GTAP Advisory Board Meeting Summary
June 3-4, 2024

Prepared by:

Center for Global Trade Analysis
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GTAP Advisory Board Meeting Attendees

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

Board Representatives
- Heleen Bartelings - Wageningen Economic Research
- Eddy Bekkers - World Trade Organization
- Lulit Mitik Beyene - The World Bank
- Mohamed Abdelbasset Chemingui - UN Economic and Social Commission for Western Asia
- Lurong Chen - Economic Research Institute for ASEAN and East Asia
- Shenjie Chen - Global Affairs Canada
- Paolo Giordano - Inter-American Development Bank
- Houssein Guimbard - Centre d'Etudes Prospectives et d'Information Internationales
- Maros Ivanic - Economic Research Service, United States Department of Agriculture
- Jong Woo Kang - Asian Development Bank
- Stephen Karingi - United Nations Economic Commission for Africa
- Aikaterini Kavallari - Food and Agriculture Organization of the United Nations
- Przemyslaw Kowalski - Organisation for Economic Co-operation and Development
- Shantong Li - Development Research Center of the State Council
- Will Martin - International Food Policy Research Institute
- Badri Narayanan - Infinite Sum Modelling, LLC
- Marta Paczos - Department for Business & Trade
- Sergey Paltsev - MIT Joint Program on the Science and Policy of Global Change
- Janine Pelikan - Thünen Institute of Market Analysis
- William Powers - US International Trade Commission
- Hugo Rojas-Romagosa - International Monetary Fund
- Jan Schmitz - European Commission - DG Trade
- Andrew Schreiber - US Environmental Protection Agency
- Natalie Soroka - US Department of Commerce
- Susumu Suzuki - Economic and Social Research Institute, Cabinet Office
- Matthias Weitzel - European Commission - Joint Research Centre

Members at Large
- Software/Modeling Community: Michael Jerie - Centre of Policy Studies, Victoria University
- Trade/Globalization Community: Anna Strutt - University of Waikato

Guests
- Diego Cardoso - Department of Agricultural Economics, Purdue University
- Amanda Countryman - Colorado State University
- Bernhard Dalheimer - Department of Agricultural Economics, Purdue University
- Joseph Francois - University of Bern, World Trade Institute
- Ben Fraser - Department for Business & Trade
- Mark Gehlhar - Department of the Interior, Office of Policy Analysis and Budget
- Mario Herrero - Cornell University
- Mike Smith - Altana

GTAP Advisory Board Meeting Summary

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, network growth updates, and announcing awards won by Center staff during the past year.

   b. **GTAP Data Base**

      Angel Aguiar (GTAP) presented the latest releases since last year's meeting. For GTAP 11, we have had 3 subsequent releases to the board: 11a, 11b, and 11c. In the previous year, we moved to complete documentation, which is posted online. For the upcoming year, we plan to work on extensions to the database: MRIO, Circular Economy, GMig, among others.

      In addition, for GTAP 12, the first pre-release for 2019 was posted on our website along with the updates. There are a number of updates that were introduced to this release. At this stage we are looking for your feedback.

      For GTAP 12, we have added Mauritania and additional countries are expected before the final release. There will be one additional pre-release to be submitted to the Board before next year's meeting. The second and last pre-release will include any corrections needed that is identified based on your feedback. We also plan to update services trade data among other regular updates.

      Following is the discussion that followed the presentation:

      Matthias Weitzel (JRC) is willing to talk about EU IOTs during the break and asked what will be targeted using UNIDO data. Angel responded that just manufactures, not energy, similar to what we do with FAO data for Agriculture.

      Will Martin (IFPRI) commented on the use of agricultural protection from IADB for Latin American countries and Ag Incentives for African countries. Aikaterini Kavallari (FAO) indicated that public expenditure is hard to map to commodities and that the funding for MAFAP is uncertain. Also, that the GAEZ data, used for land use and cover extension of GTAP will be updated. Will get an introduction to researchers working on MAFAP.

      Paolo Giordano (IADB) followed up that the IADB follows OECD methods but updates are infrequent. Angel will follow up as in the past the data was not as detailed as OECD, but can be introduced to the team working at IADB. On domestic support, it was indicated that EU member data is not being released by the OECD but during the conference we were able to progress the discussions and we hope that the consistency expected is not altered much.

      Sergey Paltsev (MIT) had a question on critical minerals data base, which was addressed in the subsequent session.

      Bill Powers (USITC) encouraged us to push services trade in the first pre-release. Marta Paczos (DIT) also encouraged making services a priority for first-prerelease. This could be done, the reason for not doing it this time was the improvements that are planned exploiting data from OECD (besides the use of BATIS and TisMoS).

      Marta Pazos also enquired about the latter and Eddy Bekkers (WTO) indicated that this will be updated.

      Badri Narayanan (ISM) asked about the work on NTM and this was discussed in the next session.

Bill Powers also suggested to have a joint optimization of goods and services trade as a session in next year's board meeting.

