

# Regional Data in GTAP

**Terrie Walmsley**

Center for Global Trade Analysis

Purdue University



# Outline

- **Current Status of Regional Data in the GTAP 7 Data Base**
- **What do we currently do to try and ensure quality?**
- **Future Plans**

# Regional Coverage

<b>Release</b>	<b>Released</b>	<b>Regions</b>	<b>Sectors</b>	<b>Base Year</b>
<b>GTAP 1</b>	<b>1993</b>	<b>15</b>	<b>37</b>	<b>1990</b>
<b>GTAP 2</b>	<b>1994</b>	<b>24</b>	<b>37</b>	<b>1992</b>
<b>GTAP 3</b>	<b>1996</b>	<b>30</b>	<b>37</b>	<b>1992</b>
<b>GTAP 4</b>	<b>1998</b>	<b>45</b>	<b>50</b>	<b>1995</b>
<b>GTAP 5</b>	<b>2001</b>	<b>66 +</b>	<b>57</b>	<b>1997</b>
<b>GTAP 6</b>	<b>2005</b>	<b>87+</b>	<b>57</b>	<b>2001</b>
<b>GTAP 7</b>	<b>2008</b>	<b>111</b>	<b>57</b>	<b>2004</b>

## **23 New Countries**

- **Bolivia, Ecuador, Nicaragua, Costa Rica, Paraguay, Guatemala, Panama (7rc1)**
- **Laos, Cambodia, Pakistan**
- **Kazakhstan, Kyrgyzstan, Armenia, Georgia, Azerbaijan, Ukraine, Belarus**
- **Iran, Egypt**
- **Mauritius, Senegal, Nigeria**
- **Norway**

# Updated countries

- **17 Updated:**
  - **Chile, Colombia, Vietnam, USA, Russia, China, Turkey, Indonesia, Romania, Korea, Thailand**
  - **Plus some very old ones: Canada, Sri Lanka, Mexico, Morocco, Uruguay, Peru**
- **27 EU countries forthcoming.**

# Old Data

Region	Data year	Initial Release	Total	Agriculture	Processed Foods	Manufactures & Services
Venezuela	1986	4	50	12	8	30
Hong Kong	1988	1	37	6	5	26
Philippines	1989	5.3	40	6	6	28
Zimbabwe	1991	5	57	12	8	37
Tanzania	1992	5	57	12	8	37
Uganda	1992	5	36	3	6	27
Bangladesh	1993-94	5	57	12	8	37
Botswana	1993-94	5	57	12	8	37
Malawi	1994	5	57	12	8	37
Paraguay	1994	6.2	51	9	7	35
Switzerland	1990 (1995)	5	46	12	8	26
Mozambique	1995	5	57	12	8	37
Zambia	1995	5	57	12	8	37
Croatia	1995	5.2	57	12	8	37
Malaysia	1995	5.3	40	6	6	28
Singapore	1995	6	57	12	8	37
Tunisia	1995	6	37	3	5	29
South Africa	1995	5	57	12	8	37

# GTAP'S MOST WANTED

<b>Top 8 countries not in GTAP</b>	<b>Top 8 countries in most need of updating</b>
<b>Saudi Arabia</b>	<b>Venezuela</b>
<b>Ethiopia</b>	<b>Hong Kong</b>
<b>United Arab Emirates</b>	<b>Philippines</b>
<b>Israel</b>	<b>Uganda</b>
<b>Algeria</b>	<b>Switzerland</b>
<b>Libya</b>	<b>Malaysia</b>
<b>Puerto Rico</b>	<b>Zimbabwe</b>
<b>Myanmar</b>	<b>Tanzania</b>

## REWARD

FREE COPY OF THE  
GTAP DATA BASE!

