extent to which imports under the quota meet market access commitments. Countries examined here include Brazil, Colombia, Costa Rica, Guatemala, Indonesia, Korea, Malaysia, Mexico, Morocco, Panama, Philippines, Thailand, Tunisia, and Venezuela. These countries primarily use tariff quotas for imports of cereals, oilseeds, meats, dairy products, sugar, fruits and vegetables as shown in table 1.

The tariff quota, also referred to as a tariff rate quota or TRQ in our literature, is a two-tiered tar-

iff.<sup>2</sup> Under this instrument, imports are permitted up to a set quantity at a low "in-quota" tariff rate. Additional imports may be brought into the country at a higher tariff rate. This tariff is their most favored nation (MFN) tariff rate.

The tariff quota arose in the 1994 Uruguay Round GATT Agreement on Agriculture as a compromise between those seeking improved market access for agricultural exports and those emphasizing tariffication (replacing quotas and other non-tariff barriers with tariffs) as a means of liberalizing agricultural import regimes. Although the term *minimum access commitment* is used to denote the agreed upon quantity of imports benefiting from the lower tariff, these commitments can in fact act as quotas. Hence, in the name of tariffication quotas became an important outcome of the Uruguay Round. To the extent that TRQs behave like quotas, an allocation mechanism to distribute rights to the low tariff and the rents that accrue is needed.

Abbott and Morse (1999) contend that the TRQ was a poorly understood instrument at the time the U.S.-European Union (EU) compromise was reached to conclude the Uruguay Round negotiations in December 1993. Relatively few developing countries have adopted this instrument, and in

Philip Abbott is a professor, and B. Adair Morse is a graduate research assistant with the Department of Agricultural Economics at Purdue University. Commissioned paper prepared for the International Agricultural Trade Research Consortium. Journal paper version for ARER. USDA National Research Initiative Grant No. 9602950 and the World Bank Integrated Program of Research and Capacity Building supported this research. Funding from the Farm Foundation and the International Agricultural Trade Research Consortium is gratefully acknowledged.

<sup>1</sup> We collected data for the major agricultural commodities that fall under the distinct product categories listed in table 1. Some minor categories have been ignored in this analysis. To keep the project manageable we have also excluded from our study implementation of tariff quotas by Eastern European countries, in that implementation issues may be somewhat different in those countries, especially where tariff quotas were proposed and implemented well after the signing of the 1994 Uruguay Round Agreement.

<sup>2</sup> Skully distinguishes between a tariff rate quota, where the tariffs applied are ad valorem, and a more general tariff quota under which tariffs may be specific or ad valorem. While most notifications indicate the use of ad valorem tariffs, specific tariffs are used in some cases.

**Table 1. Developing Country TRQ Notifications by Country and Commodity**

Country	Cereals	Oilseeds & Products	Meat	Dairy	Sugar	Fruits & Vegetables	Other
Brazil						2	
Colombia	7	9	4	5			8
Costa Rica			1	4			
Guatemala	5	1	3	1	1	1	
Indonesia	1						
Korea	6	4	3	3		6	6
Malaysia			1	3	1	1	1
Mexico				1			
Morocco		5	3	1	1		
Panama	2		2	2		2	
Philippines	2		4		1	1	1
Thailand	2	6		2	1	4	7
Tunisia	2		2	3	1		2
Venezuela	8	12	3	5	1		3

most cases where they have implementation is quite different from the original conception of how a TRQ was to function. In developing countries, TRQ implementation mechanisms are frequently either MFN tariffs at levels well below GATT bindings or modifications of state trading or licensing regimes. In the latter case, most import levels are well in excess of minimum access commitments. Some more recent adoptions of tariff quotas, such as in the U.S.–China agreement on agricultural trade (USTR 1999), appear to use these commitments as maximum rather than minimum trade levels, however. Recent WTO entrants in eastern Europe have also used true TRQs much more extensively, resulting in more protectionist trade regimes.

Several issues arising from alternative implementation mechanisms employed for TRQs are relevant to the debate on how this instrument might be viewed in the upcoming Millennium Round of WTO negotiations which was to have been launched at the December, 1999 WTO Ministerial meeting in Seattle. We first briefly explore these issues—discrimination, underfill, state trading, and protectionism—and develop related theory underlying TRQ administration. We then examine data on TRQ commitments, actual imports, and trends in those imports to evaluate the relevance of these issues as they apply to developing countries' agricultural imports. From this analysis, we make recommendations regarding the role of TRQs in further liberalization of trade regimes.

