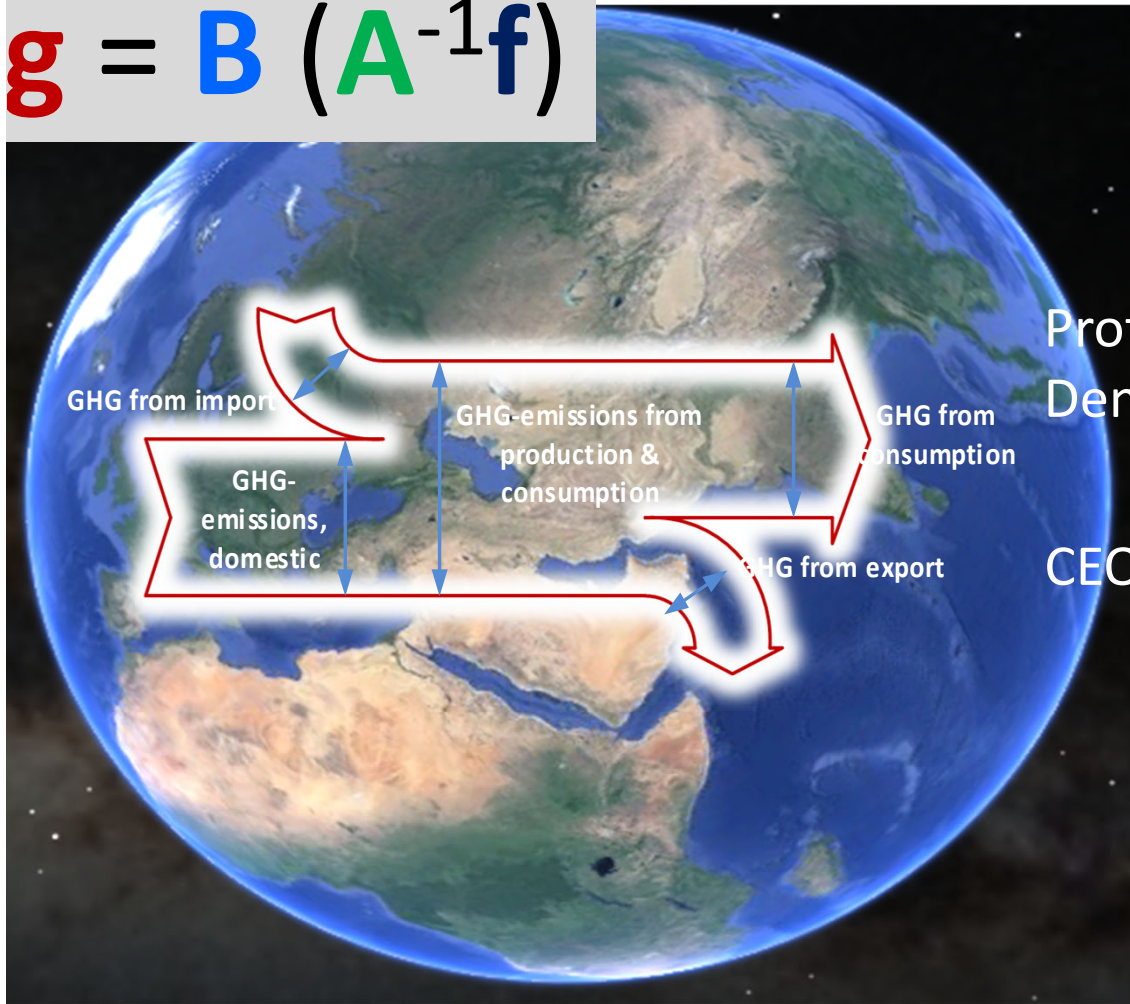


Input-output modelling

Integrating fixed capital formation and final use into the SUTs

$$\mathbf{g} = \mathbf{B} (\mathbf{A}^{-1} \mathbf{f})$$



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CEO, 2.-0 LCA consultants




Updated: 20th April 2022



AALBORG UNIVERSITY
DENMARK

Agenda

- 
- Integrating fixed capital formation into the core supply-use tables
 - Integrating final consumption into the core supply-use tables

Capital formation

- **Gross fixed capital formation**

- acquisitions minus disposals of fixed assets, tangible assets (buildings, machinery, transport equipment, etc.) and intangible assets (subsoil assets, software assets, entertainment, literary and artistic originals), as well as improvements to non-produced assets (land).

