Updating the WIOD Database in a Collaborative Virtual Laboratory

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WIOD funded by the EU
WIOD Construction Methods
based on Dietzenbacher et. al (2013)
Divide into 4 parts
1st part

Concordance between national and WIOD classification

National Account statistics
Convert NSUT to 59-Product, 35-Industries

NSUT
Harmonised NSUT

Time-Series NSUT
Basic Price NSUT

SUT-RAS
SUT-RAS

Int’ Demand, Final Demand, GFCF,
Use of import by country of origin
Convert import cif to fob prices
Gravity model

Share of import for product & services
Bilateral Trade UN Comtrade, NSI
Use of import for product and services

WSUT

BEC rev. 3

To distinguish goods & services into 3 categories Intermediate demand, final demand, GFCF

Int’ Demand, Final Demand, GFCF,
Re-export
Use of import by country of origin
Convert import cif to fob prices
Gravity model

Share of import for product & services
Bilateral Trade UN Comtrade, NSI
Use of import for product and services

RoW-WIOD countries intermediate block
RoW-WIOD countries export block
Estimate RoW domestic block
Average export share developed to developing economies in WIOD
Weighted average share From BRICIM countries
Apply RAS
WORLD minus WIOD countries

Model “D”
Fixed product sales structure assumption
Calculate export from and import to RoW
HS-6 digit UN Comtrade

Convert NSUT to 59-Product, 35-Industries
Concordance between national and WIOD classification

1st part
WIOD Construction Methods
based on Dietzenbacher et. al (2013)

2nd part

Concordance between national and WIOD classification

Convert NSUT to 59-Product, 35-Industries

Harmonised NSUT

NSUT

National Account statistics

Convert Use, final demand to basic price

Int’ Demand, Final Demand, GFCF,

Net Taxes

Inventories

Margin

SUT-RAS

Basic Price NSUT

Harmonised NSUT

SUT-RAS

Time-Series NSUT

ISUT

WSUT

WIOT

Bilateral Trade

UN Comtrade, NSI

UN services trade corresponding BoP codes and CPA

HS-6 digit (goods)

BEC rev. 3

To distinguish goods & services into 3 categories
Intermediate demand, final demand, GFCF

Use of import by country of origin

Re-export

Use of import for product and services

Bilateral Trade

HS-6 digit UN Comtrade, NSI

Model “D” Fixed product sales structure assumption

Calculate export from and import to RoW

RoW-WIOD, countries intermediate block

Estimate RoW blocks

Transforming WSUT to WIOT

Share of import for product & services

HS-6 digit UN Comtrade

Average export share developed to developing economies in WIOD

RoW export block

Apply RAS on domestic block

RoW domestic block

Weighted average share from BRICIM countries

Convert NSUT to 59-Product, 35-Industries

Bilateral Trade

UN Comtrade

HS-6 digit (goods)

BEC rev. 3

Share of import for product & services

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Model “D” Fixed product sales structure assumption

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Weighted average share from BRICIM countries

RoW export block

Apply RAS on domestic block

RoW domestic block

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WORLD minus WIOD countries

Convert Use, final demand to basic price

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RoW-WIOD, countries intermediate block

Estimate RoW blocks

Transforming WSUT to WIOT
WIOD Construction Methods
based on Dietzenbacher et. al (2013)

Concordance between national and WIOD classification

National Account statistics

Convert NSUT to 59-Product, 35-Industries

NSUT

Harmonised NSUT

SUT-RAS

Basic Price NSUT

Time-Series NSUT

ISUT

WSUT

WIOT

Directories

Formula

Main Path

Data

Intermediate Path

Weighted average share
From BRICIM countries

Apply RAS

WORLD minus WIOD countries

HS-6 digit UN Comtrade

Calculate export from and import to RoW

Model “D”
Fixed product sales structure assumption

Estimate RoW blocks

Transforming WSUT to WIOT

Bilateral Trade UN Comtrade, NSI

UN services trade corresponding BoP codes and CPA

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HS-6 digit (goods)

BEC rev. 3

To distinguish goods & services into 3 categories
Intermediate demand, final demand, GFCF

Gravity model

Convert import cif to fob prices

Use of import by country of origin

Bilaterial Trade UN Comtrade, NSI

Share of import for product & services

Int’ Demand, Final Demand, GFCF,

Weighted average share developed to developing economies in WIOD

Average export share developed to developing economies in WIOD

Apply RAS on domestic block

RoW domestic block

RoW export block

RoW-WIOD countries

Intermediate block

RoW-WIOD countries

Basic Price NSUT

Convert Use, final demand to basic price

Int’ Demand, Final Demand, GFCF,

Re-export

Use of import for product and services

Gravity model

Convert import cif to fob prices

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**WIOD Construction Methods**  
*based on Dietzenbacher et. al (2013)*

**4th part**

Concordance between national and WIOD classification

- **NSUT**
  - Harmonised NSUT
  - National Account statistics
  - Convert NSUT to 59-Product, 3 Industries

- **SUT-RAS**
  - Basic Price NSUT
  - Time-Series NSUT

- **ISUT**
  - Basic Price NSUT
  - Int’ Demand, Final Demand, GFCF,
  - Share of import for product & services

- **WSUT**
  - Bilateral Trade UN Comtrade, NSI
  - Use of import by country of origin
  - Re-export

Converting import CIF to FOB prices

**Gravity model**

- **UN services trade**
- **BEC rev. 3**

To distinguish goods & services into 3 categories
- Intermediate demand, final demand, GFCF

**Main Path**
- **Data**
- **Formula**

**Intermediate Path**
- **Data**
- **Formula**

**Directory**
- **Formula**
- **Main Path**
- **Intermediate Path**
WIOD in the Virtual Laboratory

The Workflow

National Account statistics

NSUT

WIOD construction methods

Basic Price NSUT

Non-benchmark year to base year 2005

International trade block

ISUT

WSUT

Initial estimate

Optimization process

WIOT

WIOD Initial Estimate Datafeed
<table>
<thead>
<tr>
<th>Original WIOD</th>
<th>WIOD in the VL</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benchmark year initial estimate</td>
<td>Base year initial estimate 2005</td>
<td>Use WIOD time-series formulas to adjust non-benchmark year</td>
</tr>
<tr>
<td>Apply balancing methods several times</td>
<td>Optimization in one go</td>
<td>Initial estimate and constraints were prepared in a routine</td>
</tr>
<tr>
<td>Harmonized SUTs into WIOD classification</td>
<td>User’s classification</td>
<td>Combine concordance; User → global root; NSUT → global root; User → NSUT</td>
</tr>
</tbody>
</table>
How do we select the base year for the initial estimate? Why 2005?
Thank you

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