### Issues in TRQ Implementation and Administration

The four key issues of concern in WTO negotiations that relate to trading rules and practices in-

clude *discrimination* among exporters by importers, *underfill* (the extent to which minimum access commitments are not met), continuation of *state trading* as an implementation mechanism, and the impact on *protectionism* (or liberalization) resulting from the adoption of this instrument.

Discrimination becomes a concern because TRQs may function as quotas, causing rents to arise and the need for allocation mechanisms to distribute rights to import. Skully has observed that issues of fairness and efficiency have been considered in rules established for implementation of tariff quotas under Article XIII of GATT. Following these rules, the initial proposal for tariff quotas under the Agreement on Agriculture was that rights to the low tariff would be allocated on a first-come, first-served basis. Several authors (Abbott and Paarlberg, 1998; Skully, 1999; Boughner and deGorter, 1999) have cited problems with this mechanism due largely to the incentive to import early and store until domestic prices rise, and to the uncertainty of market access under this regime. First-come, first-served administrations are in fact seldom used by the fourteen developing countries studied here, who typically employ either an applied MFN tariff regime or more traditional licensing schemes. MFN regimes include neither a mechanism to allocate rents nor a means to enforce the quota limitation. Under the licensing mechanism, discrimination concerns arise with the need to determine license allocation procedures. State trading and apparent state managed regimes are common methods, although countries often do not report how licenses are distributed. Skully elaborates on the potential unfairness and inefficiencies of these mechanisms relative to auctions, which are also rarely implemented by these 14 countries.

The notifications submitted by these developing

countries to the WTO reveal many instances in which countries do not import sufficient quantities to meet their minimum access commitments. This outcome, called "underfill" can occur under two distinct scenarios. The two possible reasons for underfill have quite different implications for the effectiveness of the TRQ instrument. One possibility is that administration mechanisms are costly and cumbersome, limiting access to the low tariff and rendering it ineffective. Thus, administrative mechanisms function as a non-tariff trade barrier (NTB). Alternatively, demand may simply have been inadequate, even at a domestic price determined by the low tariff, to generate imports sufficient to meet the minimum access commitment. In this case, it should be borne in mind that these commitments were not intended as guaranteed import levels, but rather as levels of market access for which additional barriers to trade would not be erected. An important task in gauging the significance of underfill is assessing which reason lies behind that outcome.

State trading is an issue in its own right in the upcoming WTO Millennium Round negotiations. This discussion will necessarily overlap debate on the TRQ instrument. One fear based on reports of implementation mechanisms for TRQs is that this instrument has helped not only to continue the need for state trading, but has caused its expanded use. Since importing rights must be allocated, a government institution must exist to do so. That institution may control imports handled by private firms or may handle the product itself. While the distinction of who handles imports may not be critical (Abbott and Young 1999), the government remains closely involved in managing trade. The need to allocate valuable quota rents ensures that concerns regarding "rent seeking" remain.

There is also concern that TRQs as implemented may increase rather than reduce the extent of protectionism applied to agricultural imports. GATT bindings of MFN tariffs in many instances are very high, often reaching prohibitive levels when TRQ regimes are in place. However, in most of these developing countries, applied tariffs are much lower than GATT bindings—a situation called "dirty tariffication" (Ingco 1995). The high GATT commitments increase concern that liberalization of import regimes was not accomplished in the Uruguay Round. Practice shows, however, that in most developing countries tariffs are bound at high levels not to raise applied tariffs, but rather to maintain flexibility in trade regimes. Since a tariff may be changed so long as it remains below the GATT binding, tariffs can be and are adjusted as

world prices change, much like what is accomplished under a variable levy.

These four issues—discrimination, underfill, state trading, and protectionism—will shape the debate on whether reform of the TRQ regime or changes in instrument settings under the regime would most likely foster greater liberalization of trade in the future. Alternatives include lowering bindings on MFN or in-quota tariffs, raising minimum access commitments, and writing new rules governing the administration of TRQs. Behaviors by these fourteen developing countries discussed below show that low MFN tariffs are found in the most liberal trade regimes.

