E-TRAINING ON COMPILATION OF SUT IN AFRICA

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Session 2: Supply and Use Tables
Outline of presentation

• Overview of supply and use tables
• Structure of supply table
  – domestic production columns
  – vectors of imports of goods and services, trade margins and transport costs; and Taxes less subsidies on products
• Structure of use table, quadrants of use table
  – Quadrant I:
    • Intermediate consumption
  – Quadrant II
    • Vectors of final consumption expenditure: Government, households and NPISHs; Gross fixed capital formation, change in inventories and valuables; and Exports
  – Value added quadrant
    • Compensation of employees, Other taxes less subsidies on production. Consumption of fixed capital, and Net operating surplus
  – Supplementary rows
    • Employment, GFCF and capital stock
Supply and Use Tables: Overview (1/4)

- SNA framework includes SUTs, in addition to the flow accounts and balance sheets
- SUTs record how supplies of different products originate from domestic industries and imports and how those supplies are allocated between intermediate or final uses, including exports
- In the commodity flow approach, different sources of supplies of a product are traced to its subsequent uses under various categories
- Both SUTs and Commodity flow approaches follow the same concept of product balances. The commodity flow approach provides a description of the supply/use balance for a single product, whereas a generalization of this for all products in the economy gives rise to SUTs.
- SUT framework thus provides for balancing the supply and uses of each product, without leaving scope for discrepancies in the national accounts
- The SUTs are one of the recommended tables under the minimum required data sets (MRDS) for implementation of SNA
Supply and Use Tables: Overview (2/4)

Supply and use tables

- A pair of tables in the form of matrices that record how supplies of different kinds of goods and services originate from domestic industries and imports and how those supplies are allocated between various intermediate or final uses, including exports.
- They are an extension of goods and services account with detailed products.
- **Supply table**: presents supplies from domestic production and imports, for each of the products included in the table.
- **Use table**: presents the use of each of these products by the categories of intermediate consumption, final consumption expenditure of government, households, and NPISHs, gross fixed capital formation, changes in inventories, acquisition less disposals of valuables, and exports.
- The two tables together ensure that supplies=uses for each product; and total output=total input, for each industry, included in these tables.
- The two tables are presented in the form of matrices with products shown in rows; and industries, imports, valuations and final uses in columns.
Supply and Use Tables: Overview (3/4)

**Simplified supply/use equation**

<table>
<thead>
<tr>
<th>Supply of a product/group of products</th>
<th>=</th>
<th>Use of the same product/group of products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic production + imports</td>
<td>=</td>
<td>Intermediate consumption + final consumption expenditure of government, households, and NPISHs + gross fixed capital formation + changes in inventories + acquisition less disposals of valuables + exports</td>
</tr>
</tbody>
</table>

• In the above equation, the two sides are on different valuations
  – supply is valued at basic prices meaning farm-gate or factory gate prices for domestic products and at their c.i.f. values for imports;
  – Uses, on the other hand, are valued at purchasers’ prices

• For product balancing, it is necessary to bring both sides to the same valuation, either at basic prices or at purchasers’ prices
Supply and Use Tables: Overview (4/4)

• In order to bring the supply of a product at basic prices to purchasers’ prices, the trade margins and transport costs, and taxes less subsidies on products need to be added
  – This is because the goods produced in the units have to go through the trade and transport chain and pay product taxes (less subsidies) before they reach the purchasers.
  – Services will not go through the trade and transport chain, as they are delivered to the users at the time of their production. They may, however, have to incur taxes on products (less subsidies on products).

Supply/use equation with valuation adjustment

<table>
<thead>
<tr>
<th>Supply of a product/group of products at purchasers’ prices</th>
<th>=</th>
<th>Use of the same product/group of products at purchasers’ prices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic production + imports + trade margins + transport costs + taxes less subsidies on products</td>
<td>=</td>
<td>Intermediate consumption + final consumption expenditure of government, households, and NPISHs + gross fixed capital formation + changes in inventories + acquisition less disposals of valuables + exports</td>
</tr>
</tbody>
</table>
Figure 1. Illustrative Supply and Use Table.

