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The Developmental Relevance of Tariff Rate Quotas as a Market Access Instrument: An Analysis of Swiss Agricultural Imports

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At present there are 1425 tariff rate quotas (TRQs) notified by member countries to the World Trade Organization. TRQs were provided for in the Uruguay Round as a trade policy instrument to guarantee minimum market access for politically sensitive agricultural imports, and in some cases to continue managed trade regimes. This article evaluates the developmental relevance of TRQs and discusses how the various methods TRQ administration methods influence market access in Switzerland for agricultural products from developing countries. The findings show that existing TRQ management in Switzerland is complicated and lacks transparency. Further, the manner in which TRQs are administered results in high transaction costs, a situation that fails to liberate trade opportunities from rents and influences trade flows of the partner countries. Proposed reforms are establishment of a more efficient administrative mechanism, modalities to liberalize trade with TRQs through reduction of out-of-quota tariffs, and capacity building in developing countries; such reforms would maximize market access opportunities from a development perspective.

Keywords: developing countries, Switzerland, tariff rate quotas

Introduction

Article 20 of the Agreement on Agriculture (AoA) mandates member countries of the World Trade Organization to negotiate and continue reform in agriculture. Even though farm policy reforms in developed countries have been along the lines of Uruguay Round rules, there has been widespread skepticism about the effectiveness of these reforms (Josling & Hathaway, 2004). Among other measures, tariff rate quotas[1] (TRQs) were implemented as a policy instrument in the Uruguay Round, primarily to ensure "minimum" market access for sensitive agricultural products and to safeguard current access levels in the face of high tariffs (Mathews & Dupraz, 2002; Abbott, 2002). At present there are 1425 TRQs notified by member countries of the WTO (WTO, 2004a). Studies, however, indicate that the results of TRQ implementation are not what this number would lead us to expect, and nearly 28-30 percent of the domestic production in developed countries is protected by TRQs (OECD, 2003). This is a matter of concern for developing countries that are potentially large exporters of agricultural products; TRQs are, therefore, widely debated from a development perspective (Abbott & Paarlberg, 1998; Skully 1999, 2001; Boughner & de Gorter 1999; Abbott & Morse, 1999; Hermann, Mönnich & Kramb, 2000; Abbott, 2002; Mathews & Dupraz, 2002; Beghin & Aksoy, 2002; de Gorter & Hranaiova, 2003). There are three main reasons to question the feasibility of employing TRQs as a market access instrument. First, studies show that the choice of administrative method influences the extent of market access afforded to trading partners (Skully, 2001; Abbott, 2002; Panagariya, 2002; de Gorter & Hranaiova, 2003). Second, there has been a persistent low fill of TRQs at the multilateral level (WTO, 2002). Finally, quota rents are often associated with TRQ regimes; these generate costs for both the preferred and excluded countries and in turn distort trade flows of the partner countries (Binswanger & Lutz, 1999; Skully, 2001; Vanzetti et al., 2004).[2]

The notified and enforced TRQs are concentrated in a few countries – Norway ranks first (232), followed by Poland (109), Iceland (90), the EU (87), Bulgaria (73) and Hungary (70). The geographical distribution of TRQs indicates that more than 79 percent of the total emanate from countries in Europe (773), North America (86) and South America (268). For the remaining 244, the usage is by countries in Asia (157), Africa (82) and Oceania (5).[3] Of the total TRQs, 217 are country-specific, with Europe and North America accounting for 187 of these (WTO, 2000; WTO, 2002). The product distribution of notified TRQs shows that nearly 75 percent of all TRQs are accounted for by four product categories. The main product groups with the largest number of TRQs are fruit and vegetables (370), followed by meat products (258), cereals (226) and dairy products (183). Tobacco (13) ranks last among the twelve product categories notified by the member countries of the WTO. The main methods employed to administer TRQs are applied tariffs; first-come first-served

(FCFS); historical importers (HI); licences on demand (LD); state trading and producer groups (ST/PG); bilateral agreements; country-specific quotas; auctioning (AU) and mixed methods (WTO, 2000; WTO, 2002). Countries also use additional conditions to allocate import licences, e.g., limits on import quota shares, export certificates and domestic purchase requirements.

This article evaluates the impact of TRQs from a developmental perspective and analyzes how the different administration methods influence market access for agricultural products from developing countries. Using the example of Switzerland, the article first analyzes whether developing countries' agricultural exports gain access into the Swiss market within lower in-quota tariffs. Second, the article identifies the inefficiencies and main impediments to market access for developing countries' exporters. Finally, modalities are recommended for liberalizing trade under TRQs. The structure of the article is as follows: section 2 traces the history of negotiations on TRQs and discusses their importance as trade policy in the multilateral trading system. Section 3 presents an overview of TRQ management in Switzerland. Section 4 analyzes how the administrative mechanism, together with tariffs and non-tariff measures, influences trade flows and market access for agricultural products. Section 5 concludes with recommendations to strengthen the existing TRQ framework and proposes an eventual phase-out of TRQs in the long term.

History of Negotiations on TRQs

The initial objective of TRQs was to provide preferential treatment for developing countries by allowing them to export at lower tariffs, subject to quantity constraints (Rom, 1979). In the Uruguay Round, 37 countries participated in the tariffication process. TRQs were negotiated as a compromise instrument, to include both tariffication and minimum access commitments, in the face of resistance to convert all non-tariff barriers into (lower) tariffs for politically sensitive goods (Abbott, 2002). As part of the tariffication process, member countries agreed to maintain "current" import access opportunities for tariffied products at levels corresponding to those existing during the base period, i.e., 1986-1988, at terms no less favourable than in the base year period (WTO, 1993). Where such current access had been less than 5 percent of domestic consumption of the product in question, the agreement required an (additional) "minimum" access opportunity on a most-favoured nation (MFN) basis at a low tariff rate (Ingco & Hathaway, 1996). This was to ensure that in 1995 the combined current and minimum access opportunities represented at least 3 percent of base-period consumption, which would progressively expand to reach 5 percent of that consumption in 2000 for developed countries and in 2004 for least developed countries (LDCs) (WTO, 1993; WTO, 1995; Tangermann, 2001). However, the conversion of quantitative restrictions to tariffs and tariff equivalents

gave the countries flexibility for "dirty tariffication"[4] (Ingco, 1996; Nogues, 2002) and "dirty quotification"[5] (Bureau & Tangermann, 2000). As a result, only some TRQs increased market access compared with earlier levels; most TRQs merely preserved pre-agreement levels of protection (OECD, 1999).