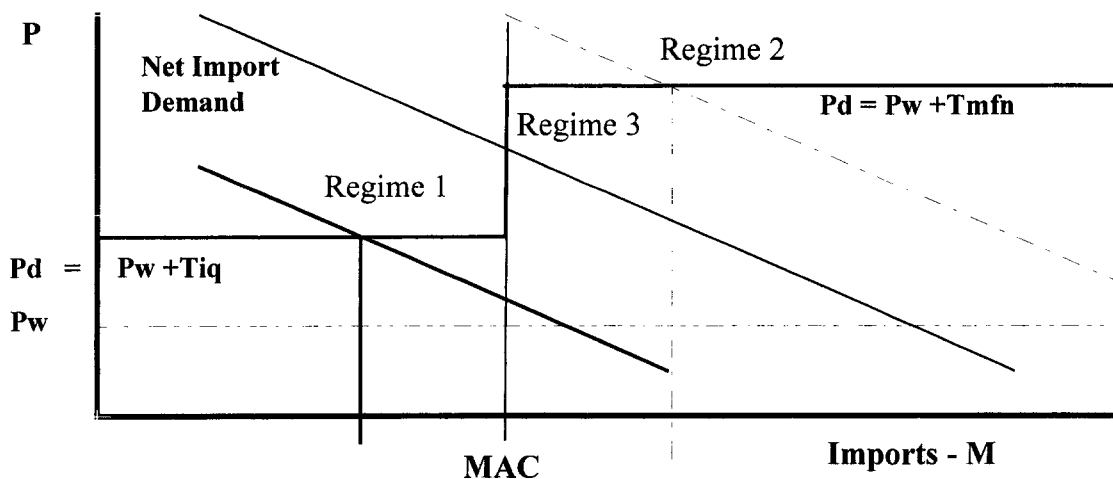
### Some Theory and Extensions

The economics of two-tiered tariffs have been developed by Abbott and Paarlberg (1998); Skully (1999); and Boughner and deGorter (1998). An essential feature of their results is that, depending on the magnitude of net import demand at the two tariff levels, one of three distinct trade regimes may apply. Figure 1, adapted from Abbott and Paarlberg (1998), demonstrates these three cases.

In the first case, the TRQ regime behaves like a pure tariff. Demand is sufficiently weak that at a domestic price equal to the world price plus the low in-quota tariff ( $P_d = P_w + T_{iq}$ ) net import demand is less than the minimum access commitment. In this case, no rents accrue, and neither an allocation mechanism nor a means to limit imports to the TRQ level is needed. This outcome would be classified as underfill, but the low import level is due to inadequate demand, not to the costs of meeting quota administration requirements.

The second case occurs when the TRQ behaves as the originally envisioned "true TRQ." Demand is strong enough that at a domestic price equal to the world price plus the MFN tariff ( $P_d = P_w + T_{mfn}$ ), imports exceed the minimum access commitment. An allocation mechanism must determine who gets to import quantities up to the minimum access commitment, and thus who collects rents equal to the difference between the high domestic price and the import cost at the lower tariff [ $\text{Rent} = (P_d - P_w - T_{iq}) * \text{MAC} = (T_{mfn} - T_{iq}) * \text{MAC}$ ].

In the final case, the trade regime behaves like a simple quota. This is an intermediate outcome in which imports at the low in-quota tariff would exceed the minimum access commitment, but at the higher tariff, imports would be lower than the minimum access commitment. The MFN tariff is effectively "prohibitive." A domestic price lies in the range between the world price plus the in-quota



Regime 2 : True TRQ    — Regime 1: Pure tariff    — Regime 3: Quota

Figure 1. Alternative TRQ Regimes

tariff and the world price plus the MFN tariff. The magnitude of rents is the domestic price less import cost times the quantity imported under the quota [ $\text{Rent} = (P_d - P_w - T_{iq}) * \text{MAC}$ ]. As is the case for the true TRQ regime, an allocation mechanism that determines who is allowed to import at the low tariff and collect these rents must be established.

Two special cases can be identified that differ somewhat from the cases in figure 1. These give alternative reasons why underfill or overfill (imports under the TRQ exceeding the minimum access commitment) may occur.

As previously mentioned, underfill may occur when demand is not sufficient at the low in-quota

tariff to meet the minimum access commitment. Figure 2 presents the alternative underfill case in which the administrative requirements of the TRQ implementation mechanism may be viewed as a transactions cost, effectively raising the domestic price high enough that imports at that price are less than the minimum access commitment ( $P_d = P_w + T_{iq} + t_c$ , where  $t_c$  is the transactions cost expressed in a tariff equivalent form). An equivalent representation, shown in figure 2, is to shift domestic demand downward by the magnitude of the transactions cost, and so reducing imports below MAC. Under a less costly regime, imports would have met or exceeded the minimum access commitment. In a poorly functioning regime, transac-

