

# Data delivery guidelines for WP1 Inter-industry Accounts

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## **I Introduction**

The delivery of data consists of delivery of 'raw' numbers and the appropriate meta-data describing the content of the raw numbers. The meta-data consists of the following types of info:

- Information on the data source, release data and description of dimensions (e.g. products, industries, final demand categories, value added etc).
- For each dimension a classification list, which might include a hierarchy but not necessarily so.
- For each dimension a concordance table which indicates the concordance of the classification with the EUKLEMS classification.

It is important that all data delivered to the datahub are sent in ProdSys<sup>®</sup> readable form. Below a detailed example of how original data from an NSO may be coded into Prodsys readable format for the case of a use table. The example is meant as a guide for the data delivery of individual consortium members. There are a number of general do's and don't's in converting the data into this format:

- Our default option for data delivery is in Excel files. The examples given below are based on this. Data delivery in other formats is possible, in principle, provided that meta-data is properly indicated. When a consortium partner would like to use another format, the data-hub database manager Ton van Moergastel ([a.p.a.van.Moergastel@rug.nl](mailto:a.p.a.van.Moergastel@rug.nl)) at the RUG should be first contacted.
- In each Excel workbook, please add one or more separate worksheets containing information on the data source, release date, type(s) of information to be found in the other sheets of the workbook, etc.. Please, be as complete as possible.
- Please, no fancy layout in the actual datasheets (i.e., the sheets containing the numbers). Put all numbers in one contiguous block, without empty rows or columns that do not correspond to any data category (industry or asset type in this example).
- Provide a separate sheet describing how your lowest-level data categories (provided they contain actually existing data) should be matched to EU KLEMS

- categories. If one or more categories happen to get split up between several EU KLEMS categories, try to provide weights.
- Provide separate sheets for the hierarchical dimensions of the data (in the example for WP1, for products and industries). Arrange this information like you would order a content section of a book/article with chapters, with indentations for paragraphs under a chapter, further indentations for subparagraphs, etc.. (see the worked out examples in the annex). For better visibility of the differences in level of hierarchically ordered meta data descriptions in Excel, you may use 3 extra dots for each level below the top level, instead of just one dot.
  - In principle, data and meta data for each original data source should be put in one file. This makes it easier to store the data. This might mean that you need to use quite a number of worksheets in one file.
  - The naming of the files should indicate roughly what is inside. So the following convention is suggested: “variable\_source\_period\_country”. For example “use\_CPB\_2003\_NLD” can be used to indicate the use data for the Netherlands from the Dutch Central Planning Bureau for 2003.
  - In case data sources have to be combined, for example, by applying the shares based on one source to the series from another source, this should be indicated in two ways: first, in a separate Word-document describing how the various sources should be linked together, and second, through the provision of weights in the concordance table (see example in the Annex).
  - It is useful to make distinctions between data which is zero, missing or not available. So please use the following conventions:
    - “0” or a blank cell indicate zero
    - “na” indicates not available
    - “cf” indicates confidential (i.e suppressed)

For more information on data delivery standards, including comments and suggestions please contact the data-hub database manager Ton van Moergastel ([a.p.a.van.Moergastel@rug.nl](mailto:a.p.a.van.Moergastel@rug.nl)).

## **II Lay out of Tables**

To streamline the data delivery process to the datahub, we have made templates for data delivery for the USE and supply tables, and the series on gross output and value added from the National Accounts. These templates are given in the files “use\_cpb\_2003\_nld.xls”, “sup\_cpb\_2003\_nld.xls” and “NA\_cbs\_70\_04.xls”. The templates should be used when delivering data to the data-hub. The lay-out of the supply and use tables follows closely the EUROSTAT recommendations (adapted from chapter 1 of Eurostat’s “ESA 95 Input-Output manual”). Below we present the lay out of these tables.

### **II.1. Use tables and valuation matrices**

In Table 1 we provide the general layout of a use table which is also used in the data-delivery template.