- **Changes in inventories**

- inventories of materials and supplies, finished goods, goods for resale, and work-in-progress.

- **Acquisitions less disposals of valuables**

- precious metals and stones (gold, diamonds etc.), jewels made from them, as well as paintings and sculptures recognised as works of art, which are acquired as stores of value and not to be used for production or consumption purposes.

Eurostat (2008, p 154), Eurostat Manual of Supply, Use and Input-Output Tables. Eurostat.

<http://ec.europa.eu/eurostat/ramon/statmanuals/files/KS-RA-07-013-EN.pdf>

Capital formation

– and integration in use table

- Integration of gross fixes capital formation in use table.
- Why do so???
- Because investments = capital goods... which should be included in LCI

Monetary use table	Activities (a)	Final uses	Total
Products (c)	U_o	y_o	q
Primary inputs	Labour	Capital formation	E_c
	Taxes		
	Use of fixed capital		
	Profit		
Total	g'		

Overview

DK1999 IO-table



FORWAST



Exiobase v1



Exiobase v2



Exiobase v3 monetary



Exiobase v3 hybrid, b2



Exiobase v4 hybrid



Investment
matrix

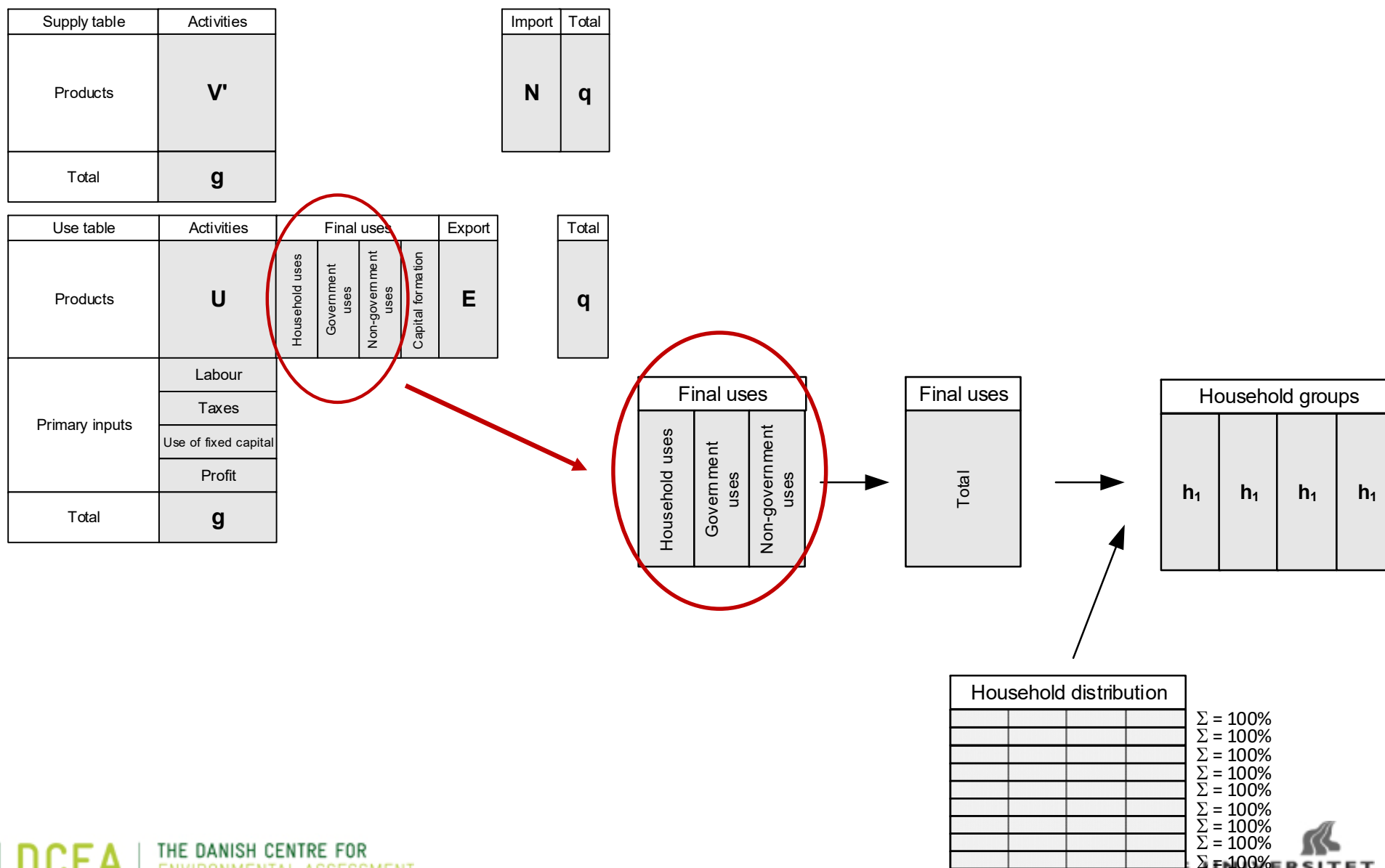
Agenda



- Integrating fixed capital formation into the core supply-use tables
- Integrating final consumption into the core supply-use tables

Integration of household uses in SUT

- Subdivision of final use column



Integration of household uses in SUT

- Subdivision of final use column

Product	Household activity									
	Clothing	Communi- cation	Education	Health care	Housing	Hygiene	Leisure	Meals	Security	Social care
1 Bovine meat and milk	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%
2 Pigs	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%
3 Poultry and animals n.e.c.	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%
4 Grain crops	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%
5 Crops n.e.c.	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%
6 Agricultural services n.e.c.	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%
7 Forest products	0%	0%	0%	0%	72%	25%	0%	3%	0%	0%
8 Recycling of waste wood	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
9 Fish	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%
10 Coal, lignite, peat	0%	0%	0%	0%	72%	25%	0%	3%	0%	0%
11 Crude petroleum and natural gas	0%	0%	0%	0%	72%	25%	0%	3%	0%	0%
12 Iron ores from mine	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%
13 Bauxite from mine	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%
14 Copper from mine	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%
15 Metals from mine n.e.c.	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%
16 Sand, gravel and stone from quarry	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%
17 Clay and soil from quarry	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%
18 Minerals from mine n.e.c.	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%
19 Meat and fish products	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%