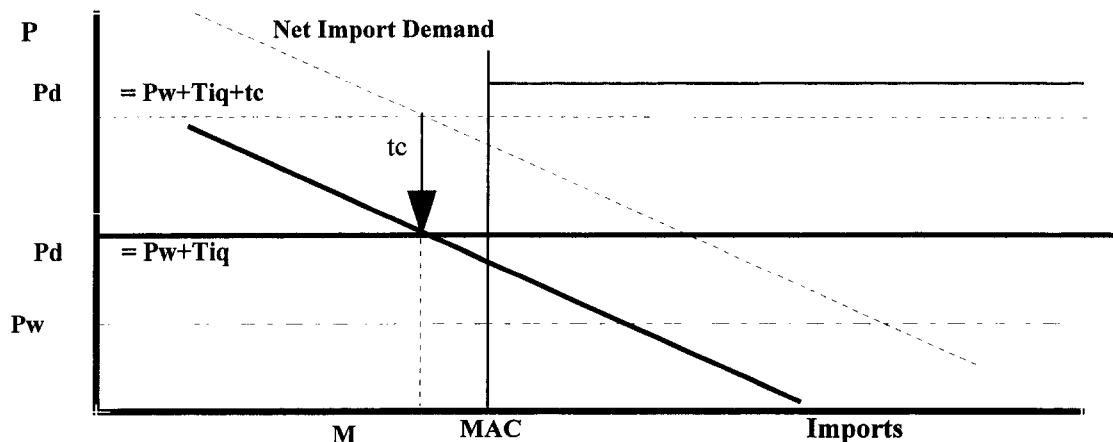


Figure 2. Underfill—Due to Low Demand or Transactions Cost?

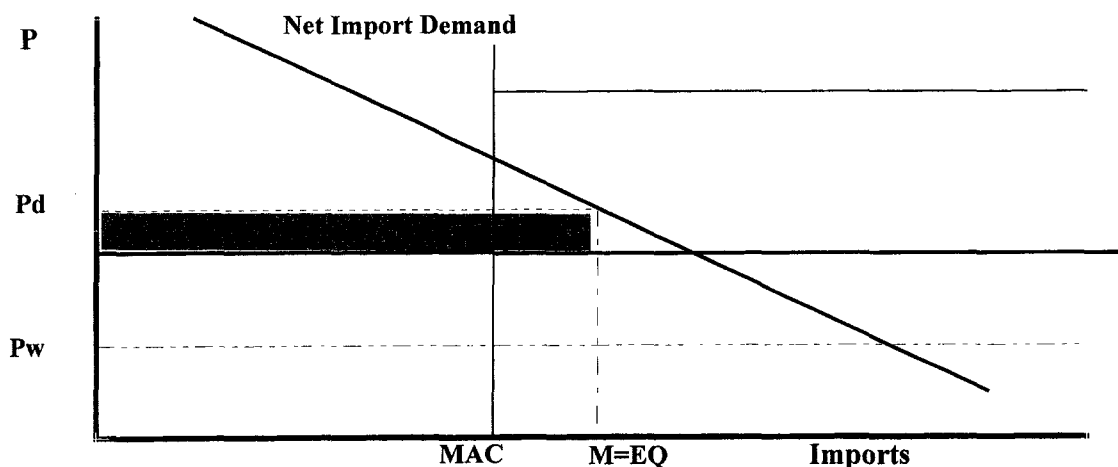


Figure 3. Overfill and Endogenous Quotas

tions costs could act as a prohibitive non-tariff barrier (NTB).

Overfill is a much more common occurrence in these developing countries. Imports reported as under the quota may in fact exceed the quota, sometimes substantially. The frequency of this outcome is due to the prevalence of two trading regimes—applied tariffs and variants on state-managed regimes. Applied tariff regimes set one tariff, and no mechanism limits imports to the minimum access commitment. We found that these one-tariff regimes often set the applied tariff below the bound TRQ rate. Implementation by variants of state-managed trade, including state trading, licenses, or bilateral quotas frequently resulted in overfill as well. It has not been uncommon in the past for state agencies to vary effective quotas based on domestic “need” which would vary with domestic production. As long as a quota is above a country’s bound minimum access commitment, it may be varied in this manner in compliance with WTO requirements. This case has been labeled an “endogenous quota” in that the quota level each year depends on domestic market outcomes and variables (Abbott and Morse 1999). This regime is shown in figure 3. It is difficult to ascertain if this is truly the regime in place, as licenses may be given simply to ensure compliance with food safety regulations and may not be limited, or may be limited in a nontransparent way by the government. Domestic price data could be used to differentiate licensing cases that limit imports from those that merely regulate compliance. An effective quota would raise the domestic price above import cost and generate rents; however, those rents could be captured by the state trader and may not be transparent.

### Information Sources on Developing Country TRQ Regimes

To determine which trade regimes were in place and how TRQs are performing in the fourteen developing countries examined here, we supplemented data available from WTO notifications with information on GATT commitments, actual imports, and applied border measures.

