

Recommendations related to supply and use tables and how to implement them in Morocco

Yattou AIT KHELLOU

National accountant

HCP, Morocco

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SUT: International recommendations

- The construction and application of Supply and Use Tables (SUT) is one of the steps required for a country to comply with the 2008 System of National Accounts (SNA).
- The Inter-Secretariats Working Group on National Accounts (ISWGNA) recommends, as part of the implementation of the 2008 System of National Accounts, that SUT be developed
- SUTs are a part of the minimum requirement data set and thus the first and core step to be compiled
- SUT is framework for checking and reconciling the consistency and completeness of GDP from various sources
- It's a powerful analytic tools for the study of the national economy, industrial structures, and the links between different industries.

SUT: International recommendations

SUTs are used :

- to carry out Industrial and sectorial analyses: Changes to specific sectors over time like information and communications technology (ICT), oil and gas, food, sport, creative sector, tourism, health, etc., and more recently, analyses covering the digital economy, sharing economy and collaborative economy as well as product specific global value chains.
- As base for SAMs used for Computable General Equilibrium (CGE) models, environmental analyses
- For ICP purposes, it's recommended to estimate detailed GDP expenditure data in the context of Supply-and-Use Tables (SUTs).
- to carry out studies on productivity issues: it's recommended to include in SUTs data on jobs (duration or full time jobs) by industry

SUT: International recommendations

- The system recommends that the statistical supply and use tables should serve as the foundation from which the analytical input-output tables are constructed.
- Statistical units, in particular establishments grouped in industries serve as a common basis for the production accounts and the supply and use table
- For the detailed analysis of production, the System therefore recommends that they should be partitioned into separate establishments each of which engages in only a single kind of economic activity at a single location.
- Industries are then defined as groups of establishments engaged in the same kinds of productive activities classified according to the (ISIC).
- The product classification scheme recommended for classifying data on goods and services is the Central Product Classification (CPC) but the product classification can be chosen on pragmatic premises.
- The preferred method of valuation [of output] is at basic prices.
- The SNA recommends that the uses of each product must be valued at purchasers' prices

SUT: Old practices to be changed

many countries still have an old perspective in developing their national accounts:

- GDP is obtained by summing production accounts carried out according to a limited number of branches
- final demand is evaluated globally
- constant price accounts are obtained by applying a single deflator for the whole economy
- SUT is perceived as a luxury : national accounts don't need it for their work!!
- when financial and human resources are insufficient, we can do without the SUT;
- If SUT is produced, it will be done punctually, and not by national accountants
- If SUT is compiled after the annual accounts have been declared final, therefore it have to be adjusted to a priori known totals (GDP)

New practices to be implemented

- SUT is a tool for the good elaboration of national accounts
- It allows an integrated treatment of all available information
- SUT should be built every year
- GDP and others aggregates are drawn directly from SUT
- SUT is an instrument for a general synthesis of all flows associate with GDP
- Possibility to build SUTs at current and constant prices.
- Production of SUT depends on
 - the statistical capacity of the country to provide the data sources required;
 - human resources (number and level of knowledge);
 - the structure of the economy, in particular the extent of the informal sector and the capacity to cover it with existing data sources.
 - the political will of a country : It is essential that the government commit to support the process in the long term.

Moroccan practices

- **Before 1998:**
 - GDP is estimated according to production approach
 - Limited data sources and limited number of activities
 - Elements of GDP from expenditure approach are estimated globally and are brought back to the total of GDP from production approach.
 - IOT 1969 and 1978 (benchmark year 1969)
 - IOT 1980 and 1985 (benchmark year 1980)

Moroccan practices

- Since 1998:
 - Implementation of SNA 1993
 - New account's base year
 - New data sources:
 - Structural Survey
 - Informal survey
 - Household Living Standards Survey
 - Survey on government's GFCF
 - Agricultural census
 - National Survey on work force
 - Use of ERETES as tool to elaborate national accounts
 - Larger staff of national accounts
 - SUT is produced annually
 - National accounts at constant prices are produced in ERETES (industries' Output, IC are produced at previous year prices as well as the final uses but we don't publish SUT at constant prices as we don't have the elements of VA component at the previous year's prices)

Moroccan practices

- compilation of national accounts is done on the supply and use framework :
- the supply and use tables are compiled as a fully integrated part of national accounts calculation
- SUT is a tool to compile GDP by three approaches in an integrated manner : These three methods may generate different results. In order to eliminate those differences and to find the most accurate result, statisticians use supply-and-use tables as a balancing framework that reconciles the three methods of GDP
- It ensures the consistency and overall quality of the national accounts.