In legal terms, TRQs do not constitute quantitative restrictions, because they do not limit import quantities but rather allow excess imports at the higher out-of-quota tariffs. The rationale for implementation of TRQs in this form is that tariffs are predictable and transparent to exporters; as well, they provide importers the opportunity to import at out-of-quota tariff rates, an opportunity that is not available under a regular quota (Wainio, 2001). However, if the out-of-quota tariff is very high it makes imports prohibitively expensive and yields the same import volume as a traditional quota. If the difference between domestic and international prices exceeds the out-of-quota tariff, a TRQ can result in a different volume of trade than a standard quota. In such a case, importers profit from high rents despite paying out-of-quota tariffs on imports.

Article XIII sets forth two normative criteria to administer TRQs and the resulting distribution of trade. Article XIII (2) of the GATT states "in applying import restrictions to any product, contracting parties shall aim at a distribution of trade in such product approaching as closely as possible the shares which the various contracting parties might be expected to obtain in the absence of such restrictions …." The text asserts that trade shares should be determined by the relative efficiency of suppliers and not by alternative discriminatory criteria. The Agreement on Import Licensing, which oversees the allocation of licences under the TRQ regime,[6] requires that rules applied by importing countries for licensing procedures should "… be neutral in application and administered in a fair and equitable manner." It states that licensing procedures should not be trade distorting or restrictive and "… no more administratively burdensome than absolutely necessary to administer the measure." The importing country, therefore, gets to decide which method is "fair and equitable" and "least administratively burdensome". The determination of TRQ allocation is a tricky issue that has not been addressed in the AoA, which allows the administering country to choose among the different methods to manage its imports. Often, countries combine different administrative methods,[7] which increases the complexity of this trade policy instrument and the consequent market access allowed to exporting countries. WTO member countries have, however, stressed the need to improve the existing TRQ administration rules as a means to enhance market access for developing countries' products (WTO, 2004a).[8]

Fill rates of TRQs are another important issue in the ongoing agricultural market access negotiations. During the period 1995-2000, the simple average fill rates for all TRQ administration methods ranged between 60 and 66 percent; the state

trading/producer groups method had the highest fill rates, followed by FCFS and HI (WTO, 2002). An interesting feature is that despite the increasing use of auctions, this method had the lowest fill rate. This suggests that the fill rate of a TRQ may not always be an indicator of its efficiency and that an underfill can be attributed to the existing market conditions. The perception that fill rates are a measure of the efficiency of TRQs is, therefore, unfounded.

TRQ Management and Patterns of Trade in Switzerland

Switzerland is a net importer of agricultural products and ranks eleventh as an importer of agricultural and food products in the world.[9] In 2006, the total value of agricultural imports was over 10,358 million CHF (Swiss Aussenhandelsstatistik, 2006[10]). Agricultural products are imported under 28 TRQs notified on 282 tariff lines (at the eight-digit level of tariff classification under the harmonized system[11]). Switzerland has notified TRQs on live animals (HS 1); meat and edible meat offal (HS 2 and HS 16); milk and dairy products, eggs (HS 4); bovine semen (HS 5); live plants and cut flowers (HS 6); fresh vegetables (HS 7); fresh fruits (HS 8); grains (HS 10); seed fruit products (HS 20); spirits, beverages and vinegar (HS 22); and casein (HS 35).[12] These notified TRQs are concentrated in a few product categories, with more than one TRQ within a product group. Fruits and vegetables (9) exhibit maximum concentration of TRQ usage, followed by meat and meat products (6) and dairy and dairy products (5). Most TRQs are notified under the current access commitments; exceptions are potatoes (HS 7) and pork (HS 2), which are notified under the minimum access commitment (WTO, 2004c).

Switzerland has very high out-of-quota tariff rates; table 1 shows the average, maximum and minimum *ad varolem* equivalents[13] (AVEs) for product groups imported under TRQs. The highest average AVEs are notified on live animals (488 percent), followed by dairy (141 percent), cereals (123 percent) and meat (104 percent). High AVEs on most products imply that the Swiss authorities use high out-of-quota tariffs to bind imports at the level of the TRQ. First, high out-of-quota tariffs protect domestic production of sensitive commodities like live animals, meat and edible meat offal, dairy and dairy products, vegetables and products of the milling industry. Second, high out-of-quota tariffs are employed as a means to achieve the policy objective of multi-functionality, as for instance in beef and dairy sectors.

Table 1 AVEs for Products Imported under TRQs, 2006

		AVE maximum	AVE average	AVE minimum
		in percentage terms		
HS 1	live animals	10554.11	487.53	0.00
HS 2	meat and edible meat offal	1212.19	104.43	0.50
HS 4	dairy, dairy produce, birds' eggs	1005.80	140.59	0.00
HS 5	bovine semen	1060.79	34.35	0.00
HS 6	live trees and cut flowers	577.97	25.55	0.00
HS 7	edible fresh vegetables	793.31	56.49	0.00
HS 8	edible fresh fruits	202.38	11.63	0.00
HS 10	cereals	453.11	122.86	0.00
HS 11	products of the milling industry; malt; starches	991.26	91.31	0.00
HS 16	preparations of meat/fish/molluscs/crustaceans/ other aquatic invertebrates	157.28	22.50	0.00
HS 20	seed fruit products	1689.24	28.77	0.00
HS 22	beverages, spirits and vinegar	342.36	25.97	0.00

