

# Overview of the statistical production process



## Regional Course on Supply and Use Tables Chiba, Japan 20-24 January 2020

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## Outline of presentation



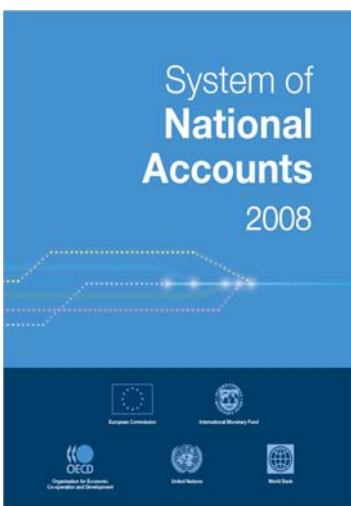
- SUTs basic concepts
  - Valuation
  - Classifications
  - Statistical units
- Statistical production process
  - Main stages of the productions process
  - Link with the compilation of the national accounts
  - Main recommendations
- Questions?



## Valuation



## Valuation



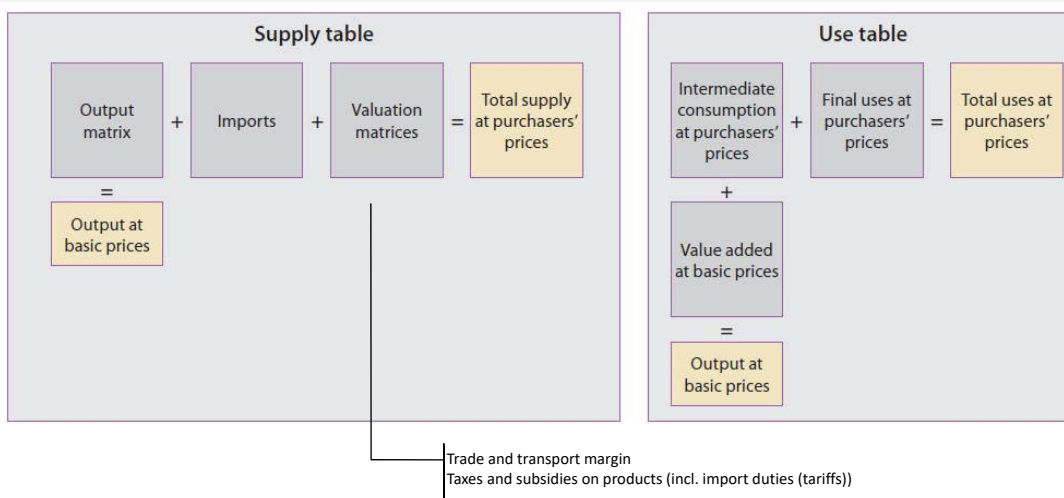
- Basic prices
  - Amount receivable by the producer from the purchaser for a unit of a good or service produced as output minus any tax payable, and plus any subsidy receivable, by the producer as a consequence of its production or sale. It excludes any transport charges invoiced separately by the producer.” (2008 SNA, 6.51)
- Producers prices
- Purchasers prices

# Valuation



$$\begin{aligned}
 & \text{Basic prices} \\
 & + \\
 & \text{Taxes on products excluding invoiced VAT} \\
 & - \\
 & \text{Subsidies on products} \\
 & = \\
 & \text{Producers' prices} \\
 & + \\
 & \text{VAT not deductible by the purchaser} \\
 & + \\
 & \text{Separately invoiced transport charges} \\
 & + \\
 & \text{Wholesalers' and retailers' margins} \\
 & = \\
 & \text{Purchasers' prices}
 \end{aligned}$$

