PRASC

Project for the Regional Advancement of Statistics in the Caribbean

Projet régional pour l'avancement de la statistique dans les Caraïbes

In partnership with Canada

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CARIBBEAN NATIONAL ACCOUNT TRAINING PROGRAM
PART 2: SUPPLY-USE TABLES

Project for the Advancement of Statistics in the Caribbean Region (PRASC)
National Accounts Training
Session 3 – Supply-Use Tables (Compilation)

April 2018

Outline of the Lecture

- In this lecture, the students will put together a supply-use table with actual data.

- The SUT-a-thon work done in Ottawa in January will be reviewed for each main component in a class setting and then replicated by the students on their own (with the instructors' guidance)

Compiling an SUT (Supply Table)

The Supply Table

- The Supply table consists of three components:
  - Output
  - Imports,
  - Margins and taxes and subsidies on products (for valuation at purchasers' prices)

- ***Output*** and ***imports*** can be added together to provide a measure of ***total supply at basic prices***. When ***margins and taxes and subsidies on products*** are added to this total, a measure of ***total supply at purchasers' prices*** is provided.

Supply Table – Domestic Production Matrix

	Agriculture	Industrial goods-producing industries	Service industries	Imports	Total
Agricultural products Industrial products Services	Output by product and by industry			Imports by product	Total supply by product
Total	Total output by industry			Total imports	Total supply

- The first step in compiling the Supply Table is to produce a **domestic production matrix**.
- This section of the Supply Table is a matrix of products and producing industries that are tabulated according to two parameters.
- The rows show products, and the columns show the producing industry groups.

Supply Table –Domestic Production Matrix

- Data on output of products by industries are valued at basic prices.
- In general, business surveys are used as data sources, supplemented by administrative records such as corporate tax returns.
- Ideally, data are collected in units that relate as far as possible to only one activity in only one location, which is considered an *establishment*.

Supply Table –Domestic Production Matrix

- Typically there are more products than types of producing industries. For this reason, the domestic production portion of the Supply Table is frequently rectangular, with more rows than columns.

- In the domestic production matrix, each column shows the total production of a given industry. Each industry can produce not only products characteristic for that industry (primary products), but also other products (secondary products). For example, the hotel industry produces both hotel accommodations (primary product) and eating and drinking services (secondary product).

Supply Table –Domestic Production Matrix

Products \ Industries	Output of Industries						
	Agriculture	Manufacturing	Construction	Trade, hotel, transport and communications services	Finance, real estate, business	Other service activities	Total
Agricultural products	7,085						7,085
Manufactured products	625	160,624	637	1,351	226	39	163,502
Construction work	114	1,029	42,268	703	204	175	44,493
Trade and hotel services	1	5,204	391	48,429	422	289	54,736
Transportation services	2	393	87	21,131	84	129	21,826
Communications	153	1,559	94	40,429	752	730	43,717
Finance, real estate, business	25	5,560	693	7,032	97,046	1,372	111,728
Other service activities	3	91	13	984	124	73,241	74,456
Total	8,008	174,461	44,183	120,059	98,859	75,975	521,543

Supply Table – Import Matrix

- Domestic Production is only one source of supply. Goods and Services are also supplied to the economy through imports.

- The supply of **total imports** represents the value of all foreign goods and services sold to a country's residents and is recorded at foreign port value.

Supply Table – Import Matrix

- Total imports are valued at free on board (f.o.b.) prices at the border of the exporting country.

- The f.o.b. price is the price paid by the importing country before payment of any import duties or other taxes on imports or trade and transport margins within the country.

Supply Table – Import Matrix

- Because the valuation of imports must be compatible with that of the domestic production matrix, each import product should be valued at the domestic port value, that is, at the importer's **c**ustoms **f**rontier (c.i.f.) **p**rice.

- The c.i.f. price includes the insurance and freight charges incurred between the exporter's frontier and that of the importer. The c.i.f. price is comparable with the basic price, allowing the aggregation of domestic production and imports to produce total supply at basic prices.

Supply Table – Import Matrix

Product	Import Value
Agricultural products	2,636
Manufactured products	97,446
Construction work	617
Trade and hotel services	427
Transportation services	5,953
Communications	5,361
Finance, real estate, business	6,062
Other service activities	788
Total	119,291
c.i.f./f.o.b. adjustment on imports	-86
Direct purchases abroad	6,690
Total	125,894

- The import matrix is a one by many products matrix.