<table>
<thead>
<tr>
<th>SUPPLY</th>
<th>USES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SUPPLY</strong></td>
<td><strong>USES</strong></td>
</tr>
<tr>
<td>Agriculture</td>
<td>Industry</td>
</tr>
<tr>
<td>Total dom. supply</td>
<td></td>
</tr>
<tr>
<td>3245</td>
<td>3245</td>
</tr>
<tr>
<td>Manf, utilities, constrn</td>
<td></td>
</tr>
<tr>
<td>Total dom. supply</td>
<td>516</td>
</tr>
<tr>
<td>1. Servs</td>
<td>659</td>
</tr>
<tr>
<td>3. Servs</td>
<td>659</td>
</tr>
<tr>
<td>4. c.i.f./f.o.b.adjustment</td>
<td></td>
</tr>
<tr>
<td>Total dom. supply</td>
<td>-10</td>
</tr>
<tr>
<td>5. PRA</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
</tr>
<tr>
<td>6. PNRDM</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1500</td>
</tr>
</tbody>
</table>
Commodity flow method

- Useful in establishing product balances with supplies = uses

<table>
<thead>
<tr>
<th>Total supply</th>
<th>Domestic production + imports + taxes less subsidies on products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total uses</td>
<td>Intermediate consumption + household final consumption expenditure + government final consumption expenditure + consumption expenditure of NPISHs + gross fixed capital formation + change in inventories + valuables + exports</td>
</tr>
</tbody>
</table>

- Also useful to estimate any one item missing in the above equation, either at product level or at the level of total economy
- Several developing countries use commodity flow method to estimate household consumption and/or the gross fixed capital formation.
- An example of Poultry meat
  - Mainly for household consumption but a part of it also may be intermediate consumption (food processing industries, restaurants)
<table>
<thead>
<tr>
<th>Poultry</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic production (value at farm gate)</td>
<td>6,500</td>
</tr>
<tr>
<td>Imports (c.i.f.)</td>
<td>0</td>
</tr>
<tr>
<td>Taxes on poultry</td>
<td>0</td>
</tr>
<tr>
<td>Subsidies on poultry</td>
<td>0</td>
</tr>
<tr>
<td>Trade margins (on household consumption)</td>
<td>130</td>
</tr>
<tr>
<td>Trade margins (on intermediate consumption)</td>
<td>10</td>
</tr>
<tr>
<td>Transport charges</td>
<td>65</td>
</tr>
<tr>
<td>Intermediate consumption</td>
<td>1,000</td>
</tr>
<tr>
<td><strong>Final consumption expenditure by households</strong></td>
<td><strong>Unknown</strong></td>
</tr>
<tr>
<td>Gross fixed capital formation</td>
<td>0</td>
</tr>
<tr>
<td>Change in inventories</td>
<td>0</td>
</tr>
<tr>
<td>Exports</td>
<td>45</td>
</tr>
</tbody>
</table>
## Commodity Flow calculation for Poultry

### Supply

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic production (value at farm gate)</td>
<td>6,500</td>
</tr>
<tr>
<td>plus Imports (c.i.f.)</td>
<td>0</td>
</tr>
<tr>
<td>plus Taxes on poultry</td>
<td>0</td>
</tr>
<tr>
<td>less Subsidies on poultry</td>
<td>0</td>
</tr>
<tr>
<td>plus Trade margins (on household consumption)</td>
<td>130</td>
</tr>
<tr>
<td>plus Trade margins (other)</td>
<td>10</td>
</tr>
<tr>
<td>plus Transport charges</td>
<td>65</td>
</tr>
<tr>
<td>equals <strong>Total supply</strong></td>
<td><strong>6,705</strong></td>
</tr>
</tbody>
</table>

### Uses

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intermediate consumption (for pet food)</td>
<td>1,000</td>
</tr>
<tr>
<td>plus Household final consumption expenditure</td>
<td>Unknown</td>
</tr>
<tr>
<td>plus Government final consumption expenditure</td>
<td>0</td>
</tr>
<tr>
<td>plus Gross fixed capital formation</td>
<td>0</td>
</tr>
<tr>
<td>plus Change in inventories</td>
<td>0</td>
</tr>
<tr>
<td>plus Exports</td>
<td>45</td>
</tr>
<tr>
<td>equals <strong>Total known uses</strong></td>
<td><strong>1,045</strong></td>
</tr>
</tbody>
</table>

### Residual calculation

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total supply</td>
<td>6,705</td>
</tr>
<tr>
<td>less Total known uses</td>
<td>1,045</td>
</tr>
<tr>
<td>equals <strong>Final consumption expenditure by households</strong></td>
<td><strong>5,660</strong></td>
</tr>
</tbody>
</table>
Supply table
Structure of Supply table

• It is a product X industries table (identical with use table)
  – Products in rows (CPC); and
  – Industries (ISIC) in columns
• It can be a square (products correspond to the characteristics products of industries) or a rectangular table (more products than industries)
• The supply table provides output of goods and services at their detailed commodity level (shown in rows) and by domestic industries and imports (shown in columns)
• Since the supply table is generally at basic prices, it has additional columns for transforming each product value at basic prices to its value at purchasers’ prices
  – Freight Transport costs
  – Wholesale and retail trade margins
  – Taxes on products
  – Subsidies on products
### Illustrative Supply and Use Table.

