

# International Comparison Program

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**2011 Round**



The National Accounts Forms and Data  
for the ICP

# National accounts data

- ▶ The national accounts framework for the 2011 ICP is the 1993 SNA
- ▶ The data requirements are exactly the same as for the 2005 ICP
  - but we have the advantage of being able to use 2005 (and 2009) data as the starting point
- ▶ However, it is not useful to simply apply 2005 splits to 2011 data for broad aggregates
  - we must compile the 2011 data, including for basic headings, using source data for 2011

# National accounts forms for 2011 ICP

1. Data reporting form (values required for each basic heading)
2. ICP basic heading expenditure source data and metadata and adjustment details (for latest available year)
3. Price formation for household final consumption expenditure and gross fixed capital formation on machinery and equipment
  - all the steps from basic prices to purchasers' prices

# National accounts forms for 2011 ICP

(continued)



4. Commodity flows for important products
5. Variations of per capita notional real expenditures (by basic heading) between 2005 and 2011
  - editing form to check the validity of prices or values (or both)

# Data reporting form

- ▶ Forms are available with the basic heading data supplied for the 2005 ICP
- ▶ We must provide the basic heading data for 2011
- ▶ It is a last resort to simply apply the 2005 splits to the 2011 broad expenditure categories

## Data reporting form (continued)

- ▶ It is preferable to use data (e.g. from a household expenditure survey) to estimate the values for each basic heading but, if data are unavailable:
  - can use commodity flow method
  - can use best “guesstimates” (but not an equal split)

# Source data, metadata and adjustments

- ▶ For each basic heading:

<b>Expenditures obtained directly from the country's national accounts (expressed in national currency)</b>	<b>Expenditure information from the original data source (survey, administrative sources etc)</b>		
	<b>Expenditure value</b>	<b>Reference year</b>	<b>Data source</b>

# Source data, metadata and adjustments

(continued)

- ▶ For each basic heading:

Adjustment documentation & adjusted value			Basic Heading Expenditure value for the latest year available
Adjustment type (e.g. coverage adjustment, or extrapolation from an earlier year)	Adjustment description (e.g. survey results adjusted using a tax benchmark, or data for 20xx extrapolated using population increase and price increases based on the CPI)	Adjusted expenditure reported for the latest year available (Cells in this column are to be completed only for components for which adjustments were made)	

# Source data, metadata and adjustments

(continued)

- ▶ For each basic heading:

<p><b>Are the original data sources for this latest year the same as those used in the 2005 ICP (other than the reference year)?</b> <b>YES/NO</b></p>	<p><b>If the answer reported in the previous column is "No", please provide details on the data sources and/or data, and the methods used to estimate the 2005 ICP expenditures</b></p>	<p><b>Data validation (any non-zero cells should be checked because they indicate an inconsistency between the national accounts data reported in column (3) and the basic heading details reported in column (10))</b></p>
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# Source data, metadata and adjustments



(continued)

- ▶ The information should be provided for 2005 wherever possible and then updated to 2011 to take account of any changes in source data, methods etc.
  - if there is not sufficient space to fill in the details in the cell in the Excel file, then indicate a link to a Word file containing the full details

# Price formation

- ▶ Forms are available for each of domestically-produced goods and imported goods within each of household final consumption expenditure and gross fixed capital formation
  - they show the evolution from basic to purchasers' prices

# Price formation (continued)

Important products (domestically-produced)		
Year to which data relate:		20__
Basic heading to which the important product relates:		
Basic heading code:		
Basic heading description:		
Product description:		
	Show percentage applied (where applicable)	Price (national currency)
<b>Ex-factory price (i.e. Basic price)</b>		
<i>plus</i> Taxes on products excluding invoiced VAT	%	
<i>less</i> Subsidies on products	%	
<i>equals</i> <b>Producers' price</b>		
<i>plus</i> VAT not deductible by the purchaser	%	
<i>plus</i> Separately invoiced transport charges	%	
<i>plus</i> Wholesalers' margins	%	
<i>plus</i> Retailers' margins	%	
<i>plus</i> <b>Installation costs</b>	%	
<i>equals</i> <b>Purchasers' price</b>		

