# Does intra-sector tariff heterogeneity matter?

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Tariff escalation is an important feature of trade policy patterns. For instance, the world average protection on agricultural processed goods of 22.5% is almost double the 12.9% average for raw materials and basic products. The use of harmonizing formulas, special sector initiatives, and tariff escalation modalities in the Agricultural Market Access negotiations of the DDA are indicative of how significant is this issue in trade talks. The incentives for trade liberalization depends on a country's position in the international division of labor: a processed goods exporter will focus on the opening of final demand markets while a producer of intermediate inputs will be more interested in growth in its partners' industries.

Current CGE frameworks poorly address the issue of intra-sector tariff heterogeneity. If models were running at the most detailed level, for trade, production and consumption, no information will be lost and the exact pattern of trade and trade policies will be captured. However, in the standard GTAP framework, a homogenous tariff rate is used at the sectoral, bilateral level whatever the destination of the imported goods in the economy. Therefore, the same average rate is used for input, final and capital goods inside a sector and the same trade liberalization will be applied to each component of demand even if in reality, detailed negotiation modalities and initial trade pattern could lead to more differentiated impacts. Even for sectors for which the GTAP nomenclature offers a good disaggregation between downstream and upstream activities, intra-sectoral specialization remains and should be taken into account.

In this study we compute differentiated bilateral sectoral rates of protection by use, modify the GTAP dataset to integrate these new figures and use an extended version of the MIRAGE CGE model to run simulations using all the available information. First, we jointly use the BEC and SITC nomenclature to build a mapping table between HS6 products and their use (final demand, intermediate inputs, capital goods) by GTAP sector. The mapping is used with trade and tariff data from the MAcMapHS6-version 2 database to aggregate tariffs using a trade-weighted average at the bilateral and sectoral level by use.

Using this framework, we assess a realistic Doha scenario based on the December 2009 modalities including specific treatment of tariff escalation as well as different flexibilities. This scenario is assessed first with a 'standard' model where homogeneous protection is assumed across demand components and then, using the upgraded database, allowing for heterogeneous tariff rates. Most important differences (country and sectors) are stressed.

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