

Session 4

Supply, Use and Input-Output Tables

The Supply Table

A supply table shows the supply of goods and services by type of product of an economy for a given period of time.

It distinguishes between the output of domestic industries and imports.

The valuation matrices for trade and transport margins and taxes less subsidies on products allow a transformation of supply from basic prices to purchasers' prices.

Three important matrices in the supply table:

1. The production matrix (transposed make matrix)
2. The import matrix
3. The valuation adjustment matrix.

1. In a first step total domestic output at basic prices and imports CIF are aggregated to total supply at basic prices.

2. In a second step the valuation vectors of trade and transport margins and taxes less subsidies on products are added to total supply at basic prices to arrive at total supply at purchasers' prices.

Supply table at basic prices, including a transformation into purchasers' prices

INDUSTRIES (NACE)		OUTPUT OF INDUSTRIES (NACE)						IMPORTS			VALUATION					
		Agriculture	Industry	Construction	Trade, hotel, transport	Finance, real estate, business	Other service activities	Total domestic output at basic prices	Intra EU imports CIF	Extra EU imports CIF	Imports CIF	Total supply at basic prices	Trade and transport margins	Taxes less subsidies on products	Total supply at purchasers' prices	
PRODUCTS (CPA)		1	2	3	4	5	6	7	8	9	10	11	12	13	14	
No																
1	Products of agriculture	Production matrix						Domestic output	Import matrix			Imports cif	Total supply at basic prices	Valuation matrix		Total supply at purchasers' prices
2	Products of industry															
3	Construction work															
4	Trade, hotel, transport services															
5	Financial, real estate, business															
6	Other services															
7	Total	Total output of industries at basic prices							Imports CIF				Total			
8	CIF/FOB adjustments on imports															
9	Direct purchases abroad by residents															
10	Total	Total output of industries at basic prices							Imports FOB				Total			
11	- Market output															
12	- Output for own final use															
13	- Other non-market output															

In the supply and use system imports are valued FOB. However, data on imports by product from foreign trade statistics are most usually valued at CIF prices.

Therefore, an extra row for CIF/FOB adjustments on imports is added which is used to reconcile the different valuations of imports with a global negative CIF/FOB adjustment in the import column.

Another extra row is added to the supply table for direct purchases abroad by residents. Both extra rows are required to derive gross domestic product at market prices from the supply and use system.

A distinction is made in the supply and use system between market output, output for own final use, and other non - market output.

Production Matrix

The first and most important element of the supply table is the production matrix.

It records data on the production of the economy that are classified according to two parameters:

by rows the type of products (CPA) and

by columns the industries (NACE).

The production matrix shows in the rows the products and in the columns the industries that produce each type of the products (goods and services).

In the production matrix the domestic output of industries is reported. The output contains

market output (revenues),

output produced for own final demand, and

other non-market output

The production matrix is defined at basic prices, which means that the valuation of the production of each type of product leaves out any taxes less subsidies on products and does not consider distribution margins for trade and transportation.

The production matrix reflects main and secondary production activities of industries.

A production matrix only includes information on domestic output of industries by product.

In the same way, imports are classified by products. Although there are no strict breakdown regulations, the system suggests two types:

on the one hand, a breakdown of goods and services,

and on the other hand, a breakdown according to geographical origins, separating intra EU imports and extra EU imports from third countries.

Since this table is designed to show the total supply by type of products, the valuation of imports should be compatible with that of production.

Imports by products, therefore, are valued at CIF prices, comparable with basic prices.

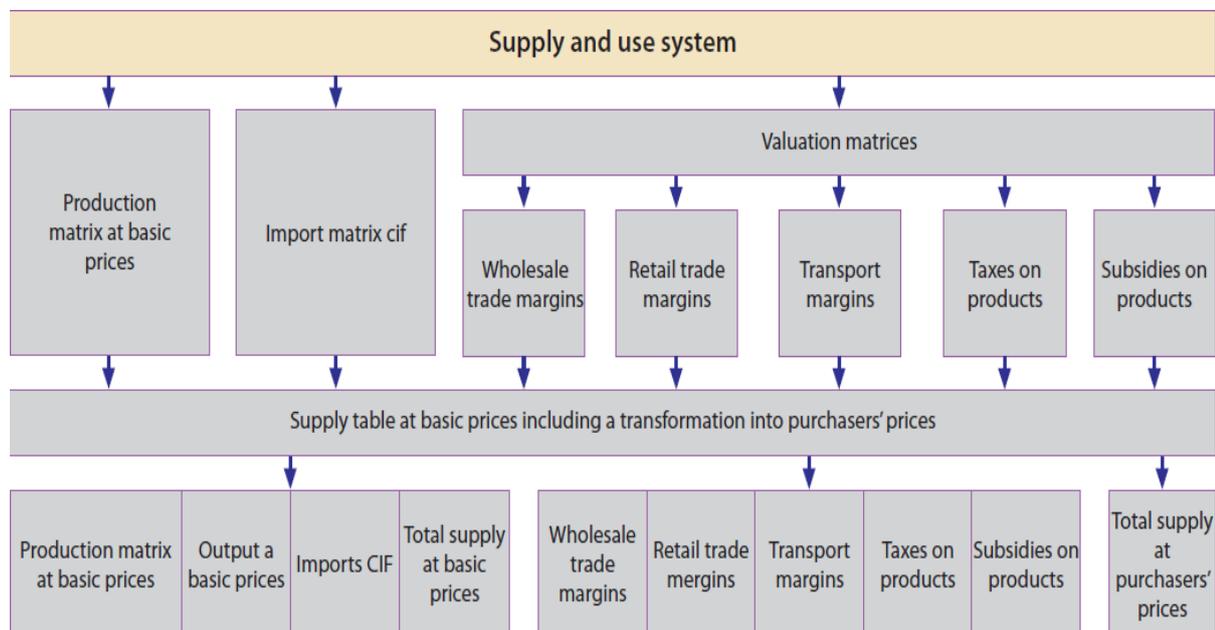
Adding both components, production and imports, gives the total supply at basic prices.

