

## **Final Summary: GTAP Advisory Board Meeting 2002**

(Dates for next year's meeting: June 9 – 10, 2003 in The Hague)

### **A. Major Recommendations**

#### ***1. Quality assurance***

The board gave quite a unified message to the GTAP staff at this year's meeting – focus efforts in version 6 on improving the quality of the domestic components of the GTAP data base. In the past, concerns about quality have focused more heavily on the international components of the data base, including: trade data, then the protection data, including domestic support for agriculture, and the energy data. The fact that consortium members and contributors have begun scrutinizing the national data bases is partly a sign of the maturity of this ambitious project. Having come to grips with the international parts of the global data base, attention is now being focused on the components contributed by individual members of the network. Since these contributions come from many different sources, the quality assurance problem is in some ways more challenging. Furthermore, in reconciling the international and national data bases to build a consistent global data base, it is the national data bases that must adjust. This naturally causes a certain amount of discomfort on the part of contributors. And it has led many of these individuals to blame the messenger, namely "FIT" – which is the program that reconciles each national data base with the international targets.

An information-theoretic measure of the extent to which FIT alters the domestic data bases is now computed and Robert McDougall provided a national-level summary of these statistics to the board. The results were found to be generally quite sensible, with those economies represented by outdated I-O tables, or as composite regions, and those economies with extensive re-exports requiring the greatest amount of change in FIT. The board expressed a strong interest in having these measures made more widely available, and in communicating them back to contributors of individual I-O tables, along with some discussion of the most dramatic outliers.

More generally, the board suggested taking steps to improve communications with individual contributors of I-O tables. This might take the form of more formal correspondence at key stages of the interaction: (a) when the I-O table is first contributed, (b) when the pre-release data base becomes available to contributors and (c) when the final release comes out. At each stage, GTAP staff should communicate as much information as possible back to contributors, including: (i) FIT statistics for the individual country, as well as the overall summary (to put their region in perspective), and (ii) the modified single region data base in SAM format. It was also recommended that these communications with contributors be handled by a single staff member. Terrie Walmsley is the natural person to do so, since she already works closely with contributors at the time they are preparing a data base. She has agreed to handle this, and will begin by communicating the FIT statistics for version 5 back to the contributors for this data base. We believe this will go a long way towards reassuring contributors that their data have not been mistreated!

Much of the discussion surrounding the modification of domestic data bases seems to stem from a lack of appreciation of the difficulties in reconciling data from diverse sources. Nowhere is this more evident than in the case of EU agriculture, where version 5 appears to

overstate the size of the sector by about \$100 billion. Robert McDougall provided a detailed report to the board on his work this spring aimed at eliminating this discrepancy (culminating in the version 5.1 interim release data base). Interestingly, more than two-thirds of the discrepancy may be traced back to discrepancies between the contributed I-O tables from the LEI (1995) and Lionel Hubbard (1990) and the agricultural production targets (1997) from EUROSTAT. Of the remaining (one-third) discrepancy introduced by FIT, most was due to differences in export targets and differences in rates of output subsidies. When the I-O tables were pre-adjusted in light of the new targets, the FITted EU data base comes within 3% of the EUROSTAT targets.

In the process of conducting this reconciliation, Robert McDougall uncovered many other inconsistencies between the targets and the domestic data bases. The most severe are the cases where exports exceed domestic production (likely due to either problems in measuring re-exports or in the differential classification of products between raw and semi-processed). These problems go well beyond the GTAP data base and will have to be resolved at the level of individual country statistics. In light of all that has been learned from this case study of “FIT” it has been suggested that Robert write up this work – providing a possible template for future efforts by individuals and contributors to address similar problems in the future.

