



An Introduction to Social Accounting Matrices




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Outline

- Introduction
- Circular Flow
- Overview of a SAM
 - LOOP
- Structure of a SAM
- *National (T-)Accounts and a SAM*
- *Price System*
 - LOOP
 - *Inter-Industry Table*
- *SNA Production Boundary*
- *Interpreting a SAM*
- *SAM Leontief Model*



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Introduction

"It is perhaps of interest to realise that the framework of any model concerned with the economy as a whole is always an accounting system. This is true whether we work with highly aggregated models such as that underlying Keynes' General Theory, the input-output model of Leontief or the still more complicated variant with which this series [A Programme for Growth] is concerned."

(Stone, 1962 ,p v).

"Since every economic model has its corresponding accounting framework, and since every such framework can be set out as a SAM, it follows that every economic model has a corresponding SAM."

(Pyatt, 1987, p 330)

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Introduction

- National accounts and economic models
- A SAM is
 - A single entry transactions matrix
 - A framework within which data can be organised
 - A statistical database for economic models
 - A database for many different economic models
- A SAM is NOT
 - An economic model
 - Perfect

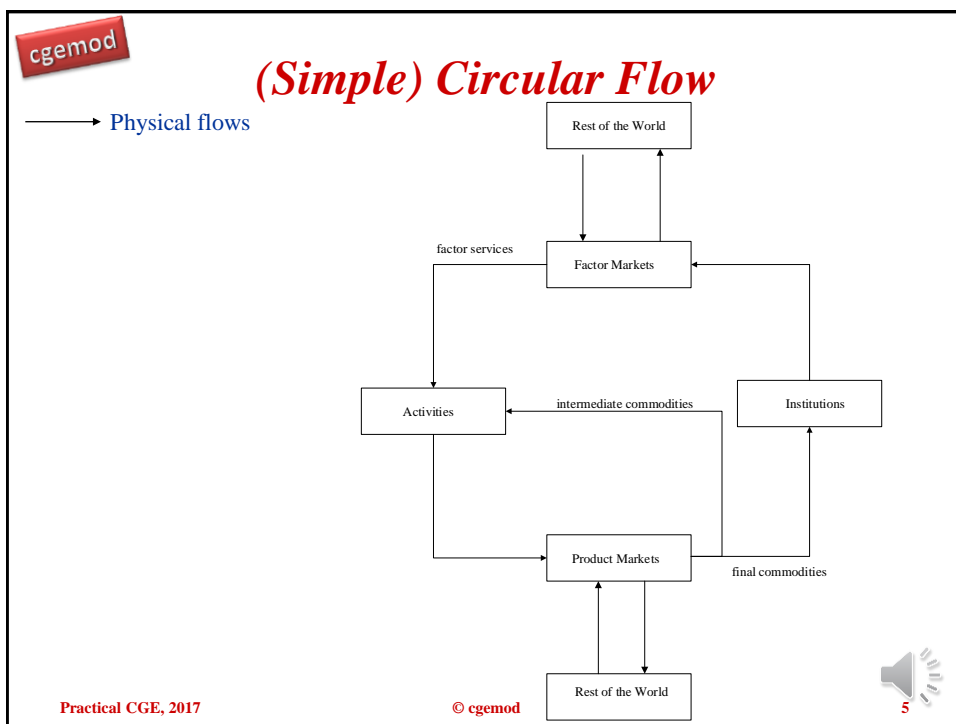
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The diagram provides an overview of a SAM. It features a red 'cgemod' logo in the top-left corner and the title 'Overview of a SAM' in red. Below the title are three bullet points: 'A square matrix' (with sub-points: 'Row and column for each agent', 'Incomes in the rows', 'Expenditures in the columns'), 'Complete and Consistent' (with sub-points: 'Complete: all transactions', 'Consistent: every expenditure has a matching and equal income'), and 'Incomes equal expenditures for ALL agents'. Below the bullet points is the mathematical equation:
$$\sum_i p_{ij} \cdot q_{ij} = \sum_i T_{ij} = \sum_j T_{ij} = \sum_j p_{ij} \cdot q_{ij} \quad \forall i = j$$
 The bottom-left corner contains 'Practical CGE, 2017', the bottom-center has '© cgemod', and the bottom-right has a speaker icon and the number '6'.

