GTAP Advisory Board Meeting Summary
Bordeaux, France | June 12-13, 2023

Attendance

Center for Global Trade Analysis
- Angel Aguiar
- Zeynep Akgul
- Ginger Batta
- Maksym Chepeliev
- Erwin Corong
- Alla Golub
- Iman Haqiqi
- Thomas Hertel
- Holly McIntire
- Dominique van der Mensbrugghe

Board Representatives
- Heleen Bartelings - Wageningen Economic Research
- Jayson Beckman - Economic Research Service, US Department of Agriculture
- Eddy Bekkers - World Trade Organization
- Shenjie Chen - Global Affairs Canada
- Jeffrey Condon - McKinsey & Company, Inc.
- Lionel Fontagné - Centre d'Etudes Prospectives et d'Information Internationales
- Stephen Karingi - United Nations Economic Commission for Africa
- Elisa Lanzi - Organisation for Economic Co-operation and Development
- Maryla Maliszewska - The World Bank
- Will Martin - International Food Policy Research Institute
- Catherine Milot - Department for International Trade
- Lars Nilsson - European Commission - DG Trade
- Sergey Paltsev - MIT Joint Program on the Science and Policy of Global Change
- Janine Pelikan - Thünen Institute of Market Analysis
- Ralf Peters - United Nations Conference on Trade and Development
- William Powers - US International Trade Commission
- Chris Rasmussen - US Department of Commerce
- Marika Santoro - International Monetary Fund
- Susumu Suzuki - Economic & Social Research Institute, Cabinet Office, Gov't of Japan
- Matthias Weitzel - European Commission - Joint Research Centre

Members at Large
- Joseph Francois - University of Bern, World Trade Institute
- Mark Horridge - Centre of Policy Studies, Victoria University

Guests
- Antoine Bouët - Centre d'Etudes Prospectives et d'Information Internationales
- Amanda Countryman - Colorado State University
- Rob Dellink - OECD
- Alessandro Gatto - Wageningen University and Research
- Russell Hillberry - Purdue University
- Jingliang Xiao - Office of the Chief Economist, Global Affairs Canada

A.   Summary of Goals and Accomplishments in the Past Year
2023 GTAP Advisory Board Report

B.   Summary of Agency Activities in the Past Year
https://www.gtap.agecon.purdue.edu/events/Board_Meetings/2023/index.aspx#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
Primary Priorities	
Maintain pre-release schedule of GTAP 12	Aguiar
GMig and work with IO table contributors	Aguiar
Power extension	Chepeliev
Land use extension	Corong
GTAPAgg3	Corong, Horridge
Mainstream GTAP-BIO	Taheripour, Chepeliev, Aguiar, Sajedinia
Mainstream/update circular economy database for GTAP	Chepeliev
Merchandise trade	Gehlhar, Aguiar
Nutritional accounts and food loss and waste data for GTAP 11	Chepeliev, Gatto
Tariff data	Pichot, Aguiar
Secondary Priorities	
Update GTAP 12 labor data	Corong
Update energy data for GTAP 12	Chepeliev
Balancing routines to include agricultural production targeting	van der Mensbrugghe
Improve disaggregation routines	tbd

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

Tasks	Responsibility
Primary Priorities	
Journal of Global Economic Analysis – Continue building pipeline of potential papers for future issues and schedule of two issues per year (June/December)	Hertel
Competitive FTA Scenarios, "Natural" Trading Levels, and the Role of Trade in Climate Change and Environmental Shocks	Golub
Carbon Leakage Resulting from Afforestation in the UK	Golub, Baldos
Publish SIMPLE-G book. Hertel and Haqiqi are in discussions with Springer to publish a book documenting the SIMPLE-G modeling framework. It will follow the same format as the GTAP book, developing the economic theory, modeling framework, data and parameterization, followed by nine applications, each of which can be replicated via the accompanying files. This will serve the purpose of documenting the framework – thereby facilitating future publications, and the book will also serve as a foundation for future SIMPLE-G courses.	Hertel, Haqiqi
Participate in Phase 2 of the EAT-Lancet Diet study assessing the sustainability of the global agri-food system. This work is being done through the AgMIP Global Economic Modeling Team.	Chepeliev, van der Mensbrugghe
Assess the sustainability of the livestock production system with a focus on policies to promote circularity	Chepeliev, Golub, van der Mensbrugghe