FOR MORE INFORMATION ON CONTRIBUTING,  
[CLICK HERE!](#)

# **The Quality of regional data is of utmost importance!**

- **What we hear about the I-O tables:**
  - **Concern about the growth in the number of countries and the quality of those new IO tables**
  - **The need for guidelines on when to accept I-O tables and when to remove old IO tables**
  - **Ensuring that old I-O tables are updated**
  - **Free-rider problem and compensation**
  - **Problems with I-O Structure – Agriculture**
  - **BUT still want further disaggregation**

*“We believe that the provision of reconciled data with some informational content is better than providing no data at all.”*

# What do we currently do to try and ensure quality?

- **Mandatory Requirements set out in TP#1:**
  - **>30 sectors (or close),**
  - **Certain mandatory splits pertaining to agriculture, energy and other**
  - **Table must balance,**
  - **Values must have the correct signs**
  - **Sectoral list and detailed mapping**
- **Not required: Taxes, land rentals, dwellings, skill splits**

# What do we currently do to try and ensure quality?

- **Internal Review: Pre-inclusion**
  - Government and dwellings
  - Ridiculous tax rates
  - **Entropy check: Checks for strange shares in cost structure**
  - Check Sectors and mapping
  - Check any disaggregation done by contributor (particularly in Agriculture)
  - Checks are revised frequently as other issues are discovered.
  - Compare IO table with previous version or similar countries.
- **Internal Review: Post-inclusion**
  - Post-construction comparisons (Robert McDougall)

# What do we currently do to try and ensure quality?

- **External Reviews**
  - Peer reviews – under development
  - Contributor review of final database
  - Reviews by board members and other contributors
- **Documentation**
  - Basic information placed on website for all users: year, source, number of sectors, mapping file etc of original contributed data.
  - Currently asking contributors if they are willing to place the original data in the public domain.
  - Periodic I-O table report
  - GTAP's most wanted list
  - Full documentation for each country is included in the GTAP Data base documentation on the website.

# Public

I-O Table: Armenia	
<b>Submitted By:</b>	Tarr, David
<b>Submitted On:</b>	7/6/2007
<b>Sector Total:</b>	30
<b>For Version:</b>	GTAP 7.0 Data Base
<b>Principle Contributor:</b>	Jesper Jensen
<b>Other Contributor(s):</b>	David Tarr and Oleksandr Shepotylo
<b>Funding Body(s):</b>	
<b>Owner:</b>	David Tarr
<b>Original Data Source:</b>	The table is based on a table included in a social accounting matrix developed by Miles K. Light, Ekaterine Vashakmadze, and Artsvi Khatchatryan. Their table has 25 sectors and is produced using official data provided by Armenian Ministries and Departments including the National Statistical Service, the Customs Authorities, and the Tax Authorities.
<b>Data Year:</b>	2002
<b>Data Units:</b>	Million USD
<b>Table Type:</b>	Commodity by Commodity
<b>Original Table Valued at:</b>	Basic/Producer prices
<b>Agricultural Aggregations:</b>	Yes
<b>Table Improvements:</b>	New Country
Sector File	 <a href="#">ARMsec.txt</a>
Mapping File	 <a href="#">ARMm.txt</a>
<b>Documentation:</b>	<i>Not Available</i>

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#### :: I-O Tables

[I-O Table Submission](#)

# Board

## Reviewer Report

If any reviews have been submitted for this table by an external I-O Table reviewer and approved by Center staff, they will be listed below.

## GTAP Reports

 <a href="#">armb.har</a>	Balance check results
 <a href="#">arme_rpt.har</a>	Entropy check results
 <a href="#">arnt.har</a>	Tax check results
 <a href="#">arms.har</a>	Sign check results
 <a href="#">armrptsept182007.doc</a>	Final written report
 <a href="#">User Documentation for I-O Table Check Programs</a>	

## Final Files

 <a href="#">armf.har</a>	Final I-O data used
 <a href="#">ARMsec.txt</a>	Sector List
 <a href="#">ARMm.txt</a>	Mapping to GTAP 57

# **What do we currently do to try and ensure quality?**

- **Assistance to contributors to undertake manipulations**
  - **Contributors website including information from technical paper, concordances, frequently asked questions and programs to assist contributors.**
  - **Dedicated GTAP team member to help solve issues**
  - **I-O Contributors course (materials will be made publicly available on the website shortly)**