Shenjie Chen (GAC) asked to elaborate on the update of TASTE. Janine Pelikan (TIMA) commented that TASTE is now available and that for next year it will be released sooner as we already started working on TASTE for GTAP 12.

Janine recommended to consider renaming some GTAP commodities and wanted to know if there are backward concordances based on HS revision years. Angel responded that 2004 is a special case in the sense that TASTE has been used. Other than that, MacMAP is delivered at the HS6 level and we use the most up to date consistent concordance to process the data at the HS6 level. On sector name, e.g., vegetable oils (VOL) mapping to CPC included animal fats from the very beginning, but we could update it from VOL to VAL.

Stephen Karingi (UNECA) agreed on the prioritization of services trade; and expressed that he remains committed to submitting African IO tables.

Joe Francois (WTI) had a question on services trade data; different reference years depending on BPM versions. Angel Aguiar explained that there are overlapping releases, but GTAP 11 is consistent with BPM6. Adjustments had to be made on 2004 only, due to the coverage of BaTiS, see footnote 16 in Aguiar et al. (2022).

Natalie Soroka (US DOC) asked if tariffs applied/MFN tariffs or include provisions e.g., Section 232. Janine mentioned this could be addressed using TASTE.

Drew Schreiber (US EPA) asked about the reconciliation of IO tables, since they have different base years. Angel explained that this is what we use the macroeconomic data for.

2. **GTAP Data Base: Component Updates**
   a. **[Circular Economy, Critical Minerals](#)**
   Maksym Chepeliev (GTAP) presented recent developments of the GTAP Circular Economy (GTAP-CE) and GTAP critical minerals databases. A new GTAP-CE v11 database has been developed and is currently under testing. The database uses as a starting point the GTAP-Power v11 database with 76 sectors and introduces an additional 23 sectors, including the disaggregation of mineral ores mining, rubber and plastic products, cement, iron and steel, aluminum, copper, other non-ferrous, metals and fertilizers. Some of the newly introduced sectors (in particular, metals and plastic) are further split into primary and secondary (recycled) activities. Compared to GTAP-CE v10, the new version of the database adds the disaggregation of cement (out of non-metallic minerals) and three types of fertilizers (N, P and K) out of chemicals sectors. With these details, the GTAP-CE v11 database now explicitly disaggregates all CBAM sectors (except hydrogen, which is not widely traded).

   Another ongoing stream of work includes the incorporation of the critical mineral flows and disaggregation of selected downstream sectors, such as solar panels, wind turbines, electric vehicles, batteries, etc. in the GTAP-CE database. Current efforts are focusing on the data collection for the critical minerals, covering ore mining, metal production and bilateral trade flows, as well as prices across metals and ores.

   Several important points have been mentioned during the discussion part. Sergey Paltsev (MIT) noted that the level of secondary materials recycling could be limited across countries/commodities depending on various factors and one should be careful in this regard, especially for the forward-looking modeling exercises. Sergey also indicated that the rapid growth in the critical minerals demand complicates the task of incorporating critical mineral flows into the database, he also asked whether minerals mining and refining are planned to be separated in the database and noted that disaggregating EV parts from other auto parts might be a relevant point to consider. On the recycling rates, Maksym Chepeliev (GTAP)

responded that it is a very valid point and that while recycling rates in the database are based on the actual data to the extent possible, for the forward-looking modeling additional checks and technological constraints need to be implemented (e.g. based on expert inputs or inputs from other models). Maksym also noted that distinguishing between mining and refining minerals is a feature that is considered in the database and traced through bilateral flow data. On the point of rapid growth in critical minerals mining, Maksym agreed that this is an important factor/issue, though similar to the one faced for various renewable generation technologies in countries around the world. The focus of the database would be on providing a snapshot of the critical minerals value chains for the specific year, while the expansion of the corresponding flows over time is something that would need to be handled on the modeling side. Finally, in terms of splitting EV parts from other auto parts, while being a valid point, Maksym noted that there is always a trade-off between the desired level of detail and the associated number of sectors that need to be introduced to the database. Przemyslaw Kowalski (OECD) asked about the representation of the fertilizers in the GTAP-CE database. Maksym responded that the GTAP-CE v11 now has three distinct fertilizer sectors (N, P, K) that have been disaggregated from the GTAP chemicals sector. Przemyslaw also asked regarding the classification of ores and metals in the new database (in terms of splitting ores and processing) and Maksym noted a preliminary list of such sectors and recognized that in some cases coming up with the corresponding data (to distinguish mining and refining ores) might be challenging.

b. **GTAP Satellite Datasets: Biofuels, NTM and Forward-looking Tariffs**
Erwin Corong (GTAP) presented on the status of three GTAP 11 Satellite databases: (a) Biofuels; (b) Non-Tariff Measures (NTM); and (c) Forward looking tariffs.