Supply Table at Basic Prices
Domestic Production and Import Matrices

Products \ Industries	Output of Industries							Imports	Supply at basic prices
	Agriculture	Manufacturing	Construction	Trade, hotel, transport and communications services	Finance, real estate, business	Other service activities	Total		
Agricultural products	7,085						7,085	2,636	9,721
Manufactured products	625	160,624	637	1,351	226	39	163,502	97,446	260,948
Construction work	114	1,029	42,268	703	204	175	44,493	617	45,110
Trade and hotel services	1	5,204	391	48,429	422	289	54,736	427	55,164
Transportation services	2	393	87	21,131	84	129	21,826	5,953	27,780
Communications	153	1,559	94	40,429	752	730	43,717	5,361	49,078
Finance, real estate, business	25	5,560	693	7,032	97,046	1,372	111,728	6,062	117,790
Other service activities	3	91	13	984	124	73,241	74,456	788	75,244
Total	8,008	174,461	44,183	120,059	98,859	75,975	521,543	119,291	640,834
c.i.f./f.o.b. adjustment on imports								-86	-86
Direct purchases abroad								6,690	6,690
Total	8,008	174,461	44,183	120,059	98,859	75,975	521,543	125,894	647,437

Supply Table

Measuring Output (review)

Output

- Output is defined as the goods and services produced by an establishment with the following exceptions:
  - the value of any goods and services used in an activity for which the establishment does not assume the risk of using the products in production, and
  - the value of goods and services produced and consumed by the same establishment except for goods and services used for capital formation (fixed capital or changes in inventories) or own final consumption.

The Supply Table: Output

1. **Market output**
   - Market output consists of output intended for sale at economically significant prices. Economically significant prices are prices that have a significant effect on the amounts that producers are willing to supply and on the amounts purchasers wish to buy.

2. **Output for own final use**
   - Output for own final use consists of products retained by the producer for his own use as final consumption or capital formation.

3. **Non-market output**
   - Non-market output consists of goods and individual or collective services produced by non-profit institutions serving households (NPISHs) or government that are supplied free, or at prices that are not economically significant, to other institutional units or the community as a whole. Applies only to general government and NPISHs—households and corporations only produce market output or output for own final use.

Measuring market output

Market output =

+ Sales
+ Own consumption for final use
- Change in inventory

Measuring Market Output - Example

Measuring the market output of manufacturers

- Manufacturer:
  - Sales = 1,000
  - Opening inventory – finished goods = 100
  - Closing inventory – finished goods = 500
  - Opening inventory – goods in progress = 100
  - Closing inventory – goods in progress = 50
  - Build a storage facility valued at $500
- Output =
  - $1000 + ($500 – $100) + ($50 – $100) + $500
  - $1000 + $400 – $50 + $500
  - $1850

Measuring Market Output - Special cases

- Measuring output is not always straight-forward. Consider the following producers:
  - Retailers and wholesalers
  - Banks
  - Insurance companies
- Do you think estimates of their sales, plus change in inventories, plus own account production is an appropriate measure of their output?
- See Part 1 of the SNA course (Session 9)

Measuring Market Output - Special cases

Measuring the market output of retailers and wholesalers

- Their output is measured by the total value of the trade margins realized on the goods they purchase for resale (i.e. , there output is a service and not a good).
- the value of output of retailers and wholesalers =
  - \+ the value of sales,
  - \+ *the value of goods purchased for resale and used for* intermediate consumption, compensation of employees, etc.,
  - \- *the value of goods purchased for resale,*
  - \+ *the value of additions to inventories of goods for* resale*,*
  - \- *the value of goods withdrawn from inventories of* goods for resale*,*
  - \- *the value of recurrent losses due to normal rates of* wastage, theft or accidental damage

Measuring Market Output - Special cases

Market output of retailers and wholesalers

- Sales = $1000
- Purchase of goods for resale = $400
- Opening inventory goods purchased for resale = $200
- Closing inventory goods purchased for resale = $100
- Output =
  - $1000 - $400 + ($100 - $200)
  - $1000 – $400 - $100
  - $500
  - Margin rate = 50%

The Supply Table: Output

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(Link)

International Trade (Imports and Exports)

Exports and Imports

- International trade can be defined as the value of the flows of goods and services between residents of an economy and non-residents over a given period.
  - Exports of goods and services consist of sales, barter, or gifts or grants, of goods and services from residents to non-residents.
  - Imports consist of purchases, barter, or receipts of gifts or grants, of goods and services by residents from non-residents.

