



GTAP Advisory Board Meeting Summary
Cartagena, Colombia
June 11-12, 2018

Attendance

GTAP Center: Angel Aguiar, Ginger Batta, Mary Burfisher, Maksym Chepeliev, Erwin Corong, Thomas Hertel, Robert McDougall, Dominique van der Mensbrugge

Board Representatives: Eddy Bekkers, Kirsten Boysen-Urban, Lucian Cernat, Lurong Chen, Shenjie Chen, Jeffrey Condon, Jean Fouré, Paolo Giordano, Mohammad Reza Gharibnavaz, Jianwu He, Mark Horridge, Stephen Karingi, Aikaterini Kavallari, Marijke Kuiper, David Laborde, Maryla Maliszewska, Mondher Mimouni, Sergey Paltsev, Janine Pelikan, Ralf Peters, William Powers, Chris Rasmussen, Antonio Soria Ramirez, Constanza Valdes

Guests: Andres Escobar, Jan Hagemejer

A. Summary of Goals and Accomplishments in the Past Year

https://www.gtap.agecon.purdue.edu/events/Board_Meetings/2018/documents/2018_IssuesReport.pdf

B. Summary of Agency Activities in the Past Year

https://www.gtap.agecon.purdue.edu/events/Board_Meetings/2018/default.asp#agencyreports

C. Overview of Broad Goals for the Center

1. **Data Goal:** To Improve the quality of data products through:
 - a. Improving the quality of contributed I-O data
 - b. Addition and improvement of other datasets
 - c. Monitoring of data quality using comparison programs
 - d. Version control and documentation
2. **Research Goal:** To actively participate in quantitative economic analysis of pressing global concern in the areas of Trade and Development and Global Environmental Issues
3. **Model Goal:** To promote further development of GTAP-based models
4. **Education Goal:** To expand and improve education for global economic analysis worldwide
5. **Staffing Goal:** To actively seek and encourage talented staff and graduate students
6. **Collaboration Goal:** To actively seek opportunities for fostering collaboration with institutions around the world
7. **Communication Goal:** To facilitate communication amongst members of the network as well as between the Center and key stakeholders

D. Overview of Priorities and Responsibilities, by Goal Type

1. Data Goal: To Improve the quality of data products

Tasks	Responsibility
Improving the quality of contributed I-O data (core)	Aguiar
<i>Primary Priorities</i>	
<ul style="list-style-type: none"> Work with contributors to improve I-O tables (US, others) 	Aguiar
<ul style="list-style-type: none"> Compare IOT with data base to work with contributor on where the largest adjustments occur 	Aguiar
<i>Secondary Priorities</i>	
<ul style="list-style-type: none"> Finalize the implementation of the dwellings module 	McDougall
Addition/Improvement of Datasets used in GTAP Data Base (core)	Aguiar
<i>Primary Priorities</i>	
<ul style="list-style-type: none"> Agricultural Production Targeting (APT) integration into FIT and other industry targeting 	McDougall
<ul style="list-style-type: none"> Program data separation 	Corong
<ul style="list-style-type: none"> Improved Agricultural Production data (FAO) 	Chepeliev
<ul style="list-style-type: none"> Review of labor and land disaggregation from value added 	
<ul style="list-style-type: none"> Energy Subsidies: special version for GTAP 9 and 10 	Chepeliev
<ul style="list-style-type: none"> Development of the GTAP non-GHG emissions Data Base 	Chepeliev
<i>Secondary Priorities</i>	
<ul style="list-style-type: none"> Examine possibility of targeting trade balances 	McDougall
<ul style="list-style-type: none"> Examine the availability of NSO data (production, etc., by year) to update I-O tables as part of FIT process 	Aguiar
<ul style="list-style-type: none"> Examine integration of biofuels into standard data base (in addition separation of heat and power) 	Chepeliev, McDougall, Taheripour
<ul style="list-style-type: none"> Domestic support, PSE database for Latin America and Africa – MAFAP 	van Tongeren, Balié, Boulanger
<ul style="list-style-type: none"> Development of the substitution elasticities data base 	Chepeliev
Addition/Improvement of Satellite Data (core)	Aguiar
<i>Primary Priorities</i>	
<ul style="list-style-type: none"> Domestic Margins: special version for GTAP 10 	Corong
<ul style="list-style-type: none"> Multi-region Input Output Database (GTAP-MRIO) 	van der Mensbrugge
<ul style="list-style-type: none"> Energy database (GTAP-E) 	Aguiar
<ul style="list-style-type: none"> GDYN database 	Golub
<ul style="list-style-type: none"> GMIG database 	Corong
<ul style="list-style-type: none"> Land use database 	Baldos
<ul style="list-style-type: none"> Power and non-CO2 emissions database 	Chepeliev

