SESSION 2

Input output table and SAM multiplier models

The social accounting matrix

- There is not a unique way of disaggregating and organizing data in a SAM. The number of accounts in each category depends on the objective of the study:

  - We can disaggregate the household accounts into different socioeconomic classes if the study is focused on distribution effects.
  - If agriculture is of interest, it has to be broken down into several activities

- SAMs also vary in the way transactions are recorded:

  Remittances can be introduced as receipts for the labor factor account or as transfer for households from the rest of the world.

- The most common use of SAMs is at the national level. However, they have also been built for regional economies and for villages.

- Finally all SAMs must respect the same logic of complete and consistent accounting.

The SAM Multipliers (1)

- The equilibrium between the total receipts and total expenditures for each account allows the representation of the whole economy in a linear form similar to what has been presented in the case of the input-output model.

- Extension of the input output model to a SAM framework is performed by partitioning the accounts into endogenous and exogenous accounts and assuming that the column coefficients of the endogenous accounts are all constant.

- Endogenous accounts are those for which changes in the level of expenditure directly follow any change in income.

- Exogenous accounts are those for which we assume that the expenditures are set independently of income.

- The standard practice is to choose for the exogenous accounts one or more among: the government, capital and rest of the world account according to the objectives of the study

The SAM Multipliers (2)

	Endogenous accounts (n)	Sum of exogenous accounts (1)	Total
Endogenous accounts (n)	$M.X$	F	X
Exogenous accounts (m)	$B.X$	L	
Total	X		

The SAM Multipliers (3)

- The SAM multipliers can be derived in a similar way as before:

$$M\ X\ +\ F = X \qquad F = X - M\ X \qquad \Delta X = (I - M)^{-1}\ \Delta F$$

$$\Delta L = B\ \Delta X$$

With

M: the square matrix ($n{\times}n$) of the endogenous accounts
X: the vector of total income or expenditure of the endogenous accounts
F: the vector sum of the expenditures of the exogenous accounts
L: the column vector of the income of the exogenous accounts
B: the rectangular matrix ($m{\times}n$) of the coefficients with exogenous accounts as rows and endogenous accounts as columns
ΔF the vector of shocks
ΔX the vector of impacts
ΔL the leakages

The SAM Multipliers (4)

- A shock or injection is given by a change in elements of the exogenous accounts and multipliers like their input output analogues, are completely demand driven.

- The coefficients in the rows of the exogenous accounts provide the "leakages": the induced demand for imports, the induced government revenues, and the induced savings.

- The obtained results are not independent of the choice of the exogenous accounts.

- The range of shocks that can be studied with a SAM model is directly derived from the choice of the exogenous accounts. For example, if the capital account is chosen to be exogenous, then shocks are mainly changes in the investment.

- In all cases, the multiplier model gives the impact on the structure of production, labor income, income of households, government revenues, savings and imports.