Source: Macmaps_HS2, using *ad valorem* equivalents

The management of TRQs is governed by the Federal Law on Agriculture of 29 April 1998, which entered into force on 1 January 1999 (Systematic Compendium – RS 910.1), the Federal Law on Alcohol of 21 June 1932 (RS 680) and the General Ordinance on Imports of Agricultural Products of 7 December 1998 (RS 916.01). The Federal Office of Agriculture (FOA) is the competent authority for administering and allocating import quotas/licences to importers during the administered period, which generally lasts from May until October every year. The main methods employed to administer TRQs are historical imports (HI); first-come first-served (FCFS); auctions; licences on demand (pro rata); domestic purchase requirement (*prise en charge*); market share of importers; and products imported for reprocessing into exports. The HI method is the one most frequently used to manage imports of beef and pork meat (HS 2) and vegetables (HS 7) during the administered period. The licences-on-demand (LD) method is the second most used method. LD allocates import quotas based on the quantities for imports requested/number of requests by the importers; if the sum of quota allocations exceeds the minimum quota commitments, the allocations are reduced proportionally by the administering authority to adjust all the requests. The LD method is generally employed to manage vegetable imports (HS 7). Domestic purchase requirement (DPR) requires importers to commit to domestic purchases; they are then allowed to import a prescribed proportion or ratio of their domestic purchases. This method is frequently used in combination with other

methods (e.g., HI) to manage imports of meat (HS 2) and cut flowers (HS 6). The FCFS method allocates licences to import horses for breeding (HS 1) and wine (HS 22) in the order of receipt of applications until the notified quota is full. The existing TRQ regime also allows imports for reprocessing into exports; dairy products (HS 4) and casein (HS 35) are important examples managed with this method.

Increasingly, Switzerland employs auctions to manage its TRQs; at present import allocations for meat (HS 2, 16) and cut flowers (HS 6) are auctioned.[14] A competitive sealed bid auction format is utilized to allocate TRQs, starting from the highest to lowest bid until the entire import quota is allocated.[15] Meat auctions are managed with the variable supply model,[16] which allows the TRQ administering authority to change the quantities to be auctioned based on the bidding pattern. If the bidding pattern is weak, the total import quantity for auction can be reduced; however, if the bids suggest evidence of high demand, the import quota for auction can be increased. This method therefore allows the administering authority to set the reserve price based on bids submitted by the bidders in the auction.

In addition, combinations of different administration methods are employed to manage imports, making the existing administrative mechanism highly complicated and non-transparent. The complexity of TRQ management is exacerbated by additional requirements for specific product groups. For example, in order to be eligible to import grapes for pressing and grape juice (HS 20), white wine in bottles, red wine other than industrial wine, and white wine in bulk other than industrial wine (HS 22), importers need to have a valid import licence and also register with *Eidg. Weinhandelskommission*, Zürich. Similarly, for importers of durum wheat, bread grains other than cereals and cereal products suitable for use for human consumption (HS 10), the allocation for import authorisation is restricted to members of the Fiduciary Office of Swiss Holders of Compulsory Cereal Stocks (OSSOC). To import coarse grain for human consumption (HS 10), authorisation is through *Reserve Suisse,* and this is restricted to only special mills that process imported grains. In addition, there are also quotas with specific provisions regarding origin of products; examples of such TRQs are meat[17] (HS 2) and milk[18] (HS 4).

Table 2 presents detailed information on the importance of TRQs notified by Switzerland to the WTO. In addition, the table gives shares of developing countries in total imports as well as in imports under the TRQ regime. The main data sources for the calculations are total agricultural imports from all countries (developed, developing and least developed) listed in Swiss Aussenhandelsstatistik for 2001-2006.

Table 2 Overview of Agricultural Imports, 2001-2006

	Total agricultural imports	Total imports in product groups notified under TRQs	Total TRQ Imports	TRQ imports share in total imports	Share of developing countries in total TRQ imports	Share of developing countries in total imports
		in million CHF			in percentage terms	
2001	8,849.21	5,757.41	2,474.41	27.96	7.97	1.24
2002	8,978.37	5,707.71	1,753.77	19.53	6.58	1.29
2003	9,181.80	5,955.25	1,872.51	20.39	7.31	1.49
2004	9,246.35	5,919.49	1,668.88	18.05	6.90	1.25
2005	9,601.92	5,911.73	1,534.98	15.99	11.16	1.78
2006	10,358.87	6,328.28	1,707.21	16.48	11.19	1.84

Source: Own calculations from Swiss Aussenhandelsstatistik, 2001-2006

In 2006, out of a total of 10,359 million CHF in agricultural imports, 6328 million CHF, or nearly 61 percent of imports were covered by product groups notified under the TRQ regime. This substantiates the importance of TRQ imports in total agricultural imports by Switzerland. Table 2 shows that the total value of agricultural imports in 2001 was over 8,800 million CHF; this increased to 10,359 million in 2006 – an increase of 14.57 percent over the course of the period 2001-2006. Trade data for this period show that on the one hand, total imports of product groups notified under TRQs increased by 9 percent (from 5,757 million CHF to 6,328 million CHF), while on the other hand, total TRQ imports declined from 2,474 million CHF to 1,707 million CHF. In percentage terms, this represents a decline of 45 percent in total TRQ imports over the period 2001-2006. An explanation for falling imports under the TRQ regime is that most of the products that were earlier imported under TRQs now come under bilateral[19] and free trade agreements (FTAs),[20] given that these agreements allow preferential tariffs to the partner countries. As a result of a bilateral agreement with the European Union, imports of agricultural products from the EU have increased manyfold. Similarly, agricultural imports from developing countries like China, Chile, Israel, Mexico, Morocco and Turkey, with which Switzerland has concluded FTAs, have also registered an increase.[21]

Table 3 presents detailed information on trade flows for all the product groups notified by Switzerland under the TRQ regime from 2001 through 2006. It lists the share of TRQ imports in total agricultural imports and developing countries' share in total TRQ imports.