2. Research Goal: To actively participate in quantitative economic analysis of pressing global issues

Tasks	Responsibility
Trade and Development	
<i>Primary Priorities</i>	
<ul style="list-style-type: none"> Continue to publish papers on trade, poverty, migration/labor and global supply chains 	Staff and Graduate Students

Global Energy and Environmental Issues	
<i>Primary Priorities</i>	
<ul style="list-style-type: none"> Continue to publish papers on energy and environmental issues with a special focus on the land-water-energy-climate nexus 	Staff and Graduate Students

3. Model Goal: To promote further development of GTAP-based models

Tasks	Responsibility
Model Updates	
<i>Primary Priorities</i>	
<ul style="list-style-type: none"> Continue to convert some of the Center's model extensions to the new facelifted version of the standard GTAP Model. The priority is GTAP-E and a new dynamic version of GTAP. 	Staff and Graduate Students

4. Education Goal: To expand and improve global economic analysis education worldwide

Tasks	Responsibility
Education Plan	
<i>Primary Priorities</i>	
<ul style="list-style-type: none"> 2018 GTAP Short Course 	Keeney, Batta, Douglas
<ul style="list-style-type: none"> GTAP 101 Courses 	Countryman, Batta, Douglas
<ul style="list-style-type: none"> GTAP PTA Course 	Walmsley, Batta, Douglas
<ul style="list-style-type: none"> 2019 Dynamic Short Course 	Aguiar, Batta, Douglas
<ul style="list-style-type: none"> GTAP HET Course 	Akgul, Batta, Douglas
<ul style="list-style-type: none"> Update instructional materials for GTAP Model updates 	Keeney, Aguiar, Chepeliev, Corong, McDougall, van der Mensbrugge
<i>Secondary Priorities</i>	
<ul style="list-style-type: none"> Further investigate development of online mini-courses on special topics 	Burfisher, van der Mensbrugge, Hertel
<ul style="list-style-type: none"> Continue development and implementation of an "Alumni Outreach/Continued Learning Initiative" for short course graduates 	Keeney
<ul style="list-style-type: none"> Develop options for accommodating growing demand for mentors 	Burfisher, Batta

5. Staffing Goal: To actively seek and encourage talented staff and graduate students

Tasks	Responsibility
New Staff	
<i>Primary Priorities</i>	
<ul style="list-style-type: none"> Hire a programmer/web designer to re-design the GTAP website and provide an architecture for a documentation wiki. 	van der Mensbrugge, Douglas

6. Collaboration Goal: Actively seek opportunities for fostering collaboration with institutions around the world.

Tasks	Responsibility
GTAP Conferences and Board Meetings	Batta, van der Mensbrugghe
<i>Primary Priorities</i>	
<ul style="list-style-type: none"> 2018 Board Meeting and Conference (Cartagena, Colombia) 	Batta, van der Mensbrugghe
<ul style="list-style-type: none"> 2019 Board Meeting and Conference (Warsaw, Poland) 	Batta, van der Mensbrugghe
<ul style="list-style-type: none"> 2020 and 2021 Conference Proposals 	Batta, van der Mensbrugghe

- 7. Communication Goal:** To facilitate communication amongst members of the network as well as between the Center and key stakeholders.