# Price formation (continued)

Important products (imported)		
Year to which data relate:		20__
Basic heading to which the important product relates:		
Basic heading code:		
Basic heading description:		
Product description:		
	Show percentage applied (where applicable)	Price (national currency)
<b>C.i.f. unit value (=Basic price)</b>		
<i>plus</i> Customs duties	%	
<i>plus</i> Taxes on products excluding invoiced VAT	%	
<i>less</i> Subsidies on products	%	
<i>equals</i> <b>Producers' price</b>		
<i>plus</i> VAT not deductible by the purchaser	%	
<i>plus</i> Separately invoiced transport charges	%	
<i>plus</i> Wholesalers' margins	%	
<i>plus</i> Retailers' margins	%	
<i>plus</i> <b>Installation costs</b>	%	
<i>equals</i> <b>Purchasers' price</b>		

# Commodity flows (for important products)

- ▶ Identify the important products (these can even be entire basic headings, classes or groups of products) for which commodity flow balances will be prepared
  - complete the commodity flows for those products
  - check consistency with data in forms 1 and 2

# Commodity flows - supply

Supply of important goods				
	+	+	+	=
Domestic production at basic prices	Imports at c.i.f. values	Trade and transport margins	Customs duties, VAT and other taxes on products	Supply Total

# Commodity flows - uses

Uses Total	Uses of important goods					
		+	+	+	+	+
	Intermediate consumption	Household Final Consumption Expenditure	Government Final Consumption Expenditure	Gross Fixed Capital Formation	Increase in Stocks and Acquisition less disposal of valuables	Exports at f.o.b. values

# Edits – changes between 2005 and 2011

- ▶ For each basic heading
  - show the values reported for 2005 and 2011
  - take a geometric average of the prices reported in each of 2005 and 2011
  - divide these average prices into the corresponding values and then divide by the population in each of these years

## Edits – changes between 2005 and 2011 (continued)

- ▶ The results are notional real expenditures per capita for each basic heading in 2005 and 2011
  - examine the % changes in each basic heading
  - check any apparently anomalous results
  - could be due to different products being priced in these two years

# Edits – changes between 2005 and 2011 (continued)

- ▶ For each basic heading

2005 ICP data			
Expenditure in national currency	Average “price”	Notional real expenditure	Notional real expenditure per capita

2011 ICP data			
Expenditure in national currency	Average “price”	Notional real expenditure	Notional real expenditure per capita

- ▶ Calculate % change in notional real expenditure per capita from 2005 to 2011 and check the plausibility

# Wheat – Inputs data

Imports of wheat, for seed (c.i.f.)	40
Import taxes on wheat	2
Transport margin on imported wheat	5
Trade margin on imported wheat (agricultural wholesaler)	3
Change in inventories of wheat seed	–30

- ▶ **Task 1** is to estimate the value of wheat imported, at purchasers' prices (imports c.i.f. = basic prices)
- ▶ **Task 2** is to estimate the total value of intermediate consumption of wheat, at purchasers' prices

# Relationship between prices

## **Basic price**

*plus* taxes (excluding invoiced VAT)

*less* subsidies on products

*equals* **Producers' price**

*plus* trade margins and separately invoiced transport margins

*plus* VAT not deductible by the purchaser

*equals* **Purchasers' price**

# Wheat – Inputs

Imports of wheat, for seed (c.i.f.)	40
Import taxes on wheat	2
Transport margin on imported wheat	5
Trade margin on imported wheat (agricultural wholesaler)	3
Change in inventories of wheat seed	-30

Imports c.i.f. + taxes + transport and trade margins

$$= 40 + x + y = ??$$

## Wheat – Inputs (continued)

Imports of wheat, for seed (c.i.f.)	40
Import taxes on wheat	2
Transport margin on imported wheat	5
Trade margin on imported wheat (agricultural wholesaler)	3
Change in inventories of wheat seed	-30

Imports c.i.f. + taxes + transport and trade margins  
 =  $40 + 2 + (5+3) = \mathbf{50}$ , which is the value (purchasers' prices) of wheat seed purchased by the farmer

## Important products (imported)

**Year to which data relate:** 20\_\_

**Basic heading to which the important product relates:**

Basic heading code:

Basic heading description: Wheat

Product description:

	Show percentage applied (where applicable)	Price (national currency)
<b>C.i.f. unit value (=Basic price)</b>		<b>40</b>
<i>plus</i> Customs duties	%	2
<i>plus</i> Taxes on products excluding invoiced VAT	%	0
<i>less</i> Subsidies on products	%	0
<b><i>equals</i> Producers' price</b>		<b>42</b>
<i>plus</i> VAT not deductible by the purchaser	%	0
<i>plus</i> Separately invoiced transport charges	%	5
<i>plus</i> Wholesalers' margins	%	3
<i>plus</i> Retailers' margins	%	0
<b><i>equals</i> Purchasers' price</b>		<b>50</b>

## Wheat – Inputs (continued)

Imports of wheat, for seed (at purchasers' prices)	50
Change in inventories of wheat seed	-30

Usually cannot measure intermediate consumption directly because businesses generally record details of purchases of inputs rather than usage of inputs

So the question is:

Intermediate consumption of wheat (at purchasers' prices) = ??