Yet another item is added to imports: that of the residents' consumption in the rest of the world.

This addition makes it possible to verify all imports of goods and services.

Finally, valuation items on trade and transport margins and taxes less subsidies on products are added to supply at basic prices to achieve the transformation into purchasers' prices.

Compilation of the Supply Table



Production Matrix

The first task is to establish a production matrix from the survey results which is reflecting main and secondary production activities of industries.

In statistics, survey results mainly cover enterprises with their numerous secondary activities.

It is the principal activity of an enterprise that determines the allocation to a specific industry. This principal activity of an industry is reported on the diagonal of the matrix.

The output contains market output (revenues), output produced for own final demand, and other non-market output.

Import Matrix

For the assessment of imported transport services, the access to a full size import matrix is desirable.

The import matrix is also required for the transformation of the use table from purchasers' prices to basic prices and finally to input-output tables.

Trade Margins

For the assessment of imported transport services, the access to a full size import matrix is desirable.

The import matrix is also required for the transformation of the use table from purchasers' prices to basic prices and finally to input-output tables.

As trade margins are quite different for wholesale trade and retail trade, the two trade sectors are treated separately.

The following approach can be implemented to verify the wholesale trade margins:

Estimate production matrix with gross concept of trade. The trade rows include the value of the traded goods.

Determine the output relevant for trade services in the production matrix. It is assumed that only goods can be traded.

The shares of product revenues relevant for trade services in total output of goods are calculated for each industry

The gross output of wholesale trade of Matrix 1 services is distributed to traded products.

The cost of purchased products for trade is estimated on the basis of assumed trade margins for each product.

The trade margins of wholesale trade services are estimated by deducting the cost of purchased products from

the gross output of wholesale trade services. The column and row totals are transferred to the supply table.

(Do table 4.6 as an example)

Transport Margins

Transport margins have to be separately estimated for domestic transport services and imported transport services.

1. Domestic transport Services

Transport services are allocated to products in a similar manner as trade margins.

However, in the case of transport services the output is directly distributed.

The value of the transported goods can be neglected as the transport company does not become the owner of the commodities.

However, in the case of transportation services, the transportation margins must be separately estimated for domestic products and imported products which have been transported on domestic territory.

2. Imported Transport Services

The following approach can be implemented to compile transport margins for imported transportation services:

The same production matrix is used as for compiling trade margins. The trade rows include the value of the traded goods.

Determining the output relevant for transport services. As for trade it is assumed that only goods can be transported.

In a supplementary row the participation rates of transported goods in the national output of goods is reported.

The shares of product revenues relevant for transportation services in total output of goods are calculated for each industry.

Net imports are defined as total imports CIF less total exports FOB.

The imported transportation margins for land transportation services of an industry are estimated by multiplying the national total of net imports of land transportation services with the participation rate of the specific industry and the share of product revenues relevant for transportation services.

The imported transportation margins for other transportation services of an industry are estimated by multiplying the national total of net imports of other transportation services with the participation rate of the specific industry and the share of product revenues relevant for transportation services.

The column totals of Matrix 5 and Matrix 6 are transferred to the supply table.

Taxes less Subsidies on Products

The transformation from basic prices to purchasers' prices in the supply and use system requires not only a reallocation of

trade and transportation margins, but also an integration of taxes less subsidies on products. This information is ideally

derived from full size valuation matrices with the same columns as the use table.

Taxes less subsidies on products comprise the following valuation matrices:

1. Non-deductible value added tax (VAT)
2. Taxes on products, except VAT and import taxes
3. Subsidies on products
4. Taxes and duties on imports excluding VAT

(Table 4.1)

Aggregation of the Supply table

All information is now available to establish the supply table at basic prices, including a transformation into purchasers' prices.

The required information by product is supply table at basic prices, vector of imports CIF, vector of trade margins, vector of transport margins and vector of taxes less subsidies on products.