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LOOP

- Law of One Price (LOOP)
 - price for any transaction in a row is the same irrespective of the purchasing agent/account
 - quantities in any row are homogenous (undifferentiated)

$$T_{ij} = \sum_j p_i q_{ij} = p_i Q_i \quad \text{and} \quad \sum_j q_{ij} = Q_i$$

LOOP is critical to understanding the price system in a SAM.

The price system embedded in a SAM defines the price system that must apply in any model calibrated with that SAM

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Structure of a SAM

- SIX groups of accounts
 - Commodity (or product) accounts
 - Activity (or production/industry) accounts
 - Factor accounts
 - Institutional accounts
 - Households
 - Enterprises
 - Government
 - Capital accounts (Investment-saving)
 - Rest of the World accounts

Order does not matter EXCEPT for making it easy to access the information

Structure of a SAM is flexible, so some can be difficult to interpret.

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Structure of a SAM

	1	2	3	4	5	6	7	8	9
	Commodities	Activities	Factors	Households	Enterprises	Government	Capital	Rest of World	Account Total
1	Commodities	Marketing Margins	Intermediate Inputs	Household Consumption		Central Government Expenditure	Investment Expenditure	Exports of Goods & Services	Commodity Demand
2	Activities	Production							Production
3	Factors		Remuneration of Factors					Factor Income from RoW	Incomes to Factors
4	Households		Distribution of Factor Incomes	Inter Household Transfers	Distribution of Enterprise Income	Transfers to Households		Remittances from RoW	Household Income
5	Enterprises		Distribution of Factor Incomes			Transfers to Enterprises		Enterprise Income from RoW	Enterprise Income
6	Government	Commodity Taxes	Production Taxes	Factor Taxes	Household Income Tax & Other payments to Government	Enterprise Income Tax & Distributed Enterprise Income		Transfers from RoW	Government Income
7	Capital		Depreciation	Household Savings	Enterprise Savings	Government Savings	Stock Changes	Capital Account Balance	Savings
8	Rest of World	Imports of Goods & Services		Factor Payments to RoW	Remittances to RoW	Enterprise Payments to RoW	Current transfers to RoW		Imports of G&S from RoW and Transfers to RoW
9	Totals	Commodity Supply	Cost of Production	Expenditure on Factors	Household Expenditure	Enterprise Expenditure	Government Expenditure	Investment Expenditure	Exports of G&S to RoW and Transfers from RoW



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Commodity Accounts of a SAM

	1	2	3	4	5	6	7	8	9
	Commodities	Activities	Factors	Households	Enterprises	Government	Capital	Rest of World	Account Total
1	Commodities	Marketing Margins	Intermediate Inputs	Household Consumption		Central Government Expenditure	Investment Expenditure	Exports of Goods & Services	Commodity Demand
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Activity Accounts of a SAM

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	Commodities	Activities	Factors	Households	Enterprises	Government	Capital	Rest of World	Account Total
1	Commodities	Marketing Margins	Intermediate Inputs	Household Consumption		Central Government Expenditure	Investment Expenditure	Exports of Goods & Services	Commodity Demand
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Factor Accounts of a SAM

	1	2	3	4	5	6	7	8	9
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Household Accounts of a SAM

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Enterprise Accounts of a SAM

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1	Commodities	Marketing Margins	Intermediate Inputs	Household Consumption		Central Government Expenditure	Investment Expenditure	Exports of Goods & Services	Commodity Demand
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Incorporated Business Enterprises

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Government Accounts of a SAM

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	Commodities	Activities	Factors	Households	Enterprises	Government	Capital	Rest of World	Account Total
1	Commodities	Marketing Margins	Intermediate Inputs	Household Consumption		Central Government Expenditure	Investment	Exports of Goods & Services	Commodity Demand
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Capital Accounts of a SAM

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	Commodities	Activities	Factors	Households	Enterprises	Government	Capital	Rest of World	Account Total
1	Commodities	Marketing Margins	Intermediate Inputs	Household Consumption		Central Government Expenditure	Investment Expenditure	Exports of Goods & Services	Commodity Demand
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Investment-Savings Accounts




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Trade Accounts of a SAM

	1	2	3	4	5	6	7	8	9	
	Commodities	Activities	Factors	Households	Enterprises	Government	Capital	Rest of World	Account Total	
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The End

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