From the WTO, we collected two types of notifications provided by individual countries as well as GATT Uruguay Round commitments. Each reporting country has submitted an MA:1 notification describing administration methods applied to its TRQs and market access commitments. These are usually reported only once, unless administrative mechanisms change. The WTO Secretariat has used that information to classify administration into one of nine categories: applied tariffs; licenses on demand; first-come, first-served; auctions; state trading; historical imports; producer organization control; other; and mixtures. MA:2 notifications are annual country self-reports on quota levels (market access levels) and in-quota imports. These data were collected from the WTO Document Dissemination Facility web site for 1995 to 1997. In addition, the WTO makes available initial TRQ offers of binding MFN and in-quota tariffs as well as minimum access commitments on a CD Rom (WTO, *Complete Results of the Uruguay Round*, 1996).

Applied MFN and in-quota tariffs were collected from the UNCTAD (United Nations Conference on Trade and Development) TRAINS (Trade Analysis and Information System) database for 1995 to 1997. In cases where true TRQs exist, two tariffs were available from TRAINS. In most

cases, only MFN tariffs are reported in TRAINS. Information from TRAINS is consistent with information on national legislation that we were able to obtain for a few countries. In at least one case, a footnote in the initial GATT offer indicated that a low tariff would only be applied if necessary to ensure that market access commitments were met. Hence, the lack of data in TRAINS on in-quota tariffs is consistent with the trade regimes actually applied.

In order to determine if above-quota imports were occurring, we collected total import data for 1980 through 1997 from the FAO AGROSTAT database. The earlier data, from 1980 to 1994, was used to project trend imports for 1995 to 1997. Thus, we were able to identify the extent to which actual imports were above or below trend projections. The 1995 to 1997 total import data were compared both with trend projections and with the WTO notifications on in-quota imports. We determined the extent of underfill or overfill, and we assessed whether demand was growing faster than trend.

Based on all the evidence we found, including descriptive information on administrative method and WTO classifications, we determined the most likely economic model to apply in each commodity case: a pure tariff regime, a pure quota regime, a true TRQ regime, or an endogenous quota regime.

More detailed explanations are available from the authors in an appendix, along with tables reporting the basic data by country used in this analysis.

## Findings

Table 2 summarizes information on use of TRQs by country. It reports the number of commodities in each developing country for which we were able to collect data on TRQ implementation; the trade regime in place; the relationships between bound and applied tariffs; and comparisons of total imports, trend imports and quota fill. Table 3 summarizes the same information by commodity for the major commodity groups (meats, milk, cereals, potatoes, soybeans, and sugar).

### *Country Summaries*

Half of the trade regimes in developing countries submitted as TRQ notifications are run as pure tariff regimes. Over a third of the total cases employ licensing schemes or state trading. True TRQ regimes are found only in Korea and the Philippines, and the only pure quota regimes are found in

Korea. We found no cases where applied tariffs were above the base GATT offer (the initial reduction in 1995), and in two thirds of cases, applied tariffs were already below these countries' GATT bound rates, which does not need to be achieved until 2004. On average, applied tariffs are half of GATT bindings, and in many countries tariffs are less than 25% of GATT bindings. This result corresponds with substantial "dirty tariffication," but more importantly, it reveals substantial liberalization of these markets. Only in Korea and the Philippines, where true TRQs are applied, are MFN tariffs close to the relatively high GATT bindings. In Korea the applied TRQ rates are about one quarter of MFN rates. In the other countries, applied MFN tariffs are almost always below the GATT-offered in-quota tariffs. In summary, except where TRQs are actually applied, pure tariffs well below commitment rates are generally found, yielding substantial liberalization of those markets.

This liberalization has led to increased imports. Imports increased beyond trend levels in nearly three quarters of the cases, and the increase is statistically significant at the 5% level in one quarter of the cases. Imports fell below trend in only one quarter of the cases, and the decline in imports was never statistically significant. Total imports of these commodities were, on average, eight times the minimum access commitments, with substantial variation by commodity. While underfill was found in 41% of the cases, overfill was found in nearly as many cases (38%). Moreover, the magnitude of overfill was substantial enough to achieve the observed ratio of imports to quotas. In Costa Rica, where auction mechanisms are reported, underfill is the most prevalent outcome, and in Korea, where true TRQs are implemented by state agencies, overfill is substantial and imports have increased significantly in many cases. Only in Tunisia are total imports routinely less than the quota.

### *Commodity Summaries*

Observations from table 3 offer insight into three issues. First, state regimes are generally applied to politically sensitive staples, whereas applied tariffs are more generally found for goods that were largely not previously traded. Second, the occurrence of underfill and overfill differs by commodity group and by extent of tradability. Third, structural shifts in import trends due to liberalization can be explained in part by commodity-specific elasticities.