# Valuation



- Compile valuation matrices to obtain SUTs on a common price basis

# Valuation



Supply table

	INDUSTRIES			Output at basic prices (4)	Imports CF (5)	Total supply at basic prices (6)	VALUATION MATRICES					Total supply at purchasers' prices (13)	
	Agriculture (1)	Manufacturing (2)	Other (3)				Trade margins (7)	Transport margins (8)	VAT (9)	Taxes on products (10)	Subsidies on products (11)		Total (12)
<b>PRODUCTS</b>													
Agriculture (1)	8 782	0	0	8 782	3 271	12 052	1 926	274	329	57	- 107	2 479	14 532
Manufacturing (2)	796	182 982	2 627	186 405	124 590	10 995	48 838	2 540	13 175	7 866	- 49	72 370	383 364
Construction (3)	83	961	44 227	45 272	563	45 835	0	0	1 529	13	0	1 542	47 377
Trade (4)	1	4 773	55 413	60 187	600	60 787	- 52 341	0	575	11	0	- 51 755	9 032
Transport (5)	13	465	25 857	26 335	8 150	34 485	0	- 2 800	558	71	- 448	- 2 620	31 865
Communication (6)	160	1 781	46 287	48 228	6 234	54 463	1 493	9	3 375	217	- 34	5 059	59 522
Finance and business services (7)	29	8 902	118 577	127 508	7 061	134 569	0	- 22	2 706	2 159	0	4 842	139 411
Other services (8)	3	85	75 555	75 643	824	76 467	85	0	1 201	576	0	1 861	78 329
<b>Total (9)</b>	<b>9 867</b>	<b>199 950</b>	<b>368 543</b>	<b>578 360</b>	<b>151 293</b>	<b>730 653</b>	<b>0</b>	<b>0</b>	<b>23 447</b>	<b>10 969</b>	<b>- 638</b>	<b>33 778</b>	<b>763 431</b>
<b>Adjustments</b>													
CF/FOB adjustments on imports (10)					- 97	97						- 97	- 97
Direct purchases abroad by residents (11)					6 675	6 675						6 675	6 675
<b>Total (12)</b>	<b>9 867</b>	<b>199 950</b>		<b>578 360</b>	<b>157 871</b>	<b>736 230</b>	<b>0</b>	<b>0</b>	<b>23 447</b>	<b>10 969</b>	<b>- 638</b>	<b>40 356</b>	<b>770 009</b>

# Valuation



Use table at purchasers' prices

	INDUSTRIES				Total (4)	Final consumption expenditure (5)	Gross fixed capital formation (6)	Changes in valuables (7)	Changes in inventories (8)	Exports (9)	Total (10)	Total use at purchasers' prices (11)
	Agriculture (1)	Manufacturing (2)	Other (3)	Total (4)								
<b>PRODUCTS</b>												
Agriculture (1)	2 583	6 570	470	9 623	3 595	180		- 27	1 161	4 909	14 532	
Manufacturing (2)	2 205	107 190	44 127	153 522	74 617	26 756	2 183	3 034	123 252	229 842	383 364	
Construction (3)	105	2 440	17 484	20 029	1 667	25 155		- 38	563	27 348	47 377	
Trade (4)	33	1 883	2 926	4 842	3 325	67	45		753	4 189	9 032	
Transport (5)	14	4 386	9 808	14 208	9 203				8 453	17 656	31 865	
Communication (6)	34	2 563	17 411	20 008	26 566	5 976		67	6 905	39 514	59 522	
Finance and business services (7)	457	13 578	63 395	77 430	39 843	11 170		- 178	11 145	61 981	139 411	
Other services (8)	8	382	3 439	3 829	73 712	113	107	1	567	74 500	78 329	
<b>Total at purchasers' prices before adjustments (9)</b>	<b>5 440</b>	<b>138 991</b>	<b>159 061</b>	<b>303 492</b>	<b>232 528</b>	<b>69 418</b>	<b>2 335</b>	<b>2 859</b>	<b>152 800</b>	<b>459 939</b>	<b>763 431</b>	
<b>Adjustments</b>												
CF/FOB adjustments on exports (10)									- 97	- 97	- 97	
Direct purchases abroad by residents (11)					6 675					6 675	6 675	
Purchases in the domestic territory by non-residents (12)					- 12 945				12 945			
<b>Total at purchasers' prices (13)</b>	<b>5 440</b>	<b>138 991</b>	<b>159 061</b>	<b>303 492</b>	<b>226 258</b>	<b>69 418</b>	<b>2 335</b>	<b>2 859</b>	<b>165 648</b>	<b>466 517</b>	<b>770 009</b>	
GVA (19)	4 427	60 959	209 481	274 868								
<b>Total input at basic prices (20)</b>	<b>9 867</b>	<b>199 950</b>	<b>368 543</b>	<b>578 360</b>								