<table>
<thead>
<tr>
<th></th>
<th>Agriculture</th>
<th>Ming, Manf, utilities, constrn</th>
<th>Services</th>
<th>Total dom. supply</th>
<th>(total f.o.b.)</th>
<th>Total supply at BP</th>
<th>Transport cost and trade margins</th>
<th>Taxes less subsidies on products</th>
<th>Total supply at PP</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5) =(2)+(3)+(4)</td>
<td>(6)</td>
<td>(8) =(5)+(6)+(7)</td>
<td>(9)</td>
<td>(10)</td>
<td>(11) =(8)+(9)+(10)</td>
</tr>
<tr>
<td>1. Agriculture</td>
<td>3245</td>
<td></td>
<td></td>
<td>3245</td>
<td>23</td>
<td>3268</td>
<td>30</td>
<td>10</td>
<td>3308</td>
</tr>
<tr>
<td>2. Ming, Manf, utilities, constrn</td>
<td>5163</td>
<td></td>
<td></td>
<td>5163</td>
<td>850</td>
<td>6013</td>
<td>100</td>
<td>-115</td>
<td>5998</td>
</tr>
<tr>
<td>3. Services</td>
<td>6594</td>
<td></td>
<td></td>
<td>6594</td>
<td>-10</td>
<td>6678</td>
<td>-130</td>
<td>885</td>
<td>7433</td>
</tr>
<tr>
<td>4. c.i.f./ f.o.b. adj.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10</td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>5. Purchases of residents abroad</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>6. Non-residents' purchases in the economy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Total</td>
<td>3245</td>
<td>5163</td>
<td>6594</td>
<td>15002</td>
<td>967</td>
<td>15969</td>
<td>0</td>
<td>780</td>
<td>16749</td>
</tr>
</tbody>
</table>
Domestic Production

- Production is an activity, carried out under the responsibility, control and management of an institutional unit that uses inputs of labour, capital, and goods and services to produce outputs of goods and services.
- The “Production Boundary” defines what activities are defined as productive.
- Includes both primary and secondary products produced by establishments.
- Data needed for compiling the columns of domestic production is output of industries with product details.
- Classifications used for industries and products are ISIC and CPC, respectively.
- Valuation of output of industries is at basic prices.
- The main data sources are the:
  - Administrative data (for example, agriculture, mining, electricity, transportation, government services, accounts of companies, etc.)
  - Economic census or establishment surveys for mining, manufacturing and services
  - Population census (for dwellings)
  - Other surveys (household budget surveys for estimating output of some products from expenditures, labour force surveys for informal sector, paid domestic services, etc.) and other adhoc sources (such as research studies done on underground or illegal activities).
Imports and exports of Goods and services (1/4)

• Trade statistics on imports and exports of goods are available from customs authorities and certain government bodies that maintain trade statistics.
• Customs authorities follow HS classification (6-digit), where as the other agencies compiling trade statistics follow the HS or SITC classification (5-digit);
• Imports of goods valued on c.i.f., total imports on f.o.b.; and exports on f.o.b.
• Data on imports and exports of services is available from the BoP statistics, mostly compiled by the central banks. The BoP shows imports and exports of goods generally in a single row, but trade in services is presented according to following 12 standard components of services:
  a. Manufacturing services on physical inputs owned by others;
  b. Maintenance and repair services n.i.e.;
  c. Transport;
  d. Travel;
  e. Construction;
  f. Insurance and pension services;
  g. Financial services;
  h. Charges for the use of intellectual property n.i.e.;
  i. Telecommunications, computer and information services;
  j. Other business services;
  k. Personal, cultural and recreational services; and
  l. Government goods and services n.i.e.
Imports and exports columns of SUTs (2/4)

• **Goods**

  – Source of data for goods is merchandise trade statistics
  – Data available according to HS/SITC needs to be converted to CPC. But, a simpler method is to use SUT product codes directly on the source data, as they are fewer in number
  – Data is available according to cif valuation, which is considered to be the basic price valuation in SNA. For the SUT, imports of goods should be on *c.i.f.*, but overall imports should be on *f.o.b.*, as it is considered to be at purchasers’ prices
  – However, control figure for imports and exports of goods is the data given in the BoP. Therefore, it is necessary to understand the differences and make adjustments to import of goods in the supply table.

