Improving European Input-Output Database for Global Trade Analysis (EU-GTAP project)

GTAP Advisory Board

DG JRC – DG TRADE
June 16, 2015
Scope of the project
DG JRC/DG TRADE collaboration

The main objective of the current project is the submission (to GTAP) of a set of Input-Output Tables for the 28 Member States for 2010 under the new ESA10 methodology and in compliance with the GTAP submission requirements (see Huff et al, 2000) and using the most recent ESTAT IO tables.
Tasks

• Data collection (from ESTAT and MS)
• Compliance with GTAP submission requirements (Huff et al, 2000):
  - Construction of (Symmetric) IO Tables
  - Match GTAP sectorial classification and IO format
  - Treatment of imports
  - Checking accounting identities and non-negativity
  - Report on the data sources and problems

• Submission by December, 2015
  - Close collaboration with GTAP (Ángel Aguiar) and DG TRADE (Chief Economist Unit)
Tasks

- **Taxes less Subsidies on Products** matrices (2010, EU28 MS) split up into:
  - VAT
  - Excises and other taxes on products
  - Import tariffs (ITC data on tariff revenues)
  - Subsidies on products

- **Transformation** of TLS sub-matrices into the GTAP format and classification (e.g. IOT format)

- Comparison of official SUTs of 2010 in the **ESA95** and **ESA10** systems
Other important features:

- Quality assurance of the results with the advice of ESTAT (Unit C2, Isabelle Remond-Tiedrez) and NSIs (e.g. CZ, UK)
- Compliance requirements consultation with GTAP consortium (Ángel Aguiar/Badri Narayanan)
- Regular discussion and feedback from DG TRADE during the project
Methodology (overview)

1. Estimation of SUTs bp for missing countries
2. Projection of SUTs bp for missing countries
3. Construction of IOTs (UF tables)
4. Breakdown of TLS matrices
5. Transformation of TLS matrices into IO format
6. Transformation of IO-based TLS matrices into GTAP format
7. Construction of UP tables
In detail, GTAP requirements:

- **UF tables**: Input-Output Tables with a distinction between domestic and import uses

- **UP tables**: Input-Output Tables with Taxes less Subsidies on Products, differentiated between domestic and imported uses

✓ Necessary mechanism to distinguish between domestic and import driven net taxes revenues
Construction of UF tables

- Incomplete SUTs bp dom/imp
  - ESTAT / JRC methodology

- Complete set of SUTs bp dom/imp
  - IOTs ind by ind bp dom/imp

- ESTAT / UN methodology (Model B)
  - IOTs prod by prod bp dom/imp

- GTAP IOTs dom/imp

- Pending: 11 MS by June15

[Flags of various countries]
Construction of UP tables

TLS SUT Split
Official

TLS SUT
Split:
- VAT
- Other tax
- Tariffs
- Subsidies

TLS SUT
Split
- dom/imp

TLS IOT
Split
- dom/imp

TLS GTAP
- dom/imp
- Total

Other data sources

UP = UF + TLS GTAP
Full process to estimate TLS tables

- Quality assurance of the database
- Estimation of import duties (ITC data)
- Estimation of excise taxes
- Estimation of other taxes on products
- Estimation of subsidies on products
- Estimation of the Value Added Tax
- Reconciliation with available TLS tables
- Estimation of TLS levied on domestic and imported transactions
- Final check
Other data sources

• **National Taxes List (EC):**
  
a) Contains detailed lists of taxes, social contributions and related tax revenues according to the SNA/ESA classification;

b) The lists are still far from being homogenous across countries in terms of the degree of detail and reporting periods (mostly, 1995-2012)

c) CZ, PT and SK data also revealed that there are occasionally apparent differences and inconsistencies between the NTL and TLS matrices (e.g. UK)

d) We will elaborate a reconciliation process, wherever necessary
Other data sources

- National Accounts (ESTAT):
  a) Data for all SNA categories (e.g. taxes, although with less detail) and institutional sectors (nat.cur)
  b) Main tax aggregates by country, broken down into rather detailed tax categories, including tax revenues received by EU institutions (e.g. part of VAT, tariffs)
  c) Supplementary data from NAs/NTL/… will be re-scaled to SUIOTs totals in order to preserve a balanced Input-Output framework
Other data sources

- **Excise taxes (DG TAXUD):**
Other data sources

**VAT**

a) CASE (Centre for Social and Economic Research): '2012 Update Report to the Study to quantify and analyse the VAT Gap in the EU-27 Member States' - report commissioned by the DG TAXUD, September 2014

b) EC[2004]: TAXATION PAPERS – 'VAT indicators' - working paper (No. 2/2004), DG TAXUD


d) Others: Reckon (2009), Schneider (2010)…
Other data sources

- **Specific agricultural and food products data:**
  b) OECD Producer and Consumer Support Estimates database (2014) and “European Union: Estimates of Support to Agriculture” (OECD)
  c) ESTAT’s Economic Accounts for Agriculture and Structural Business Statistics (food industry)
Other data sources

Other (non-exhaustive list) data:

a) Investment by institutional sectors
b) Environmentally Related Taxes, Fees and Charges - Revenues raised by environmentally related taxes for selected countries – OECD database
c) ESTAT’s households consumption expenditure by COICOP categories
d) Exchange rates
e) Other country-specific data: HU, CZ (larger detail)
Timeplan for GTAP submission

- **September 2015**: 5-10 countries
- **December 2015**
  - UF Tables (IO)
  - Report on methods, data sources and problems
- **Spring 2016 (-> GTAP 9.2)**
  - UP Tables (IO + TLS) + Comparison SNA93/SNA08
  - Report on methods, data sources and problems
- **Trade and transport margins (later on)**
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Thank you very much

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