

Appendix: Technical Details of AVE Calculations

In their WTO schedules, members used a variety of formats and levels of precision to specify individual tariff commitments. In most cases, members specified tariffs in ad valorem terms, as a simple percentage of the value of the imported product. However, some countries elected to specify some or all tariffs in specific or other non-ad valorem terms. *Tariff Formats Conceal High Levels of Protection* (page 5), presents two examples of common forms of non-ad valorem tariffs. Before comparing tariff protection across countries and commodities, detailed tariff bindings must be converted into a common format. Calculating ad valorem equivalents (AVEs) of specific or other non-ad valorem tariffs allows aggregation of tariffs across the widest group of commodities and countries.

Commodity coverage in this report is based on the definition of agriculture as specified in Annex 1 of the WTO Agreement on Agriculture (see appendix box, *Product Coverage of the WTO Agreement on Agriculture*). This definition includes all items from chapters 1-24 of the Harmonized System (HS), minus chapter 3 (fish and crustaceans). Also included are selected agricultural products from other chapters, such as selected chemicals, fibers, and other substances. The HS provides a nomenclature for classifying internationally traded goods. Each of the chapters listed in Appendix table 1 is classified at a 2-digit level in the HS. Successive levels of disaggregation, found at the 4-, 6-, 8- or 10-digit levels, define products in narrower and narrower terms, or levels of specificity.

Countries in Dataset and Regional Groupings

North America:

Canada, Mexico, United States

Central America:

Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama

South America:

Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Suriname, Uruguay, Venezuela

Caribbean Islands:

Antigua & Barbuda, Barbados, Cuba, Dominica, Dominican Republic, Grenada, Haiti, Jamaica, Saint Kitts & Nevis, Saint Lucia, Saint Vincent & The Grenadines, Trinidad & Tobago

EU-15:

European Union

Non-EU West Europe:

Cyprus, Iceland, Malta, Norway, Switzerland

Eastern Europe:

Czech Republic, Hungary, Poland, Romania, Slovak Republic, Slovenia

Middle East:

Bahrain, Israel, Kuwait, Qatar, Turkey, United Arab Emirates

North Africa:

Egypt, Morocco, Tunisia

Sub-Saharan Africa:

Angola, Benin, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Congo, Cote d'Ivoire, Djibouti, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, Tanzania, Togo, Uganda, Zaire, Zambia, Zimbabwe

South Asia:

Bangladesh, Bhutan, India, Pakistan, Sri Lanka

Asia-Pacific:

Australia, Brunei, Fiji, Hong Kong, Indonesia, Japan, Korea, Macau, Malaysia, Maldives, New Zealand, Papua New Guinea, Philippines, Singapore, Solomon Islands, Thailand

Southern Africa:

Botswana, Lesotho, Namibia, South Africa, Swaziland

For example, at the 2-digit, or the HS chapter level, we find the aggregate category, *Meat and Edible Meat Offal* (chapter 2). Chapter 2 is disaggregated into 10 categories at the 4-digit level, ranging from 0201, *Meat of Bovine Animals, Fresh or Chilled*, to 0210, *Meat and Edible Meat Offal, Salted, In Brine, Dried or Smoked; Edible Flours and Meals of Meat or Meat Offal*. Within each 4-digit grouping, a further level of disaggregation would be at the 6-digit level, for example, 020110, *Carcasses and Half-carcasses*, and 020120, *Other Cuts with Bone-in*. Up to the 6-digit level, tariff schedules across countries use the same categories for breaking out successive commodity disaggregation. Therefore, a 6-digit commodity definition for a given commodity in one country that uses the HS would correspond to the same items in another country using the HS. The definitions of HS commodity groupings up to the 6-digit level are established regularly by the World Customs Organization.

Tariff schedules of WTO members were specified at various levels of commodity detail. Thus, some countries' schedules have as little as a few hundred individual tariff-lines, with some of these specified at the 2- or 4- digit level.¹ Other countries specified tariffs at a 10-digit level, which resulted in schedules containing nearly 2,000 tariff-lines. At 8-digit and higher levels of disaggregation, commodity definitions vary from country to country, therefore specific comparisons across countries are increasingly difficult at that level of detail.