    • IMTS use a cif valuation for imports, while BoP uses fob valuation
    • The change of ownership basis used for the balance of payments means that goods entries will have a time of reporting consistent with the corresponding financial flows. In contrast, IMTS follow the timing of customs processing.
    • In the case of goods sent abroad for processing with no change of ownership, the values of goods movements are included in IMTS, but only service charges in BoP
    • IMTS data may not cover merchanting, nonmonetary gold, goods entering or leaving the territory illegally, goods procured in ports by carriers, but cover goods moving physically but where there has been no change of ownership.
Imports and exports columns of SUT (3/4) \( c.i.f./f.o.b. \) adjustment

• Generally, data on imports is available at \( c.i.f. \) while exports are at \( f.o.b. \).

• SNA recommends imports are valued at \( f.o.b. \) prices, because the value of imported goods includes the transport and insurance services incurred in bringing them to the importing country, which are either provided by residents or by non-residents.

• If provided by residents, it is already included in domestic production. If they are provided by non-residents, they are included in imports (under services).

• This gives rise to double counting, and hence there is a need to remove the insurance and freight components in the imports.

• Therefore, imports column in the supply table is modified to show:
  – each imported product at \( c.i.f. \) in the supply table since it is equivalent to the basic value of the same domestic goods; and
  – total value of imports must be valued \( f.o.b. \), since this is the true value of imports.

• A row and a column are inserted in the supply table, for this adjustment.
Imports and exports columns of SUT (4/4)

Adjustment for purchases by residents abroad and non-residents in the economy

- Residents make purchases abroad and non-residents in the economy, mainly for consumption purposes.
- This information is generally available in the BoP statistics under the item travel. If not, adjustments should be made for these purchases.
- They are recorded as imports (for residents purchases) and exports (for non-resident purchases).
- If the product profile of these purchases is available, adjustment may be made in the corresponding products, otherwise, they are shown in an adjustment row in the supply and use tables under imports and exports (corresponding adjustment to be made for household consumption, if household consumption expenditure data is based on a retail trade survey).
Trade margins columns (1/2)

• Trade margins include
  – Output of traders (which is derived as the difference between the sale and purchase value of traded goods)
  – Secondary output of other industries (several industries (other than trade), sell some products in the same condition as they are purchased. The margin from such sales is trade product of these industries)

• Data required for supply table is trade margins by products for the total economy

• Usually, the enterprise surveys and business accounts provide data on total trade margins only

• Very few countries are able to collect information on trade margins by products through surveys

• Therefore, data on trade margins by products is mostly estimated through indirect methods.
Trade margins columns (2/2)

- The indirect method involves four steps:
  - estimating total output of trade (in the supply table), which is equivalent to the sum of
    - output of principal product of trading industry and
    - output of trade product of other industries;
  - estimating (or assuming) trade margin ratios for each product;
  - estimating trade margins for each product (only goods) by applying the trade margin ratios on the product’s output at basic prices; and
  - finally, adjusting the trade margins for each product to the controlled figure, which is the total output of trade product

- These trade margin ratios for different products can be estimated on the basis of small surveys of wholesalers and retailers

- It is advisable to estimate trade margins by products separately for wholesale and retail trade, as trade margin ratios are different for the same product in the hands of wholesalers and retailers, especially for the agricultural and perishable goods
Columns of freight transport costs

• The requirement of data is transport costs by products for the total economy.

• As in the case of trade, the transport costs can also be estimated through indirect methods, in the absence of direct product-wise information on transport costs from the enterprise surveys.

• The procedure is exactly the same as mentioned under trade margins.

• It is also advisable to estimate transport costs by products, separately for each means of transport, namely, railways, road, air, and water, if feasible.
Columns of taxes and subsidies on products

- A tax on a product is a tax that is payable per unit of some good or services. The tax may be a specific amount of money per unit of quantity, or it may be calculated ad valorem as a specified percentage of the price per unit.

- A subsidy on a product is a subsidy payable per unit of output of a good or service. The subsidy may be a specific amount of money per unit of quantity, or it may be calculated ad valorem as a specific percentage of the price per unit.