This experience with FIT, and the very information- and time-intensive nature of the job required to “get the data right” clearly shows that this work cannot be done on a comprehensive, global basis at Purdue. We need to move towards an “open-source” model in which contributors and consortium members have access to the tools required to do this kind of work themselves. As an exploratory first step, we plan to make the FIT program available on the web so that consortium members and contributors can experiment with alternative targets and experience for themselves the challenge of reconciling conflicting data. We are also thinking of holding training sessions at which Center staff will train contributors in the techniques required to reconcile domestic and international data sources using pre-adjustment techniques as well as the FIT program. In this regard, we propose to hold a one-day workshop on this topic between the GTAP board meeting and the 2002 conference in The Hague (June 8, 2003). The target audience would be staff members of the consortium agencies with a particular interest in developing skills in this area.

In summary, we believe that:

- As much as possible, we want to keep the Center out of the business of basic data construction,
- We want to help contributors to contribute better tables,
- To this end, we should share programs, techniques, and ideas with them (e.g., through a workshop on this topic),
- We should open up the reconciliation programs to them, so contributors can better understand how the reconciliation is done, and even make their own suggestions for improvement (and indeed contribute code, if they care to);
- The data reconciliation is necessarily a central function, and the way for researchers to get involved in it is by contributing to our maintained code base. If contributors care to do their own “anticipatory reconciliation” in preparing tables to submit to the Center, that is perfectly fine, but this is just their working more

effectively within the old division of labor, not a new division of labor; and it doesn't get the Center out of the reconciliation business. (It might mean much smaller shocks to FIT for some variables in some regions, but it doesn't get us out of maintaining and running FIT).

## ***2. Parameter estimation and model validation***

The second area in which there was a general consensus that more work is needed has to do with parameter estimation and model validation. This theme was also a frequent one over the course of the conference. Increasingly policy makers are identifying key parameters and asking for more justification for the values used in the model. For example, Robert Koopman emphasized this point in his policy panel presentation. The Commissioners at the ITC have learned about the importance of Armington parameters, and they expect some justification of these values, and, ideally confidence intervals around the parameter estimates and the resulting welfare impacts. It appears that, to the extent GTAP staff engages in modeling work; this should be directed as much as possible towards these topics. Tom Hertel also presented a joint proposal with Joe Francois aimed at a series of workshops designed to advance the state of the art in this area. There was strong support from the board for this kind of work, and several board members suggested they would be interested in supporting this kind of workshop, either with staff contributions, hosting etc. There was also interest in a special session at next year's conference aimed specifically at this topic.

## **B. Other Significant Points**

### ***1. New national data bases***

There was strong interest in getting the CEEC data bases out and into use by the GTAP community. Martin Banse is the one who developed these data bases and he is well-placed to make them "GTAP-ready". However, Martina Brockmeier has pointed out that Martin is very heavily committed at the moment, since he has had to assume many of Stefan Tangermann's duties in Goettingen after Stefan left for the OECD. Therefore GTAP staff agreed to take on this task – pointing out that this is an exception to our normal rule of drawing the line between what we do and what contributors do, by only accepting GTAP-ready data bases. Specifically, Terrie Walmsley has agreed to take on this task.

Robert Koopman also reported that work with the Russian data base is progressing and he anticipates having a GTAP-ready data base available later this summer. Therefore, we anticipate the CEECs, Russia, as well as the new Southeast Asian data bases from the IDE becoming available in a series of interim releases of version 5 in the fall.

### ***2. Baseline policies***

In response to Terrie Walmsley's presentation on the evolving GTAP baseline, there was increased interest this year in tapping into the policy detail that Terrie has compiled. Terrie will continue to work on this as time permits, and we will continue to make this information available to the consortium members on an "as requested" basis. When sufficient demand develops, we will formalize the approach for disseminating the GTAP baseline.