Exhaustive and complete coverage

Make the best use of all available data

Correct for coverage and other data source issues

SUT's elaboration steps

Step 1: surveys preparation

In Morocco the preparation of the SUT starts at least one year before the start of the actual work of national accountants:

- Preparation of the methodological files of the statistical surveys to be carried out by the Statistics Directorate
 - Construction exhaustive sampling frames
 - definition of the survey plan
 - implementation of questionnaires
 - implementation of instructions to interviewers and ensuring their compliance with the SNA's concepts.
 - preparation of official classification to be used in surveys

SUT's elaboration steps

Step 2: definition of the conceptual and methodological frameworks

- It takes place for the first development of SUT (base year SUT)
- definition of SNA version to implement
- setting up of SUT's classifications:
 - decision on detail's levels of product and industry in SUT
 - local reality must take precedence over international requirements
- Inventory of all available data sources.
 - surveys carried out by other departments
 - Agricultural census
 - Agricultural surveys (on crops and livestock);
 - survey of processing industries
 - administrative data:
 - General State Budget;
 - the administrative accounts of local authorities;
 - accounting documents of public institutions and companies;
 - Companies accounting documents
 - Central bank data
 - Balance of payments
 - tax revenues statistics
 - Foreign trade statistics
 - social security institutions data
 - building permits statistics

SUT's elaboration steps

Step 3: Collection of all available data sources:

- Any information related to the needs of national accountants deserves to be collected :
 - Economic data (surveys, administrative data...)
 - Legal data (e.g. General Tax Law, social contribution rate...)
 - Demographic data (population, work force data)
 - Technical (information about production process of a given industry...)
- We can not be satisfied with a single source to evaluate a position when several can be obtained:
 - In Moroccan SUT we confront data on compensation of employees from structural surveys and from CNSS (national social security institution)
 - the landings of fish at ports in quantity and value is compared to the output of fisheries through structural et informal surveys.



Any information is good to take into consideration

SUT's elaboration steps

Step 4: transposing available data into SNA concepts and definitions:

All source data are processed in order to fulfil the requirements of NA on definitions and concepts

- Classifications: Data sources have their own classification
 - ➔ Bridges to SUT's classifications (Products and Activities)
- Valuating: in data sources it can be physical quantities, indices , coefficients
 - ➔ Use SUT's concepts (Basic prices for output, purchasers' prices for Use...)

SUT's elaboration steps

Step 5: loading available data into national accounts database and pre-reconciliation

- Data is loaded in national accounts database with specifying the nature of each operation (output, IC, Taxes, Transports and Trade margins, HFCE, NPISH FC, GFCE, X, Import, others taxes on production, COE, GOS,...)
- Each cell is characterized by the operation and the product and/or branch concerned
- Pre-reconciliation: an initial expert assessment of the overall consistency of data loaded, for example :
 - Confrontation of two sources: for example, confront the import duties recorded by customs with the amounts received by general government.
 - Verification of the apparent rates of tax or social contributions: do they comply with the legislation in force?
 - Employment balance (by industry): this forms the basis for any assessment of the informal part of the economy. The person responsible should propose A first draft of this balance, which will then be refined as the accounts are being compiled

SUT's elaboration steps

Step 6: construction of initial unbalanced SUT

- Compilation of initial Supply table: domestic production and the valuation vectors
- Constraining of column of foreign trade : imports (supply) and exports (use)
- Construction of initial Use table (IC and domestic final uses)
- Construction of Gross Value Added quadrant

SUT's elaboration steps

Step 7: balancing SUT and general synthesis

- Balancing is carried out simultaneously within the entire SUT system to ensure that for each product:
 - Supply at purchasers' prices = uses at purchasers' prices**
- To facilitate balancing, a 'bridge column' describing the differences between the target values and the unbalanced totals (in ERETES this differences appear for each product balance);
- Every difference shown in the 'bridge column' requires further investigation, with large inconsistencies requiring more attention than smaller ones;
- After each iteration, the results are critically examined and discussions with subject area experts allow to adapt data manually to reduce differences between supply and use;
- after balancing IC supply and IC demand(by industry) other adjustment are made:
 - The CIF / FOB adjustment
 - The adjustment for the purchases of residents and non residents.

Supply table

P R O D U C T	Trade and Transport Margins
	Taxes on products
	- Subsidies on products

①

INDUSTRY

<i>Output Matrix</i> <i>Breakdown by product (at basic prices)</i>

2

③

Imports

Use table

**P
R
O
D
U
C
T**

INDUSTRY

<i>Industries' Intermediate consumption (at purchasers' prices)</i>

4

<i>Final uses (at purchasers' prices)</i>

5

VA's component

⑥

Compensation of employees
Gross operating surplus / Mixed income
Other taxes- subsidies on production

ERETES: SUT

[SUT exemple.xlsx](#)

Challenges and usefulness

- Compiling SUTs is not an easy task even in countries which have reasonably well developed statistical systems
- it's important to highlight that:
 - The compilation of supply and use tables for the first time is very laborious
 - It requires a large investment of human resources and is time consuming (it is demanding on source data and on the methodological skills of the compilers of national accounts)
 - This investment, although costly, is necessary to ensure the quality of the national accounts estimates
 - provide useful and coherent information to the users
 - With every succeeding year, the act of compiling the table will become easier, the possibilities for refinement greater and the analysis more useful.
 - documentation of the basic data and the methods used, the problems encountered and the results achieved is highly recommended

Challenges:Key points to remember

before starting the project of the SUT it's necessary to:

- communicate about the project importance in producing coherent and comprehensive statistics for the policy makers and thus to mobilize the funds necessary for its success
- organize meetings with business organizations to interest them in the project and thus encourage them to respond to the statistic office surveys
- The trade -off between accuracy, timeliness and comprehensiveness should always be kept in mind by managers as well as working level staff.
- Managers should be able to ensure that the needs of the national accounts, in terms of data coverage and timing of results, are taken into account within basic information sources.
- While external assistance can on occasion be useful to an office, local staff have an understanding of the characteristics of the local economy that visiting advisors can never compete with.