- Data on taxes and subsidies on products are available from the government budget documents or tax authorities.

- Sometimes, product-wise tax data (excise duties, sales tax or VAT) may not be available.
  - In such cases, countries first need to estimate product taxes for each product on the basis of average tax rates (output at basic prices multiplied by average tax rate) and then adjust these to the control figure of total product taxes on pro-rata basis.
  - This may be done for each type of tax on product (excise, VAT, sales tax, import duties, etc.), as tax rates are different for different types of taxes on the same product.
  - Industry surveys may also provide information on taxes and subsidies paid/received by the producers, but the summation of these may not tally with the government records.
USE TABLE
Structure of Use Table (1/2)

• It is a product X industries and final uses table: Values are at purchasers’ prices
• Number of products and industries are identical in both supply and use tables
• Rows in use table present sales to industries and final users, i.e.
  – How each product is used by industries for their intermediate consumption
  – How each product is used for consumption capital formation and exports
• Columns of industries in the use table present the amounts of a mix of products and primary inputs that each industry consumes in order to produce output
  – Products purchased by industries for their intermediate consumption
  – Value added at basic prices
  – Provides scope to record costs of each industry in terms of primary inputs
  – Provides scope to include satellite rows for GFCF, capital stock, and labour inputs, for each industry
• Columns of final users show consumption expenditure of products by households, NPISHs and government; and product-wise information on GCF and exports
• Total uses in the use table = total of supply in the supply table, for each product
• Total output = total inputs, for each industry
• Use table is important in SUT and in combination with supply table, provides a single estimate of GDP from all three approaches, production, income and expenditure
Structure of Use Table (2/2)

Adjustment rows in Use Table
• purchases abroad by residents in HFCE
• purchases in the domestic market by non-residents in HFCE (negative) and in exports
• Adjustments will not be needed, if:
  – HFCE estimates are based on household expenditure survey, as the survey covers only the residents. Adjustment is needed only when the estimates are based on retail trade survey
  – The balance of payments includes these data in exports (travel item)

Quadrants of use table
• Quadrant I: refers to the intermediate use of products by industries (rows limited to products and columns limited to industries);
• Quadrant II: refers to the final use of products (rows limited to products and adjustment items and columns limited to final uses); and
• Quadrant III: value added components of industries (rows limited to value added components or its uses and columns limited to industries)
Overview of the structure

<table>
<thead>
<tr>
<th>Industry</th>
<th>Agriculture</th>
<th>Industry</th>
<th>Services</th>
<th>Total inter-industry use</th>
<th>Export 3 (fob)</th>
<th>HFCE/ NPISH</th>
<th>GFCE</th>
<th>GCF</th>
<th>Total use at PP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>(2+3+4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(5+6+7+8+9)</td>
</tr>
<tr>
<td>1. Agriculture</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Industry</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Services</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purchases of residents abroad</td>
<td>R</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purchases of non-residents in the domestic market</td>
<td>NR</td>
<td>-NR</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total IC at PP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GVA at BP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other taxes on product</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OS/MI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total industry output at BP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Quadrant I

Quadrant II

Quadrant III
## Illustrative Supply and Use Table.

<table>
<thead>
<tr>
<th>USE table</th>
<th>Agriculture</th>
<th>Mining, manf, utilities, construction</th>
<th>Services</th>
<th>Total inter-industry use</th>
<th>Exports, consumption</th>
<th>Consumption expenditure</th>
<th>Government final consumption expenditure</th>
<th>Gross capital formation</th>
<th>Total use at purchasers' prices</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Agriculture</td>
<td>400</td>
<td>450</td>
<td>130</td>
<td>980</td>
<td>57</td>
<td>2229</td>
<td>15</td>
<td>27</td>
<td>3308</td>
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<tr>
<td>2. Mining, manf, utilities, construction</td>
<td>160</td>
<td>2050</td>
<td>1000</td>
<td>3210</td>
<td>513</td>
<td>1271</td>
<td>130</td>
<td>874</td>
<td>5998</td>
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<tr>
<td>3. Services</td>
<td>242</td>
<td>1217</td>
<td>1362</td>
<td>2821</td>
<td>275</td>
<td>2456</td>
<td>817</td>
<td>1064</td>
<td>7433</td>
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<tr>
<td>4. c.i.f./f.o.b. adj.</td>
<td>10</td>
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<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>5. Purchases of residents abroad</td>
<td>10</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Non-residents’ purchases in economy</td>
<td>-20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. IC/final use PP</td>
<td>802</td>
<td>3717</td>
<td>2492</td>
<td>7011</td>
<td>865</td>
<td>5946</td>
<td>962</td>
<td>1965</td>
<td>16749</td>
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<tr>
<td>8. Gross output BP</td>
<td>3245</td>
<td>5163</td>
<td>6594</td>
<td>15002</td>
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<tr>
<td>9. GVA at BP</td>
<td>2443</td>
<td>1446</td>
<td>4102</td>
<td>7991</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Compensation of emp.</td>
<td>1000</td>
<td>700</td>
<td>2000</td>
<td>3700</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taxes less subs. on prodn.</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFC</td>
<td>240</td>
<td>140</td>
<td>410</td>
<td>790</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOS/MI</td>
<td>1203</td>
<td>606</td>
<td>1692</td>
<td>3501</td>
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<tr>
<td>Employment</td>
<td>294.2</td>
<td>133.8</td>
<td>107</td>
<td>535</td>
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</tbody>
</table>