### ***3. MacMAPS, preferential tariffs, anti-dumping and aggregation issues***

The board was very enthused about the presentation by Sebastien Jean of the MacMAPS work. This offers a new, additional vehicle for incorporating the basic tariff data collected by UNCTAD and the WTO into GTAP. There were a number of specific questions about the methodology for treating tariff-rate-quotas, as well as the approach to aggregation using representative regions' trade weights. It was agreed that a working committee needs to be formed to compare the MacMAPS and WITS data bases and evaluate which parts of these data bases should be used in the version 6 prerelease. Committee members should include individuals from CEPII, UNCTAD, the WTO and the World Bank, as well as representatives from other member agencies with an interest in this topic. (E.g., Paul Gibson, from ERS/USDA, who coordinated the AMAD effort, which feeds into both WITS and MacMAPS.) Betina Dimaranan will coordinate this work from the GTAP side. She will begin by producing two alternative GTAP data bases, one with the new WITS data reflecting tariff preferences, and one with the MacMAPS data base (initially omitting the antidumping duties – we need a separate evaluation of these by the committee). We will need a recommendation from this committee regarding which to use in the pre-release for version 6, by December 1, 2002.

#### ***4. Bilateral trade data and re-exports***

Another area in which CEPII may be able to help is that of bilateral trade data and re-exports. CEPII is in the process of modifying its aggregation scheme for the CHELEM data base so that it maps readily to GTAP commodities. It appears that they have done some work on the re-allocating re-exports on a direct trade basis for Hong-Kong and Singapore. The board suggested that the relevant individual at CEPII open communications with Mark Gehlhar at ERS/USDA in an effort to identify potential sharing of ideas and information on bilateral trade. This has already been implemented on the GTAP web site, along with a list of qualifying countries.

#### ***5. Pricing of data base sales to LDCs***

It was decided by the board to provide concessional pricing of the GTAP data base to institutions and individuals in the Least Developed Countries, as defined by the World Bank. Specifically, they will be charged half-price for the data base.

#### ***6. The Alfred Marshall Project***

The board expressed considerable support and encouragement for this open-source, elasticity project, led by Renger van Nieuwkoop. Renger received specific suggestions about how to revise his proposal and whom to share this with in an effort to seek funding.

#### ***7. GTAP Web site and conference support***

The board was pleased with the current state of the GTAP web site and recognizes its increasingly important role in organizing the annual conference. As a result, the Center will continue to devote resources in this direction.

### **C. Priorities for Version 6**

On the afternoon of day 2 of the board meeting, we went through the version 6 “wish list” compiled by Rob McDougall (see appendix to this summary), and prioritized them according to the following logic:

0. = already done,
1. = will be done,
2. = might be done,
3. = will not be done.

Two items listed as 3's received some encouragement from the board and we will pursue them as time and resources permit:

- (a) prototype work on domestic margins, and
- (b) a generalized data base adjustment program.

Several 2's were downgraded to 3:

- (a) better data to support international margins,
- (b) apportionment of traveler's expenditures,
- (c) miscellaneous protective measures for agriculture (according to Jesus Anton of the OECD, these mostly relate to market support for other sectors, which is captured in GTAP by tariffs).

Of the remaining items in category 2, the highest priority was given to those that will improve the quality of the existing data bases, including:

- (a) standardized treatment of dwellings and government services,
- (b) improving the value-added splits by separating owner-operator labor from capital, and
- (c) improving the treatment of land-based subsidies in OECD agriculture.

Future progress on the separation of accounts for government and household sectors should be facilitated by the World Bank's current project (the General Accounting Framework) to construct macro-economic SAMs at the country level. This project is just beginning, and we will rely on Dominique van der Mensbrugge to keep us abreast of these developments. It is unclear whether this will fit in with version 6 or not.

## **D. Summary of post-board meeting discussions**

### ***1. Textile and apparel quotas***

During a brief, post-board meeting with Dean Spinanger, several board members received a first-hand explanation of the recent research by Dean and Joe Francois on the measurement of textile and apparel quota rents in the version 5, GTAP data base. The new treatment is based on direct observations of disaggregated quota rents in Hong Kong, mainland China and India. Quota rents for other regions are also adjusted in light of this new information, so that the relative magnitude of these barriers remains comparable to version 4.