## Wheat – Inputs (continued)

Imports of wheat, for seed (at purchasers' prices)	50
Change in inventories of wheat seed	-30

### Intermediate consumption of wheat (at purchasers' prices)

= imports of wheat *minus* changes in inventories of wheat (all at purchasers' prices)

$$= x - y$$

$$= ??$$

## Wheat – Inputs (continued)

Imports of wheat, for seed (at purchasers' prices)	50
Change in inventories of wheat seed	-30

### **Intermediate consumption of wheat (at purchasers' prices)**

= imports of wheat *minus* changes in inventories of wheat (all at purchasers' prices)

$$= 50 - (-30)$$

$$= \mathbf{80}$$

# Wheat – Output data

Output of wheat (value at farm gate)	170
Taxes on wheat (10%)	17
Export subsidy on wheat (5%)	8
Transport margin	15
Trade margin (retailer)	6

Note that farm gate prices are basic prices

- ▶ **Task 3** is to estimate the value of output of wheat, at purchasers' prices
- ▶ **Task 4** is to estimate the total supply of wheat, at purchasers' prices

# Wheat – Output

Output of wheat (value at farm gate)	170
Taxes on wheat (10%)	17
Export subsidy on wheat (5%)	8
Transport margin	15
Trade margin (retailer)	6

## **Output at purchasers' prices**

= Output (farm gate prices) + net taxes + transport and trade margins

$$= 170 + x + y = ??$$

# Wheat – Output (continued)

Output of wheat (value at farm gate)	170
Taxes on wheat (10%)	17
Export subsidy on wheat (5%)	8
Transport margin	15
Trade margin (retailer)	6

## **Output at purchasers' prices**

= Output (farm gate prices) + net taxes + transport and trade margins

$$= 170 + (17-8) + (15+6)$$

$$= \mathbf{200}$$

## Important products (domestically-produced)

**Year to which data relate:** **20 11**

**Basic heading to which the important product relates:**

Basic heading code:

Basic heading description:

Product description:

	Show percentage applied (where applicable)	<b>Price</b> (national currency)
<b>Ex-factory price (i.e. Basic price)</b>		<b>`170</b>
<i>plus</i> Taxes on products excluding invoiced VAT	10%	17
<i>less</i> Subsidies on products	5%	8
<i>equals</i> <b>Producers' price</b>		<b>179</b>
<i>plus</i> VAT not deductible by the purchaser	%	0
<i>plus</i> Separately invoiced transport charges	%	15
<i>plus</i> Wholesalers' margins	%	0
<i>plus</i> Retailers' margins	%	6
<i>equals</i> <b>Purchasers' price</b>		<b>200</b>

# Wheat – Total supply

NOTE: All values are at purchasers' prices

Imports of wheat	50
Output of wheat	200

**Total supply**  
 = output + imports  
 = 200 + 50  
 = **250**

# Wheat – Uses data

Intermediate consumption	50
<b><i>Final uses</i></b>	
Final consumption expenditure by households	22
Gross fixed capital formation	0
Change in inventories of wheat (materials)	-30
Change in inventories of wheat (finished goods)	18
Exports	160

## **Total uses**

= intermediate consumption + final consumption

= 80 + w + x + y + z

= ??