20 Dairy products	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%
21 Fruits and vegetables, processed	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%
22 Vegetable and animal oils and fats	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%
23 Flour	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%
24 Sugar	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%
25 Animal feeds	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%
26 Food preparations n.e.c.	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%
27 Beverages	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%
28 Tobacco products	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%
29 Textiles	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%

Energy

Food

Integration of household uses in SUT

■ Subdivision of final use column

Product	Household activity									
	Clothing	Communi- cation	Education	Health care	Housing	Hygiene	Leisure	Meals	Security	Social care
59 Metals basic, n.e.c., virgin	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%
60 Recycling of metals basic, n.e.c.	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
61 Iron, after first processing	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%
62 Aluminium, after first processing	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%
63 Copper, after first processing	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%
64 Metals n.e.c., after first processing	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%
65 Fabricated metal products, except machinery	0%	0%	0%	0%	36%	3%	48%	12%	0%	0%
66 Machinery and equipment n.e.c.	20%	0%	0%	0%	8%	5%	5%	61%	0%	0%
67 Office machinery and computers	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%
68 Electrical machinery n.e.c.	0%	4%	0%	0%	91%	0%	6%	0%	0%	0%
69 Radio, television and communication equipment	0%	19%	0%	0%	0%	0%	81%	0%	0%	0%
70 Instruments, medical, precision, optical, clocks	0%	0%	0%	59%	0%	0%	41%	0%	0%	0%
71 Motor vehicles and trailers	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
72 Transport equipment n.e.c.	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%
73 Furniture; other manufactured goods n.e.c.	0%	0%	0%	0%	62%	0%	38%	0%	0%	0%
74 Recycling services	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%
75 Electricity, steam and hot water	12%	0%	0%	0%	32%	8%	14%	34%	0%	0%
76 Gas	0%	0%	0%	0%	72%	25%	0%	3%	0%	0%
77 Water, fresh	16%	0%	0%	0%	0%	69%	0%	16%	0%	0%
78 Buildings, residential	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%
79 Buildings, non-residential	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%
80 Infrastructure, excluding buildings	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%

Dom.
appliances

Cars

Schmidt J H (2010). *FORWAST: Documentation of the data consolidation, calibration, and scenario parameterisation.*

Deliverable 6-1 of the EU FP6 project FORWAST. <http://forwast.brgm.fr/>. <http://lca-net.com/p/203>



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Integration of household uses in SUT