Tasks	Responsibility
User Support	
<i>Primary Priorities</i>	
<ul style="list-style-type: none"> GTAP-L, gtapsupport, contactgtap: continue offering support 	Batta, Chepeliev
<ul style="list-style-type: none"> Website redesign/redevelopment 	Douglas, van der Mensbrugghe
Strategic Communication	
<i>Primary Priorities</i>	
<ul style="list-style-type: none"> GTAP Social Media – continue to increase presence 	Keeney, Batta
<ul style="list-style-type: none"> Publish third volume of the <i>Journal of Global Economic Analysis</i> 	Hertel, Winchester

E. Summary of Discussions

1. Welcome and Overview

- a. **Overview and Issues** – Dominique van der Mensbrugghe (GTAP) opened the meeting welcoming everyone to Cartagena, introducing new board members, covering the meeting agenda, the Center’s goals, agency reports, and network growth updates. Ginger Batta (GTAP) briefly updated the board on the Center’s social media efforts.
- b. **The GTAP Data Base: Version 10** – Angel Aguiar (GTAP) updated the board on the progress towards releasing the GTAP 10 Data Base. Following the presentation, there were questions regarding the availability of Croatia as part of the domestic support data set, which was confirmed.

Bill Power (USITC) inquired about GTAP’s interaction with OECD’s TIVA. Tom Hertel (GTAP) asked Bill about the best way to interact. Bill agreed to organize a session at the 2019 conference to combine presentations from OECD, GTAP, and a third initiative.

Lucian Cernat (EC) raised the need to update Armington elasticities. Tom Hertel referred him to work by Russell Hillberry and David Hummels (2013). Dominique van der Mensbrugghe also mentioned previous work by Bill Powers and Alan Fox. Antonio Soria Ramirez (EC JRC) cautioned that the homogeneity of services is an issue.

Jean Fouré (CEPII) signaled that the committee on labor splits would be meeting during the conference but had nothing new to report. Maryla Maliszewska (WB) commented that there

is an employment project where dynamic modelling would have to address labor composition.

Regarding the split of labor and sectors, the Australian efforts (GTERM) were commended. Policy relates to further split of sectors, say in the auto industry or Pork versus Poultry.

David Laborde (IFPRI) commented on a potential issue with the GTAP classification of fishing and processed food industries because trade statistics assign raw fish into the fishing industry, while frozen fish is assigned to processed food industry. The issue may arise when more fishing boats start to freeze their catch.

There was a call to further document GTAP's ranking of data inputs and also that tariff aggregation should be done using reconciled trade data for consistency.

Stephen Karingi (UNECA) mentioned that African countries are working hard to improve their statistics so that they can be included in GTAP, as well as a potential collaboration with the WTO-OECD. Eddy Bekkers (WTO) indicated that difficulty lies in identifying trade costs for elasticity estimation and that this line of work is also relevant to the WTO's future work.

2. The GTAP Data Base: Updates on Core Components

- a. **IO Tables** – Angel Aguiar provided an update on IO tables. Mary Burfisher (GTAP) asked whether we can also work with Social Accounting Matrices. Angel responded that we do because our format is a simplified format. We are also asking contributors to submit the original data so that we can return to extract extra detail we are currently not considering.

Antonio Soria Ramirez welcomed the move from 57 to 65, but cautioned against the concordances that took the team contributing the EU tables a few extra steps. The Center's data team has updated concordances tables, which would facilitate future contributions.

Maryla Maliszewska indicated her interest in including the Lesotho IO table.

Similar to Mary's point, Bill Powers inquired whether we are suited to include Supply-Use tables from other projects like WIOD, EXIOBASE, which do not include tax instruments. From the contribution point of view, we are suited as mentioned before, because ours relies on a simplified format. From the model point of view, we are better prepared with the later version because it includes make and use matrices (akin to supply use tables).