Imports and exports of goods

- Starts with Customs data which record the flow of goods across the border.
- Balance of Payments adjustments are then added to the Customs data:
  - to align the Customs data with Balance of Payments and National Accounts concepts and conventions;
  - to make short-term improvements to the quality of Customs data; and
  - to balance MEA supply-use models.
- BoP adjustment example:
  - When change of ownership not recorded by Customs
  - Imports should be valued at the port of entry and exports at the port of exit

Imports and exports of services

- Travel services
  - Goods and services purchased by residents in another country or non-residents in the country
- Transportation services
  - include revenues (receipts) and expenses (payments) at the international level arising from transportation of goods and cross-border travellers, as well as from supporting services related to transportation.
- Commercial services
  - Includes such services as; Insurance services, legal and accounting services, education services, etc.
- General government services
  - Government services cover international transactions arising largely from official representation and military activities, as well as commercial activities of governments not covered in other accounts. They include expenses of staff at embassies and missions and of individuals stationed on military bases.

The SUT: Imports and Exports

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(Link)

Compiling an SUT (Use Table)

Use Table

- A Use Table shows the use of goods by product and by type of use for a given period of time.

- It can be divided into three parts: intermediate use, final use, and Gross Value Added and has two key features:
  - First, industry columns show the input structure (intermediate consumption of products and GVA) of each industry.
  - Second, the rows portray the use of different products by industries and final demand.

Use Table

Industries / Products	Input of Industries			Final uses			
	Agriculture	Industrial goods-producing industries	Service industries	Final consumption	Gross capital formation	Exports	Total
Agricultural products Industrial products Services	Intermediate consumption by product and by industry			Final uses by product and by category			Total use by product
Value added	Value added by industry						Value added
Total	Total output by industry			Total final uses by category			

Use Table

- The Use Table usually has many more entries than the Supply Table, as the number of industries using a product generally exceeds the number of industries that supply the product.

- While the supply and use of products can be balanced at basic prices as well as at purchasers' prices, the Use Table is typically compiled at purchasers' prices.

Use Table

- As with the Supply Table, the first step in constructing a Use Table is to tabulate source data. Due to the complexity of the cost structures in the Use Table, the construction of an initial set of estimates must draw on a variety of source data.

- Ideally, the level of detail in the source data would allow aggregation into the same product groups used in the Supply Table. For some industries, the source data suffice for this aggregation. It is rarely the case, however, that this information exists for all industries.

Use Table

- Some possible challenges in compiling the Use Table include
  - Surveys may not have total coverage. They may exclude units below a threshold or they may be based on small samples. In this case, some adjustments are needed to make them compatible with National Accounts definitions.
  - Input structures may be unknown. It may be possible to use input structures from other industries that are assumed to be comparable.
  - The informal economy may form a considerable share of output in some industries.
  - Cost structures may include some acquisition of capital equipment originally treated as current expenditure in business accounts.

The Use Table

Intermediate Consumption / Use

Use Table – Intermediate Use

Products \ Industries	Input of Industries						
	Agriculture	Manufacturing	Construction	Trade, hotel and transport services	Finance, real estate, business	Other service activities	Total
Agricultural products	2,096	4,898	13	389	34	59	7,489
Manufactured products	1,814	91,797	11,585	14,855	5,509	8,823	134,383
Construction work	135	2,222	9,888	2,318	3,807	1,713	20,083
Trade and hotel services	33	1,574	120	2,104	199	281	4,311
Transportation	13	3,859	254	7,397	742	293	12,559
Communications services	38	2,382	302	8,720	5,317	1,791	18,551
Finance, real estate, business services	464	13,053	4,428	18,807	25,064	8,554	70,370
Other service activities	8	356	59	1,095	366	2,221	4,104
Total at purchasers' prices	4,602	120,140	26,649	55,685	41,039	23,736	271,850

Use Table - Intermediate consumption

- Intermediate consumption consists of the value of the goods and services consumed as inputs by a process of production, excluding fixed assets whose consumption is recorded as consumption of fixed capital.