# Wheat – Total uses

Intermediate consumption	50
<b><i>Final uses</i></b>	
Final consumption expenditure by households	22
Gross fixed capital formation	0
Change in inventories of wheat (materials)	-30
Change in inventories of wheat (finished goods)	18
Exports	160

## **Total uses**

= intermediate consumption + final uses

= 80 + 22 + 0 + (-30 + 18) + 160

= **250** (= total supply)

## Poultry – Data sources

- ▶ No details are available on poultry from the household expenditure survey because it collected data classified only for the “Meat” group as a whole
- ▶ Value of domestic production (6,500) is based on estimates of the total numbers of poultry in the country, take-off (slaughter) rates and average prices per bird obtained from various sources such as the Ministry of Agriculture, the Veterinary Department and the consumer price index (for prices)

## Poultry – Data sources (continued)

- ▶ Pet food manufacturers have reported purchases of 1,000
- ▶ Exports of poultry meat are 45
- ▶ Transport margins are roughly estimated at 1% of the value of domestic production and retail margins on poultry for domestic consumption are estimated at just over 2%
  - these margins are low because most poultry in this country is produced by farm households for own consumption and only a small part is commercialised

## Poultry – Data sources (continued)

- ▶ A nominal figure of 10 is assigned to “other trade margins” to represent the margin on sales of poultry meat to the pet food manufacturers
  - the national accountants have no firm information on the actual margin, but they are sure that it is not zero and that 10 must be closer to the truth than zero
- ▶ Inventories are always very small because of the problems of storing the slaughtered poultry for any length of time so it is reasonable to assume zero change in inventories

# Poultry – Data summary

Domestic production (value at farm gate)	6,500
Imports (c.i.f.)	0
Taxes and subsidies on poultry	0
Transport margins	65
Trade margins (on household consumption)	130
Trade margins (other)	10
Intermediate consumption (for pet food)	1,000
Household final consumption expenditure	??
Gross fixed capital formation	0
Change in inventories	0
Exports	45

# Poultry – Output

Output (value at farm gate)	6,500
Taxes on poultry	0
Subsidies on poultry	0
Transport margins	65
Trade margins (on household consumption)	130
Trade margin (retailer)	10

## **Output at purchasers' prices**

= Output (farm gate prices) + net taxes + transport and trade margins

= 6,500 + x + y + z

= ??

## Poultry – Output (continued)

Output (value at farm gate)	6,500
Taxes on poultry	0
Subsidies on poultry	0
Transport margins	65
Trade margins (on household consumption)	130
Trade margin (retailer)	10

### **Output at purchasers' prices**

= Output (farm gate prices) + net taxes + transport and trade margins

= 6,500 + 0 + 65 + (130 + 10)

= **6,705**

# Poultry – Supply

**Supply** = output + imports

= 6,705 + 0

= **6,705**

# Poultry – Uses data

Intermediate consumption (for pet food)	1,000
<b><i>Final uses</i></b>	
Household final consumption expenditure	??
Gross fixed capital formation	0
Change in inventories	0
Exports	45

## **Total known uses**

= Intermediate consumption + final uses

= 1,000 + 0 + 0 + 45

= **1,045**

# Poultry – HFCE estimated

- ▶ By definition, total supply = total uses
- ▶ In this case, total uses = known uses + HFCE

$$\begin{aligned}
 \text{So, HFCE} &= \text{total supply} - \text{known uses} \\
 &= 6,705 - 1,045 \\
 &= \mathbf{5,660}
 \end{aligned}$$

## Cars – Data sources

- ▶ The c.i.f. value of imports was 955
- ▶ Customs duties paid were 75
- ▶ Businesses reported purchases of motor cars of 135 in a survey of capital expenditures
- ▶ Government finance statistics show that government purchased cars worth 20
- ▶ Discussions with the main importers of motor cars result in transport margins and trade margins being estimated as 60 and 80 respectively

## Cars – Data sources (continued)

- ▶ Cars are not used as intermediate consumption
- ▶ An assumption is made that there is no change in inventories
- ▶ No exports of motor cars were recorded in the merchandise trade statistics

# Cars – Data summary

Domestic production (basic prices)	0
Imports (c.i.f.)	955
Taxes on motor cars	75
Subsidies on motor cars	0
Transport margins	60
Trade margins (total)	80
Intermediate consumption	0
Household final consumption expenditure	??
Government final consumption expenditure	0
Gross fixed capital formation (gov+business)	155
Change in inventories	0
Exports	0

# Cars – Supply

Output (domestic)	0
Imports (c.i.f.)	955
Taxes on motor cars	75
Subsidies on motor cars	0
Transport margins	60
Trade margins (total)	80

## **Supply at purchasers' prices**

= Output (factory door prices) + imports (c.i.f.) +  
net taxes + transport and trade margins

= 0 + 955 + 75 + 60 + 80

= **1,170**

# Cars – Uses

Intermediate consumption	0
Household final consumption expenditure	??
Government final consumption expenditure	20
Gross fixed capital formation	135
Change in inventories	0
Exports	0