The contrast between cereals and oilseeds on the one hand, and meats and dairy on the other hand, is

**Table 2. Trade Regime, Tariffication, Quota Fill and Import Trends by Country**

Administration	All 14	Brazil	Colombia	Costa Rica	Guatemala	Indonesia	Korea	Malaysia
TRQ Notifications to WTO	180	2	33	5	12	1	28	8
Tariff Regimes	91	2	19	5	7	0	0	0
State Regimes	65	0	14	0	5	1	10	8
Quota Regimes	2	0	0	0	0	0	2	0
True TRQs	24	0	0	0	0	0	18	0
Tariffication								
Applied MFN Tariff/GATT MFN Offer	0.52	0.45	0.15	0.26	0.19	0.00	1.20	0.01
Applied Tariff less than MFN Offer	120	2	33	5	12	1	0	6
Applied Tariff less than TRQ Offer	109	2	33	5	12	1	0	6
TRQ Offer/GATT MFN Offer	0.61	1.06	0.99	0.65	0.40	0.56	0.62	0.79
TRQ Applied/MFN Applied Tariff	—	—	—	—	—	—	0.23	—
Imports versus Quotas								
Total Imports/Quota	8.03	1.64	27.47	2.94	4.42	26.93	18.37	6.09
Underfill cases	41%	0%	23%	93%	22%	0%	44%	33%
Overfill cases	38%	100%	76%	0%	44%	100%	36%	33%
Imports increased after 1994	72%	83%	80%	73%	61%	100%	74%	92%
+1 Std	39%	83%	43%	53%	39%	67%	39%	54%
+2 Std	23%	67%	24%	27%	14%	67%	29%	42%
Imports decreased after 1994	28%	17%	20%	27%	39%	0%	26%	8%
-1 Std	6%	9%	4%	20%	8%	0%	4%	0%
-2 Std	1%	0%	0%	0%	0%	0%	0%	0%
Administration	Mexico	Morocco	Panama	Philippines	Thailand	Tunisia	Venezuela	
TRQ Notifications to WTO	1	11	8	9	20	10	32	
Tariff Regimes	0	7	8	2	9	2	30	
State Regimes	1	4	0	1	11	8	2	
Quota Regimes	0	0	0	0	0	0	0	
True TRQs	0	0	0	6	0	0	0	
Tariffication								
Applied MFN Tariff/GATT MFN Offer	1.47	0.65	—	1.47	0.52	0.22	0.21	
Applied Tariff less than MFN Offer	0	7	—	2	11	9	32	
Applied Tariff less than TRQ Offer	0	7	—	1	4	7	31	
TRQ Offer/Gatt MFN Offer	0.00	0.85	—	0.93	0.36	0.32	0.43	
TRQ Applied/MFN Applied Tariff	—	—	—	0.59	—	—	—	
Imports versus Quotas								
Total Imports/Quota	1.30	8.95	3.74	4.72	3.76	0.69	1.32	
Underfill cases	0%	30%	25%	71%	63%	75%	39%	
Overfill cases	100%	3%	13%	25%	37%	0%	28%	
Imports increased after 1994	0%	70%	100%	100%	78%	50%	54%	
+1 Std	0%	52%	88%	83%	35%	5%	13%	
+2 Std	0%	36%	38%	58%	17%	5%	4%	
Imports decreased after 1994	100%	30%	0%	0%	22%	50%	46%	
-1 Std	0%	9%	0%	0%	2%	25%	10%	
-2 Std	0%	0%	0%	0%	2%	10%	0%	

reflected in trade regime choice. Whereas cereal imports are most often controlled by a state regime, tariff regimes are more prevalent for meat and dairy products. State regimes generally ensure that quotas fill. The low wheat tariffs are likely due to the fact that state agencies are controlling trade. Tariff regimes are frequently applied to products that are historically non-tradable. Where the private sector is more involved, as appears to be the case for non-tradables, tariffs are closer to GATT

bindings. Several regimes are applied to sugar, with varying results. Nevertheless, applied tariffs are generally below GATT bindings.

Underfill cases are most prevalent for meats and dairy products. These goods would have been thought of as non-tradable prior to 1994 in most of these countries. It should be noted, however, that meat and dairy imports frequently increased at least one standard deviation above trend and seldom fell below trend. For cereals and oilseeds,