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

Tasks	Responsibility
Primary Priorities	
GTAP-SR (GTAPWiNDC): embedded WiNDC subnational data and model for the U.S. within global CGE GTAP framework.	Corong, Golub, van der Mensbrugghe
Develop GEMPACK version of the GTAP-SR model and documentation, and conduct illustrative policy analysis.	Corong, Golub, van der Mensbrugghe
GTAP-HS-TRQ - Implementation of TRQs using "ntuples" to limit complementarity to only bilateral trade notes subject to TRQs.	Golub
Extend the SIMPLE-G model to better utilize the GTAP Data Base. Iman Haqiqi is currently extending the SIMPLE-G model to incorporate production, consumption and trade data to match the GTAP crop categories. This will allow for future integration of SIMPLE-G into specialized versions of GTAP.	Haqiqi

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

Tasks	Responsibility
Primary Priorities	
2023 Course Delivery: • GTAP 101 Courses (March 20 - May 2 / September 4 - October 22) • GTAP Short Course (June 5 - August 11) • GTAP Dynamic Short Course (August 14 - October 13)	Batta
Curriculum Updates: • identify materials that require updates • propose new course materials to fill any possible gaps in the course • develop/review new and updated course materials	Akgul, Batta

Complete/Launch:
• new course proposal and review system
• module repository system
    ○ develop instructor guidelines for usage and access
    ○ new common module content developed (e.g., RunGTAP, FAQ data base, etc.)
• systematic documentation of GTAP model extensions (two tracks – for instructors and for non-staff users)
	Akgul, Douglas

New Course Development:
• Meet with instructors, board members, course participants and colleagues in the network to identify demand for core and specialized training in CGE modeling
• Propose new course ideas and work with instructors to develop/implement
    ○ GTAP for Non-Economists Course
    ○ GTAP-E-Power Course
	Akgul

Secondary Priorities	
Quality Assessments: • Regular review of course content and technical quality • Carry out post-mortem meetings with lead course instructors • Report the status of courses at staff meetings	Akgul
Report on the status and future directions of GTAP-U	Akgul

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

Tasks	Responsibility
Primary Priorities	
Hire new research professor	van der Mensbrugghe

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

Tasks	Responsibility
Primary Priorities	
2024 GTAP Conference (Fort Collins, Colorado, USA)	Batta, van der Mensbrugghe, Countryman
2025 GTAP Conference (Kigali, Rwanda)	Batta, van der Mensbrugghe, UNECA
2026 GTAP Conference (tbd)	Batta, van der Mensbrugghe
GTAP Virtual Seminar Series	Batta

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

Tasks	Responsibility
Primary Priorities	
GTAP website redesign	Douglas

E.   Summary of Discussions

1. **Welcome and Overview**
   a. **Meeting Overview**
      Dominique van der Mensbrugghe (GTAP) opened the meeting welcoming everyone, announcing new and departing member agencies, reviewing the agenda, the Center's goals, agency reports, and network growth updates.

   b. **GTAP Data Base**
      Angel Aguiar (GTAP) presented the status of GTAP 11, pre-release 4 was released in November 2022 for reference year 2017 and the final public release for all reference years was released in March 2023. The expanding geographical coverage was reviewed and the expected countries expected to be added soon. Also, upcoming releases were discussed, including GTAP 11a, correcting a concordance issue affecting the trade data. Other releases consist on extension and satellites, which include the Power extension among others, expected to be completed by the end of the year. Finally, a preview of GTAP 12 was presented, which will be released next year before the board meeting.

      Lars Nilsson (DG Trade) enquired about the use of TisMoS in subsequent releases. Aguiar responded that we will continue to use TiSMoS but that its latest reference year is 2017 and that GTAP 12 latest reference year is 2019 and that we will be adding OECD data, where relevant to supplement the services trade information.

      More information regarding tariff rate quota was requested, we currently use limited information from TASTE.