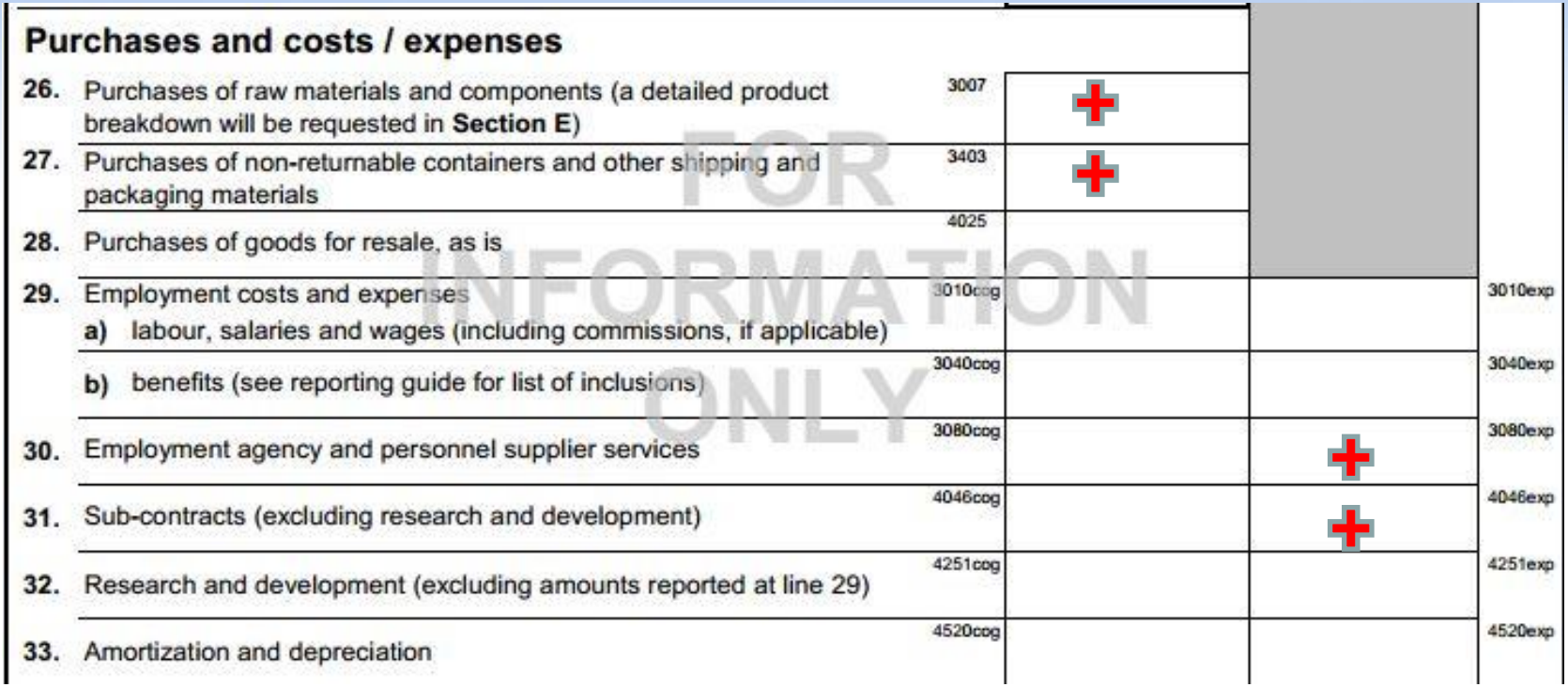
Intermediate consumption

- Intermediate consumption includes not just the raw materials and parts that go into the production of goods or services but also the many services inputs such as:
  - Electricity
  - Rent for buildings and equipment
  - Legal fees
  - Accounting fees
  - Consulting fees
  - Advertising fees

- Each of these represent classes of products in the national accounts framework.