**Table 3. Trade Regime, Tariffication, Quota Fill and Import Trends by Commodity**

Administration	Beef	Pork	Poultry	Milk	Potato	Wheat	Barley	Maize	Rice	Soybean	Sugar
TRQ Notifications WTO	7	7	7	10	4	4	5	7	8	3	5
Tariff Regimes	3	3	2	5	1	0	0	2	2	1	2
State Regimes	4	2	3	4	2	4	4	4	6	2	2
True TRQs	0	2	2	1	1	0	1	1	0	0	1
Tariffication											
Applied MFN Tariff/GATT											
MFN Offer	0.58	1.01	0.77	0.35	1.19	0.06	0.37	0.61	0.27	0.43	0.48
Applied Tariff less than MFN Offer	5	3	4	7	1	4	4	3	4	2	4
Applied Tariff less than TRQ Offer	3	4	5	8	1	4	3	5	6	2	4
TRQ Offer/GATT MFN Offer	0.95	0.97	0.80	0.51	0.44	0.36	0.53	0.56	0.69	0.42	0.46
TRQ Applied/MFN Applied Tariff	—	0.72	0.59	0.09	0.33	—	0.06	0.22	—	—	0.63
Imports versus Quotas											
Total Imports/Quota	4.05	1.09	2.81	5.25	5.75	1.29	3.18	11.34	4.82	16.65	19.88
Underfill cases	62%	43%	57%	32%	38%	13%	10%	7%	20%	0%	43%
Overfill cases	8%	14%	29%	26%	25%	63%	50%	64%	47%	100%	25%
Imports increased after 1994											
+1 Std	0%	0%	43%	16%	13%	0%	10%	29%	13%	17%	14%
+2 Std	38%	79%	21%	16%	63%	0%	10%	36%	27%	33%	14%
Imports decreased after 1994											
-1 Std	15%	0%	0%	21%	0%	25%	10%	0%	0%	0%	14%
-2 Std	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%

which were traded more heavily prior to the 1994 GATT agreement, underfill is quite rare and overfill is common. Increases in cereal and oilseed imports relative to trend are less pronounced, but decreases are only found for wheat. In the wheat cases, imports are only 30% above minimum access commitments on average, whereas much greater ratios of imports to quotas are found for the other cereals. For sugar cases, underfill is frequently found.

Structural changes in trends can also be related to commodity characteristics. To ensure increased market access following liberalization, structural change may be necessary. While on average sugar imports are well above minimum access commitments, imports appear to have remained on trend more than other commodities, so underfill is more common than overfill. This may reflect low demand elasticities for sugar, since tariff reductions would have lowered domestic prices. Cereal imports are also less likely to expand than meats or dairy products when tariffs fall due to low elasticities. Imports of meat and dairy products generally increased, though in several cases that increase was insufficient to fill quotas.

### General Themes

The above observations together with the detailed country information described in Abbott and

Morse (1999) permit us to make some generalizations about TRQ implementation and administration in developing countries.

### Use of TRQs

Tariff rate quotas were relatively little used by developing countries as part of their trade regimes following the Uruguay Round GATT Agreement. Only fourteen developing country WTO members are providing notifications on the use of this instrument. In many cases, those notifications seem intended to report that imports are meeting minimum access commitments, as the tariff regime in place is seldom a true TRQ. We found TRQs implemented as designed only in Korea and the Philippines. In other countries, either applied tariffs are below the low in-quota tariff included in GATT offers, or TRQ notifications correspond with some state control of trade, through licensing or continued state trading. State regimes are more prevalent for the politically sensitive staples, commodities that account for a substantial number of TRQ notifications.

### Liberalization

In spite of possible continued state involvement in management of agricultural trade, substantial lib-

eralization of trade regimes is found in these cases. Tariffs have been reduced, and imports have generally expanded. Moreover, applied tariffs are generally below GATT bindings, offering flexibility to these governments in varying applied tariffs as world prices fluctuate. We know that flexibility (effective variable levies), and not increased protectionism, has been the rationale behind "dirty tariffication" in several cases. Where true TRQs have been implemented, applied tariffs are closer to GATT bindings, but substantial expansion of trade has generally occurred, because imports are often above trend projections. Total imports are generally several times the minimum access commitments. In those cases, state or producer organization management of trade is important. Thus, liberalization is more likely due to actual tariffication and reduction of MFN tariff than to the use of TRQs.

### *State Trading and Endogenous Quotas*

One difficulty in evaluating these trade regimes is due to their extensive use of licenses. Licenses may ensure that food safety regulations are met or may limit imports. If they do limit imports, the state is commonly setting quotas above minimum access commitments, which results in overfill being as common as underfill. It is likely that quotas are adjusted annually by the state based on domestic market conditions, along the lines of the endogenous quota model discussed earlier. This flexibility in policy is in compliance with WTO commitments since these quotas generally remain above minimum access commitments.