Table 3 Overview of Agricultural Imports under TRQs, 2001-2006

	2001		2002		2003		2004		2005		2006	
Products	TRQ as % of imports*	DC % share**	TRQ as % of imports*	DC % share**	TRQ as % of imports*	DC % share**	TRQ as % of imports*	DC % share**	TRQ as % of imports*	DC % share**	TRQ as % of imports*	DC % share**
HS 1: live animals	60.38	0.23	7.79	0	10.98	0	11.87	0	11.79	0	13.41	0
HS 2: meat & edible meat offal	73.95	22.13	44.26	22.45	79.16	18.08	63.93	16.75	64.41	29.08	63.2	33.65
HS 4: dairy & dairy products	94.44	0.06	47.37	0.05	82.25	0.31	92.25	0.15	92.98	0.04	91.12	0.06
HS 5: bovine semen	9.91	0	0	0	7.91	0	6.01	0	7.85	0.2	6.87	0.8
HS 6: live plants & cut flowers	14.8	18.92	14.15	15.84	13.61	17.29	13.49	20.33	13.43	27.07	13.57	26.48
HS 7: vegetables	77.12	4.44	47.55	3.28	72.53	4.64	67.77	5.88	68.49	5.28	71.45	5.44
HS 8: fresh fruits	7.37	17.72	8.58	8.16	11.14	8.09	11.38	6.4	10.15	10.41	9.81	5.99
HS 10: grains	45.44	5.33	39.51	3.47	38.19	3.13	33.44	1.94	30.31	3.81	16.41	3.84
HS 11: products of milling industry; malt	0.18	0	0.54	0	0.37	0	0.38	0	0.44	0	0.47	0
HS 16: preparations of meat/fish/mollu scks/other aquatic invertebrates	32.75	15.4	19.21	1.79	32.7	6.42	31.97	3.33	31.97	3.36	29.42	4.9
HS 20: seed fruit products	2.46	0	0.21	0	2.66	0.02	2.85	0	2.23	0.04	1.92	0.15
HS 22: beverages, spirits & vinegar	56.84	4.83	52.27	3.95	15.72	2.41	9.35	2.31	8.62	2.84	6.91	2.83
HS 35: casein	3.67	1.34	0.68	0	4.02	0	3.62	0	4.8	1.52	5.02	1.27
Average	**42.98**	**7.97**	**30.73**	**6.58**	**31.44**	**7.31**	**28.19**	**6.9**	**27.93**	**10.26**	**26.98**	**11.19**

* TRQ imports as a percentage of total agricultural imports
** Developing countries' percentage share in total agricultural imports under TRQs
Source: Own calculations based on MA: 2 commitments and Swiss Aussenhandelsstatistik for 2001-2006

The analysis of products imported under the TRQ regime suggests that on average nearly 85 percent of total dairy and dairy products (HS 4) were imported under TRQs. Close to 71 percent of total imports of vegetables (HS 7) were under TRQs. Meat and meat offal (HS 2) followed with over 65 percent. For meat preparations (HS 16), 30 percent were imported under TRQs, whereas only 14 percent of the total cut flowers and live plants (HS 6) were imported under the TRQ regime. For other groups, TRQs were less important. Table 3 shows that the average share of developing countries in total agricultural imports under TRQs was 11 percent in 2006. Notable exceptions were meat (HS 2) and flowers (HS 6) – product groups in which developing countries' shares ranged from 26 to 34 percent. Developing countries' shares of imports of fresh vegetables (HS 7) and fruits (HS 8) were between 5 and 6 percent. For grains (HS 10); meat and fish products (HS 16); and spirits, beverages and vinegar (HS 22) their shares were low, at less than 5 percent in 2006. Trade flow analysis suggests that more than 75 percent of the total TRQ imports came from EU member states. Developing countries had a relatively small share in total agricultural imports, and participation by LDCs was marginal. Argentina, Brazil, Chile, China, Colombia, Kenya, Mexico, Morocco, South Africa and Thailand were the main developing countries that participated in imports under the TRQ regime during the period 2001-2006; these countries had a share of over 90 percent of imports from developing countries in all the product groups imported under the notified TRQs. It is interesting to note that participation in Swiss agricultural imports by the "less developed" developing countries is, however, very limited.

The fact that only a few developing countries participate in TRQ imports suggests that all developing countries do not benefit from the additional market access allowed through lower in-quota tariffs under the TRQ regime. The reason for low participation by most developing countries is that agricultural products from most of these countries are unable to utilize the lower in-quota tariffs under the TRQ regime to gain access into the Swiss market. The explanation for lower participation in TRQ trade is not the lack of developing countries' export potential[22] but the existing tariff and non-tariff barriers (NTBs) that impede market access for developing countries' agricultural products. One main tariff impediment is high in- and out-of-quota tariffs. Another is the preferential tariffs allowed under bilateral agreements and FTAs that are lower than in-quota tariffs allowed on products imported under the TRQ regime. As a result, countries prefer to trade under the preferential trade framework of the bilateral and free trade agreements. Finally Switzerland has specific tariffs that place the producers of low-value agricultural products at a disadvantage and impede participation by developing countries. Important NTBs that impede participation in the import market

in Switzerland and thus are relevant from a developmental perspective are supply side constraints; institutional weaknesses such as lack of export finance and insurance facilities; inability to meet the rules-of-origin requirements for imports; infrastructural bottlenecks and high transportation costs in developing countries; strict labeling requirements; stringent health and safety standards; and consumers' perceptions about the origin of products. These barriers result in additional compliance costs for developing-country exporters. Consequently some developing countries that have the potential to export are excluded from participation in the import market in Switzerland.

Impact of the Existing TRQ Administrative Mechanism on Trade Flows and Market Access for Developing Countries' Exporters

The objectives of TRQ administration are threefold. First, from an international perspective the method of TRQ administration employed should allow maximum market access opportunities up to the full amount of the TRQ level. Second, from the perspective of the home country, administration should allow for the most efficient use of domestic resources and ensure that the lowest-cost firms import. Third, administration of TRQs should be efficient and transparent so that resources are not lost to rent seeking because of high transaction and administration costs for the importers. Some main characteristics of TRQs and TRQ management that determine market access for developing countries' agricultural products in Switzerland are in- and out-of-quota tariff rates, transaction costs associated with the different administrative methods, validity and size of quota allocations, size of existing market access commitments and country-specific quotas. Other factors, such as low in-quota preference margins on agricultural products and the specific structures of tariffs, place developing-country exporters at a distinct disadvantage in comparison to EU member states and result in their lower participation as sources of Swiss imports.