BP: basic prices;  
PP: purchasers’ prices  
CFC: consumption of fixed capital  
NOS: net operating surplus  
MI: mixed income
Quadrant I: Inter industry consumption (1/2)

- Quadrant I shows inter-industry consumption of goods and services or sales of products made to industries for their intermediate use
- **Intermediate consumption** (IC) consists of value of goods and services that are used as inputs in the production process resulting in output.
  - Excluded from IC: use of fixed assets, expenditures on valuables
  - Included in IC: expenditures on hand tools of low value
- IC is recorded on an accrual basis: time when goods and services are used in the production process
- IC = Acquisitions – Changes in inventories
Inter-industry consumption (2/2)

- Intermediate consumption is normally valued in purchasers’ prices, as that is the price paid by the producers for the intermediate inputs.
- This price consists of
  - basic price received by the producer of the good or service,
  - transportation costs paid separately by the purchaser,
  - wholesale and retail trade margins, and
  - any non-deductible tax less subsidies on the product payable (these elements are not shown separately in the use table)
- Classifications for industries and products are ISIC and CPC, respectively
- Sources of data for intermediate consumption by industry and products
  - economic censuses, enterprise/establishment surveys, business accounts, government budget documents, administrative data and cost studies or focused input-output surveys on small select units covering each activity.
Quadrant II: NPISHs

• NPISHs are legal or social entities created for the purpose of producing services (and sometimes goods) on a non-market basis
  – mainly financed by donations or regular subscriptions
  – not a source of income, profit or other financial gain for the units that establish, control or finance them.
  – can have surpluses but cannot be appropriated by those which establish them.

• **Final consumption expenditures of NPISHs** equals the gross output of producers of NPISHs services less sales of non-capital goods and services plus social transfers in kind.

• The final expenditures of NPISHs are classified according to classification of the purposes of non-profit institutions (COPNI) (housing, health, recreation and culture, education, social protection, religion, political parties, labour and professional organizations) : These need to be converted to a product classification for use table.

• Data sources:
  – tax authorities collect accounts of NPISHs, though exempt from taxation..
  – economic censuses, enterprise surveys, annual accounts, labour force surveys.
  – BoP on current transfers made to NPISHs
Quadrant II: GFCE

GFCE equals government output, less value of government sales of non-capital goods and services, plus social benefits in kind. Classification used is COFOG.

- Output of government services is measured on the cost basis
- Other government expenditures such as subsidies to industries, interest payments, costs of capital goods procurement, transfers, etc. do not form part of output
- Sales include receipts from fees and charges that are not economically significant and, to a minor extent, receipts from sales of market output
- Social benefits in kind include expenditure on consumption goods and services purchased by government from market producers and supplied directly to households without further processing

GFCE includes

- Expenditure on individual services and collective services produced by government itself that are supplied free or at prices not economically significant
  - Individual final consumption expenditures consist services, mainly of (a) Health, (b) Recreation, culture and religion, (c) Education, (d) Social security and welfare, and (e) Housing, refuse collection and sewerage.
  - Current expenditures defined as collective fall under the broad headings of general public services, defense, public order and safety, economic affairs and environment protection but they also include certain expenditures under housing, health, recreation and culture, education and social protection that are considered to benefit the community at large.
Quadrant II: HFCE (1/2)