# Valuation



- Valuation matrices (product by industries and final use) are calculated in order to derive the **use table at basic prices**
- Valuation matrices consists of a disaggregation of the trade and transport margins, and taxes and subsidies on products by industry and final use

Supply Table at purchasers' prices

PRODUCTS	INDUSTRIES				Total supply at basic prices	VALUATION			Total supply at purchasers' prices
	Agriculture	Other services	Output at basic prices	Imports		Trade and transport margins	Taxes on products	Subsidies on products	
Agriculture									
Manufacturing									
Construction									
Trade									
Transport									
...									
Other services									
Total									

Use Table at purchasers' prices

PRODUCTS	INDUSTRIES				FINAL USE			Total use at purchasers' prices
	Agriculture	Other services	Total	Final consumption expenditure	Gross capital formation	Exports		
Agriculture								
Manufacturing								
Construction								
Trade								
Transport								
...								
Other services								
Total								
GVA								
Total								
Total input at basic prices								

# Valuation



Supply Table at purchasers' prices

PRODUCTS	INDUSTRIES				Total supply at basic prices	VALUATION			Total supply at purchasers' prices
	Agriculture	Other services	Output at basic prices	Imports		Trade and transport margins	Taxes on products	Subsidies on products	
Agriculture									
Manufacturing									
Construction									
Trade									
Transport									
...									
Other services									
Total									

Use Table at purchasers' prices

PRODUCTS	INDUSTRIES				FINAL USE			Total use at purchasers' prices
	Agriculture	Other services	Total	Final consumption expenditure	Gross capital formation	Exports		
Agriculture								
Manufacturing								
Construction								
Trade								
Transport								
...								
Other services								
Total								
GVA								
Total								
Total input at basic prices								

Subsidies on products

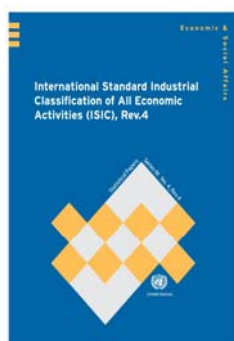
PRODUCTS	Agriculture	Other services	Total
Agriculture			
Other services			
Total			

Taxes on products

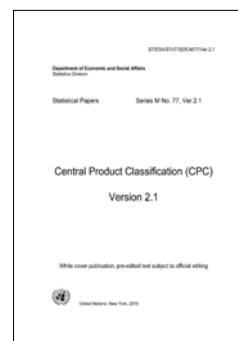
PRODUCTS	Agriculture	Other services	Total
Agriculture			
Other services			
Total			

Trade and Transport margins

PRODUCTS	Agriculture	Other services	Total
Agriculture			
Other services			
Total			



## Classifications

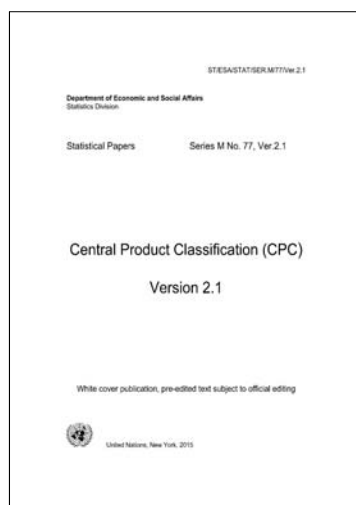


## Classifications of economic activities



- Recommended classification for the economic activities (industry)
- SUTs are generally published at a more aggregated level of detail (taking into account users' needs and confidentiality) than that at working level)
- Recommendation - use the most detailed level of classification of industry at the working level, taking into consideration user needs, the availability of data, and the level of detail used in the National Accounts
- Choice of working level depends on
  - Distinction between industries which are allowed to deduct Value Added Tax (VAT) and those that are not
  - Distinction between market and non-market producers
  - Explicit identification of certain industry sub-divisions which are relevant for the compilation of the trade and transport margin matrices