      Jayson Beckman (ERS) asked whether there are plans to introduce water as a factor endowment in GTAP. Iman Haqiqi (GTAP) explained that there is a version of GTAP (version 9) that contains this information, but it is not planned to be updated because it relies on data that needs to be updated.

There was also discussion about the introduction of meat substitutes for end-of-life phase studies, waste management and other environmental impacts on island countries, for example.

2. GTAP Data Base: Component Updates

    a. <u>**Non-tariff Measures**</u>

Ralf Peters (UNCTAD) presented ongoing collaboration between GTAP (Erwin Corong) and UNCTAD (Alessandro Nicita, Ksenia Koloskova, and Ralf Peters) to create a publicly-available GTAP 11 Non-Tariff Measures (NTM) Satellite Data Base. With funding provided by longtime board member, Ken Kawasaki (GRIPS), this satellite data will provide ad valorem estimates (AVEs) of customs compliance costs—i.e., traditional quantitative restrictions, price control measures, traceability, licensing, processing and inspections—for each good and country/region in the GTAP 11 Data Base. Ralf mentioned that the AVEs are made consistent with the GTAP Data Base by recalculating the initial AVE estimates by Kee and Nicita (2002) using GTAP Armington elasticities. This satellite data also includes a GTAPAgg2 routine to aggregate AVEs for use in GTAP simulations. Ralf ended his presentation by confirming that the NTM Satellite data will be released in the fall, along with technical documentation and model application to analyze AFCFTA and RCEP. During the discussion, Bill Powers (USITC) recommend that the original AVE estimates by Kee and Nicita (2002) be included to allow researchers to use either the original or recalculated AVEs.

    b. <u>**Food Loss and Waste**</u>

Maksym Chepeliev (GTAP) and Alessandro Gatto (Wageningen University and Research) presented the recent advances in representing food loss and waste and nutritional accounts in the GTAP Data Base. This includes work on the incorporation of micronutrients into the database as well as tracing the environmental footprints of food loss and waste along the global value chains. In addition, Maksym Chepeliev (GTAP) mentioned several other ongoing collaborations in this regard, including the construction of food balance sheets at the detailed commodity level (joint work with the PNNL team), a more detailed representation of the livestock sector in the GTAP Data Base (NIFA-funded project in collaboration with Cornell team) and multi-model assessment of the various aspects of the global sustainable dietary transition within the EAT-Lancet 2.0 project. Maksym also mentioned that the GTAP 11 FBS database is expected to be released to the Board members during the summer.

During the discussion part, a point regarding the inclusion of micronutrients in the database has been raised and Alessandro Gatto (WUR) responded that it is currently a work in progress and that we are planning to include micronutrients in a special release of the GTAP-FBS 11 Data Base.

Another important point raised during the discussion regarded a potential accounting of landfilling-related environmental impacts of food loss and waste. Alessandro Gatto (WUR) responded that the representation of the corresponding impacts is complicated due to the lack of data but the World Bank provides estimates on handling of municipal organic waste (not only food though but also garden-related waste) and it might be possible to compute the amounts that end up in landfill based on these data.

    c. <u>**Biofuels**</u>

Angel Aguiar (GTAP) presented the current status of the Biofuels extension of GTAP, now based on the Power extension. We are looking to develop a fully disaggregated extension. The calibration of cost structures for feedstocks and biofuels should be done in a single step.

Sergey Paltsev (MIT) asked if biomass use is being considered. Maksym Chepeliev (GTAP) responded that currently this is not being considered. Jayson Beckman (ERS) followed up whether the sector classification could be expanded to separate electricity from heat, but this is not being considered.

Will Martin (IFPRI) asked if methane emissions will be tracked. This is important in the context of new development of GTAP with enhanced livestock accounting. Jayson Beckman (ERS) also added that the work on emission-extension (GTAP-EF) will be updated.

d. **Energy and Emissions**

Maksym Chepeliev (GTAP) presented on the recent developments of the GTAP energy and emission accounting. These include a revised treatment of the combustion CO_2 emissions using the IPCC 2006 Guidelines and provide much better alignment with other international data sources (IEA and EDGAR), revised representation of the bilateral energy trade flows (using complementary data from Eurostat and British Petroleum), which particularly addresses an issue of the natural gas trade present in the GTAP 10 Data Base, as well as reliance on the UN energy balances to complement the IEA energy data for the case of countries not reported by IEA. In addition, newly released GTAP 11 complementary GHG emission accounts now cover process CO_2 emissions are report 25 types of fluorinated gases allowing for a more detailed representation of the mitigation potential across various GHGs. Updated air pollution accounts now rely on the most recent EDGAR release, which distinguishes between bio-based and fossil-based sources for all types of air pollutants allowing for a more precise mapping to emission drivers in the GTAP Data Base.

