

Assessing HS-Level Impacts Using the GTAP-HS Model

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The GTAP-HS model is a hybrid version of the standard GTAP model (Corong et al., 2017) that facilitates modeling at the Harmonized System (HS) level. The model enables users to disaggregate GTAP commodities into sub-commodities at the HS6 level (or some aggregation specified by the user) and reconcile data flows in the GTAP database simultaneously using an automated data generation procedure. Specifically, the first part of the process entails combining HS6 level data on bilateral trade and import tariffs (using the TASTE utility) with the standard GTAP database. The resulting data is then used as input to the GTAP-HS model for policy simulations.

In this paper, we first explain the demand- and supply-side extensions underlying the GTAP-HS model. We then illustrate the model's usefulness for trade policy assessments by disaggregating the motor vehicle and parts (MVH) commodity in the GTAP 10 database into a set of more disaggregated commodities at the HS6 level that define the MVH sector. We then run technical change simulations to compare and contrast the results generated from three models, namely: (a) standard GTAP, (b) GTAP-HS and (c) standard GTAP model with MVH disaggregated (i.e., naïve SPLITCOM approach that only uses trade shares to disaggregate sectors) into the same commodity categories defined in the HS model, but without HS modeling linkages. We find that these three models generate similar macro-economic outcomes but with slightly differentiated sectoral results. We untangle the drivers of these changes and highlight the advantages of using GTAP-HS to better capture impacts on specific sub-sectors, particularly where the industries in question are directly interrelated.

References

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