**Table 1 Use Table at purchaser prices**

Uses	Industries		Final uses			Total	
			Final consumption	Gross capital formation	Exports		
<b>Products</b>	<b>A</b> INTERMEDIATE CONSUMPTION BY PRODUCT AND BY INDUSTRY at purchasers' prices	<b>A2= Sub-total A</b>	<b>C</b> FINAL USES BY PRODUCT AND BY CATEGORIES OF FINAL USE at purchasers' prices			<b>C2= Sub-total C</b>	<b>E</b> TOTAL USE BY PRODUCT
	<b>A1=Subtotal A</b>		<b>C1=Subtotal C</b>				
<b>Components of value added</b>	<b>B</b> VALUE ADDED at basic prices BY COMPONENT AND BY INDUSTRY	<b>B2= Sub-total B</b>					
	<b>B1=Subtotal B</b>						
<b>Total</b>	<b>D=A1+B1=</b> TOTAL GROSS OUTPUT at basic prices						

Gross output at basic prices, section D, is the result of the intermediate total over all products at purchasers' prices (section A1) plus the total value added at basic prices (section B1). Section B (and B1) is the total over all products of value added at basic prices. In addition to this use table, one needs also valuation matrices which can be used to transform the price concept for intermediate and final consumption from purchaser's to basic prices. The price concepts are linked as follows:

basic price values

ADD net taxes on products

producers' price values

ADD margins

purchasers' price values minus non-deductable VAT

ADD non-deductable VAT

purchasers' price values

This means that we need full matrices for intermediate use (product by industry) and the same full matrices for final demand (product by final demand category) of:

- 1) product taxes,
- 2) product subsidies
- 3) the three margin types separately (wholesale, retail, transport) and
- 4) non-deductable VAT

See Chapter 6 in Eurostat IO Manual or more on valuation matrices

**Table 2 Product Tax Table**

Uses	Industries	Final uses			Total
		Final consumption	Gross capital formation	Exports	
<b>Products</b>	<b>A</b> Product Taxes paid on intermediate use	<b>C</b> Product Taxes paid on final use			<b>E</b> TOTAL Tax by PRODUCT

The lay out for the other valuation matrices is similar to the one for product tax.

### II.2. Supply tables

In Table 3 we provide the general layout of a supply table which is also used in the data-delivery template. The margins are given in the columns and should correspond with the totals columns in the valuation matrices described above.

**Table 3 The supply table**

Supplies	Industries		Rest of the world	Total	Taxes	Subsidies	Trade and Transport Margins
<b>Products</b>	<b>A</b> OUTPUT BY PRODUCT AND BY INDUSTRY at basic prices	<b>A2= sub-total A</b> at basic prices	<b>C</b> IMPORTS BY PRODUCTS at basic prices	<b>E</b> TOTAL SUPPLY BY PRODUCT at basic' prices	<b>TOTAL Tax by PRODUCT</b>	<b>TOTAL Subsidies by PRODUCT</b>	<b>TOTAL Margin by PRODUCT</b>
<b>Total</b>	<b>B</b> TOTAL OUTPUT BY INDUSTRY at basic prices		TOTAL IMPORTS	TOTAL SUPPLY			

### II.3. Timeseries on GO and VA

The National Accounts time-series on gross output, value added and value added components should contain the following components:

**Table 4 Gross output and value added categories**

EUKLEMS code	Description
GObas	Total Gross output at basic prices
Iipur	...Total intermediate inputs at purchaser's prices
VAbas	...Value added at basic prices
Comp	.....Compensation of employees
Wag	.....Wages and salaries
Soc	.....Social premiums for employers
GOS	.....Gross operating surplus
NOS	.....Net operating surplus
ComImp	.....Imputed compensation for employers and own-account workers
NOSx	.....Return to assets

Depr	.....Consumption of fixed capital
NTaxPr	.....Net taxes on production
TaxPr	.....Taxes on production
SubPr	.....Subsidies on production

### III Description of templates

#### III.1 Use template

Please look at the contents of the file “use\_cpb\_2003.xls”. This file can also be downloaded from the EUKLEMS website. It contains the template for the USE-table filled with data for a Dutch example. The following sheets are contained in the file “use\_cpb\_2003.xls”. The sheets are either *comment sheets* which provide extra information on the data sources etc., *meta-data sheets* which provide description of the data or *data sheets* which contain the actual data.

#### Comment sheets

Introduction	Describe datasources etc.
Comment on layout of datasheets	What is in the rows and columns?

#### Metadata sheets

Dutch products and VA	row categories in Dutch use table
euklems products and VA	this is the EUKLEMS list for products and value added components (use tables)
products and VA conc	concordance from Dutch rows to EUKLEMS rows
Dutch industries and fin. use	column categories in Dutch use table
euklems industries and fin. use	this is the EUKLEMS list for industries and final use components (use tables)
industr. and fin. use conc	concordance from Dutch columns to EUKLEMS columns

#### Data sheets

cpb use 2003	use table at purchasers' prices
Taxes	valuation matrix
Subsidies	valuation matrix
wholesale margins	valuation matrix
retail margins	valuation matrix
transport margins	valuation matrix
Nd-VAT	valuation matrix

(Note: in the example workbook, the 6 sheets at the end with valuation matrices have not actually been filled with data yet.)