Several Board Members welcomed the presented developments and indicated that these would be particularly helpful in their work. One of the participants asked whether there are plans on disaggregating electricity and heat production in the GTAP Data Base. Maksym Chepeliev (GTAP) indicated that while this particular development is still under consideration, currently data development efforts are focused on other areas, which are considered to be of a higher priority.

3. **Education and Outreach**
   a. **GTAP-U**

Zeynep Akgul (GTAP) reported on the education plan for the third year of GTAP-U, highlighting key milestones and developments. She provided a summary of the course participation data spanning from September 2022 and August 2023. She also announced that the GTAP Short Course and the Dynamic Short Course will be conducted in-person at Purdue this Summer.

She informed the board that the GTAP 101 Course underwent a thorough update, aligning it with GTAP Model version 7 and introducing an additional common module that consists of several tutorials that present essential technical background and software. This module will serve as a valuable resource for the other GTAP-U courses that are scheduled to be updated in 2023-2024 to ensure compatibility with model version 7.

Akgul also informed the Board about the recent launch of the GTAP-U online portal, which allows external instructors in the network to submit new course proposals to develop courses to be included in the curriculum and teach at GTAP-U (www.gtap.org/gtap-u/). Mark Horridge (CoPS) asked how course content will be used after the instructor can no longer teach the material. Akgul informed the board about the current instructor agreement, as well as the course development and delivery process with GTAP-U courses. The instructor's involvement in course delivery depends on the preference of the instructor, whether they prefer an instructor-led or a self-paced course. The continued use of course content will be based on a mutual agreement with the instructor and the Center. In the case that the instructor no longer prefers to teach a course but agrees that the course to remain in the curriculum, they can endorse another instructor to continue teaching the course like the example of GTAP 101.

Looking ahead, the future directions of GTAP-U were also reported, with an emphasis on launching the GTAP for non-economists course among other initiatives. Akgul conveyed that the course is currently in the development stage, with plans to incorporate two tracks catering to policymakers/lawyers and interdisciplinary research. During the discussion, there was significant interest in the GTAP for non-economists course. Dominique van der Mensbrugghe (GTAP) mentioned the plans to introduce case studies in the course. Stephen Karingi (UNECA) supported this idea and indicated that trade-focused case studies with a focus on AfCFTA would be very helpful.

Furthermore, Jayson Beckman (ERS) inquired about the potential inclusion of GTAP in R as a course. Akgul responded that the decision would depend on new course proposals and the demand from participants, highlighting the flexibility of the curriculum to adapt to evolving needs.

b. **GLASSNET**

Tom Hertel (GTAP) reported on GLASSNET, which is a long run, NSF-funded initiative to link GTAP with ten other global research and engagement networks representing different perspectives and disciplines working on global sustainability challenges (https://glassnet.net). Tom summarized key findings from a recently published PNAS paper (https://www.pnas.org/doi/10.1073/pnas.2220401120) which highlights the economic gains from global conservation policies aimed at supporting natural capital. This novel integration of the GTAP Model with the InVEST model of ecosystem services will be further extended in ongoing work funded by the World Bank. A 2022 GLASSNET workshop held at Purdue University is culminating in a special issue of the interdisciplinary journal: *Environmental Research Letters* (https://iopscience.iop.org/journal/1748-9326/page/Managing_the_Global_Commons) focusing on global-to-local-to-global analysis of sustainability challenges. GLASSNET is also sponsoring Use Case Workshops and providing scholarships to early career researchers to visit GLASSNET-related centers and conferences. More detail can be found on the GLASSNET website: (https://glassnet.net).