When a country uses non-ad valorem tariffs, the ability to compare levels of protection across countries and commodities is further complicated. A recent paper by the WTO secretariat, *Ad valorem, Specific, and Other Tariffs*, discusses issues raised in the calculation of AVEs of non-ad valorem tariffs. In order to calculate AVEs, it is necessary to divide the specific tariff by an import price. Given the lack of detailed data available on import prices at the HS level, AVEs were calculated using world import unit values as a proxy for country-specific import prices. The world import unit values were defined at the 6-digit HS level, which, as noted above, is the most disaggregate level at which tariff nomenclatures are internationally comparable. Import unit values were calculated for available world imports from all sources (minus EU-intra-trade), in value and

¹ Some developing countries' schedules contain a single uniform tariff rate (such as 100 percent) across all commodities. In such cases, a 6-digit tariff schedule for the country was constructed using the uniform rate across all tariff lines.

Product Coverage of the WTO Agreement on Agriculture (HS96)

HS Chapters 1 to 24 less fish and fish products, plus¹--

HS Code	2905.43	(mannitol) ⁷
HS Code	2905.44	(sorbitol)
HS Code	2905.45	(glycerol-othre than crude)
HS Heading	33.01	(essential oils)
HS Code (ex)	Ex 3302.10	(preparations based on odoriferous substances, of a kind used in the manufacture of beverage)
HS Headings	35.01 to 35.05	(albuminoidal substances, modified starches, glues)
HS Code	3809.10	(fishing agents)
HS Heading	3823	(oleochemicals)
HS Code	3824.60	(sorbitol n.e.p.)
HS Headings	41.01 to 41.03	(hides and skins)
HS Heading	43.01	(raw furskins)
HS Headings	50.01 to 50.03	(raw silk and silk waste)
HS Headings	51.01 to 51.03	(wool and animal hair)
HS Headings	52.01 to 52.03	(raw cotton, waste and cotton carded or combed)
HS Heading	53.01	(raw flax)
HS Heading	53.02	(raw hemp)

¹The product descriptions in round brackets are not necessarily exhaustive.

Source: WTO Agreement on Agriculture, annex 1.

volume terms, using global trade data from the United Nations Trade Data System (COMTRADE). The import unit values used were for the period 1995-97, the most recent period available, and were obtained from the Agricultural Market Access Database. The world import unit values expressed, where available, the unit value in U.S. dollars for each 6-digit category, in kilograms or pieces. For countries that did not schedule their tariff bindings in U.S. dollars, a final step prior to calculating the AVEs was to convert the import unit values, for each year, into national currencies, and then calculate average import unit values for 1995-97, in national currencies.

Tariff schedules of 129 WTO members were reviewed in this report, yielding a total of about 91,000 individual tariff lines. Calculations of AVEs were needed for about 5,600 non-ad valorem tariff lines. Of this total, AVEs could not be calculated for 387 of the tariff-

lines. The majority (198) of the tariff lines for which AVEs were not calculated were in chapter 22 of the HS, which covers beverages, spirits, and vinegar. Duties on many items in this chapter are specified in terms of the percentage of alcohol. In these cases, the tariffs could not be matched to the world import unit values and, thus, AVEs were not calculated. The next largest number (95) of the remaining items for which AVE calculations were not possible pertained to many of the complex tariffs scheduled by Malaysia on products outside of chapter 22.

AVEs were calculated at the tariff-line level, whether it be the 2-, 4-, 6-, 8-, or 10-digit level, but using import unit values at the 6-digit level. When a tariff was scheduled at a more disaggregated level, using the world unit import value could have led to underestimating the AVE for some of these tariffs while overestimating it for others. When a tariff was scheduled at the more aggregate 4-digit level, the price used was a simple average of all 6-digit import unit values within each given 4-digit tariff.

Tariffs used throughout this report, including the AVE calculations, are the final bound MFN tariffs scheduled by WTO members. The final tariff bindings reflect the rate effective after phased implementation of Uruguay

Round tariff cuts. As a general rule, developed countries phased in their tariff reductions during the period 1995 to 2000. Developing countries began phasing in their tariff reductions in 1995 as well; however, they have until 2004 to complete implementation. In cases where developing countries applied tariffs that were unbound, they had the flexibility to offer ceiling bindings on these products. These ceiling bindings were exempt from the reduction commitments; therefore, the final bound tariff would take effect in 1995.

Tariff averages are calculated to reflect average MFN bound tariff rates. These averages are calculated in one of two ways, depending on whether or not the country scheduled TRQs. If the country did not schedule TRQs, all tariff lines in the schedule were used to calculate average tariffs. If the country did schedule TRQs, the over-quota TRQ rates and all non-TRQ rates were used to calculate average tariffs. An alternative in the second case would have been to first compute tariff averages for each TRQ by simply averaging the in-quota and over-quota rates. The in-quota rates are not included in this report's tariff averages since, as some have argued, using the over-quota rate alone is more appropriate, because it represents the marginal, binding constraint on additional trade (Laird).