Example

Measuring the intermediate consumption of manufacturers



Purchases and costs / expenses				
26. Purchases of raw materials and components (a detailed product breakdown will be requested in **Section E**)	3007	+		
27. Purchases of non-returnable containers and other shipping and packaging materials	3403	+		
28. Purchases of goods for resale, as is	4025			
29. Employment costs and expenses	3010cog			3010exp
a) labour, salaries and wages (including commissions, if applicable)				
b) benefits (see reporting guide for list of inclusions)	3040cog			3040exp
30. Employment agency and personnel supplier services	3080cog		+	3080exp
31. Sub-contracts (excluding research and development)	4046cog		+	4046exp
32. Research and development (excluding amounts reported at line 29)	4251cog			4251exp
33. Amortization and depreciation	4520cog			4520exp

Example

Measuring the intermediate consumption of manufacturers

34.	Energy and water utility (a detailed breakdown will be requested in **Section G**)	4066cog		+	4066exp
35.	Vehicle fuel expenses (e.g., gasoline, diesel fuel, propane, natural gas)	4069cog		+	4069exp
36.	Transportation, shipping (contracted out), warehousing, storage, postage and courier	4179cog		+	4179exp
37.	Rental and leasing (including motor vehicles)	4115cog		+	4115exp
38.	Repair and maintenance (including motor vehicles)	4178cog		+	4178exp
39.	Insurance (including motor vehicles)	4350cog		+	4350exp
40.	Property and business taxes, licences and other permits	4410cog			4410exp
41.	Royalties and franchise fees	4440cog		+	4440exp
42.	Stumpage fees (for logging operations only)	4018cog			4018exp

Example

Measuring the intermediate consumption of manufacturers

B3 - Cost of goods sold / expenses (continued)

			Cost of goods sold	Expenses	
			'000 CAN$		
43.	Advertising and marketing	4365cog		+	4365exp
44.	Travel, meals and entertainment	4370cog		+	4370exp
45.	Professional and business service fees	4315cog		+	4315exp
46.	Management fees and other service fees paid to head office and other business support units	4555cog		+	4555exp
47.	Telephone and other telecommunication	4101cog		+	4101exp
48.	Office supplies	3301cog		+	3301exp
49.	Other service costs/expenses, not specified above (e.g., financial service fees)	4500cog		+	4500exp
50.	Interest costs/expenses	4630cog		?	4630exp
51.	All other costs and expenses (e.g., variance, bad debts, donations)	4569cog		?	4569exp
52.	**Total purchases and/or costs** (sum of lines 26 to 51, left column only)	4300			

The Use Table: Inputs

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(Link)

The Use Table

Gross Value Added & Primary Inputs

Use Table –Gross Value Added

- **Gross Value Added** equals total output at basic prices in the column totals from the Supply Table minus total intermediate consumption at purchasers' prices in the column totals from the upper part of the Use Table. Gross Value Added can be broken down into primary inputs:
  - compensation of employees
  - other taxes on production less subsidies
  - gross mixed income
  - gross operating surplus

- The compensation of employees row is shown first, then the taxes row, finally, Gross Operating Surplus – constructed residually – is calculated. Estimates of these industry totals are usually available early in the process of Use Table compilation and should be checked for credibility before balancing SUTs.

Use Table – Primary Inputs (Incomes)

- Primary Inputs represent the amount left over from output after taking into account intermediate consumption. It represents income accruing to the factors of production

- All income, as measured in the SNA, comes from production

- Primary inputs are broken down by who receives the immediate benefit from value added

  - **Compensation of employees** shows the return to labour
  - **Operating surplus** shows the return to capital
  - **Taxes less subsidies on production** shows how much is appropriated by government
  - **Mixed Income** shows the amount that can't be split between labour and capital

Use Table – Primary Inputs (Incomes)
Compensation of employees

- Compensation of employees is defined as the total remuneration, in cash **or in kind**, payable by an enterprise to an employee in return for work done by the latter during the accounting period.
- Compensation of employees represents the income generated in the production of goods and services accruing to the labour factor of production.
- Compensation of employees is comprised of two components:
  - wages and salaries; and
  - employers' social contributions.

Use Table – Primary Inputs (Incomes)
Gross operating surplus

- Gross operating surplus can be interpreted as the compensation owed to capital from the production of goods and services.
- In it's simplest terms it is the value of goods and services produced (output) less intermediate consumption (inputs) less compensation of employees less taxes on production.
- It can be thought of as the income left over for the owners of the capital once they have paid for their inputs, their workers and the government.
- It tends to be more volatile than the other types of income.

