



An Introduction to macro-Social Accounting Matrices



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Outline

- Introduction
 - What is a macro-SAM?
 - Why use a macro-SAM?
 - Structure of a macro-SAM?
- A macro-SAM
 - A macro-SAM to aid SAM development
- A ‘Full’ macro-SAM
 - A macro-SAM to provide important control totals
- Process



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Introduction



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What is a macro-SAM?

- National Accounts in Matrix format
 - Double-entry bookkeeping
 - Single-entry bookkeeping
- Rendering SNA formatted data in matrix format
 - Production: Commodities & Activities
 - Factors
 - Institutions
 - Households
 - NPISH
 - Government
 - Taxes
 - Products
 - Production
 - Income
 - Capital accounts
 - Investment
 - Savings
 - Rest of the World



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Why use a macro-SAM?

- A circular flow
 - Complete and consistent
- Simplify transition from national accounts to a SAM
- Clarify the distribution and use of income
 - Sources of income
 - Uses of income
- Reconcile & Link SAM and national accounts
- Derive control totals for SAM estimation
 - What are control totals

Complete and Consistent



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Structure of a macro-SAM

- Production: Commodities & Activities
- Factors
- Institutions
 - Households
 - NPISH
 - Government
- Taxes
 - Products ← Taxes & subsidies
 - Production ← Taxes & subsidies
 - Income ← Taxes & subsidies
- Capital accounts
 - Investment
 - Savings
- Rest of the World



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A macro-SAM



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Macro-SAM

- Plan A: simple macro totals (one per cell)
- Plan B: plan A plus some extra detail
 - Institutions
 - Households
 - NPISH
 - Government
 - Disaggregate taxes
 - Specific product & production tax instruments
 - Specific product & production subsidies
 - Direct taxes by institution
 - Options for consumption of fixed capital
 - Stock changes



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A 'Full' macro-SAM

- Plan B: macro and control totals
 - Institutions
 - Distribution of incomes
 - Patterns of expenditure
 - Taxes
 - Production taxes and subsidies
 - Commodity taxes and subsidies
 - Trade taxes – import duties and export taxes
 - VAT, GST
 - Excise taxes
 - Direct taxes
 - Income – households and corporations
 - Wealth
 - Inter-institution Transfers
 - Social welfare – government to others
 - Private – non-government



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Control Totals and SAM Estimation



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 **Control Totals**

What is a Control Total?
An estimate of the sum of the transactions in a sub-matrix of dimensions $n*m$, where n & m are ≥ 1

Why use Control Totals?
Some TVs may be known (with error)
Some aggregates may be targets (with error),
e.g., C, G, I, X, M
Consistency conditions

Role of Control Totals
Used in estimation and reconciliation metrics 

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 **Control Totals**

- The lessons for developing control totals for SAM estimation are
 - more control totals are better than fewer,
 - estimates of the standard errors for priors and control totals are important,
 - estimates of standard errors may need to be subjective, and
 - the accuracy of an estimated SAM, as a reflection of economic transactions, depends strongly on the information in the prior estimates.

A Macro-SAM provides a series of control totals for aggregate TVs 

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Process



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Process

Learning by doing

and by mistakes!!!

Use the macro-SAM guidelines



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 **Process**

Use the Templates

- Collect published national accounts data
 - Start with *C, G, I, X & M*
 - Then
 - factor payments
 - Taxes on products & production
 - Total incomes & expenditures by institutions
 - Trade accounts for current account TVs
 - What is left?

Data points are usually missing 

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 **Process**

All data points are measured with error

For each data point evaluate error bounds

With statistical evidence record standard errors and distribution

In the absence of statistical evidence assign 'subjective' bounds, e.g., 'score' 1 to 6

RECORD THE INFORMATION 

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The End



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