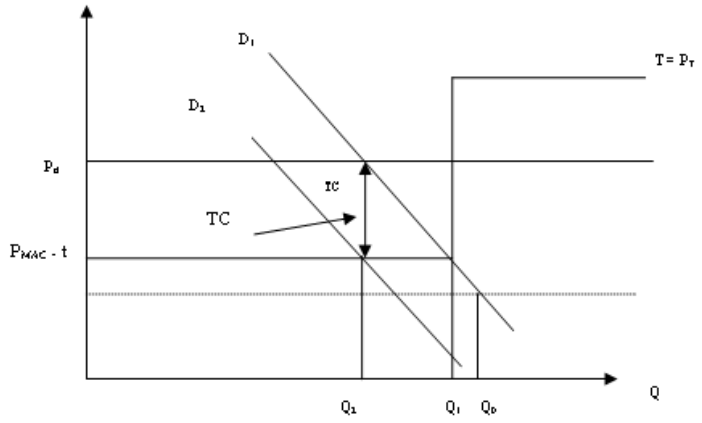
An analysis of the *Zolltarif*[23] shows that low out-of-quota tariffs are notified on products such as bovine semen (HS 5) and fodder (HS 10) that are required to boost the competitiveness of pharmaceutical and food processing firms, which otherwise would be hampered by costly inputs. This suggests that Switzerland employs TRQs to protect its domestic producers. In addition, preferential tariffs allowed under the bilateral agreements also influence partner countries' trade flows. Trade data show that agricultural imports from the EU have registered a steady increase, while those from developing countries have declined under the TRQ regime. An examination of the Swiss tariff schedule shows that tariffs under the bilateral agreement are identical to and at times even lower than preferential tariffs notified on imports from developing countries under the Generalised System of Preferences[24] (GSP) scheme, placing

developing countries at a distinct tariff disadvantage. For instance, the in-quota tariff on orchids (HS 6) is zero under the Swiss-EU bilateral agreement, compared to CHF 20/100 kg under the GSP framework.[25] As a result, there is indirect importation of cut flowers via the EU, though this fact cannot be substantiated due to lack of re-export figures. In this manner, TRQs influence trade flows of the partner countries.

The method of administration is another determinant of the total extent of access allowed to the Swiss market. For instance, the TRQ on beef (HS 2) is allocated with the HI method, which provides certainty to importers about future participation. As a result, Swiss meat importers have invested in upgrading the infrastructure and technical capacity of meat producers in Brazil and Argentina; this investment has helped these countries' producers to remain competitive. In this manner, the HI method has the potential to impact trade flows. Another method used is the DPR, which requires importers to commit to domestic purchases as a precondition for the allocation of import quotas. Consequently, importers in Switzerland import frozen poultry from developing countries (mainly China and Thailand) to offset their cost disadvantage under the DPR method. This method, therefore, also influences trade flows. Further, from an efficiency perspective this method is not welfare enhancing for either consumers or producers, as it indirectly subsidizes the high cost of domestic production and violates the fundamental principles of competition policy. Similarly, the LD method influences trade flows because the allocation of import shares is uncertain and makes long-term planning difficult for importers. The FCFS method also favours nearby exporting countries, mainly the EU, especially for products with shorter TRQ validity. The use of this method results in losses and disrupts shipments from distant developing countries because importers face uncertainty when purchasing imports, especially if the quota limit is being approached. Auctioning is deemed a generally efficient method by which to allocate the right to import (Bergsten et. al, 1987; Skully, 1999), but such may not always be the case. TRQ auctions in Switzerland are based on the principle of "maximum bid, maximum share", which does not specify the maximum share per bidder. This implies that it is possible for one group to purchase the entire portion of the right to import and withhold part of the licensed import quantity to maximise rents. In this manner, the design of the bidding system in Switzerland affects total imports as well as participation by countries (Khorana, 2004). The question thus arises as to whether TRQs achieve the objective of allowing maximum market access opportunities up to the full quota level in Switzerland.

Management-specific factors, i.e., limited validity periods,[26] small size and the manner of import quota allocation, discriminate against distant suppliers and do not allow for economies of size and coordination; these factors thus affect the trade flows of countries that supply imports under the TRQ regime. Limited validity and the use

of different TRQ administration methods complicate management, contribute to lack of transparency in administration and result in high transaction costs. An example of a high transaction cost under the TRQ regime in Switzerland is the cost to speed up information on the total quantity of imports within in-quota tariffs under the FCFS method. Another form of transaction cost is the additional cost importers incur to purchase a certain percentage of domestic produce under the DPR method, as, for instance, in the case of cut flowers (HS 6) or poultry meat (HS 2). Similarly, under the LD method, importers bear the costs to hedge against the insecurity of not getting quota access for the firm's profit-maximising quantity in the case of, for example, vegetables (HS 7). Figure 1 illustrates the impact of transaction costs on the net import demand. These costs often result in a low TRQ fill rate as, for instance, in the case of cut flowers, so that imports are below the minimum access commitments.



Q_o: quantity that would have been imported if there were no protection
Q_1: quantity that would be imported at the in-quota tariff under the TRQ regime without transaction costs
Q_2: quantity that should be imported at the world price plus in-quota tariff rate plus transaction costs
P_T: out-of-quota tariff rate
P_d: domestic price of the imported product
P_w: world market price
P_{MAC}: market price at in-quota tariff (world market price and in-quota tariff)
D_1: import demand without transaction costs
D_2: import demand with transaction costs
TC: transaction costs

Figure 1 Impact of transaction costs on TRQ fill rate.