- b. **MRIO Database** – Dominique van der Mensbrugghe presented a brief summary of the state of play with the Multi-Region/Multi-Output (MRIO) database. The original database emerged from Caitlyn Carrico's PhD dissertation (and work on the European Commission's procurement project). The initial public version, with the accompanying documentation was published in the June 2017 issue of the JGEA, however with a fixed aggregation. The Center has improved the estimation procedure using grid computing to significantly reduce the computational time to create the MRIO database. The database is now available at the standard GTAP aggregation for Version 9.2 of the GTAP Data Base. The Center is preparing an integrated workflow that will automate the preparation of the MRIO database for future releases.
- c. **Agricultural Production Targeting** - Maksym Chepeliev (GTAP) provided an overview of the current efforts on the updated approach to agricultural production targeting. By utilizing FAO data such approach significantly extends regional coverage compared to the currently used methodology (from 46 to 133 GTAP regions). After taking further steps on the input data verification, this approach will be implemented into the special release of GTAP 10.

- d. **Other Updates** - Robert McDougall (GTAP) reported on other updates to the data base. For the main data release, these included a new data set for disaggregating agricultural sectors in input-output tables, based on work by Everett Peterson; transitioning from tables based on revision 3 of the International Standard Industry Classification to revision 4; updating and revised handling of data for income and factor employment taxes; and updated data for trade in services. For trade in services, following delays to expected data contributions, we would combine data from several different sources: the IMF Balance of Payments Statistics (BoPS), bilateral trade estimates contributed for previous releases by the CPB (Netherlands), and the World Bank bilateral trade data set. Of these, only the BoPS covers the latest GTAP Data Base reference year (2014). In addition, two special releases would integrate domestic margins and non-budgetary energy subsidies. For trade in services, Lucian Cernat suggested using the WTO/OECD data set.

3. Education, Outreach, and Strategic Communication

- a. **GTAP Education and Mentoring Initiatives** – Mary Burfisher (GTAP) reviewed the current and near-future educational and mentoring programs that the Center offers inquiring to the board whether or not these programs meet the needs of their agencies. Those in attendance indicated that they were supportive of these offerings.
- b. ***Journal of Global Economic Analysis*** – Tom Hertel (GTAP) reported that the journal has now published five issues – with the first issue of 2018 coming out at the end of June. The citation ranking is looking positive and the editors are starting to build a backlog of submissions. He encouraged board members to have their staff and colleagues consider the JGEA for any foundational work, which they are doing. The JGEA also publishes perspectives and pedagogical papers from time to time. Finally, he reported that the editors are expecting a special issue of the JGEA encompassing several papers emerging from groups formed during the baseline workshop held at the OECD.
- c. **Referencing GTAP** – Dominique van der Mensbrugge introduced this topic in order to provide Board members (and others), a standard way to reference the GTAP Data Base and Model that avoids any ambiguity regarding attribution of the quantitative findings. Standard wording was proposed and the Center will provide standard references, in various formats, of the key GTAP source materials.
- d. **PhD students working in the CGTA** – Board members have expressed interest in keeping tabs on the PhD students working with the Center, so Tom Hertel presented on what each of the Center’s current students are working on and when they would be entering the job market. At least one substantive bilateral conversation between a student and a board member emerged from this short presentation. Board members can access more information about students working with the Center at: www.gtap.agecon.purdue.edu/about/center.aspx (scroll to “Center Graduate Students” list and click “Full Details”)

4. New Developments at the Interface of Data and Modeling

- a. **New Emissions Database** - Maksym Chepeliev provided an overview of the current efforts on the construction of GTAP air pollution database, which is based on the data from EDGAR database and provides emissions of 10 air pollutants (BC, CO, NH₃, NMVB, NMVF, NO_x, OC, PM10, PM2.5 and SO₂). This database is provided as a satellite account consistent with the standard GTAP Data Base. It also has the same functionality as the non-CO₂ database and the two could be readily merged. Moving forward, the GTAP air pollution database will be developed as a satellite account for GTAP 10.