c. **Journal of Global Economic Analysis**

Tom Hertel (GTAP) reported that the JGEA is now entering its eighth year. The June issue was published just before the conference and included papers on GEMPACK simulations in R, a Latin hypercube sampling utility, and calibrating constant elasticity of substitution technologies. The journal is always keen to solicit additional, foundational contributions involving extensions to theory, methods, data, parameters and pedagogy. For more information on the journal, please visit www.jgea.org.

d. **CGTA PhD Students**

Tom Hertel (GTAP) shared information on the Center's graduate students. Two students anticipate graduating this summer. One anticipates being on the job market in summer 2025, and three are planning for spring 2026. Tom emphasized the value of engaging with students early on in their program and involving them in projects. This has the advantage of allowing consortium members to build a relationship with the student. Such projects can often shape a student's choice of dissertation topic as well.

4. **New Developments at the Interface of Data and Modeling**
   a. **CBAM Exposure Index**

   Maryla Maliszewska (World Bank) presented the toolkits for the assessment of the impacts of the EU Carbon Border Adjustment Mechanism (EU CBAM). These include the CBAM Exposure Index, which identifies countries with high exposure to CBAM and provides insights on countries' relative competitiveness on the EU market; and the CBAM Explorer, which relies on a highly disaggregated CGE modelling framework and the GTAP circular economy database

aimed to provide the insights into the country-specific CBAM implications taking into account the GE effects and relative advantages.

Lionel Fontagné (CEPII) indicated that while it is an interesting work, several caveats should be highlighted. First, the presented CGE simulations do not explicitly take into account the impact of phasing out of free allocations. The latter would interaction with the impacts of CBAM and the composite effect would be different from the impact of CBAM only presented here. Second, countries in the rest of the world are also implementing mitigation policies, including carbon prices, which would interact with the effect of the EU CBAM. Finally, one need to keep in mind that the emission intensities are defined and reported and the firm level, which might be very different from the aggregate sectoral level identified in the GTAP Data Base, while the reporting itself might be associated with various biases (on the reporter side).

Maryla Maliszewska (World Bank) acknowledged that these are very valuable caveats and that in the next rounds of simulations, the team would be working on better reflecting the point of the free allocations phase-out and mitigation measures in the Rest of the World within the developed scenario setup.

Both Lionel Fontagné (CEPII) and Matthias Weitzel (EC-JRC) noted that in the case of some sectors, such as iron and steel and aluminum current legislation are intended to cover Scope 1 emissions only, while extension to Scope 2 might be considered in the longer-term.

b. **Global Analysis of Water Scarcity with SIMPLE-G Global**

Iman Haqiqi (GTAP) shared information regarding the SIMPLE-G global model and the results of a worldwide groundwater conservation/scarcity scenario. The presentation focused on the importance of economic responses and the impact of changes in demand and supply at local, regional, and global levels. The study showed that changes in international trade, production patterns, and local production technology could help reduce the initial impact of global groundwater restrictions. This modeling framework provides a better understanding of the effects of spatially diverse shocks and policies such as climate change and sustainability. Multiple board members expressed their curiosity during the meeting regarding the model and data development. They deliberated on how the recently acquired information on the significance of water and the precise estimation of parameters could lead to research opportunities for various potential applications. Additionally, it has been suggested that the utilization of this framework could yield advantageous results when combined with the GTAP-AEZ land-use information and models. This approach may offer valuable insights and help to enhance our understanding of various environmental and economic factors.

c. **Flash Session**

i. **GTAP in R**

Dominique van der Mensbrugghe (GTAP) highlighted ongoing work at the Center to develop R code that would read and compile TABLO code—including the GTAP model, read the GTAP Data Base and run simulations using a solver in R. This would provide potential users with access to running the GTAP model using opensource software, which would automatically allow for integration into one of the most popular analytical tools. The code is currently being debugged and will eventually be made public. This work is being supported by a generous grant from USDA.

ii. **MANAGE**

Dominique van der Mensbrugghe (GTAP) introduced the single country computable general equilibrium (CGE) model known as MANAGE, which is coded in GAMS. It is designed with considerable flexibility and also has a focus on energy, emissions, climate impacts and adaptation. The current version has automated links to the GTAP Data Base and has been used for a number of World Bank Country Climate and Development Reports (CCDR).