Use Table – Primary Inputs (Incomes)
Gross operating surplus

- There are two components to gross operating surplus:
  - Consumption of fixed capital, which represents the income that needs to be generated in order to replace the capital that is used up in the production process. Consumption of fixed capital (CFC) represents the decline in the value of the produced capital stock due to normal damage and obsolescence, and wear and tear from the use of the assets in production
  - Net operating surplus, which represents the income that is payable to the owners of capital once they have accounted for the capital that was used up in the production process.

Use Table – Primary Inputs (Incomes)
Mixed income

- Mixed income refers to the income of unincorporated businesses that are generated from their productive activity
- “Mixed” because it includes remuneration of both capital and labour services and it is impossible to separate the two, given that the accounting records of the unincorporated business and households are not separated.

Use Table – Primary Inputs (Incomes)
Mixed income – An example

- Suppose that there is a dairy farmer with100 cows producing $300,000 worth of milk each year. Suppose that the farmer spends $100,000 on feed, $20,000 to maintain the milking equipment and another $30,000 on insurance, heating and other utilities. The farmer is an unincorporated business. How would we calculate the mixed income?

Production account	
Output	300,000
Feed	100,000
Maintainence	20,000
Insurance, heating and utilities	30,000
Gross value added	***150,000***
Generation of income account	
Compensation of employees	?
Gross operating surplus	?
Gross mixed income	***150,000***

Use Table – Primary Inputs (Incomes)
Taxes

- Taxes are compulsory, unrequited payments, in cash or in kind, made by institutional units to government units.
  - Taxes on products is a tax payable per unit of some good or service consumed.
    - Examples include the GST, HST, gasoline and motive fuel taxes, custom import duties....
  - Taxes on production consist of all taxes except taxes on products that enterprises incur as a result of engaging in production.
    - Examples include natural resources licences and taxes, payroll taxes, real property taxes, licences, permits and fees.

Use Table – Primary Inputs (Incomes)
Subsidies

- Subsidies are current unrequited payments that government units, including non-resident government units, make to enterprises on the basis of the levels of their production activities or the quantities or values of the goods or services that they produce, sell or import.
  - 'Subsidies on products' is a subsidy payable per unit of a good or service consumed.
  - 'Subsidies on production' consist of subsidies except subsidies on products that resident enterprises may receive as a consequence of engaging in production.
- Subsidies are subtracted in the calculation of gross domestic product

The Use Table: Primary Inputs

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(Link)

The Use Table

Final Use / Final Demand

The Use Table: Final Demand

- Final uses, which populate the upper right hand side of the Use Table, include final consumption expenditures by households, NPISH and government, gross capital formation, and exports.

- Data on final uses are tabulated by the product groups used for intermediate consumption to allow horizontal summation. This frequently requires the use of correspondence tables between the standard classification of the data type and the product grouping.

The Use Table: Final Demand (Final Consumption)

- **Final consumption** consists of goods and services used up by households or the community (governments, non-profit institutions serving households) as a whole to satisfy their individual or collective needs

  - Goods or services do not need to be purchased on the market to be included in final consumption. Examples include:
    - Barter;
    - Household production and subsequent consumption of goods and one service (imputed housing)
    - Goods and services in kind

The Use Table: Final Demand (Gross Fixed Capital Formation)

- Fixed capital covers tangible or intangible assets which are produced as outputs from production processes and which are themselves used repeatedly or continuously in other production processes for more than one year.

- Gross fixed capital formation is the total value of acquisitions, less disposals, of fixed assets during the reference period, plus the activity related to certain additions to the value of non-produced assets (such as the discovery of mineral deposits or major improvements to the quantity, quality or productivity of land) owing to the productive activity of institutional units.

The Use Table: Final Demand (Inventories)

- In the GDP by expenditure account, investment in inventories is estimated for the agricultural and non-agricultural business sector, non-profit institutions serving households and for the government sector.
- Inventory fluctuations essentially represent the gap between aggregate production and final demand in any given period.
- Inventories can play a crucial role in generating swings in economic activity despite the fact that changes in inventories are a relatively small component of GDP.
- The level of the “change in inventories” is not important—rather it is the change in the “change in inventories” that contributes or subtracts from the growth in GDP.