- b. **TASTE 10** - Janine Pelikan (Thünen Institute of Market Analysis) described recent and current work on TASTE. For the version accompanying GTAP 10, as for the two previous releases, data preparation is performed by the Thünen Institute. The HS classification is updated from HS07 to HS12, and the GTAP sectoral classification expanded from 57 to 65 sectors. Proposed future work includes providing several options for handling tariff rate quotas, and incorporating several base years in a single TASTE release.
- c. **Advances in GEMPACK Software** - Mark Horridge (CoPS) presented on the soon to be released GEMPACK 12 software. Mark mentioned a number of updates including:
 - i. GEMPACK programs supporting ultra-high resolution screens and some touch screen features
 - ii. move to 64-bit ViewHAR, AnalysGE, ViewSOL programs to cope with larger datasets
 - iii. TABLO syntax enhancements including loops and left-hand side mappings
 - iv. solution time speedups, making GEMPACK run 5-times faster
 - v. Linux versions of command-line programs
 - vi. TABmate enhancements for block select/copy/paste features and other keyboard shortcuts

Mark also mentioned that progress has been made in adapting RunGTAP, GTAP, and instructional material to GEMPACK 12 and standard GTAP Model version 7.

- 5. **Parking Lot: Other Data and Modeling Issues** - Given the prominence of trade policies in the past 12-18 months, this session was devoted to a discussion on trade led by Ralf Peters (UNCTAD). The discussions are summarized below.

6. The Network

- a. **GTAP Research Fellows** - The Board approved the following individuals to serve as GTAP Research Fellows for 2018-2021.
 - i. Michael Jerie
 - ii. Lionel Fontagné
 - iii. Marijke Kuiper
 - iv. Jose Manuel Rueda-Cantuche
 - v. Nelson Villoria

The Research Fellows Committee will remain Stephen Karingi (chair), Kenichi Kawasaki, and Thomas Hertel for 2019.

- b. **GTAP Conferences** - Presentations and subsequent discussions on the current and future GTAP Conferences were held with the following outcomes.
 - i. **2020 Conference Proposal and Vote** – Dominique van der Mensbrugghe (on behalf of Kenichi Kawasaki and the National Graduate Institute for Policy Studies) presented the proposal to hold the 23rd Annual Conference in Tokyo, Japan in June 2020. The board unanimously approved this proposal.
 - ii. **2019 Conference Update** – Jan Hagemeyer (University of Warsaw and National Bank of Poland) presented an update on planning for the 22nd Annual Conference, which will be held June 19-21, 2019 in Warsaw, Poland. The 2019 Conference Program Committee was established prior to the board meeting and met during the conference to begin formal discussions on potential sources of funding, plenary speakers, and organized session topics. Moving forward, the committee will continue these discussions via email.

- iii. **2018 Conference Update** – Andrés Escobar (Universidad de Cartagena) updated the Board on the 21st Annual Conference on Global Economic Analysis, focusing on the events for the week and conference demographics for the past decade.

7. New Developments at the Interface of Data and Modeling

- a. **Paris Baseline Workshop** – Dominique van der Mensbrugge presented the key outcomes from a workshop on ‘Developing Baselines’ that was held at the OECD in Paris in January 2018. The workshop was organized by the Center at the request of the Advisory Board following the June 2017 Board Meeting. The meeting was greeted with significant enthusiasm by the global CGE modeling community with submissions from around 25 modeling teams describing their models and how they develop baselines and more than 75 participants at the 3-day workshop. One concrete result of the workshop was the creation of seven working groups: macroeconomic drivers; demand side and consumer behavior; supply side and producer behavior; linkages with sectoral models (e.g. energy, agriculture and food); nutrition; trade and energy and environment. The working groups are preparing submissions summarizing the key commonalities across modeling groups’ methodologies, unresolved issues, potential best practices, and ways forward. Some initial findings were presented at a session of the GEA 21 conference. The draft reports from the working groups are scheduled to be ready for Fall 2018, and a model comparison exercise will be undertaken over the next 12 months with the next workshop expected to be held in Warsaw just prior to the 2019 Board Meeting and Annual Conference.
- b. **GTAP and Dynamics** - Erwin Corong (GTAP) presented recent updates and extensions to the standard GTAP Model version 7 (<http://dx.doi.org/10.21642/JGEA.020101AF>), published in the *Journal of Global Economic Analysis* (JGEA) in June 2017. The updates include:
 - i. Fisher ideal price and quantity indices
 - ii. additional region-wide technological change and labor-biased technical change variables
 - iii. new upward sloping factor supply curves
 - iv. additional saving-investment closures