### ***2. Domestic support for agriculture***

Six of the board members met with Jesus Anton of the OECD in a special session following the board meeting to discuss the measurement and modeling of domestic support for agriculture. The one area in which there appears to be a substantial discrepancy between

GTAP v. 5 and the OECD has to do with the treatment of land-based payments in the US and EU. This is also an area that received considerable attention in a special session on this topic during the 2001 GTAP conference. The OECD applies an equal rate of subsidy across program crops for EU area payments and an equal rate of subsidy across all cropland for US payments based on historical entitlements. This reflects the fact that planting decisions among these activities are not affected by these payments, and so removal of support should not affect the allocation of acreage, *ceteris paribus*. Of course, once commodity prices are permitted to change as a result of subsidy removal, there will be second round effects. Furthermore, since not all uses of farmland are covered by these payments, there will still be movement of farmland to alternative uses when the subsidies are removed. This precipitated discussion of which activities to include and which to exclude from the subsidy payments. (The OECD PEM model only deals explicitly with 4 program crops.) It was concluded that Soren Frandsen would pursue this matter for the European countries and Mary Bohman would do so for North America. They will report back to the board.

The broad strategy for including these land-based payments in GTAP will be to compute the appropriate level of total payments to land for the base year for a given country and then spread these across all qualifying uses of farmland, achieving an equal *ad valorem* rate of subsidy across those uses that are not excluded. It was also suggested that this adjustment be made available in the version 5.1 interim release of the GTAP data base. However, upon discussing this matter with Robert McDougall and Betina Dimaranan, they propose to make this available as a separate data base adjustment, since it only involves the reallocation of value-added between market-based payments and subsidies to agriculture.

There was also some discussion of value-added cost shares for agriculture at this session. Of particular concern is the treatment in the GTAP data base whereby the shares of value-added allocated to land, labor and capital are equalized across all agricultural uses based on outside econometric estimates. Some members would prefer to have their own, survey-based estimates of value-added cost shares that were provided in the original source IO tables retained in the database. The problem with changing the treatment for a few regions, but not for others, is that it might be a source of idiosyncratic results in the global model simulations. Since these cost shares are easily changed, it was agreed that those most concerned about this (Soren Frandsen, in particular) would experiment with changing them and report back to the board.

#### **E. Goals for the coming year**

Translating this board summary into concrete goals for the coming year, yields the following, preliminary list:

1. Improve communications with IO table contributors. This will involve more formal communications from the Center to contributors at each stage in the process. It will also involve the sharing of more information with contributors, including FIT targets, FIT statistics, and adjusted tables.
2. Provide better feedback to contributors on adjustments to national data bases: Provide better access to programs and data sets used to reconcile national data bases with international targets; assist in capacity development for national data base preparation. This will likely involve putting the FIT program on the web, as

well as developing training materials and experimenting with a one-day workshop prior to next year's annual conference.

3. Develop a new set of income and price elasticities of demand for use in GTAP based on international cross-section econometric analysis.
4. Develop a new set of Armington elasticities estimated at the disaggregated, GTAP merchandise commodity level.
5. Encourage research aimed at model validation.
6. Produce interim releases of version 5 incorporating the new CEECs, Russia and the new IDE data bases for Southeast Asia.
7. Obtain a detailed comparison of the WITS and MacMAPS data bases and make a determination of which to use for tariffs, as well as how best to make use of the MacMAPS data on anti-dumping duties in the version 6 data base.
8. Improve the quality of the domestic data bases by improving the treatment of dwellings and government services.
9. Improve the value-added splits for developing countries by making use of household survey data to split self-employed labor out of capital for manufacturing and services sectors.
10. Refine the treatment of domestic support for agriculture in the context of the version 6 data base.
11. Incorporate data on bilateral services trade into the GTAP 6 data base following the approach outlined by McDougall.
12. Hold short courses in the UK (Sheffield) and South America (likely Buenos Aires – to be sponsored by the IDB).
13. Support the program committee of the Sixth Annual Conference on Global Economic Analysis, to be held in The Hague: Thursday, Friday and Saturday AM, June 12 – 14. The GTAP board meeting will precede this event, taking place on Monday and Tuesday, June 9 and 10. This will leave one day in between for workshops and informal meetings.

