

PRASC



**Project for the Regional
Advancement of Statistics
in the Caribbean**

**Projet régional pour
l'avancement de la statistique
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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 1 – Supply-Use Tables (Key Concepts)

April 2018

Outline of the Lecture



- What are Supply-Use Tables?

- A review of key concepts: production, income and use

- Key Identities:
 - Product Balance (Supply = Use)
 - Industry Balance (Inputs = Outputs)



Concepts underlying the Supply-Use Tables

What are Supply and Use Tables?



- As we have seen from part 1 of the SNA course, the national accounts deal with production, income and expenditures, and accumulation. These economic flows and stocks are organized into a sequence of accounts.
- Supply and use tables focus on the process of production, the use of goods and services in the economy and the income accruing to factors of production. They help describe inter-industry relationships in the economy – how much one industry depends on others other industries as both suppliers of their inputs and consumers of their output.

What are Supply and Use Tables?



- Supply and use tables are a powerful tool to compare and contrast data from various sources and improve the coherence of the economic information system.
- They permit analysis of markets and industries and allow productivity to be studied at a disaggregated level.
- They are usually built from establishment data and provide a link to detailed economic statistics outside the scope of the SNA. (2008 SNA p. 14.3).

Concepts



- The concepts that underlie the Supply and Use tables are the same as for the rest of the System of Macroeconomic Accounts:
 - Production boundary
 - Output
 - Consumption
 - Final and intermediate expenditures
 - Gross fixed capital formation and the asset boundary
 - Income
 - Valuation concepts
 - Institutional units (Establishments grouped as industries)
 - Accrual accounting



Review: Production, Income and Use

Review: 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 products (goods and services).*

$$Y=f(L,K,IC)$$

Review: Production



- Products are **goods** and **services** (including knowledge-capturing products) that result from a process of production.
 - **Goods** are physical, produced objects for which a **demand exists**, over which **ownership rights can be established** and whose **ownership can be transferred** from one institutional unit to another by **engaging in transactions on markets**.
 - **Services** are the result of a production activity that **changes the conditions** of the consuming units, or **facilitates the exchange** of products or financial assets.
 - Changes the conditions of the consumer: Car tune-up, haircut, movies, etc.
 - Facilitates exchange: Retailer selling clothes, bank selling financial services, etc.

Review: Income



- All income as measured in the SNA is **generated by production.**
- The GDP by income account shows who receives the immediate benefit from productive activity.
 - **Compensation of employees** shows the return to labour or the income returned to labour for provision of its services.
 - **Operating surplus** shows the return to capital or income returned to capital for the provision of its services (recorded gross and net).
 - **Taxes less subsidies on production:** valuation adjustment to arrive at production (GDP) at market prices.

Review: Income



- Within the Supply and Use framework, income arising from production is also referred to as **primary inputs**.
- Labour and capital are inputs of primary factors. Their **compensation** is seen as an input into the production process in much the same way as gravel is seen as an input into making cement.

Review: Use



- Produced goods and services can have a range of different uses in the economy:
 - **Intermediate use (Intermediate consumption)**
 - consists of the value of the goods and services consumed as inputs by a process of production.
 - **Final use**
 - Final use reflects goods and services that are entirely consumed in the accounting period, but are not inputs to further production.
 - This includes;
 - Final Consumption
 - Gross Capital Formation
 - Exports

Review: Use



- **Final use** reflects goods and services that are entirely consumed in the accounting period, but are not inputs to further production.
 - **Final consumption** by households, NPISH and government reflects consumption of goods and services to satisfy needs and wants (eating, recreation) or the delivery of non-market services (policing, education).
 - **Gross capital formation** reflects the use of goods or intellectual property used in successive processes of production (not immediately transformed/used up in production processes).
 - **Exports** reflect goods that exit the resident economy for use by non-residents for either intermediate or final use.




The Key Identity: Supply must equal Use

The product balance

The fundamental SNA identity



- The amount of a product available within the economy must have been **supplied** either by domestic production or by imports. This represents the SUPPLY of a product in the economy.
- The same amount of the product entering an economy in an accounting period must be **used** for intermediate consumption, final consumption, capital formation (including changes in inventories) or exports. This represents the USE of a product within the economy.
- Within the context of the System of National Accounts
 - SUPPLY = USE
- This is known as the supply-use identity or put in the context of macroeconomic theory  supply = demand.

The product balance

The fundamental SNA identity

- The identity takes the form of (at basic prices):

Supply

Output
+
Imports

Use

= Intermediate consumption
+
Final consumption
+
Gross Fixed Capital formation
+
Inventories
+
Exports

The product balance

The fundamental SNA identity

- The identity takes the form of (at market prices):

Supply

Output
+
Imports
+
Margins
+
Taxes less
subsidies on
products

Use

= Intermediate consumption
+
Final consumption
+
Gross Fixed Capital formation
+
Inventories
+
Exports

The product balance

The fundamental SNA identity



- The national accounting Supply=Use Identity states that the total supply of a commodity (domestic output plus imports) must be consumed (intermediate consumption, final consumption, investment and exports).

	Output			Imports	Total Supply	Intermediate Consumption			Final Consumption Expenditure	Investment and Inventories	Exports	Total Use
	P	M	S			P	M	S				
Cars	0	50	0	20	70	0	0	0	40	15	15	70

- In this example 70 cars are supplied (50 from domestic production and 20 from imports). Of the 70 cars supplied, 40 are consumed by households, 15 are purchased by businesses to run their operations and 15 are exported. All cars have been accounted for!



The Key Identity: Output must equal Inputs

Outputs = Inputs Identity (Industry Balance)



- In the System of National Accounts another key accounting identity states that inputs must be fully ‘compensated’ for their contribution to production
- In other words, the value of an industry’s output is equal to the **compensation** provided to all inputs to its production
- The industry balance holds since one of the elements of the “compensation” of inputs is operating surplus
 - Includes returns to capital from the production process, including what is traditionally thought of as “profit” in the business world

Outputs = Inputs Identity (Industry Balance)



- Assume that an industry produces cars and trucks such that the total output is 300.
- The inputs used to produce the output included intermediate inputs (170), primary inputs of labour(50), and primary inputs of capital (60) and taxes less subsidies (20)

Output	\$	Inputs	\$
Cars	100	Steel	75
Trucks	200	Electricity	25
		Wire	10
		Services	40
		Other	20
		Total Intermediate Consumption	170
		Taxes less subsidies	20
		Compensation of Employees	50
		Gross Operating Surplus	60
Total	300		300

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!