The figure shows that in the absence of transaction costs, total imports would be Q_1 at price $P_{MAC.}$ If the administrative mechanism results in transaction costs, then the domestic price of imported goods (P_d) will be the world price plus the in-quota tariff (P_{MAC}) and transaction costs (TC). In effect, net import demand shifts down from D_1 to D_2 by the magnitude of transaction costs, and total imports decline from Q_1 to Q_2. For instance, until 2005 imports of cut flowers (HS 6) were managed with a combination of LD, HI and DPR methods. While importers were notified of

allocations under the HI method at the beginning of the administered period, the relevant quantities that importers had to purchase from the domestic market (to be eligible for allocation under the DPR method) were not communicated until the administered period was underway. In addition, the eligibility to import was notified weekly and fluctuated based on the evolution of domestic demand and supply. This contributed to uncertainty, increased transaction costs and lowered the fill rate of the portion of the TRQ on cut flowers managed by the DPR method.

While the utilization rates of other administration methods, for instance the FCFS (cereals for bread making, HS 10, and dairy products, HS 4) and HI methods (meat, HS 2, 16, and fresh vegetables, HS 7), have been over 100 percent, it does necessarily follow that the fill rate of an administration method is an indicator of its efficiency. Some of the main determinants of fill rates are the applied in-quota tariffs; size of the TRQ/import quota; prevailing market conditions;[27] trade preferences and country-specific quotas allocated by the TRQ administering country;[28] non-tariff barriers such as strict standards and labeling requirements and health and safety requirements; and transportation costs. In addition, rules on resale of import quota rights in the secondary market also affect importers' incentives to utilize TRQs. The existing rules allow resale of quota allocation, which encourages strategic behaviour and rent seeking by importers who have been allocated import quotas but do not import during the administered period, especially for products with high out-of-quota tariffs. Such resale decreases the overall efficiency of TRQs as a market access instrument.

Another closely related factor that determines the extent of market access for the partner countries at the in-quota tariffs are the minimum access commitments. For example, the minimum access commitments on pork meat have been maintained at 1986-88 quantities; as a result, the quota is the binding constraint for imports. The definition of the TRQ is yet another determinant of the total market access allowed, as in the case of the beef TRQ, which is allocated at a specific 8-digit level with rather restrictive product coverage of boneless beef meat. This results in high out-of-quota red meat imports from Brazil. Likewise, a broad definition of the TRQ on grains allows importers to import high-value organic grains at the in-quota rate of CHF 29.30/100kg (similar to the rate for non-organic grains), so the current access commitment (70,000 tons) is filled with organic grains. This influences market access positively for some developed countries, such as Canada, that produce high quality organic grains.

Similarly, country-specific quotas allow additional market access (under both in- and out-of-quota tariffs) only to the beneficiary countries. Important examples are meat (300 tons of beef to the United States and 170 tons of dried meat to Italy) as well as milk and cheese (to France). As a result of country-specific allocations, most developing countries that are not the beneficiaries of these allocations are excluded

from participating in TRQ imports. In addition, market access for agricultural products is influenced by Switzerland's specific tariff structure. This is because, first, a strong Swiss Franc translates specific tariffs into higher *ad valorem* equivalents (AVEs), and, second, levying tariffs by weight discriminates against low-value, unprocessed agricultural products, in which low-income developing countries' producers often specialize. This deprives the agricultural products from developing countries of their competitive advantage, and specific tariffs become a barrier to developing countries' agricultural exports.

Existing NTBs are another factor that impedes participation of developing countries. Examples of some important NTBs are specific sanitary and phyto-sanitary requirements on meat and poultry processing standards, residue limits for pesticides in foods and regulation of agricultural biotechnology. Such stringent requirements result in high costs of compliance for developing countries. The disadvantage of most low-income developing countries is compounded by their inability to design production structures compatible with the standards required for processed agricultural products. There are, in addition, supply constraints as well as infrastructural weaknesses in these countries that result in high transportation costs; as well, there are institutional drawbacks and technological backwardness, lack of credit availability, high costs of financing trade and lack of insurance. All these further limit developing countries' participation in TRQ imports. The inability of most developing countries to benefit from preferential market access within in-quota tariffs questions the justification of employing TRQs as means to enhance market access. The findings show that, on the contrary, this trade policy instrument has the potential to restrict imports of agricultural products – a detriment to market access from a developmental perspective.

Conclusions and the Way Forward

Given that TRQ management in Switzerland has the potential to impact exports of the trading partners' agricultural products, reform is warranted in the existing administrative mechanism if TRQs are to be used as a market access instrument from the development perspective. The proposed reforms suggest an efficient TRQ administrative mechanism, complemented with overall trade liberalization in the long term, to enhance the relevance of TRQs from the perspective of developing countries and LDCs.

The first step is to liberalize trade with TRQs in the short term through simplification of the existing administrative mechanism. This will enhance transparency, reduce the existing high transaction costs, improve TRQ fill rates and allow better utilization of import quotas by low-cost suppliers as well as encourage new entry. One option to minimize transaction costs is to increase the size of quota

allocations. Larger import quotas will allow importers to reap the benefits of economies of scale and encourage imports from countries disadvantaged due to high transportation costs. In addition, the existing mechanism can be simplified by reviewing the rules on tradability of import licences and the resale of import quota rights, which at present affect the importers' incentives to utilize TRQs. To ensure that there is no hoarding of import quotas for rent seeking, it is suggested that the resale of unused import quota licences be monitored periodically. This is particularly relevant in cases when LD and HI are used to manage imports. Under the LD method, there can be a strong incentive for importers to overstate their demand for import licences and earn rents from resale of quota rights in the secondary market (from those importers who are not allocated the licence to import). Similarly, under HI, since new importers can only gain entry to the market by participating in imports, new entrants have to purchase import rights from the secondary market to be eligible for licence allocation in the following year. Rents are another issue that needs to be addressed. Regular monitoring of the resale of import quota rights will provide information on import needs misrepresentation and will minimize rent seeking. This can be made operational by requiring an importer to submit a security deposit in proportion to the quota quantity allocated. In the event of lower imports without any valid reason, the deposit may be forfeited. Longer validity of import quotas is also proposed, as this will allow importers adequate time to plan imports from low-cost suppliers and reap the benefits of economies of scale. To make this suggestion operational, authorities can consider allocating a certain percentage of yearly import quotas (which can be 80 percent of last year's imports) at the beginning of the administered period, with an indication of the tentative imports subject to revisions in the final import quantities during the administered period. Finally, auctions are proposed as a method by which to manage TRQs.[29] The rationale for this suggestion is that auctions reveal information on the binding level of import quotas as well as serve as the basis for establishing an equivalent tariff. This is substantiated by white wine TRQ auctions in Switzerland during 1997-2000 (Jörin & Lengwiler, 2003).[30] It is expected that employing auctions will provide a good starting point for gradual liberalization of existing protection levels.

