Czech approach to compiling SUTs

Vítězslav Ondruš
*Czech Statistical Office*

Workshop of supply and Use Tables, Session 2
2-4 October, Chisinau
Input-Output Tables as a part of National Accounts

- National Accounts Department
  - Sectoral Accounts Unit (10 persons)
  - Input-Output Tables Unit (9 persons)
  - Quarterly Accounts Unit (6 persons)

- Responsibility of Input-Output Tables Unit
  - Supply and Use Tables
  - Symmetric Input-Output Tables
  - Final Household Consumption Expenditure
  - Gross Capital Formation
  - Balances of Non-financial Assets
Supply and Use Tables

- Compiled annually – two sets of SUTs
  - Preliminary version (T+6 months)
  - Semi-final version (T+18 months)

- Tools:
  - MS Excel - for preliminary version
    - 2 Excel files (SUP and USE)
    - Excel formulas
    - Limited size of SUT
  - SNA-NT Software - for semi-final version
    - Based on Oracle database
    - Data stored at database
    - Calculations and deflation are done by SNA-NT software
    - Figures downloaded to MS Excel

- Fully consistent with sector accounts for total economy
  - Goods and services account
  - Production account
  - Generation of income account
Role of SUTs inside of CzSNA

- Annual National Accounts: SUTs are used for balancing of GDP (production and expenditure sides) and deflation of GDP and its components
  - Compilation process of SUTs – consistent and linked with compilation of other part of SNA
    - Macroaggregates before balancing of SUTs
    - Balancing of SUTs
    - Adjustments to other part of SNA
  - Deflation of GDP and its components

- Quarterly national Accounts: SUTs are not compiled quarterly, but
  - Commodity structures for transformation of price indices in CPA to NACE
  - Deflation
    - Shares of export on output by product or industry
    - Shares of import on use by product or industry
  - Commodity flow method for GFCF
Semifinal version of SUTs using SNA-NT

- Compilation SUTs in current and constant prices
  - Database d model based on ORACLE
  - Input data in ASCII (text) format
  - Output data can be exported to DBF (MS Excel or MS Access)
  - Balancing current and constant prices
  - Deflation – at 3-digit CPA level

- Used classifications:
  - 3-digit CPA and NACE classifications
  - almost 2500 commodities (6-digit code = 3 digit CPA level + 3 digit product specification, e.g. 004 – residents, 005 – agriculture self-supply, 007 – re-export…)
  - Three dimensions
    - Row – product
    - Column – type and branch
    - Valuation types
Symmetric Input-Output Tables

- Compiled every five years (0,5)

- Used mainly for econometric analysis

- Main users:
  - Universities
  - Government
  - Consulting companies
Preliminary version of SUTs use simplified model in Excel

- Lack of time = Simplified model in Excel = 2-digit CPA (89 products) and 2-3 digit NACE (120 branches)

- Model consists from two files that allows:
  - to integrate all needed data sources
  - to check their consistency
  - to balance individual groups of products
  - to transfer products to basic prices
  - to deflate products to previous year prices.

- Both excel files (SUP and USE):
  - have sheets with matrices or vectors that are down repeated by needed data inputs and needed adjustments
  - individual sheets and both files are linked by calculations formulas
Simplify schema of SUP file

Sheets:
SUM . . . . Supply and use table, general overview (table for balancing)
TOTAL . . Output, basic prices
DOM . . . . Output for domestic use
EXP . . . . Exports
NS . . . . Non-market services
SUB . . . . Subsidies on products
SPC . . . . Specific output (FISIM, Imputed rent, trade margins, transport margins, research and development, ...)

CZSO
Simplify schema of USE file

<table>
<thead>
<tr>
<th>TOTAL</th>
<th>VAT</th>
<th>TRA</th>
<th>TRD</th>
<th>SUB</th>
<th>TAX</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMP</td>
<td>SPC</td>
<td>USE basic</td>
<td>USE i</td>
<td>USE dom</td>
<td>HFCE</td>
</tr>
</tbody>
</table>

TOTAL ...... Use, purchasers' prices
VAT ...... Value added tax
TRA ...... Transport margins
TRD ...... Trade margins
SUB ...... Subsidies (from the use side)
TAX ...... Taxes on products (except VAT)
IMP ...... Imports
SPC ...... Specific output (imputed rent, ...)
USE basic ...... Use, basic prices
USE i ...... Use from imports, basic prices
USE dom ...... Use for domestic, basic prices
HFCE ...... Households final consumption expenditures
S13, S15 ...... Final consumption of non-market services
Process of SUTs compilation

■ Filling:
  ■ Individual data sources  -> macroaggregates by SNA
  ■ Price indices
  ■ Parameters (rates of taxes, rates of margins)
  ■ Additional data (energy, transportation, industrial statistics, …)

■ Balancing
  ■ Balancing team (Supervisor + Members)
  ■ Balancing protocols
  ■ 4 stages:
    ■ checking and roughly balancing 10-20 CPA with biggest balancing differences
    ■ roughly balancing all CPAs (to difference ± 1%, or less than € 500)
    ■ Using RAS method for IC
    ■ Final individual balancing

■ Analyses and removing negatives
  ■ deductible matrices (valuation, exports or imports matrices

■ Deflation
  ■ Sheet for price indices and deflators  -> deflation is running automatically
Thank you for your attention