The Use Table: Final Demand

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(Link)

The Valuation Matrix

The Valuation Matrix

- Valuation Matrices bridge the differences between basic prices and purchasers' prices.

- In the Supply Table, Valuation Matrices are columns (vectors) that can be added to product supply at basic prices to yield product supply at purchasers' prices. This equals product use in the Use Table.

Valuation Matrices – Trade Margins

- **Trade margins** are the amount earned by a wholesaler or retailer by reselling goods with minimal or no further processing. Such goods are not counted as intermediate consumption of wholesalers and retailers. Instead, wholesalers and retailers are treated as supplying services, whose output is measured as the trade margins earned on resold goods plus some non-margin trade services.

- Trade margins can be produced by any industry, but the bulk of trade margin output is produced by the trade industries.

Valuation Matrices – Trade Margins

- Trade services should be separated into wholesale and retail trade. Retailing is the resale of goods mainly to the general public for personal or household consumption. Wholesale is the resale of goods to industrial, commercial, institutional, or professional users; retailers; other wholesalers; or foreign buyers.

- Trade margins are defined as the difference between sales and the cost of goods purchased for resale, adjusted for changes in inventories. Calculation often requires extensive use of assumptions due to data limitations. User-specific trade margin ratios are not commonly available, as buyers of goods do not know how much of the prices they pay reflect trade margins.

Valuation Matrices –Transport Margins

- **Transport margins** are the costs of transportation of products paid separately by the purchaser and included in the use of products at purchasers' prices, but not in the basic price of a manufacturer's output or in the trade margins of wholesalers and retailers.

- Transport margins are recognized when performed by the manufacturer, wholesaler, retailer, or a third party, so long as they were arranged by the seller, and the buyer paid for transportation separately. However, the transportation industries account for the bulk of transport margins.

- Several kinds of transport margins must be defined, such as road, railway, water, air, and pipeline margins. Services of forwarding agencies and transport insurance are also included in transport margin when arranged by the seller and purchased separately by the buyer.

Valuation Matrices – Tax Margins

- A **product tax** is payable per unit of some good or service. The tax may be specified as an amount of money per unit or quantity of the product, or as a percentage of the price per unit of value. Likewise, a product subsidy is payable per unit of a good or service, and may be specified as an amount of money per unit or as a percentage of the per-unit price. A **subsidy** may also be calculated as the difference between a target price and the actual purchase price.

- There are three categories of product taxes: value-added type tax (VAT), taxes and duties on imports excluding VAT, and taxes on products excluding VAT and import taxes. Similarly, there are three categories of product subsidies: import subsidies, export subsidies, and other product subsidies.

The Valuation Matrix

Products \ Industries	Output of Industries							Imports	Supply at basic prices	Valuation			Supply at purchasers' prices
	Agriculture [1]	Manufacturing [2]	Construction [3]	Trade, hotel, transport and communications services [4]	Finance, real estate, business [5]	Other service activities [6]	Total [7]	[8]	[9]	Trade and Transportation Margins [10]	Taxes less subsidies [11]	Total [12]	[13]
Agricultural products	7,085						7,085	2,636	9,721	2,032	190	2,223	11,943
Manufactured products	625	160,624	637	1,351	226	39	163,502	97,446	260,948	44,886	18,969	63,855	324,803
Construction work	114	1,029	42,268	703	204	175	44,493	617	45,110		1,686	1,686	46,796
Trade and hotel services	1	5,204	391	48,429	422	289	54,736	427	55,164	-45,932	527	-45,405	9,759
Transportation services	2	393	87	21,131	84	129	21,826	5,953	27,780	-2,546	3	-2,543	25,237
Communications	153	1,559	94	40,429	752	730	43,717	5,361	49,078	1,519	3,283	4,802	53,880
Finance, real estate, business	25	5,560	693	7,032	97,046	1,372	111,728	6,062	117,790	-34	4,496	4,462	122,252
Other service activities	3	91	13	984	124	73,241	74,456	788	75,244	74	-2,621	-2,546	72,698
Total	8,008	174,461	44,183	120,059	98,859	75,975	521,543	119,291	640,834	0	26,535	26,535	667,368
c.i.f./f.o.b. adjustment on imports								-86	-86				-86
Direct purchases abroad								6,690	6,690				6,690
Total	8,008	174,461	44,183	120,059	98,859	75,975	521,543	125,894	647,437	0	26,535	26,535	673,972

Valuation Matrices

2015 SUT – Montserrat

(Link)

The SUT: Introduction to Balancing

- A key concept of the SUT framework is balancing the flow of goods and services in the economy. Balancing is achieved through an iterative process that ensures the basic identities between supply and use for each product and between output and input of each industry.