In the long term, trade liberalization with TRQs can be through expansion of the existing quotas, reduction of in-quota tariffs, and/or reduction of prevailing high out-of-quota tariffs. Though member countries in the WTO have been debating expansion of TRQs as a means to enhance market access, this may not always necessarily be helpful from a development perspective. This is because market access for developing countries' products depends not only on the in- and out-of-quota tariffs but also on the prevailing demand and supply conditions as well as their export competitiveness. Any expansion of the TRQ has to be necessarily complemented with low out-of-quota

tariffs, else rents will continue and the benefits from increased market access will accrue to those privileged by administrative methods of access allocation. However, if the level of TRQ is the binding constraint, reducing out-of-quota tariffs not only will minimize potential rents in the short run but also will increase the probability of out-of-quota imports in future. Similarly, if in-quota tariffs are the binding constraint, reducing out-of-quota tariffs may have no immediate effect, though it will reduce the size of future rents. This suggests that any reduction in out-of-quota tariffs, therefore, is a potential future gain because lower out-of-quota tariffs will be an opportunity for competitive exporters to compete; consumers will also benefit through lower domestic prices. In the long term, lower out-of-quota tariffs will reduce rent seeking among importers and lead to a more open market. The benefit of additional market access can only be reaped by developing countries if capacity-building measures in these countries are initiated that aim to support increased participation by exporters in international trade. Trade facilitation is imperative if developing countries are to benefit from trade liberalization with TRQs.

The Swiss government acknowledges the importance of capacity building and technical assistance for developing countries.[31] As part of its commitment to supporting development of developing countries in the multilateral trading system, the Swiss government has undertaken various capacity-building measures. Important examples of recipients of such initiatives during 2005-06 were Costa Rica, Nicaragua, El Salvador, Guatemala, Morocco and Tajikistan.[32] The measures have improved participation and competitiveness of exporters. In addition to government initiatives, independent Swiss import organisations, for example the Swiss Import Promotion Programme (SIPPO), as well as individual supermarkets that are also importers, for example Coop and Migro, have undertaken capacity-building measures in meat (HS 2), vegetables (HS 7) and fruits (HS 8) that have enhanced market access opportunities for the beneficiary countries' exporters into the Swiss market.

To conclude, TRQs do not enhance market access for developing countries' agricultural products in Switzerland. The manner of administration is complicated, which leads to high transaction costs, which in turn affect the total extent of market access allowed to countries participating in Swiss TRQ trade. This pattern negates the developmental relevance of TRQs. For developing countries to enjoy the benefit of enhanced market access, it is imperative that the management approach be simplified. This will enhance transparency and reduce transaction costs, lead to higher fill rates of the import quotas by developing countries and consequently impact market access for these countries positively. However, simplification of TRQ administration is not the only way to enhance market access for trading partners over the long term. Reduction of high out-of-quota tariffs is important as well, as this will increase consumer welfare, lower quota rents, improve market access for products protected with high

out-of-quota tariffs and enhance the developmental relevance of TRQs in the multilateral trading system.

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Endnotes

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1. All imports under the TRQ regime face a two-tiered tariff in a given period. A lower in-quota tariff rate is applied to the initial imports. When the quota has reached its limit, a higher out-of-quota tariff is applied to the subsequent imports.
2. Binswanger & Lutz (1999) show that TRQs administered by the EU on banana imports generate rents for the importing firms in the EU, whereas the potential benefits to the ACP countries are small. The study found that the total annual cost for EU consumers was nearly US$ 2 billion; out of this only US$ 150 million reached the exporters in the beneficiary ACP countries. A more recent study by Vanzetti et al. (2004) suggests that the total value of resource transfers was € 780 million, out of which only 20 percent was transferred as rents to the ACP producers.
3. Fourteen developing countries utilize TRQs to manage their imports of over 180 agricultural commodities. These countries are Brazil, Colombia, Costa Rica, Guatemala, Indonesia, Korea, Malaysia, Mexico, Morocco, Panama, the Philippines, Thailand, Tunisia and Venezuela. Among these countries, Korea has notified the highest number of TRQs (67).
4. Since tariffication was based on 1986-88 prices, when world agricultural prices were low, countries had considerable discretion over the conversion of non-tariffs into tariff equivalents. This allowed countries to continue with high levels of protection by "putting water in tariffs".
5. "Dirty quotification" implies the manipulation of the domestic consumption calculations by developed countries, given that the reference period for calculating consumption levels was not specified in the modalities.
6. This agreement is available on line at http://www.wto.org/english/docs_e/legal_e/23-lic.pdf