## Total known uses

$$\begin{aligned}
 &= \text{Intermediate consumption} + \text{final uses} \\
 &= 0 + 20 + 135 + 0 + 0 \\
 &= \mathbf{155}
 \end{aligned}$$

# Cars – HFCE estimated

- ▶ By definition, total supply = total uses
- ▶ In this case, total uses = known uses + HFCE

$$\begin{aligned}
 \text{So, HFCE} &= \text{total supply} - \text{known uses} \\
 &= 1,170 - 155 \\
 &= \mathbf{1,015}
 \end{aligned}$$

## Tobacco – Data sources

- ▶ A household expenditure survey from a few years ago reported expenditure on tobacco at 7,000
  - updating this value by the tobacco component of the CPI gives 8,000 for the current year
- ▶ The latest industrial census shows domestic production at basic prices came to 8,200
- ▶ Imports (c.i.f.) are 1,200
- ▶ The Ministry for Excise reports sales taxes and import duties on tobacco, which are both levied at a rate of 10%, amounted to 940 for the year

## Tobacco – Data sources (continued)

- ▶ Transport margins are estimated at 200
- ▶ Trade margins are estimated to be 1,700
- ▶ The tobacco companies reported a fall in inventories of tobacco of 10
- ▶ Exports of 350 were recorded in the merchandise trade statistics

# Tobacco – Data summary

Domestic production (basic prices)	8,200
Imports (c.i.f.)	1,200
Taxes on tobacco	940
Subsidies on tobacco	0
Transport margins	200
Trade margins	1,700
Intermediate consumption	0
Household final consumption expenditure	8,000
Gross fixed capital formation	0
Change in inventories	-10
Exports	350

# Tobacco – Supply

Domestic production (basic prices)	8,200
Imports (c.i.f.)	1,200
Taxes on tobacco	940
Subsidies on tobacco	0
Transport margins	200
Trade margins	1,700

## **Supply at purchasers' prices**

= Output (basic prices) + imports (c.i.f.) + net taxes  
+ transport + trade margins

= 8,200 + 1,200 + 940 + 0 + 200 + 1,700

= **12,240**

# Tobacco – Uses

Intermediate consumption	0
Household final consumption expenditure	8,000
Gross fixed capital formation	0
Change in inventories	-10
Exports	350

## Total uses

$$\begin{aligned}
 &= \text{Intermediate consumption} + \text{final uses} \\
 &= 0 + 8,000 + 0 + (-10) + 350 \\
 &= \mathbf{8,340}
 \end{aligned}$$

# Tobacco – Supply-use balance

- ▶ By definition, total supply = total uses
  - But  $12,240 = 8,340$
  - Imbalance = 3,900
- ▶ The HFCE data come from a HES
  - HESs are well-known for understating expenditure on products like tobacco, alcohol and gambling
- ▶ So we will assume that the whole of the difference should be allocated to HFCE
- ▶ HFCE on tobacco =  $8,000 + \text{an adjustment of } 3,900$   
 = **11,900**

## Net expenditures abroad

- ▶ Household final consumption expenditure (HFCE) in the SNA refers to the expenditure incurred by resident households, whether that expenditure is incurred within the economic territory or abroad

## Net expenditures abroad (continued)

- ▶ Can calculate HFCE as the total expenditure by all households, whether resident or not, in the economic territory and adjust this figure by adding expenditures by residents abroad and subtracting expenditures by non-residents in the economic territory

## Net expenditures abroad (continued)

- ▶ The total expenditures by all households within the economic territory may be used to calculate HFCE in this way, but it is not an aggregate defined in SNA93
  - whether net expenditures abroad needs to be calculated as part of HFCE depends on the data sources (retail survey compared with a household expenditure survey)

# Net expenditures abroad (continued)

	Resident households	Non-resident households	Retail survey
Purchases in local economic territory	800	40	840
Purchases by residents abroad	100	not applicable	0
HES	900		

# Net expenditures abroad (continued)

	Resident households	Non-resident households	Retail survey
Purchases in local economic territory	800	40	840
Purchases by residents abroad	100	not applicable	0
HES	900		
	Retail survey	BoP	HFCE
Purchases in local economic territory	840	40 (by non-residents)	
Purchases by residents abroad	not applicable	100	
Total purchases by residents			900