## F. Appendix: Revised Priorities for Version 6

Priority codes:

1. = To be done
2. = To be done if feasible
3. = Not to be done

<b>PRIORITY</b>	<b>DETAILS</b>	<b>COMMENTS</b>
<b><i>Release Arrangements</i></b>		
1	In consultation with contributors make selected data input publicly available for download	High priority
1	Pre-release road map maintained	
2	Pre-release aggregation facility for non-data contributors	
2	Release date June 2003	
<b><i>Pilot Studies</i></b>		
3	GTAP-L Multiple land classes	
2	GTAP-M: Domestic Margins	Changed to 3 from 2: pilot study.
<b><i>Ancillary Programs</i></b>		
2	Single region SAM	Use the basic program from Martina Brockmeier.
2	Generalized database adjustment program (ALERTAX++)	Changed to 3 from 2 in light of interest on part of board. This is seen as a temporary alternative to getting the complete FIT process.
<b><i>Ancillary Tables</i></b>		
1	FDI	
1	Projections baseline	Want projections to be placed on web again
1	Reports on data adjustments, e.g. in fitting tables	High priority
3	Services Trade barriers	
1	Time series macro data	
1	Anti-dumping measures	Working committee to evaluate anti-dumping duties
3	Technical barriers to trade	Changed from 2 to 3 in light of slow progress.
3	Carbon Dioxide sinks and sources other than fossil fuel combustion	
3	Greenhouse gases	
3	Reports on detailed data sourcing e.g. tariffs	Less of a concern given availability of AMAD, WITS and MacMAPS.
<b><i>Integrated into Data base and Model</i></b>		
1	New external accounts	
2	Separate accounts for government and household sectors	
1	Balance commodity tax totals against financial statistics	
1	Data-based bilateral structure for services trade	

<b>PRIORITY</b>	<b>DETAILS</b>	<b>COMMENTS</b>
1	Direct Taxes	
1	Identify and adjust IO tables with non-standard treatment of government consumption	
1	Target not only rates but also money values for assistance	
2	Miscellaneous protective measures for ag	
3	Better support for international margins	Changed from 2 to 3. Low priority for board at this point.
3	Data-based apportionment of travelers' expenses	Changed from 2 to 3. Low priority for board at this point in time.
2	Ownership of dwellings and IO tables	Closely linked to the quality issue, so this should be addressed, if possible.
2	Make use of labor splits data from IO tables	
2	Separate owner-operator from capital	The board is interested in improving this aspect of the data base. We may try and use the household survey data being gathered by Maros Ivanic.
3	IO tables with non-std treatment of domestic margins	
3	Make more use of IO tables in estimating energy	
3	Revise treatment of energy usage in transport	
3	Revise treatment of gas	
<b><i>Data Procurement</i></b>		
1	CEEC IO tables	High Priority: Center should make an exception to standard policy and process these to completion ASAP.
1	Procure preferential tariff data	Working committee to compare WITS and MacMaps and determine which one to use for industrial tariffs.
1	Review miscellaneous data anomalies with IO table contributors	High priority
1	ERS – commodity tax data for USA	Mary Bohman will check with Agapi in this regard.
	Review and rationalize energy price data sourcing	This is an area where we need external assistance.
3	Advise IO table contributors of SNA conformity requirements	It would be good to have a specific proposal from those concerned with this issue.
3	Seek IO Tables for oil exporting economies	Lots of nibbles, but nothing firm on the horizon.
<b><i>Invisibles</i></b>		
1-3	Invisibles	Not a big concern amongst board, but important as it assists Betina and Rob.