iii. New Model Links

Erwin Corong (GTAP) presented his ongoing efforts to create a permanent page on the GTAP website where GTAP version 7 suite of models and their applications can be downloaded. This dedicated page will make it easier for researchers in the GTAP community to find the specific model they want to use, thereby addressing previous challenges associated with locating GTAP model versions. Erwin confirmed that each model (RunGTAP and stand-alone) zip file will be uploaded to coincide with the release of their corresponding GTAP 11A Satellite Data Base.

iv. Parallelization

Dominique van der Mensbrugghe (GTAP) described new software in Python, which allows to take advantage of parallelization on multi-core personal computers. It has been tested with the Center's 'FIT' procedure and to run Monte Carlo simulations (using a GAMS-based integrated assessment model). It reduced compute times for the 'FIT' procedure from 75 to 15 minutes, and the Monte Carlo simulations from 6 hours to 1 hour. The software is documented in GTAP Working Paper No. 93.

5. GTAP Network

a. GTAP Research Fellows

The Board approved the following to serve as GTAP Research Fellows for June 2023 – May 2026.

- Amanda Countryman
- Justin Johnson
- Florian Schiffman

The Board also approved the following to be inducted into the GTAP Hall of Fame.

- Lionel Fontagné
- Marijke Kuiper

The 2023-2025 research fellows committee was formed and approved during the meeting. Janine Pelikan will remain on the committee as chair and will be joined by Bill Powers (USITC) and Erwin Corong (GTAP).

For the 2024 research fellows nomination cycle, the committee requested additional effort from board members to nominate potential research fellows in an effort to help diversify and broaden nominations. Additionally, Ginger Batta (GTAP) will provide statistics to the Board and Center staff on network members that rank highly in terms of number of resources on the GTAP website, GTAP-based citations, etc. to try and generate ideas for potential nominees.

b. GTAP Conferences

Presentations and subsequent discussions on the current and future GTAP Conferences were held with the following outcomes.

- **2023 Conference Update** – Antoine Bouët (CEPII) and Ginger Batta (GTAP) updated the Board on the 26th Annual Conference on Global Economic Analysis, focusing on attendee numbers and demographics.

- **2024 Conference Update** – Amanda Countryman (CSU) presented an update on the 2024 conference, which will be held at Colorado State University the week of June 3-7, 2024.

- **2025 Conference** – Ginger Bata (GTAP) reminded the Board that in 2022 they approved moving the Kigali proposal from 2022 to 2025, so not vote was required this year. Ginger also informed attendees that the Kigali Convention Centre was already secured for June 23-27, 2025.

Additional discussions on conference costs and delivery methods were held but tabled during the meeting in order to stay on time with the agenda. The Center was tasked with reviewing and evaluating conference expenses to ensure costs are kept at a reasonable level, as well as looking into the pros, cons, and feasibility of altering future conference delivery methods (e.g., keeping in-person only, hybrid: onsite + virtual participation, alternating between onsite and fully online). The Center will return to the board with options and ideas in the coming months for further discussion.

6. **New Developments at the Interface of Data and Modeling**
   a. **Panel Discussion on Decoupling**
      Bill Powers (USITC) together with Eddy Bekkers (WTO) and Maryla Maliszewska (World Bank) initiated a panel discussion on decoupling policies which encompass trade (Tariffs, import bans, export restriction/controls and international sourcing agreements), Investment (divestment orders and financial sanctions), Industrial (production and consumption policies with sourcing requirements), and other policies (licensing restrictions and visa bans). They mentioned that current decoupling policies have affected technology transfer and intellectual property flows, direct portfolio investment, cross-border banking and debt flows, as do cross-border goods and services flows.

   b. **Trade and Inter-sectoral Labor Mobility**
      Jingliang Xiao (Global Affairs Canada) presented current research work with Erwin Corong (GTAP) and Shenjie Chen (Global Affairs Canada) which incorporates a labor module into the GTAP-RD model in order to assess labor market transitions which are further influenced by age group and gender. An activity matrix based on ILO data was used to calibrate against GTAP. This data includes employed and unemployed workers as well as those not part of the labor force.