Below we give some examples of the meta-data sheets for the column categories in the Dutch case. We start out with the the ‘Dutch industries and fin. use’ sheet, followed by examples of the concordance between the columns in the Dutch table and the EUKLEMS columns. We show a concordance table with allocation weights (derived from more detailed other sources) for industries in the Dutch use table 2003 into the EUKLEMS industry categories. ProdSys uses these weights in calculating the values for the corresponding EUKLEMS use table.

	A	B	C	D	E
1	<b>cuse03</b>	<b>desc</b>			
2	1	Akkerbouw			
3	2	Tuinbouw			
4	3	Veehouderij			
5	4	Overig landbouw			
6	5	Hoveniers en agrarische dienstverlening			
7	6	Bosbouw en jacht			
8	7	Visserij			
9	8	Aardolie- en aardgaswinning			
10	9	Delfstoffenwinning overig			
11	10	Slachterijen en vleesverwerking			
12	11	Visverwerking			
13	12	Groente- en fruitverwerking			
14	13	Vervaardiging van zuivelprodukten			
15	14	Vervaardiging van veevoeder			
16	15	Vervaardiging overige voedingsmiddelen			
17	16	Koffiebranderijen en theepakkerijen			
18	17	Vervaardiging van dranken			

An example of many-to-one concordance concerning sub-categories of agriculture:

cuse03	industry description	EUKLEMS	EUKLEMS industry description	wt
1	Akkerbouw	1	Agriculture	1
2	Tuinbouw	1	Agriculture	1
3	Veehouderij	1	Agriculture	1
4	Overig landbouw	1	Agriculture	1
5	Hoveniers en agrarische dienstverlening	1	Agriculture	1

An example of one-to-many concordance concerning the splitting up of publishers-and-printers:

cuse03	industry description	EUKLEMS	EUKLEMS industry description	wt
25	Uitgeverijen en drukkerijen	221	Publishing	0.364374
25	Uitgeverijen en drukkerijen	22x	Printing and reproduction	0.635626

### And one-to-many examples from the electronics industries

cuse03	industry description	EUKLEMS	EUKLEMS industry description	wt
40	Overige elektrische machines en apparaten	313	Insulated wire	0.371
40	Overige elektrische machines en apparaten	31x	Other electrical machinery and apparatus nec	0.626
41	Audio-, video- en telecommunicatie-apparatuur	321	Electronic valves and tubes	0.057
41	Audio-, video- en telecommunicatie-apparatuur	322	Telecommunication equipment	0.149
41	Audio-, video- en telecommunicatie-apparatuur	323	Radio and television receivers	0.795
42	Medische, meet- en regelapparatuur	331t3	Scientific instruments	0.812
42	Medische, meet- en regelapparatuur	334t5	Other instruments	0.188

The full 'Final use conc' sheet, which includes a many-to-one for government consumption.

cuse03	final use description	EFDlist	EUKLEMS final use description
107	Uitvoer van goederen (fob) en diensten	Exp	Exports
108	Consumptieve bestedingen door huishoudens	HHCx	Household consumption
109	Consumptieve bestedingen door izw tbv huishoudens	HHCNp	Non-profit consumption
110	Sociale uitkeringen in natura door de overheid	Gov	Government consumption
111	Consumptieve bestedingen eigen productie overheid	Gov	Government consumption
112	Investerings in vaste activa (bruto)	GFCF	Gross fixed capital formation
113	Veranderingen in voorraden (incl_ kostbaarheden)	Inv	Changes in inventories and valuables

### **III.2 Supply template**

Please look at the contents of the file "sup\_cpb\_2003.xls". This file can also be downloaded from the EUKLEMS website. It contains the template for the Supply-table filled with data for a Dutch example. The following sheets are contained in the file "CPB supply 2003.xls".

#### **Comment sheets**

Introduction	Describe datasources etc.
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#### **Metadata sheets**

Dutch rows	row categories in Dutch supply table
euklems supply row categories	this is the EUKLEMS list for products (supply tables)
products conc	concordance from Dutch rows to EUKLEMS rows
Dutch columns	column categories in Dutch use table
euklems supply col. categories	this is the EUKLEMS list for industries, import, taxes and subsidies (supply tables)
column conc	concordance from Dutch columns to EUKLEMS columns

#### **Data sheets**

cpb sup 2003	Dutch supply table 2003 at basic prices
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### **III.3 GO and VA template**

Please look at the contents of the file “NA\_cbs\_70\_04.xls”. This file can also be downloaded from the EUKLEMS website. It contains the template for the gross output and value added table (without actual data). The following sheets are contained in the file “NA\_cbs\_70\_04.xls”.