Erwin also presented the model’s dynamic version, which is well suited for baseline creation and trade projections. Finally, Erwin informed the board that the static v7 and its recursive dynamic version will be used beginning the 2018 Short Course and the 2019 Dynamic Short Course, respectively.

8. Priorities for Forthcoming Year

- a. **Center Finances** Dominique van der Mensbrugge reported that the Center’s projected deficit for 2017 was somewhat smaller than anticipated. Externally funded staff support remains a key, if volatile, share of the total budget.
- b. **Priorities for Forthcoming Year** – Dominique van der Mensbrugge stated that the urgent priority was pre-release 3 of version 10 quickly followed by its public release. Issues in improving the services trade data has been the main reason for the delay. After public release of v10, the Center will move to defining the contours for v11. The Center is also working on developing workflows to automate the production of the TASTE and MRIO databases. Beyond the standard improvements to the database (for example updated input-output tables) potential database improvements include work on energy (for example biofuels, power and heat), review of labor and land satellite accounts, and a more detailed rendering of the balance of payments. Model priorities include consolidating version 7 and its extensions (GTAP-E, GDYN), finalizing work on GTAP-RD (recursive, dynamics, with inputs from the

'baseline' project) and development of a workflow for GTAP-PE (partial equilibrium). The research focus will be on the 'baseline' project follow-up, investigating PE-GE model linkages (FAO and NSF/C projects) and developing a workflow for GTAP-PE. The Center will continue to explore a makeover of the GTAP website. We anticipate a new GTAP-U offering of GTAP-HET and a re-configured GTAP-Dyn course. Next year's Board meeting an annual conference will be held in Warsaw the week of June 17-21, 2019.

9. Additional Meetings

- a. **Whither the International Trade Architecture** – Ralf Peters led the discussion on the directions of the future international trade architecture in light of the tariff actions undertaken by the Trump administration and the decision of the UK to leave the European Union (Brexit). While these two topics are headlines, there are other signs of a wider spread backlash to 'globalization'. The discussion largely revolved around how to highlight the beneficiaries of trade openness and policies that should be implemented, or reinforced, to help those hurt by openness. One implication is that GTAP-based analysis is still necessary, though it needs improvement (for example services trade restrictiveness, non-tariff measures, investment measures, etc.), but it also needs to be complemented with micro-analysis and case studies.
- b. **Services Trade by Mode** – Lucien Cernat provided an overview of recent efforts to improve trade in services data. As a result of the 2015 Board Meeting in Melbourne, the WTO and EC have been working together to push improvements in services trade data with a focus on additional disaggregation and data broken out by mode of supply. The OECD and WTO have jointly produced the BaTIS database (Balanced Trade in Services Statistics) that has reconciled bilateral trade in services covering the period 1995-2012 for 11 service categories (transportation, communications, construction, insurance, finance, computer and information, royalties and license fees, other business services, personal, cultural and recreational services, government services). This data is expected to be extended by mode of supply before the end of the year and barriers to bilateral services trade are in preparation (I-TIP/WTO and STRI/OECD) and need to be converted to ad valorem equivalents (AVEs). The WTO and OECD are committed to producing these databases on a regular basis as input into the GTAP Data Base.