7. For instance, the EU has notified 89 TRQs to the WTO. Of these, 47 are managed under a combination of different methods. For instance, a fixed proportion of TRQs are issued on a FCFS basis, and once the limit is reached the import quota is allocated on the basis of LD; so if there are more requests than there are licences available the quota allocations are reduced *pro rata* where they exceed the available quantities. The remaining 42 TRQs are administered with the FCFS (20) and HI (22) methods (WTO, 2004b). Studies show that the use of different methods in combination increases the complexity of this trade policy instrument (Bureau & Tangermann, 2000).
8. The G-20 countries have been demanding better administration of TRQs. The G-20 countries are Argentina, Bolivia, Brazil, Chile, China, Cuba, Egypt, India, Indonesia, Mexico, Nigeria, Pakistan, Paraguay, Philippines, South Africa, Thailand, Tanzania, Venezuela and Zimbabwe. Developed countries, for example the United States, have also suggested improving the TRQ administrative mechanism as a means to enhance market access in the multilateral trading system.
9. The main imports were meat and meat offal products (HS 2); fresh vegetables (HS 7); fish and crustacean mollusks and other aquatic invertebrates (HS 16); and beverages and spirits (HS 22).
10. Online access: http://www.ezv.admin.ch/themen/00504/index.html?lang=de
11. The International Harmonized Commodity Coding and Classification System (HS), established by the World Customs Organization, is an international standard for world trade at the six-digit level. For example, 10=cereals, 1005=corn, 1005.90=other corn. Each country has the option of breaking down these international HS codes into more digits and more detail to meet its own needs. The commodity coverage is based on the definition of agriculture as specified in Annex I of the Agreement on Agriculture and includes all items from chapters 1-24 and chapter 35 of the Harmonized System.
12. Details of all the TRQs notified by Switzerland to the WTO are available online at http://www.ezv.admin.ch/zollinfo_firmen/abfertigungshilfen/zollkontingente/index.html?lang=de. Accessed on 9/11/2007.
13. AVEs are calculated by dividing the specific tariff per unit by the value of the product per unit. The detailed modalities for calculating the AVEs are at http://www.macmap.org/Reference.Methodology.aspx
14. In the past, auctions were used to manage the TRQs notified on wine (1998-2001) and grains (2004-2006).
15. The modalities and guide to bidding in auctions are available at http://www.blw.admin.ch/imperia/md/content/eauction/benutzerhandbuch_d.pdf
16. The Swiss National Bank uses the variable supply method to auction treasury bonds twice every month. Jörin & Lengwiler (2003) suggested adopting this method for TRQ auctions because they found no instances of collusion among bidders when this format was used to auction treasury bonds by the Swiss National Bank.
17. The meat TRQs limited to specific origin allow imports of dried ham from Spain and Italy and sausages from Italy, Spain, Germany and Hungary, as well as pet food from the EU.

18. The fresh milk TRQ allows import only from France.
19. Switzerland has concluded a bilateral agreement with the EU that covers agricultural and industrial products. The details of the agreements are at http://www.zoll.admin.ch/f/gesetze/dokumente/d30/d30.php
20. These are within the framework of the European Free Trade Association (EFTA) and cover processed agricultural products and fish and other marine products as well as industrial products. Unprocessed agricultural products are not covered by the agreement. Available online at http://www.ezv.admin.ch/index.html?lang=fr
21. Switzerland has entered into a FTA with Andorra, Bulgaria, China, Chile, Croatia, Faroe Islands, Gaza Strip, India, Israel, Jordan, the Democratic Peoples Republic of Korea, Macau, Macedonia, Mexico, Morocco, Pakistan, Romania, Singapore, Sri Lanka, Tunisia and Turkey. As a result of the FTA, Switzerland allows preferential tariffs on products imported under TRQs and the FTA from these countries. The tariffs are at http://xtares.admin.ch/tares/details/tarifDetailFormFiller.do;jsessionid=H19z3y1RPB0spxgCnbmWXdBG73TGVwpT2Fw4Qh26LxsVmFstHTPp!-991409488?tn=0707.0050&zc=00&schluessel=000&isApplying=true. Accessed on 10/11/2007.
22. For this study, the underutilized export potential of the developing countries has been calculated on the basis of

    (a) their share/rank in total world agricultural exports;

    (b) their share in total agricultural products imported by Switzerland.

    This has been computed from *product maps*, an e-portal of the ITC based on COMTRADE statistics. The findings suggest the following countries and products have an underutilised export potential: Brazil and Thailand in meat and meat products (HS 2, 16); Colombia and Thailand in cut flowers (HS 6); Mexico, India and China in fresh vegetables (HS 7); Chile, China and Brazil in fruits (HS 8); Argentina in grains (HS 10); and Chile in wine (HS 22).
23. Online access at www.tares.ch
24. The Generalised System of Preferences allows non-reciprocal preferences on selected agricultural and industrial products originating in developing countries and the LDCs at reduced or zero tariffs over the MFN tariff rates.
25. In-quota tariffs for the EU and GSP beneficiaries are available at http://xtares.admin.ch/tares/details/ansatzvergleichFormFiller.do;jsessionid=DBhJNsGrxVPg3mkf0DN1NYsMsCd81zf8C3lXvLeeerHcJmjxLwiQ!1179872173!-1118955996?tn=0603.1059&zc=00&schluessel=000. Accessed on 10/11/2007.
26. Validity is generally one week, and can be as little as three days during the domestic production season.
27. Prevalence of either weak demand, especially for goods that are non-storable (e.g., eggs, dairy and meat), and/or an inadequate supply can also contribute to an underfill during the period of observation.
28. For instance, if the TRQ is allocated to a country that is unable to supply the entire quantity allocated, the TRQ is underfilled.
29. There is an emerging consensus among WTO member countries, supported by economic literature, that auctioning import rights is an efficient method of TRQ administration (Skully, 2001; Jörin & Lengwiler, 2003). Literature shows that

auctioning makes the distribution of quota rents under TRQs more transparent and allows the government to retain rents that under the other methods accrue to domestic importers (WTO, 2004a).

30. Based on the auction results, the TRQ notified on wine (HS 22) was increased from 160,000 hl in 1997 to 190,000 hl in 2000; this was later integrated into a larger global quota in 2001.
31. The capacity-building measures undertaken by the federal government are at http://www.seco-cooperation.ch/imperia/md/content/laender/107.pdf?PHP SESSID=cfd8772c3bacbc0c6f0bf7575f8dfd76&langID=1 and http://www.seco-cooperation.ch/imperia/md/content/laender/46.pdf?langID=5. Accessed on 30/10/2007.
32. These are listed at http://www.seco-ooperation.ch/imperia/md/content/ laender/107.pdf?PHPSESSID=cfd8772c3bacbc0c6f0bf7575f8dfd76&langID=1 and http://www.seco-cooperation.ch/imperia/md/content/laender/ 46.pdf?langID=5. Accessed on 10/11/2007.