Erwin underscored the challenges faced when constructing the Biofuel Satellite data, particularly limited production statistics and that most input-output (IO) tables do not represent biofuel sectors separately. To address this, detailed trade data at the Harmonized System (HS) 6-digit level, agricultural feedstocks from the Food and Agricultural Organization (FAO) and data sourced from international and national statistical agencies are combined to help disaggregate biofuel sectors in the GTAP Data Base. The Center is currently working on a fully disaggregated GTAP 11 Biofuels Satellite data with updated land use emission factors, since the latter are critical when assessing the environmental impacts of biofuel production. Parallel work to incorporate biofuel specification in the GTAP version 7 model is also in progress.

On NTM data, Erwin highlighted the importance of close collaboration among advisory board members GRIPS (Ken Kawasaki), UNCTAD (Alessandro Nicita, Ksenia Koloskova, and Ralf Peters) and the GTAP Center (Erwin Corong). The GTAP 11 NTM Satellite Data Base provides ad valorem estimates (AVEs) of customs compliance costs—i.e., traditional quantitative restrictions, price control measures, traceability, licensing, processing and inspections—covering all agricultural and manufactured commodities and regions in the GTAP 11 Data Base. Data processing has finished and a new GTAPAgg2 routine to aggregate AVEs for use in GTAP simulations has been created. The NTM Satellite data is scheduled for public release in September.

The GTAP 11 Forward-Looking Tariff Satellite Data Base is a new dataset that provides actual and future tariff reduction commitments based on all existing free trade agreements (FTAs) in the world from 2017 to 2050. This dataset is being produced in collaboration with Advisory Board members GRIPS (Ken Kawasaki), UN-ITC (Mondher Mimouni and Xavier Pichot) and the GTAP Center (Erwin Corong). Tariff data processing is underway and a new GTAPAgg2 routine to aggregate tariffs for use in static or dynamic GTAP simulations is also being developed.

c. **GTAP-LVS**
Alla Golub (GTAP) reported on a new project aiming to understand how climate change mitigation, healthy diets, and zero waste policies affect global livestock sectors, and develop solutions for sustainable development of these sectors. One of the goals of this project is to improve representation of livestock sectors in the GTAP data base. Feed-use efficiency, productivity and emission intensities vary a lot across livestock products, animal species, production systems and regions. However, the current level of GTAP data base disaggregation does not capture this heterogeneity and is not sufficient for comprehensive

assessment of livestock sustainability policies. GTAP staff are collaborating with Food Systems and Global Change Initiative team at Cornell University to develop GTAP-LVS – GTAP data base with detailed representation of livestock sectors at fully disaggregated sectoral and regional level. In the future, GTAP-LVS will be linked with nutritional accounts and food loss and waste estimates. The project is funded by USDA AFRI-NIFA competitive grant program.

Several important points were raised during the discussion. Livestock diet quality and composition were highlighted as main drivers of differences in feed-use efficiency, productivity and emission intensity in livestock sectors. Livestock manure data should be considered for inclusion in the analysis of sustainability policies with GTAP-LVS. Water demand from and impact of livestock sectors on water quality are two other important dimensions of the livestock sustainability policies mentioned in the discussion.

d. **Emission Multipliers**

Maksym Chepeliev (GTAP) presented new estimates of GTAP emission multipliers. While the standard GTAP Data Base includes information on emission, production, consumption and flows, data on emission intensities is not explicitly reported in the database and requires additional data manipulations to be implemented by users. To simplify this task, a new database with emission multiplier estimates across commodities, countries, scopes and greenhouse gases has been developed. The database traces emissions through global value chains via the construction of the global MRIO inverse and estimates emission intensities of the final consumption. The dataset distribution also includes a global MRIO inverse (technological matrix), which will allow for a derivation of a wide range of environmental, trade and supply chain indicators. Data will be provided across all GTAP reference years in the form of a satellite account.

Sergey Paltsev (MIT) noted that since e.g. scope 3 emission estimates in the database might be rather different (from the definitional point of view) from scope 3 emissions at the firm level and the difference between value- and volume-based emission intensities, it might be helpful to provide additional methodological details/definitions of the reported indicators when distributing the database. Maksym Chepeliev (GTAP) responded that it is a very valid suggestion and also noted that since the entire MRIO inverse would be provided to the users they will also have an opportunity to refine the scope definitions for their own purposes if needed. Joe Francois (WTI) asked whether it is possible to calculate emission multipliers before and after the simulations, while Marta Paczos (DIT) asked whether it is possible to share the code for MRIO inverting. Maksym responded that it is possible to estimate multipliers before and after simulation and that they have been doing such multiplier estimates also in the dynamic CGE model framework for each simulated year. Maksym also mentioned that he can share the code for inverting MRIO.

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

Zeynep Akgul (GTAP) presented an overview of GTAP-U's key highlights, beginning with enrollment and course graduation data for GTAP-U courses over the past year. She also provided updates on ongoing course revisions. The revamp of the GTAP-PTA course is in progress and will be completed by summer, with the next offering scheduled for September 2024. Similarly, the GTAP Dynamic Short Course is being updated, with the next online phase scheduled to begin in January 2025. Additionally, the GTAP-HET model has been updated to GTAP v7, with a course revamp currently underway.

