GTAP Board Report 2019-2020
Organisation for Economic Cooperation and Research (OECD)

The GTAP databases are important inputs into two OECD CGE models: The ENV-linkages model in the Environment directorate and METRO model of the Trade and Agriculture Directorate. The GTAP Power database version 9.2 and 10 as well as GTAP's carbon emissions and Air pollutants databases are one of a few database inputs into the OECD dynamic environmental-economic CGE model, ENV-Linkages. The main GTAP database version 10 as well as the associated migration satellite database (GMIG) are used as the basis of the METRO model database, the in-house CGE trade model.

Both models are used to produce OECD reports and papers. The ENV-linkages model is used to project materials use to 2060 as well as Resources efficient and circular economy policy to 2040. The METRO model has been used to assess the impact on trade of various policy measures included the OECD's Economic Outlook, country surveys and working papers.

OECD Environment Directorate

Projects and reports

1. Three reports on Resources efficient and Circular Economy policies are currently being finalised (declassification processes):

   - "Policy scenarios for a transition to more resource efficient and circular economy"

   - "The jobs potential of a transition towards a resource efficient and circular economy"

   - "The consequences of a more resource efficient and circular economy for international trade patterns." (Dellink, R. 2020, OECD Environment Working Paper No 165).

These reports are based on a version of ENV-Linkages enhanced in two ways. First, ENV-Linkages takes into account 60 kinds of materials, using the UNEP 2017 database on material extraction linked to bilateral trade flows from GTAP. In addition, the GTAP 9.2 Database was augmented with 9 new sectors relevant to recycling as well as primary and secondary metal processing (for Iron and steel, Aluminium, Copper and Other nonferrous metals), which were split from GTAP based on information from EXIOBASE version 3.

2. Participation of ENV Team members to the finalization of several papers of the forthcoming special issue of JGEA dedicated to baseline in CGE models, edited by Dominique van der Mensbrugghe (University of Purdue and GTAP), Rob Dellink (FAO) and Bert Saveyn (European Commission).

3. Contribution to EU SRRS projects. Using ENV-Linkages, produce economic and material uses projections for 3 country case studies for Czech Republic, Hungary and Slovakia (forthcoming reports).

4. Introduce in OECD ENV-Linkage Model the Air Pollution emissions and air pollution policies from IIASA GAINS Model + update on Air pollutions damages in the model (morbidity, mortality, crop losses, etc…) for an ongoing report on "The economic benefits of air quality improvements in Arctic Council countries".

5. **Ongoing work** includes plastic projections to 2060 using the latest sectoral disaggregation of the GTAP 10 database (e.g. "CRP" disaggregation) together with a split of various plastic/polymer uses.

OECD Trade and Agriculture Directorate

Database

1. The METRO model database is derived from the GTAP 10L14 database extended with trade flows disaggregates by use categories derived from the OECD and UN sources. Bilateral remittance information from the GTAP satellite data GMIG2 is also included.

2. UN Comtrade is used to calculate split shares for the 45 agriculture and manufacturing sectors. The OECD Inter-Country Input-Output Model provides use information for the 15 services sectors. The OECD ICIO data, however, is available only for a subset of countries. Accordingly, the 141 regions in GTAP are aggregated to match the 64 regions available in the OECD data. The METRO model database, therefore, distinguishes 64 regions, 65 sectors and 4 use-categories.

Publications and papers incorporating METRO model analyses

1. Grundke, R. and J. Arnold (2019), "Fostering Argentina's integration into the world economy", *OECD Economics Department Working Papers*, No. 1572, OECD Publishing, Paris, https://doi.org/10.1787/7ed95b2b-en.
2. Joumard, I., C. Arriola and M. Dek (2020), "Challenges and opportunities of India's enhanced participation in the global economy", OECD Economics Department Working Papers, No. 1597, OECD Publishing, Paris, https://doi.org/10.1787/a6facd16-en.
3. OECD (2019), OECD Economic Outlook, Interim Report September 2019, OECD Publishing, Paris, https://doi.org/10.1787/37e06864-en.
4. OECD (2019), *OECD Economic Outlook, Volume 2019 Issue 2*, OECD Publishing, Paris, https://doi.org/10.1787/9b89401b-en.
5. OECD (2019), *OECD Economic Surveys: India 2019*, OECD Publishing, Paris, https://doi.org/10.1787/554c1c22-en.

Other Activities related to the METRO model

1. **New model version**: In May 2020, a new version of the METRO model was made publically (version 3). The most significant changes in the new model version is the

new land allocation module. The new module allows for better representation of the constraints in agricultural production related to land by implementing a 4-tier nesting of CET functions for land supply. Other enhancements include: a new facility to calibrate the household savings rates inherent in the model database to a target rate; and an update to the model interface which gives users the ability to restart from a previous simulation allowing for layering of policy analyses.

2. **Estimates of AVE of NTMs**: OECD has also recently published estimates of ad valorem equivalents of non-tariff measures at the region and GTAP version 9 sector level. The data are calculated from the estimations described in Cadot et al (2018), which describes the method to calculate price effects from the estimated coefficients of a gravity equation. Updated estimates at the GTAP version 10 level will be made available later in the year.

3. **Ongoing work** includes work on COVID-19 impacts, focussing on GVCs, and continued work on Brexit. First results of work on linking the METRO model to household expenditure micro-data will be presented at his year's GEA conference.