# Classification of products



- Recommended classification for products
- Other classifications of products
  - Harmonized System (HS 2012) (trade statistics)
  - Standard International Trade Classification (SITC) (trade statistics)
  - Classification of Broad economic categories (BEC) (trade statistics)
  - Extended Balance of Payments Services Classification (EBOPS 2010) (trade in services)
  - Classification of Individual Consumption According to Purpose (COICOP)
  - Classification of the Purposes of Non-Profit Institutions Serving Households (COPNI)
  - Classification of the Functions of Government (COFOG)

# Functional Classifications relevant for SUTs



- Final consumption expenditure by households, NPISH and Government

Use Table

		INDUSTRIES				FINAL USE					Total
		Agriculture	..	Other services	Total	Final consumption expenditure			Gross capital formation	Exports	
						Households	NPISH	General government			
Products	Agriculture										
	Other services										
Value added											
Total											

- Functional classifications support the compilation of SUTs and allow for a wider range of analyses
- The difficulty often is in the concordance with CPC. Correspondence tables are available on UNSD website

# Functional Classifications relevant for SUTs



Use Table

		INDUSTRIES				FINAL USE					Total
		Agriculture	..	Other services	Total	Final consumption expenditure			Gross capital formation	Exports	
						Households	NPISH	General government			
Products	Agriculture										
	Other services										
Value added											
Total											

Final consumption expenditure by households (COICOP)

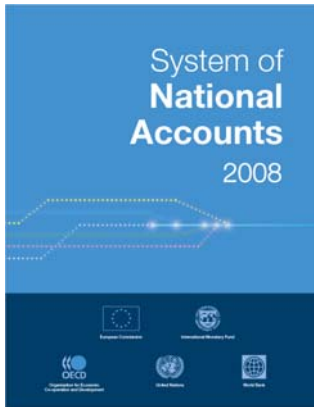
		COICOP					
		1	2	3	4	5	6
Products		Final consumption expenditure by NPISH (COPNI)					
Products		Final consumption expenditure by government (COFOG)					
		COFOG					
		General public services	Defence	Public order and safety	..	Social protection	Total
Products	Agriculture						
	Other services						
Total							



## Statistical units



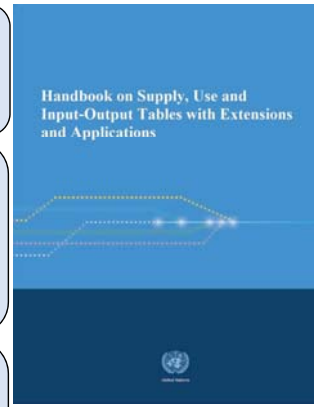
# Statistical units



- Enterprise: A producer of goods and services (where institutional units are economic entities that have autonomy of decision making and have clear links with the legal units)

- Establishment: An enterprise or part of an enterprise that is situated in a single location and in which only a single productive activity is carried out or in which the principal productive activity accounts for most of the value added – **recommended for SUTs**

- Kind-of-activity unit: An enterprise, or a part of an enterprise, which engages in only one kind of (non-ancillary) productive activity or in which the principal productive activity accounts for most of the value added



- Recommendations on partitioning vertically /horizontally integrated enterprises

## Statistical production process

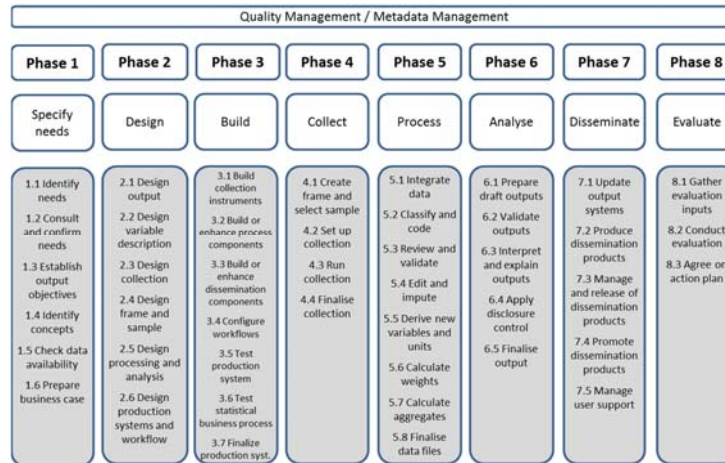
- Main stages of the production process
- Link with the compilation of the national accounts