### *Underfill*

Underfill, or imports less than minimum access commitments, was identified as a concern based on initial notifications of imports under TRQs. At least in these developing country cases, this seems to be a misplaced concern. Overfill is as common as underfill. Imports of commodities are usually substantially greater than the commitments and are expanding. On average, total imports are at eight hundred percent of commitment. In cases where underfill is observed, products were unlikely to have been extensively traded prior to 1994, and low demand elasticities mean that liberalization is unlikely to lead to demand increases sufficient to meet minimum access commitments. Evidence on administrative methods shows only a few cases in which requirements to obtain access to quotas or transactions costs associated with these quotas could lead to reduced imports. In the case of Costa Rica, for example, where auctions to allocate quota

rights seem to be failing, out-of-quota imports are well above minimum access commitments. This result may be due in part to the small difference between in-quota and MFN tariffs.

In the two countries where true TRQ regimes are functioning, cases of underfill are more common. In both Korea and the Philippines, underfill often appears to be due to weak demand, but problems with the administration of quotas by producer groups have been noted. In at least one instance, procedures have been challenged in the WTO dispute settlement process and have been modified several times as governments seek to ensure that producer groups comply with the intent of the TRQs.

### *Quota Rights and Rents*

Since quota regimes are rare, administrative methods seldom need to allocate rights to import under low tariffs, and hence to the rents accruing to these rights. Where rents might accrue, institutions typically are designed to give those rents to domestic agents. Assigning administration of quotas to producer groups or processors is common. When endogenous quotas are in place, constraints related to prior sale of domestic production are also found. There are very few bilateral quotas implemented by developing countries. Bilateral quotas are commonly used in the U.S. and EU as part of their preferential trade arrangements and to offer foreign aid via trade opportunities by allowing developing country exporters to capture the quota rents. This same motivation is not relevant to these developing countries that have little incentive to use this institution to direct trade toward politically favored partners.

## **Conclusions**

Only fourteen developing country members of the WTO are reporting that they use tariff rate quotas as part of their agricultural import regimes. Evidence regarding administration of those imports indicates that true TRQ mechanisms as initially envisioned, and as implemented in the U.S. or EU, are used in only two of those fourteen countries—Korea and the Philippines.

Our belief, supported by the notifications on administration methods, is that in many cases countries are not actually implementing TRQ regimes, and the purpose of their notifications to the WTO is simply to verify that imports are meeting their minimum access commitments under the Uruguay Round Agreement. In half of the cases examined here, regimes described in notifications to the

WTO are simple applied tariff regimes, and those countries only report the use of MFN tariffs to UNCTAD. In two thirds of the remaining cases, licenses are employed and some state involvement in trade regimes may remain. While these latter cases are not transparent regimes, they appear at times to continue institutions similar to pre-Uruguay Round trade regimes. In addition, these regimes may employ endogenous quotas that can ensure that minimum access commitments are met and can adjust in response to domestic market conditions or world prices.

Both dirty tariffication and endogenous quotas permit developing countries to operate flexible policy regimes within their WTO commitments. These regimes permit stabilization of domestic markets in the face of the continuing volatility of world prices.

In spite of continued state involvement in trade, substantial liberalization of the trade regimes for commodities notified as being under TRQ regimes has occurred. Tariffs are well below GATT bindings, both for MFN commitments and lower in-quota tariff commitments. Imports have expanded, often significantly above trend imports, and overfill of quotas is as common as underfill. Imports below minimum access commitments are more likely caused by weak demand than by costs associated with meeting TRQ administrative requirements. Underfill is more common for meat and dairy, products that would have been viewed as non-tradable prior to 1994 and for which the observed significant expansion of imports is still below those commitments. For the politically sensitive staples, demand has expanded less, but underfill is rare. Low demand elasticities for agricultural goods are also likely to contribute to underfill, since lower tariffs may have little impact on demand levels.

Problems of underfill, discrimination in the distribution of rights to import, and rent seeking could increase in the future if countries choose to make further use of TRQs. In China's accession offer to join the WTO, and in trade regimes adopted by recent Eastern European entrants to the WTO, more extensive use of true TRQs has led to much more protectionist regimes, at least in the long run, than were found in the fourteen developing countries studied here.

The substantial liberalization found here is due to tariffication and lowering of MFN tariffs, not to increased market access via TRQs. Future liberalization of agricultural trade regimes is more likely to arise from reductions of MFN tariffs than from expansion of either minimum access commitments or greater use of TRQs as a device to guarantee access. Lowering in-quota tariffs will most likely

only increase rents to privileged agents, and allocations mechanisms generally direct those rents to domestic agents or intermediaries, not exporters. Expanded minimum access commitments permit problems of quantitative restrictions to persist. Lowering above-quota or MFN tariffs is likely to lead to more liberal markets in the future, while avoiding problems of rent allocation from either expanding quotas or decreasing in-quota tariffs.

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