#### **Comment sheets**

Introduction	Describe datasources etc.
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#### **Metadata sheets**

euklems GO and VA	euklems categories of gross output and value added
Dutch industries	Dutch industry list
euklems industry list	euklems industry list
industry conc	concordance from Dutch industry list to euklems industry list

#### **Data sheets**

gross output	Total Gross output at basic prices
intermediate inputs	Total intermediate inputs at purchasers' prices
total value added	Value added at basic prices
compensation of empl.	Compensation of employees
wages and salaries	Wages and salaries
social premiums	Social premiums for employers
gross operating surplus	Gross operating surplus
net operating surplus	Net operating surplus
imputed compensation	Imputed compensation for employers and own-account workers
return to assets	Return to assets
compensation of fixed capital	Consumption of fixed capital
net taxes	Net taxes on production
taxes	Taxes on production
subsidies	Subsidies on production

Note that you do not have to fill in all the worksheets, but only those for which you have the data. There is a natural hierarchy of the worksheets as indicated in section II.3, e.g. wages and salaries plus social premiums is equal to compensation of employees.

### **IV How to fit the template?**

In many cases your raw data will not directly match the lay-out in the EUKLEMS template. Below we give you the problems we encountered in the Dutch tables, and how

we solved them. This might, or might not, be relevant for your case. The ideal format itself was discussed above. We had to adjust a number of things:

1. from non-deductible VAT row in Use to matrix
2. from margins and net taxes columns in Supply table into matrices
3. distribute FISIM
4. get rid of “nuisance” cells

*Non-deductible VAT* was given as a separate line at the end of the product lines in the use table. So implicitly, the valuation concept for the products in the use table is purchasers’ price minus non-deductible VAT, see Table below

**Alternative 1 Use Table with non-deductible VAT row**

Uses	Industries		Final uses				Total
			Final consumption	Gross capital formation	Exports		
<b>Products</b>	<b>A</b> INTERMEDIATE CONSUMPTION BY PRODUCT AND BY INDUSTRY at purchasers’ prices -/- non-ded. VAT	<b>A2=</b> <b>Sub-</b> <b>total</b> <b>A</b>	<b>C</b> FINAL USES BY PRODUCT AND BY CATEGORIES OF FINAL USE at purchasers’ prices -/- non-ded. VAT			<b>C2=</b> <b>Sub-</b> <b>total</b> <b>C</b>	<b>E</b> TOTAL USE BY PRODUCT
<b>nd-VAT</b>	<b>A*: non-ded. VAT</b>		<b>C*: non-ded. VAT</b>				
	<b>A1=Subtotal A+A*</b> at purchasers’ prices		<b>C1=Subtotal C+C*</b> at purchasers’ prices				

In this case the nd-VAT line must be redistributed over all products. One way to do this is to use the proportions found in the matrices above the nd-VAT line. *Margins and net taxes* are given as columns at the end of the supply table: they must be redistributed over the industries and final demand categories. Ways to do that have been discussed at the Groningen Workshop.

Three columns at the end of the final use section of the original use table contained values for *actual minus paid VAT*, *FISIM* and *direct purchases abroad by residents* were stored into. This is not desirable, and these items have to be carefully redistributed over the intermediate part of the use table. This means that the intermediate total over all products will differ from the ones found in the original table. This in turn must be compensated in the GOS (gross operating surplus) component of value added, so that gross output remains unaffected.

We will now sketch how the ideal model was created from the actual data.

1. The three “non-final demand” columns are called “Direct purchases abroad by residents”, “Actual minus paid VAT” and “FISIM”. They contain numbers to be redistributed.
2. For the ‘direct purchases’ column there are only two cells, one cell in the “other services nec” line, and one compensatory cell in a (non-standard) line also called “Direct purchases abroad by residents”. For these two cells a special product

- category was created in EUKLEMS: pAdjDP, the “direct purchases” adjustment item.
3. The FISIM column contains two cells, one in the bank services line and a compensatory cell in the GOS line. The bank services cell must be expanded to form a complete FISIM line for example in the proportions of the industry and final use components of the bank services line. The compensatory cell must be dealt with by adjusting GOS per industry in such a way that gross output per industry remains unaltered.
  4. The actual minus paid VAT column has only two cells: one in the non-deductable VAT line, and a compensatory cell in the GOS line. The “non-deductable VAT” cell must first be redistributed over the industry and final use components of the non-deductable VAT line.
  5. After that the industry and final demand components of the non-deductable VAT line can be redistributed over the products (which at this stage includes FISIM).