- Balancing allows for tracing inconsistencies of basic data and estimation methods used. Inconsistencies should be traced by analyzing the underlying sources and discussing the data with experts in the concerned area. After balancing, the SUTs provide consistent data linking all industries, products and sectors.

The SUT: Introduction to Balancing

- The balancing starts with compiling preliminary estimates of all required data to assemble SUTs at both purchasers' and basic prices. Plausibility and credibility checks should be applied to product and industry data. If a data point appears to be implausible, one has to look for an acceptable explanation by analyzing the underlying sources for the appropriate solution

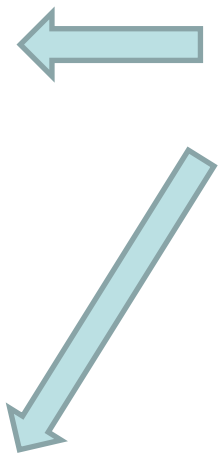
- It is time consuming to investigate all the possible problems and inconsistencies in the balancing of SUTs. In this process, it is evident that large inconsistencies require more attention than smaller ones. Inconsistencies may be caused by discrepancies in the data provided by statistical units (enterprises, establishments, households etc.) and other sources, such as administrative records.

The SUT: Introduction to Balancing

- These balancing process is comprised of the following steps:
  - Balancing the industry dimension of the SUTs
  - Balancing the production based GVA and the income based GVA
  - Compilation of valuation matrices
  - Balancing the product dimension of the SUTs in purchaser prices
- These steps are repeated iteratively until both the industry and product dimensions are fully balanced.

The SUT: Introduction to Balancing Brief Example: Product Balance

	Unbalanced		
Farm and fishing products	2014	2015	2016
Production	63,304	67,111	69,229
Imports	13,029	12,838	13,557
Margins	16,961	17,087	17,398
TOTAL SUPPLY	93,294	97,036	100,184
Intermediate input	50,665	51,275	52,775
Household consumption	17,700	17,854	18,273
Government consumption	0	0	0
NPISH consumption	0	0	0
Gross Fixed Capital Formation	0	0	0
Inventories	-4,057	-1,122	-3,127
Exports	28,986	28,851	29,381
TOTAL USE	93,294	96,858	97,302
Difference	0	178	2,882



$Supply \neq$ Use

The SUT: Introduction to Balancing Brief Example: Product Balance

	Unbalanced		Balanced	
Farm and fishing products	2015	2016	2015	2016
Production	67,111	69,229	67,111	68,829
Imports	12,838	13,557	12,838	13,557
Margins	17,087	17,398	17,087	17,398
TOTAL SUPPLY	97,036	100,184	97,036	99,784
Intermediate input	51,275	52,775	51,275	52,975
Household consumption	17,854	18,273	17,854	18,273
Government consumption	0	0	0	0
NPISH consumption	0	0	0	0
Gross Fixed Capital Formation	0	0	0	0
Inventories	-1,122	-3,127	-944	-845
Exports	28,851	29,381	28,851	29,381
TOTAL USE	96,858	97,302	97,036	99,784
Difference	178	2,882	0	0

Production was moved slightly downward as not all data sources were finalized.

Data for imports and exports are based on customs data and so are considered to be of high quality and rarely adjusted.

Intermediate inputs are based on the uses of other industries (e.g. food manufacturing).

Inventories were changed for both years. They are generally considered to have the lowest data quality.

Data for imports and exports are based on customs data and so are considered to be of high quality and rarely adjusted.

$Supply = \text{Use}$

The SUT: Introduction to Balancing

2015 SUT – Montserrat

(Link)

National Accounts - Uses

➢Key takeaways

- ✓Understand the key elements of a Supply-Use table
- ✓Understand the key identities of the Supply-Use table
  1. The Product Balance
  2. The Commodity Balance

Thank you!