- Household final consumption expenditures include:
  - All purchases of consumer non-durable and durable goods except dwellings and valuables;
  - Imputed purchases of consumer durables by financial leasing;
  - Imputed gross rental for owner-occupied housing services;
  - Own-account production and consumption of goods
  - Bartered consumer goods and services (net);
  - Domestic services provided by domestic servants;
  - Goods and services in kind provided by enterprises as wages;
  - Imputed financial intermediary (banking, insurance, etc.) service charges;
  - Fees paid to government and NPISHs, fees for all kinds of licences and permits
  - Purchases by residents abroad;
  - (Minus) Purchases by non-residents at home.
Quadrant II: HFCE (2/2)

- HFCE is recorded at purchasers’ prices paid by households including any transport charges and taxes on products that are payable at the time of purchase.
- Individual consumption expenditure of households includes a number of imputed expenditures.
  - Goods consumed out of own production is valued at purchasers’ prices, although it is same as basic prices, since there are no trade and transport margins and taxes.
  - Income in kind is valued at purchasers’ prices if the employer purchased the products that are provided to employees. It is valued at producers’ prices if the products are produced by the enterprise itself.

- Data sources for estimating HFCE are the household income-expenditure surveys, retail trade surveys and other administrative data.
- Commodity flow approaches are widely used to estimate the HFCE.
- Classification used for HFCE is COICOP.
Quadrant II: Actual final consumption

- The use table also has a provision to record actual final consumption of households, NPISHs and general government
  - Of these, conventionally, the NPISHs do not have actual final consumption, as their expenditures are of the nature of individual final consumption and, therefore, become part of household actual final consumption.
  - The actual final consumption of general government is its collective consumption expenditure. The individual consumption expenditure of general government becomes part of actual final consumption of households.
  - Thus, the actual final consumption of households includes:
    - Household final consumption expenditures;
    - Final consumption expenditures of NPISHs; and
    - Individual final consumption expenditures of general government
Quadrant II: Gross capital formation (1/5)

- **Gross capital formation**: comprises gross fixed capital formation, changes in inventories and acquisition less disposal of valuables

- **Gross fixed capital formation (GFCF)** includes
  - all expenditure by producers on acquisitions less disposals of produced fixed assets to be used in the production process, such as
    - vehicles, machinery, equipment, buildings and other construction works, cultivated biological resources, weapons systems;
    - intangible assets of computer software, mineral exploration, and literary, artistic and entertainment originals;
    - certain additions or major improvements to non-produced tangible assets (land and sub-soil assets)
    - major renovations to existing assets,
    - own account GFCF
    - capital transfers in kind and
    - fixed assets acquired through barter
Gross capital formation (2/5)

SNA recommends for GFCF data to be shown by following types of assets

(i) Dwellings
(ii) Other buildings and structures
(iii) Machinery and equipment
(iv) Weapons systems
(v) Cultivated biological resources
(vi) Costs of ownership transfer on non-produced assets
(vii) Intellectual property products
Gross capital formation (3/5)

• GFCF estimates are based on
  – construction surveys, building permits, enterprise surveys, accounts of corporations and NPISHs, government budget documents, foreign trade statistics and the household surveys (on own account construction).
  – commodity flow methods are widely adopted to estimate GFCF by developing countries.

• GFCF is valued at
  – purchasers’ prices and include costs of transport and installation and any fees or taxes for transfer of ownership.
  – Own-account GFCF at basic prices or at the costs of production plus estimated operating surplus.
Gross capital formation (4/5)

- **Changes in inventories** are measured by value of entries into inventories less value of withdrawals and less value of any recurrent losses of goods held in inventories during the accounting period.

- Inventories are usually classified into three broad categories:
  - **Finished goods** include goods acquired for resale by wholesalers and retailers, all goods stored by government as strategic reserves, such as food and fuel, and finished goods that are awaiting delivery to customers.
  - **Materials and fuels** include raw materials and supplies which will be used up as intermediate consumption in the course of production in a future year.
  - **Work-in-progress** consists of:
    - goods and services on which some processing has taken place but which are not yet in a finished form suitable for delivery to customers.
    - In agriculture, work-in-progress consists of the natural growth of vineyards, orchards, plantations and timber tracts and the natural growth in livestock that are being raised for slaughter or milk.
Gross capital formation (5/5)