She also reported that the GTAP Conference Scholars Program continues to be successful, with six scholars selected this year. Other GTAP-U highlights include the development of an ongoing module repository system, where free materials are being updated and organized into a publicly accessible module. Moreover, she announced two new courses are planned for development this year: GTAP for Non-economists and GTAP-E-Power. The policymakers' track for GTAP for Non-economists course is planned to be developed this year with support from board members and colleagues from the network.

Furthermore, she reported that the GTAP 101 course instruction team has received the 2024 Purdue University Online Excellence Award, which specifically recognized the use of AI text-to-speech software in developing the GTAP 101 curriculum. She also mentioned that GTAP-U welcomes external course proposals from board members and network colleagues who are interested in developing and teaching new courses on the platform.

The presentation was followed by the discussion below:

Marta Paczos (DIT) had a question about GTAP for non-economists course. She asked about the timeline of the course. She also expressed interest in contributing to the development of ideas regarding communication of results and common questions on CGE. She has followed up with Zeynep with a list of questions.

Jan Schmitz (EC-DG Trade) asked whether there is a compilation of what the GTAP Model can do and cannot do, what are the advantages and disadvantages. He also asked whether there is documentation that discusses anti-globalization accusations. Zeynep responded that one of the lectures in the GTAP non-economists course could focus on the common questions about GTAP model and asked if the board members would be interested in collaborating on compiling a list of questions that they and their colleagues frequently receive regarding GTAP model and CGE analysis. Jan Schmitz, Marta Paczos, Natalie Soroka and Janine Pelikan have expressed interest in collaborating and Zeynep will follow up with them.

Dominique van der Mensbrugghe (GTAP) mentioned a previous WTO discussion paper on non-technical explanation of CGE models. He also recommended working on case studies for the GTAP for non-economists course. One application could be about Brexit. Another could be a US case study following up with recent publications by the Peterson Institute.

Natalie Soroka (US DOC) also stated that the communication of results piece is important in the non-economists course. She also asked who the case study will be addressed to. Will they themselves use the model or is it for people who want to be informed about it? Zeynep responded that there could be several layers of the course. The first layer is intended to just inform the policymakers about CGE/GTAP and what it can be used for. Zeynep will work on conceptualizing these layers together with Mary Burfisher.

Badri Narayanan (ISM) asked whether the GTAP for non-economists course could also be tailored for interdisciplinary researchers. Zeynep responded that the course is intended to have two tracks: one for policymakers and another for interdisciplinary researchers. She stated that we will first focus on the development of policymakers' track.

Janine Pelikan (TIMA) expressed interest in contribution to the communication of results and asked if we could also share the GTAP-AEZ UK afforestation / reforestation application used in the GTAP Short Course.

b. **GLASSNET**
Tom Hertel (GTAP) presented that GLASNET is a long term, NSF-funded project aimed at building an international, interdisciplinary network of networks focusing on global-local-global analysis of land and water sustainability. Tom Hertel is the GLASSNET PI, and activities are coordinated through the Center for Global Trade Analysis. During the past year, GLASSNET has hosted a variety of workshops, focusing on topics ranging from quantitative modeling of sustainable development pathways, to understanding the climate impacts on crop yields, exploring spillover effects of policies to respect the planetary boundaries, linking GTAP to ecosystem services modeling, as well as a series of early career workshops. GLASSNET also supports early career scholar exchanges and short courses aimed at interdisciplinary modeling. In addition, the GLASSNET web interface allows users to access global gridded data base and modeling tools. For more information about GLASSNET, visit: https://glassnet.net

c. **Journal of Global Economic Analysis**

Tom Hertel (GTAP) reported that the JGEA continues to rise in the rankings of economics journals. It is now on the cusp of the top 2% of all economics journals according to the simple impact factor index maintained by RePEC (https://ideas.repec.org/top/top.journals.simple.html). The December issue include articles incorporated the Eaton-Kortum framework into GTAP, incorporating theory-consistent endogenous markups into CGE models, estimation of parameters for GTAP and a new GTAP-Power data base. The June 2024 issue (forthcoming) includes articles on the incorporation of municipal waste into a global CGE model, a new approach to teaching applied general equilibrium analysis, and a comment on the estimation of value-added elasticities for GTAP.

d. **CGTA PhD Students**

Tom Hertel (GTAP) reported that as is done each year, we provided an overview of the graduate students working in the Center for Global Trade Analysis. Two students anticipate graduating in the summer of 2025, two in spring 2026 and one in spring 2027. A new crop of PhD students will be entering in the fall, and the Center will be recruiting from the pool to restock the 'pipeline'. For more details on individual students, feel free to visit the Center's web page: https://www.gtap.agecon.purdue.edu/about/center.aspx.

