Introductory Course in Building Input–Output Tables (IOT), Supply and Use Tables (SUT), And Social Accounting Matrices (SAMs)

Objective of the course

This course focuses exclusively on the statistical development and compilation of Input–Output Tables (IOTs), Supply and Use Tables (SUTs), and Social Accounting Matrices (SAMs), providing participants with a rigorous, step-by-step framework for constructing these matrices in line with the 2008 System of National Accounts (SNA). The training emphasizes the sequential construction of SAMs from primary data sources; including SUTs, national accounts, balance of payments, government finance statistics, and household survey data; covering account classification, aggregation, reconciliation, and closure rules. Includes intensive hands-on group exercises to build and balance SAMs using Direct and coefficient-based Cross-Entropy Methods, Least Squares Approach, RAS method, and Iterative Manual Balancing procedures. Designed for policy analysts and researchers in government, statistical agencies, central banks, academia, and international organizations, the course places strong emphasis on practical data consistency checks, treatment of statistical discrepancies, and validation of balanced SAM tables. The course is delivered in five modules as follows.

- **Module 1: Introduction to Economic Accounting Frameworks**
  - Overview of macroeconomic accounting frameworks
  - Principles of the System of National Accounts (SNA 2008)
  - Relationship between IOTs, SUTs, SAMs, and National Accounts
  - Production, income, expenditure, and accumulation accounts
  - Institutional sectors and transaction classifications
  - Data requirements and statistical sources for IOT/SUT/SAM compilation
  - Industry and product classification systems (ISIC, CPC)
  - Consistency conditions and accounting identities
- **Module 2: Statistical Compilation of Supply and Use Tables (SUTs)**
  - Data sources for construction of SUTs
  - Developing transaction matrices in spreadsheets
  - Structure and dimensions of Supply and Use Tables
  - Step-by-step compilation of the Supply Table (ST) and Use Table (UT)
  - Treatment of trade and transport margins in ST and UT
  - Valuation matrices (basic vs purchasers' prices)
  - Initial consistency checks and balancing of SUTs
  - Step-by-step construction of the Supply and Use Table (SUT) using national data
  - Group practical exercises: Building SUTs
- **Module 3: Construction of Input–Output Tables (IOTs)**
  - Role of IOTs in economic statistics
  - Product-by-product vs industry-by-industry IOTs
  - Technology assumptions (industry vs product technology)
  - Hands-on derivation of symmetric IOTs from SUTs
  - Treatment of by-products and secondary production in IOTs

- Computation of technical coefficients in IOTs
- Validation and interpretation of IOT structures
- Group practical exercises: Deriving IOTs from SUTs

- **Module 4: Step-by-Step Construction of Social Accounting Matrices (SAMs)**
  - Conceptual structure of a Social Accounting Matrix (SAM)
  - Sequencing and definition of SAM accounts
  - Circular flow of income in a SAM
  - Hands-on preparation of data sources for SAM construction including national accounts, SUTs, Household Income/Expenditure Surveys, Labor Force Surveys, BOP and so on.
  - Hands-on mapping SUT and IOT data into SAM account blocks in spreadsheets
  - Practical integration of BOP, fiscal data, financial/non-financial and household surveys
  - Treatment of transfers, taxes, savings, and investment in the SAM
  - Construction and review of the initial (unbalanced) SAM
  - Consistency checks (with source data) and bug-fixes in the unbalanced SAM
  - Documentation of the sources of persistent bugs in the unbalanced SAM
  - Group-based, hands-on SAM construction exercises
- **Module 5: SAM Balancing Techniques, aggregation and Validation**
  - Sources of imbalance in SAM construction with demonstrations in spreadsheets
  - Step-by-step balancing of the SAM using an iterative manual procedure in spreadsheets
  - Step-by-step balancing of SAMs using RAS method
  - Practical direct cross-entropy method of balancing SAMs in GAMS
  - Hands-on coefficient-based cross-entropy adjustment methods in GAMS
  - Comparison of SAM balancing techniques
  - Diagnostic checks and validation of balanced SAMs
  - Aggregation of SAMs using GAMS and R programming software packages
  - Finalization, documentation, and metadata preparation

Mode of delivery

The course is delivered through an intensive, hands-on approach in which participants systematically construct SUTs, IO and SAMs over the duration of the training. The programme is highly sequential, requiring full attendance at all sessions, as each step builds directly on the previous one. Participants work in teams to enhance peer learning and methodological coherence, while each participant is required to have an individual laptop and mouse for practical implementation. By the end of the course, each team presents policy simulation results generated from their model. For the online delivery option, participants are required to submit all assignments within the stipulated timelines to ensure completion within the scheduled period, as extensions may incur additional facilitation costs. To apply for this course, fill in the form below or send an email to apply@macrosolve.net or macrosolveinfo@gmail.com.