- **Valuables:**
  - Are produced goods of considerable value that are not used primarily for purposes of production or consumption but are held as stores of value over time.
  - Are expected to appreciate or at least not to decline in real value, nor to deteriorate over time under normal conditions.
- They consist of precious metals and stones, jewellery, works of art, etc.
- Acquisitions of valuables are valued at their purchase prices together with associated costs of ownership transfer. Disposals are valued at their sale prices less any associated costs of ownership transfer.
- Supply of valuables can be estimated using the commodity flow methods.
- Valuables mostly belong to few product groups included in SUTs, therefore, allocation to products in the use table is based on supply
Quadrant II: Exports

- Exports of goods and services consist of sales, barter, or gifts or grants, of goods and services from resident to non-residents.
- In theory, exports occur when transfer of ownership from residents to non-residents takes effect, but in practice change of ownership is deemed to occur when goods cross international boundaries.
- Exports are valued f.o.b. i.e. measured without the costs of transport and insurance services. f.o.b. price is regarded as the purchaser’s price.
- Exports of services include direct purchases in the domestic market by non-resident households (“tourist expenditures”).
- If this data is already included in exports of services, the adjustment item for exports in the standard SUT table “direct purchases by non-resident households” will be zero.
- Data for exports of merchandise (goods) comes mainly from customs.
- Data for exports of services comes mainly from balance of payments.
Adjustment items in the use table

Adjustment for purchases of residents abroad
• Direct purchases by residents abroad are treated as both imports and HFCE
  – These values are shown in the adjustment rows
    • under imports in supply table
    • under HFCE in use table
  – ESA recommends (i) distributing these expenditures to different products, not in a single adjustment row and (ii) allocating part of these expenditures to intermediate consumption in the case of business travels.

Adjustment for purchases of non-residents in the domestic market
• Direct purchases in the domestic market by non-residents are shown under exports and also as a negative entry under HFCE in the use table, in a separate row at the end of the product rows

This adjustment rows are not required if the HFCE is based on household expenditure survey (since it does not cover non-residents) and if balance of payments include data on such purchases by residents/non-residents
Quadrant III: Compensation of employees

• Total remuneration, in cash or kind, payable by an enterprise to an employee for work done during an accounting period.

• For owners of unincorporated enterprise, they are classified as self-employed and shown under mixed income

• Recorded on an accrual basis

• Included:
  – Wages and salaries (cash or kind)
  – Social insurance contributions payable by employers, either actual or imputed

• Sources of data are the same as those used for estimating domestic production and intermediate consumption
Quadrant III: Consumption of Fixed Capital

• CFC is a cost of production - for use of fixed assets
• It measures the decline in the current value of the stock of fixed assets during the accounting period
• Definition: the decline, during the course of the accounting period, in the current value of the stock of fixed assets owned and used by a producer as a result of:
  – physical deterioration;
  – normal obsolescence; or
  – normal accidental damage.
• CFC is estimated along with the estimates of capital stock of industries, which are compiled using perpetual inventory method based on GFCF data of past several years
• CFC is applicable only to produced assets and not to valuables
Quadrant III: Other taxes and subsidies on Production

Other taxes on production
• Comprise all taxes payable out of the value added of producers
  – May be levied on land, fixed assets or the labour employed.
    • Examples are motor vehicle licenses, business licences, real estate taxes, stamp duties, etc.

Other subsidies on production
• They are current transfers that government pays to producers that constitute additions to the income receivable from their output
  – Other subsidies on production lack the characteristics of subsidies on products. Examples are subsidies on payroll or workforce and subsidies for interest relief

Data sources
• The control figures are those available from the budgets.
• Allocation to industries could be based on industry surveys, business accounts, and other administrative data as used for GVA estimation
Quadrant III: Net operating surplus/mixed income and supplementary rows

**Net operating surplus:** Generally derived as residual

| Net operating surplus/mixed income = | GVA from production approach – compensation of employees – consumption of fixed capital – other taxes (less subsidies) on production |

**Supplementary rows:**

- The use table has scope to include supplementary rows in Quadrant III for employment, gross fixed capital formation, change in inventories and fixed capital stock, as also other indicators which are specific to industries.
- These supplementary rows facilitate in carrying out further economic analysis by establishing linkages between output, final uses and industry-specific indicators, especially the employment and investment.
Suggested reading material

• Handbook on SUT: Compilation, Application, and Practices Relevant to Africa (Draft), UNECA

• The 2008 SNA, European Commission, IMF, OECD, UN, World Bank, 2009;
  – Chapter 14: The supply and use tables and goods and services account

  – Chapters 3 to 7
THANK YOU