4. **New Developments at the Interface of Data and Modeling**

a. **Predicting Modal Split in Freight Transport**

Bernard Dalheimer (Assistant Professor, Department of Agricultural Economics, Purdue University) presented new research on estimating transport modal decisions—work done in collaboration with Onno Hoffmeister at UNCTAD. The new estimates are based on new ways of reporting international merchandise trade since 2010, better national statistical systems, availability of trade margins and mode reporting in UN COMTRADE Plus and improvements in GIS trade-related data. Current results are promising, particularly given the parsimony of the predicting variables, but are still limited by the low number of reporting countries.

b. **Emerging Applications of Machine Learning to Data Analysis**

Diego Cardoso (Assistant Professor, Department of Agricultural Economics, Purdue University) delivered a brief presentation on machine learning and its applications to economics. His talk highlighted that the key difference between traditional econometric techniques and machine learning is that the former emphasizes the relationship between the outcome and the inputs, i.e., the estimated coefficients, whereas machine learning puts an emphasis on accurately predicting outcomes.

c. **Real-time Trade and Supply Chains**

Mike Smith (Head of Financial Services Technology at Altana) provided an overview of the firm's capabilities in terms of predicting rapid changes in supply chain networks, for example as a result of natural disasters, geopolitical conflicts and changes in policies such as tariffs and sanctions. The firm relies heavily on using evolving artificial intelligence methodologies coupled with the ability to process huge volumes of data.

5. **Parking Lot**

a. **Reconciling COMTRADE Data for GTAP**

Mark Gehlhar (US DOI) provided updates on sources and procedures for preparation of merchandise trade data for GTAP. Procedures were outlined using 4-part modules: (1) International margins conversion (2) Re-export treatment conversion to domestic exports and retained imports (by redistributing to direct-route basis) (3) Bilateral flow selection and reliability indicators (4) Final assembly and aggregation of FOB and CIF to GTAP sector level.

A key change is that UN COMTRADE-plus is now the sole source of margins data with reporting countries representing all continents. Previously CIF/FOB data was exclusively from individual country customs trade data independent of COMTRADE.

A second major modification is utilizing 2-4-6-digit classification levels available (from COMTRADE-plus) in the reconciliation process. As explained in the presentation there is common suppression of data exhibited by many countries (nondisclosure/unclassified) with greater commodity detail. Making use of 2-digit and 4-digit totals in the reconciliation process proves extremely valuable having far less nondisclosure problems. By comparing the summation of 6-digits to a 4-digit total it reveals sector specific missing or unclassified commodities. This type of problem is a self-reported discrepancy revealed without counter-part mirror flows. This addition fits well with the goal of preserving original reported total merchandise: a key objective in the reconciliation procedure. This is carried out by diagnosing reporter weaknesses at the most granular level (bilateral-6-digit commodity) to minimize major adjustments at aggregate level. This is (according to Mark) a form of medical science applied to data reconciliation akin to minimally invasive surgery. Mark explained the importance of retaining official records and making adjustments only deemed necessary with good reason.

Questions posed by Board members were on 1) access to COMTRADE Plus, (2) particular reasons for suppression or unclassified trade (3) whether large sporadic transactions were permissible (Will Martin). Further questions were on whether the v12 pre-release had incorporated the changes (Marta Paczos).

Mark explained that all countries exercise some form of non-disclosure due to industry secrets, firm size and structure. The example of Denmark's pharmaceuticals is a classic example of a dominant firm trader. The changes described are implemented across all years: past, current, and forthcoming as documentation is no longer version-specific. In addition, comparisons of reported and reconciled data is routinely performed at all levels of aggregation.

b. **Reconciling COMTRADE Data for BACI**
Houssein Guimbard (CEPII) presented the reconciliation procedure that takes place when developing the BACI database. Developed since the early 2000s the purpose has been to provide an analytical bilateral trade flows and quantities on a yearly-basis.

COMTRADE is also the raw data used by BACI and is the only source of information used. Working also at the HS6 data, for BACI, the first step is to also operate at FOB valuation. CIF rates are estimated and applied to the FOB values. The reconciliation of mirror flows is also based on a reliability index. But one of the differences with respect to the previous presentation is that re-exports are included in the BACI database.

For BACI, one of the goals is to preserve, as much as possible, the consistency of the time-series. Among the future developments, BACI will aim to incorporate new information from COMTRADE with respect to transports mode.

Houssein also presented the difficulty in assigning a geography to the origin of imports. COMTRADE follows the country-of-origin convention, while EUROSTAT follows the country of consignment convention. Similarly, Hussein provided information about the IMF Direction of Trade Statistics, and how its use has upward bias in the estimated impact of regional trade agreements (Cotterlaz and Vicard (2023)).

Przemyslaw Kowalski (OECD) asked if there is HS bilateral data on country of consignment. Houssein responded that COMEXT (for the EU) reports HS6 bilateral trade data on country of consignment (depending if it is intra- or extra- EU trade). Some countries in COMTRADE also use this convention as well (see Cotterlaz and Vicard, 2023. CEPII's WP series).