      The theory behind the labor market transition approach is based on initial work by Dixon and Rimmer (2008) where labor market transitions are based on an optimization for supply where workers choose their activity to maximize utility and firms optimize demand by minimizing cost.

      For the illustrative simulation, the authors decided to test the Canada, US, and Mexico against the no-NAFTA scenario. This new module allows for the examination of distributional effects of labor across gender and age group.

7. **Priorities for Forthcoming Year**
   a. **Center Finances**
      Dominique van der Mensbrugghe (GTAP) reported a projected $687K surplus for FY23. Actual for FY23 was a deficit of ($100K). This is largely due delays in the release of version 11. The projected FY24 is a surplus of $380K as data base sales for v11 are expected to be at their highest over the next year.

   b. **Revisit Priorities for Next Year**
      Dominique van der Mensbrugghe (GTAP) presented the desired priorities for the next 12 months. 1) Data: (a) produce updated release V11A and the accompanying satellite accounts; (b) pursue work on database extensions—bioenergy, livestock, food loss and waste and critical minerals; (c) continue work on next release (V12); and (d) continue work on streamlining the build; 2) GTAP model: (a) finalize modular version of GTAP (GTAP-IAM); (b) finalize update of course models (GTAP-HET and GTAP-FTA); (c) post sub-regional version of GTAP model based on the

GTAP-WiNDC database; and (d) finish work on new 'model' landing page; 3) <u>Research</u>: (a) Make updated SSP database available; (b) empirical trade (NTMs and Armington elasticities database); (c) circular economy (livestock and critical minerals); (d) EAT-Lancet report as part of AgMIP-based multi-model study; (4) <u>Staffing</u>: fill new research professor position and assess potential for a regional hub in Europe; (5) <u>Network</u>: (a) GTAP-U: (i) finish modularization and model updates; (ii) develop new courses (e.g. GTAP-Margins, GTAP-Energy) and GTAP for non-economists; (b) assess conference venues for 2026 and beyond and future costing; and c) pursue financing options for 'open-sourced' GTAP database.

8. **Additional Meetings**
   a. <u>**SSP Update**</u>

   Rob Dellink)OECD) presented a preview of his conference paper entitled "Updating the economic projections of the SSPs". The OECD team revised the underlying assumptions of the Shared Socioeconomic Pathways, but not their storylines. They updated all drivers including GDP projections. During July/August the plausibility of projections will be reviewed by the ICONICs community. Between August and October, the revised methodology will be integrated by the Economics Department at OECD. Final results to be launched, potentially, by November 20203, but not yet confirmed.

   b. <u>**Recent Research on Trade Elasticities**</u>

   Trade elasticities are the most important parameters in modern trade theory since they not only determine the response of trade to changes in relative prices, but also affect the magnitude of welfare changes. Russell Hillberry (Purdue University) provided a summary of three recent papers that estimated trade elasticities. The first paper by Fontagné et al. (2022) generally find lower Armington elasticities across trading partners (ESUBM) when compared with existing GTAP parameters. While the estimations are carried out at the HS6 level, the key weakness of Fontagné et al. (2022) is that tariffs are orthogonal to unmeasured trade costs. The second paper by Boehm et al. (2023) exploit the variation in applied MFN tariff rates to estimate Armington elasticities across trading partners. They estimate short and long-run ESUBM elasticities at 0.76 and 2 respectively. Russell pointed out that the main weakness of Boehm et al. (2023) is that the extensive margin could be important for small trading partners as in general, they may respond differently to tariff cuts than trade flows. Finally, Bajzik et al. (2020) find average Armington elasticities between domestic and imported goods (ESUBD) at around 3.8, based on meta-analysis of the literature. Russell concluded that there is no definitive answer on trade elasticity values as estimates are largely dependent on time horizon and estimation methods, thereby resulting is substantial heterogeneity in both ESUBD and ESUBM estimates. Nonetheless, he pointed out that results from the three reviewed papers suggest that the rule of 2 (i.e., ESUBM = 2*ESUBD) implies too large a gap between ESUBM and ESUBD.