# Survey of Contributors

- **Currently Surveying contributors on their experience and problems faced in contributing. Findings so far:**
  - **Unfortunately low response rate so far: V6 – 4 and v7 – 7**
  - **High use of excel**
  - **High use of IO tables, but increasingly data is in make and use format (v7)**
  - **Biggest Problems: maintaining balance while manipulating, sectoral mapping and disaggregation, dwellings, land rents and self employed labor.**
  - **Contributors want: web courses, more/better concordances, and external review (50% willing to review).**
  - **All contributors willing to contribute again!**

# Two issues and Four Strategies

- **Two issues we considered during the Strategic planning process:**
  - What is our policy towards low quality and older I-O tables already included in the GTAP Data Base?
  - How can we further improve the quality of incoming tables?
- **Four potential strategies:**
  - Documentation and flags to highlight and inform users
  - Restrict the country data included in the GTAP Data Base
  - More programs or procedures to assist contributors and us in checking the quality of I-O tables.
  - Work directly with statistical offices to obtain raw data to use in the GTAP model or alter our requirements to more closely match the data provided by statistical offices.

# Documentation and flags

- **Metadata and Data Treatment Flags:** In order to improve communication on the processing undertaken on individual I-O tables we will provide “Metadata” with the data base which indicates the underlying data sources and other aspects of the different countries in the GTAP Data Base, thereby acting as “data treatment flags”.
- **Annual I-O Table Report:** To be produced on an annual basis .

# Restrict the country data

- **“Chopping Block”**: Eliminate “bad components” of GTAP data, even if it means fewer regions, based on certain criteria:
  - the age of the IO table (1995 or older); and
  - the version to which the table was submitted (prior to version 6).
  - Hope to increase incentives to update I-O tables!
  - Advanced warning of chopping bloc at beginning of release process.
  - Once eliminated:
    - Still be used in the construction of composite regions.
    - Still available to board members and potentially in other versions, such as the Africa database.

# Chopping Bloc

Region	Data year	Initial Release	Total number of sectors	Available in Alternative Version?
<b>Version 8</b>				
Venezuela	1986	4	50	
Hong Kong	1988	1	37	
Philippines	1989	5.3	40	
Zimbabwe	1991	5	57	Africa
Tanzania	1992	5	57	Africa
Uganda	1992	5	36	Africa
<b>Version 9</b>				
Bangladesh	1993-94	5	57	
Botswana	1993-94	5	57	Africa
Malawi	1994	5	57	Africa
Switzerland	1990 (1995)	5	46	
Mozambique	1995	5	57	Africa
Zambia	1995	5	57	Africa
Croatia	1995	5.2	57	
Malaysia	1995	5.3	40	
South Africa	1995	5	57	Africa

# Versions

- **All I-O data contributed will be used in the construction of the GTAP Data Base.**
- **But access to level of disaggregation will differ.**
  - **Board version: Most disaggregated. All countries for which we have I-O data will be disaggregated.**
  - **Public Version: Excludes countries listed in chopping bloc (and countries for special versions may/may not be included depending on quality).**
  - **Special Versions: e.g., African Data Base may be commissioned to break out countries within a region.**

# More programs and procedures

- **Improved and stricter guidelines on the manipulation of Regional Data:** As contributors have become less experienced the Center needs to establish rules for manipulating data in order to ensure consistency.
- **Peer-review System:** Over the last year, with the assistance of the USITC, a system of peer review for the I-O tables has been established. We are also currently implementing this on a trial run basis, however it is proving difficult to attract reviewers

# Statistical offices

- **Alternative I-O Contribution Format:** The proposal here is to adopt the SNA supply and use format as an alternative format for I-O table contributions, then to develop tools to manipulate these tables into the GTAP format in-house. The idea is to move closer to the format commonly used in statistical offices in Europe and many other countries.