On the above question by Will Martin (IFPRI), Houssein stated that in BACI too there is no data revision, it is taken as it is in the data (e.g., in BACI, when a boat, or a nuclear reactor is sold from r to s, on a given year, this is preserved).

6. **Guest Speaker**
   a. **EAT-Lancet and Sustainable Diets**

   Mario Herrero (Cornell) presented an overview of the ongoing study on the EAT-Lancet dietary transition, which includes an assessment of the environmental and socio-economic implications of transitioning to healthier and more sustainable diets worldwide. The study involves a large group of partial and general equilibrium models (e.g. ENVISAGE, MAGNET, AIM, CAPRI, FARM, etc.) and assesses a number of scenarios including climate impacts, food loss and waste reductions, different levels of agricultural productivity, as well as dietary transition itself. Mario also presented the preliminary high-level results from the study.

   One of the points raised during the discussion part included an interpretation of the voluntary/behavioral vs policy-induced dietary transition. Mario responded that indeed this is an important limitation of this study (the fact that the diet is imposed rather than induced by specific policy instruments), however, the current study substantially improved over the previous phase of the EAT-Lancet assessment, where diets have been evaluated using a more simplified (input-output) framework. In addition, he mentioned that selected modeling groups within the EAT-Lancet study are looking into selected aspects of the policy-induced dietary shifts. Another point mentioned during the discussion part concerned a presentation of results at a more granular level, in particular, for the land use patterns, as well as equity and social dimensions. Mario acknowledged that this are important points that are explored in more detail in selected EAT-Lancet papers in preparation and the report. He also indicated that there is a separate GTAP conference session that provides additional details on various aspects of the EAT-Lancet study.

7. **GTAP Network**
   a. **GTAP Research Fellows**

   The Board approved the following as GTAP Research Fellows from June 2024 – May 2027.
   - Edward J. Balistreri
   - Christoph Böhringer
   - Kirsten Boysen-Urban
   - Simon Mevel
   - Sebnem Sahin

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

   b. **GTAP Conferences**

   The following presentations and discussions on the current and future GTAP Conferences were held.
   - **2024 Conference Update** – Amanda Countryman (CSU) updated the board on the 27th Annual Conference on Global Economic Analysis, focusing on attendee numbers and demographics.

   - **2025 Conference Update** – Ginger Batta (GTAP) reminded the board of the dates and location (June 23-27, 2025, Kigali, Rwanda) for the 2025 GTAP Advisory Board Meeting and Conference, and requested a discussion on conference themes. A listing of themes from the original 2022 Kigali conference were displayed, and following discussion, the themes were adjusted to the following.

     "Accelerating Economic Transformation, Diversification, and Job Creation"
     - Adjusting to different policy environments of trade
     - Advancements in value chains and economic development
     - Climate change
     - Environment and natural resource management
     - Filling data gaps
     - Food security and nutrition
     - Promoting gender in development

- Reducing poverty and inequality
- Seizing the benefits of the digital economy for growth
- Tackling the economics of regional integration and cooperation
- Technology adoption and infrastructure development

The conference co-chairs (Dominique van der Mensbrugghe and Stephen Karingi) are still working to establish the program committee, who will meet online in July to begin discussions on potential plenary speakers and sources of funding.

- **2026 Conference Update** – Ginger Batta reminded the board that in February-March of 2024, an online vote was held on the proposal circulated to hold the 2026 conference in Kyoto, Japan. The proposal was approved and Ginger is currently working with the International Conference Center Kyoto to finalize the venue contract.

8. **GTAP Initiatives**
   a. **GTAP Science Council**
   Joe Francois (University of Bern, World Trade Institute) presented a proposal, developed in collaboration with the Center, to form a GTAP Scientific Council. The goal of this Council is to broaden the range of scientific input available to the Center, allowing the Center and the Advisory Board to remain abreast of new issues and emerging challenges in the field of global economic analysis. The Council would meet in advance of the annual board meeting and provide a short summary for presentation to the Board in the June meeting. We envision a total of 8 members with 4-year terms, renewable for one term.

   b. **Regional Workshops**
   Ginger Batta reported to the board on the "GTAP and CGE Modelling in Africa" online seminar that was held in April 2024 and jointly organized with the UNECA. Ginger covered registrant versus attendee data, as well as how many registrants have downloaded the free Africa-focused version of GTAP 11 that was made available. Following the report, Ginger opened the floor for discussion on future directions on what kind of seminars/workshops the board might like to see offered in the future.

   The presentation was followed by a discussion on the following points:

   Maros Ivanic (USDA-ERS) stated that he was not aware of the GTAP Africa workshop. He mentioned he was in Ghana recently and worked to get people interested in CGE. He thinks that they don't currently have the capacity building to benefit fully from these workshops. He stated that he has got very little follow up from the capacity training in Ghana and they will go to Kenya next. He thinks that the workshops/training are useful efforts, and they should focus on what people can get out of CGE. There should be a push on Africans to appreciate the value of CGE modeling and improving data in Africa. He thinks the margins in the database are not good and the African data is not good unless this comes from them. He thinks these issues are easy to fix. He encourages GTAP staff to keep talking to the African colleagues to take advantage of the CGE model and database.