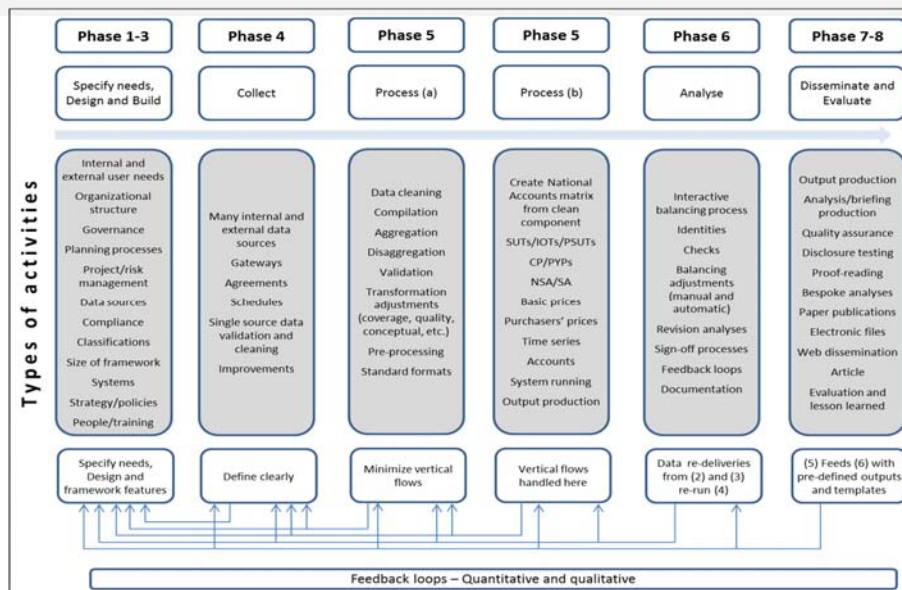
# Statistical production process



- The statistical production process can be viewed in the context of the main stages of the **Generic Statistical Business Production Model (GSBPM)** (United Nations Economic Commission for Europe, 2013)



# Main stages of the productions process of SUTs



## Statistical production process



What are the steps?

Supply table

Use table

Valuation matrices

Imports use table and domestic use table at basic prices

SUTs in volume terms

Link SUTs with institutional accounts

Significant inter-dependency

## Compilation of SUTs as an integral part of the National Accounts



Benefits?

Ideal framework to integrate 3 GDP approaches

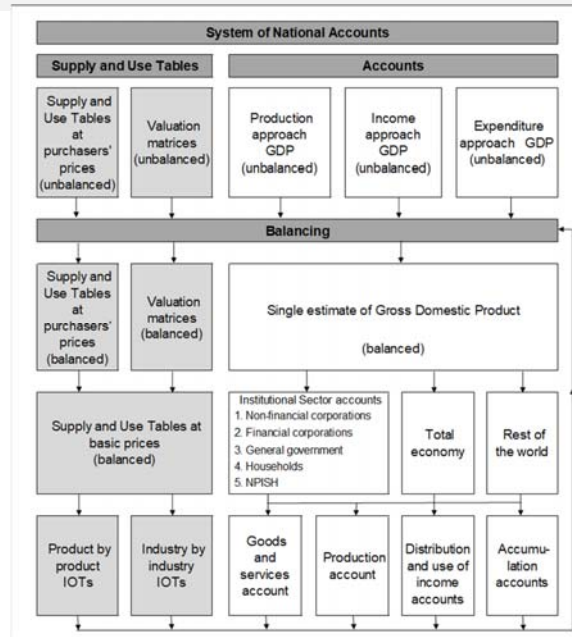
Allows data confrontation

Improves quality of national accounts

Availability of complete set of SUTs (albeit at a more aggregated level) consistent with preliminary information

Allows incorporation of new information

# Compilation of SUTs as an integral part of the National Accounts



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