# Alternative Format

- **Collect raw data in supply and use format.**
- **Identify a set of commodity taxes for which specific vectors should be included in the Supply matrix, e.g., import duties, VAT and GST. Also identify the required detail for trade and transport margins.**
- **Collect detail import, margin and tax and subsidy expenditure matrices where they are formally published.**
- **Collect a macro SAM for each region that reconciles the inter industry data with the national accounts.**
- **Adopt standard SNA and input-output terminology: i.e., learn to talk their ‘language’.**

**Comments?**

**Additional Ideas?**

# Survey Results

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**Q1. What data format best describes the data with which you started?**

	<b>v6</b>	<b>v7</b>
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<b>Total Respondents:</b>	4	7
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<b>I-O Table</b>	4	5
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<b>SAM</b>	1	2
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<b>Make and use</b>	0	4
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<b>Q2. Which of the following issues caused you the most difficulty?</b>	<b>v6</b>	<b>v7</b>
<b>Total Respondents:</b>	4	7
Understanding the GTAP format and how it related to your initial data	0	1
Working out tax definitions and how they related to your initial data	2	1
Balancing an unbalanced initial table	1	1
Understanding the balance condition in your initial data	1	0
Understanding the balance condition in the GTAP format	1	2
<b>Maintaining balance while manipulating data</b>	<b>1</b>	<b>4</b>
Converting to commodity by commodity	1	1
Splitting imports	1	1
Splitting taxes	1	1
Removing trade margins	0	1
Removing a fictitious sector	0	1
Removing sign problems	1	1
<b>Finding dwellings</b>	<b>1</b>	<b>4</b>
<b>Finding land rents</b>	<b>1</b>	<b>4</b>
<b>Allocating self employed labor</b>	<b>0</b>	<b>3</b>
Negative value added or other value added related problems	1	0
<b>Mapping to GTAP sectoral classification</b>	<b>2</b>	<b>3</b>
Aggregating up to GTAP classification	0	1
<b>Disaggregating sectors to conform to GTAP sectors</b>	<b>3</b>	<b>4</b>
Documentation	1	0
Other (GTAP-defined balance condition does not match original table)	1	1



<b>Q4. Which of the following resources did you find useful in creating and/or improving the quality of your contribution?</b>	<b>v6</b>	<b>v7</b>
<b>Total Respondents:</b>	4	7
<b>Report produced by Center staff</b>	4	4
<b>Balance check</b>	1	4
<b>Sign check</b>	1	4
<b>Tax check</b>	1	3
<b>Entropy check</b>	1	1
<b>Contributor's website</b>	2	0
<b>GTAP Technical Paper No. 1</b>	3	3
<b>Other contributor documentation</b>	1	2
<b>GTAP Data Base Documentation</b>	2	2
<b>Concordances on GTAP website</b>	2	2
<b>GTAP Center staff</b>	2	4
<b>I-O contributor course</b>	0	0
<b>Other Colleagues</b>	1	1
<b>The country's statistical office</b>	2	1
<b>Reports produced by third parties which referred to your country's data</b>	0	1

<b>Q5. What more could the Center provide to assist contributors?</b>	<b>v6</b>	<b>v7</b>
<b>Total Respondents:</b>	4	7
<b>Short Course on contributing</b>	0	2
<b>Web course on contributing</b>	2	4
<b>More/better concordances</b>	1	4
<b>Email discussion list</b>	1	2
<b>Simplify GTAP format</b>	0	0
<b>Ask contributors to share their programs</b>	0	2
<b>Formal review of the I-O</b>	1	4
<b>Table/documentation</b>		
<b>Provide references</b>	0	0
<b>Other</b>	0	0

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<b>Q6. Would you be willing to serve as a reviewer of another I-O Table?</b>	<b>v6</b>	<b>v7</b>
<b>Total Respondents:</b>	4	7
<b>Yes</b>	3	3
<b>No</b>	1	4

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**Q7. Did you compare your contributed data to the GTAP Data Base?**

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<b>Total Respondents:</b>	4	7
<b>Yes</b>	3	5
<b>No</b>	1	2

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<b>Q8. Would you contribute again?</b>	<b>v6</b>	<b>v7</b>
<b>Total Respondents:</b>	4	7
<b>Yes</b>	4	7
<b>No</b>	0	0

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