   Paolo Giordano (IDB) stated that IDB used to have in-person conferences every year before, but they dropped them during the pandemic. He thinks that Latin America is underrepresented and asked whether the board or GTAP is interested in a hybrid work to organize and broadcast it.

   Dominique van der Mensbrugghe (GTAP) asked how we advertised these workshops outside of the GTAP community to include more people, especially people outside of the network? He suggests thinking about how to broaden the outreach to get more people involved.

   Ginger Batta (GTAP) stated that Channing Arndt (IFPRI) gave a list of contacts to her to advertise this Africa workshop, and the advertisement went to PEP and other networks.

Aikaterini Kavallari (FAO) asked about what the exact purpose of these workshops should be. Is it about other people to be aware of GTAP or sell more of GTAP data or to discuss more research topics of interest? She states that communicating and disseminating modeling work is difficult with African colleagues. There are very specific research entities with experience, excellent collaboration with the Department of Agriculture, workshops that are very targeted to specific people. She states that we must clarify what the objective of the workshop is. Regional may not always be the best format. She suggests that maybe focusing on themes and tailoring it to regions based on specific themes would be better. Would it work for Asia or Latin America? Regional workshops can be on mega-regional agreements. Maybe that would also be applicable to the Scientific Council initiative. She suggests working with other institutions that have some capacity and experience with regional workshops could be helpful.

Ginger Batta (GTAP) agreed that it does not have to be compartmentalized and focused on the regional aspect.

Stephen Karingi (UNECA) expressed that the African workshop was a very successful event. He states that we should see the glass half full. You don't get results with these things the next day. He thinks that the 30% downloading is a very good statistic. He states that he has received emails from people that were very excited about it, and inquired after the number of Africans who attended the short course, and how many of them produced papers after that? He informs that the applications of CGE modeling in the continent is much better compared to 10 years ago, so we are moving in the right direction. This is an opportunity. His key suggestion is: instead of sending the communication to the PEP network, why don't we work with them? These institutions have very specific networks in the continent.

Lulit Mitik Beyene (WB) mentioned experience with PEP and AGRODEP. She states that it is good to have the training and after that you have to go back to work. She mentioned the mentoring and funding opportunities with AGRODEP during and after the workshops. She suggests that travel grants could be a way to collaborate between networks. You have the chance to come to the conference with the funding and then collaborate with the network after that.

Will Martin (IFPRI) suggested a GTAP-related event as a pre-conference or a post-conference meeting/workshop with regional or the international associations could be helpful to deal with the cost issue. If there is a CGE-focused event before or after the conference then it would be another reason to attend since people would already be going.

Jing Liu (GTAP) suggested training the instructors to build skill, especially in the African region, and partnering with the academics to train professors to regularly offer their course.

Stephen Karingi (UNECA) followed up that PEP and AGRODEP offer training opportunities and programs for people in universities.

9. **New Developments at the Interface of Data and Modeling**
   a. **Estimating heterogenous effects of non-tariff liberalisations: a gravity-difference-indifference approach**
   Ben Fraser (Trade Modelling Unit of United Kingdom (UK) Department for Business and Trade) presented their work to account for heterogenous non-tariff impacts of prospective trade agreements in the UK. Ben emphasized that accounting for heterogenous impacts is necessary because trade agreements vary by provisions, country coverage, tariff reduction commitments, and sector coverage. He shared that heterogeneity-robust methods from the Difference-in-Difference (DiD) literature can be used to estimate the effects of trade policy. Ben concluded that these estimates can also be used to guide counterfactual experiments to analyze prospective trade agreements in the GTAP Model.

b. **Reconciling NQTM and CGE**

Eddy Bekkers (WTO) presented his joint work with Erwin Corong (GTAP), Joe Francois (WTI) and Hugo Rojas-Romagosa (IMF) to incorporate an Eaton-Kortum trade specification in the GTAP version 7 model. Eddy first summarized the similarities and differences between CGE and New Quantitative Trade (NQT) models, then explained the theory behind the Eaton Kortum model with continuum of goods and probabilistic formulation of productivity. He then provided a comparison of simulation results derived from GTAP models with Armington and Eaton-Kortum specifications. Eddy concluded that the real income impacts based on trade policy experiments are very similar with marginal differences being driven by the transportation sector. The terms of trade impacts from tariff changes are also similar between the two GTAP model specifications, while the impacts of trade cost changes on trade volumes are smaller in the Eaton-Kortum specification because of the identical-price-by-source-country property.

In the wake of the board's interest in this topic, a lunch meeting was held with Sam Kortum on Friday of the conference. Participants discussed the possibility of holding a joint workshop at Yale University (hosted by Sam Kortum) at which a set of papers would be presented by members of both communities on a topic of mutual interest.

10. **Priorities for Forthcoming Year**

a. **Center Finances**

Dominique van der Mensbrugghe (GTAP) reported a projected $380K surplus for FY24. Actual for FY24 was a surplus of $514K. This is largely due to the timing of the GTAP 11 Data Base release and the significant increase in research funding. Projected for FY24 is a surplus of $13K as data base sales are expected to decline, and staff expenses will increase with the hire of two new Research Economists.

b. **Revisit Priorities for Next Year**

Dominique van der Mensbrugghe (GTAP) rounded out this year's board meeting with a presentation of the key Center priorities for the forthcoming year. In summary: (1) on the data side the key priorities include the second pre-release of v12 and pursuing the overhaul of the database 'build' procedure; (2) on the modeling side is the finalization of the integrated assessment version of the GTAP model (GTAP-IAM); (3) on the research side is working on the final report(s) related to the EAT-Lancet diet project and make substantial progress on the critical minerals and livestock projects; (4) on the staffing side is to find a new director and pursue establishment of the Brussels-based GTAP EU hub; and (5) on the network side assess potential options for an 'open-sourced' GTAP Data Base.

11. **Additional Meetings**

a. **SIMPLE-G: Developments and Links to GTAP**

The GLG lab (Uris Baldos, Iman Haqiqi, Tom Hertel, Jing Liu, and Zhan Wang), presented to the board the development of the SIMPLE-G framework, its comparison to GTAP, and the potential for integrating the two systems. While each framework has been successful in achieving its respective objectives, their combination offers enhanced capabilities for multi-scale analysis, as evidenced by the recently developed GTAP-SIMPLEG model. Future endeavors to implement the integrated model in traditional trade applications (e.g., trade policies and flows), would be a strategic starting point to demonstrate how the combined system can effectively address trade-related sustainability issues

Center for Global Trade Analysis: Forthcoming Year Priorities

Data Goal

To improve the quality of data products through improving the quality of contributed I-O data, adding and improving other datasets, monitoring data quality using comparison programs, and versioning control and documentation

Tasks	Responsibility
Primary Priorities	
Update GTAP 12 labor data	Corong
Income and factor Taxes	Corong
EU domestic support	Boulanger, Philippidis, Aguiar
Services trade	Pereira, Aguiar
Complementary green-house emissions	Chepeliev
Balancing routines to include agricultural production targeting	van der Mensbrugghe
Input Output Tables	Contributors, Aguiar
Update energy data for GTAP 12	Chepeliev
Mainstream GTAP-BIO	Taheripour, Chepeliev, Aguiar, Sajedinia
Mainstream land use and land cover into standard GTAP Data Base	Baldos, Corong
Disaggregation of critical minerals and select downstream sectors in the data base	Chepeliev
Secondary Priorities	
Manufacturing Production Targeting	Pereira, Aguiar
Improve disaggregation routines	tbd
Development of the GTAP Data Base with disaggregated livestock sectors	Chepeliev, Golub, van der Mensbrugghe

Research Goal

To actively participate in quantitative economic analysis of pressing global concern in the areas of trade and development and global environmental issues

Tasks	Responsibility
Primary Priorities	
Journal of Global Economic Analysis – Continue pipeline of potential papers for future releases	Hertel
Assess the sustainability of the livestock production system with a focus on policies to promote circularity	Chepeliev, Golub, van der Mensbrugghe
Documentation of the partial equilibrium global livestock-crop model calibrated to the ERS/USDA international baseline	Golub

Model Goal
To promote further development of GTAP-based models

Tasks	Responsibility
Primary Priorities	
GEMPACK version of GTAP-SR model and documentation	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

Education Goal
To expand and improve education for global economic analysis worldwide

Tasks	Responsibility
Primary Priorities	
Course Delivery: • GTAP Short Course (June 3 - August 9, 2024) • GTAP 101 Course (September 2 - October 20, 2024) • GTAP PTA Course (September 9 - October 18, 2024) • GTAP Dynamic Course (January 20 - March 14, 2025) • GTAP 101 Course (March - May 2025 tbd)	Batta, Akgul Keeney, Et al. Countryman Walmsley, Strutt Aguiar, Et. al. Countryman
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:
• module repository system
   o develop instructor guidelines for usage and access
   o 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

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	Akgul
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

Staffing Goal
To actively seek and encourage talented staff and graduate students

Tasks	Responsibility
Primary Priorities	
Continue director search	van der Mensbrugghe, Hertel
Onboard and train new research economist	van der Mensbrugghe, Data Team
GTAP European Office	van der Mensbrugghe, Hertel

Collaboration Goal
To actively seek opportunities for fostering collaboration with institutions around the world

Tasks	Responsibility
Primary Priorities	
2025 GTAP Conference (Kigali, Rwanda)	Batta, van der Mensbrugghe
2026 GTAP Conference (Kyoto, Japan)	Batta, new CGTA director
2027 GTAP Conference (30th annual at Purdue University)	Batta, new CGTA director
GTAP Virtual Seminar Series	Batta

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

Tasks	Responsibility
Primary Priorities	
Website updates: design, security, functionality, etc.	Douglas