EL SALVADOR

TECHNICAL ASSISTANCE REPORT—THE CAPACITY DEVELOPMENT NATIONAL ACCOUNTS STATISTICS MISSION

July 2020

This Technical Assistance report on El Salvador was prepared by a staff team of the International Monetary Fund. It is based on the information available at the time it was completed on May 2018.
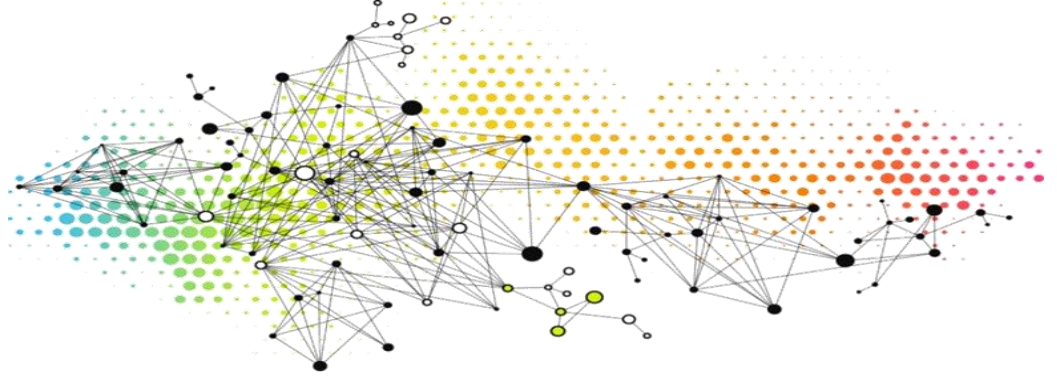
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REPORT ON THE CAPACITY DEVELOPMENT NATIONAL ACCOUNTS STATISTICS MISSION (MAY 14–18, 2018)

Prepared by Francisco Sabido

REGIONAL TECHNICAL ASSISTANCE CENTER FOR CENTRAL AMERICA, PANAMA AND THE DOMINICAN REPUBLIC

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Glossary

2008 SNA	*System of National Accounts 2008*
CAPTAC-DR	Regional Technical Assistance Center for Central America, Panama and the Dominican Republic
CBR	Central Reserve Bank of El Salvador
CIF	Cost, Insurance and Freight
DIGESTYC	General Directorate of Statistics and Censuses
DNA	Department of National Accounts [Spanish abbreviation DCN]
IMF	International Monetary Fund
IOT	Input-Output Table
NPISH	Non-profit Institutions Serving Households
SUT	Supply and Use Table
TA	Technical Assistance
VAT	Value-Added Tax

SUMMARY OF MISSION OUTCOMES AND PRIORITY RECOMMENDATIONS

1. **A technical Assistance (TA) Mission was conducted by CAPTAC-DR[1] from May 14 to 18, 2018 with the objective of supporting the Central Reserve Bank of El Salvador (CBR) in its efforts to strengthen its national accounts statistics for decision making.** The TA mission covered the following topics: compilation of an Input-Output Table (IOT) for 2014; as well as to follow up on the recommendations made in previous TA missions to disseminate Supply and Use Tables (SUT) for 2015 and thereafter, as part of the national accounts' series with base year 2005. In addition, the mission provided training to the Department of National Accounts (DNA) team of the CBR in the methodological and conceptual aspects necessary for the analysis and application of the IOT as a statistical and analytical tool.

2. **SUTs provide a solid foundation for verifying and validating source data as well as providing a framework to overcome data gaps in the compilation of national accounts.** They can also be used to derive an IOT, which constitutes an important tool for macroeconomic analysis that allows for a more detailed description and evaluation of the interdependence between different industries of the economy and the actual intermediate transactions between them.

3. **The 2014 IOT compiled during the mission should be published after the incorporation of the most recent revision of the balance of payments data**. The data became available after the completion of the 2014 SUT. In this regard, the mission proposed that current SUT compilation method can be improved by integrating and coordinating the production process of the balance of payments series with the compilation process of the annual national accounts series.

4. **Some room for improvement has been identified in the compilation of the SUT that can be incorporated in a future rebasing project, these recommendations are included in this report.** The authorities have expressed their intentions to begin the process for a new base year, the reference year still needs to be determined.

RECOMMENDATIONS

5. **To support progress in the two work areas identified above, the mission recommended the following priority actions (Table 1).** The workplan proposed considers recommendations for the short term, with 2019 as the deadline for their implementation.

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[1] The mission was conducted by Francisco Sabido, Short-Term Expert (IMF Statistics Department).

Table 1. Priority Recommendations

Target Date	Priority Recommendation	Responsible Institutions
Input-output table		
September 2018	Evaluate the publication of the 2005 and 2014 IOT for El Salvador, once the updating of the balance of payments series have been incorporated in the 2014 SUT.	**CBR**
Supply and Use Tables		
September 2018	Evaluate the publication of the final version of the 2014 SUT.	**CBR**
March 2019	Publication of the 2015 SUT.	**CBR**
September 2019	Disseminate the annual series by economic activity with additional detail that is currently available.	**CBR**

More details on the priority of recommendations and related actions / milestones can be found in the action plan under Detailed Technical Assessment and Recommendations.

COMPILATION OF INPUT-OUTPUT TABLE

A. Creation of a Work Plan to Compile the IOT

6.   Together with the CBR authorities and technical personnel, the Mission agreed on a work plan with the aim of preparing the IOT for 2014.

7.   The present mission focused on the creation of the SUT table. The table will be developed using the CIF valued imports**,** as well as the development of a valuation matrix that would enable a use table at basic prices (consistent with the valuation of the supply chart) to be obtained.

B. Valuation Table Estimation

8.   The input-output model takes the valuation at basic prices as the most suitable for economic analysis.

9.   The mission first disaggregated each of the valuation tables using the balance worksheets at the demand components level. For example, intermediate consumption; final consumption expenditure; gross fixed capital formation; variation of stocks and exports.

10.   It should be noted that Value Added Tax (VAT) cannot be deducted from the so-called exempt branches for either intermediate consumption or gross formation of fixed capital.

11.   For VAT purposes, these exempt branches were identified and, in the preliminary creation of the valuation table, the VAT for intermediate consumption per product was distributed with intermediate consumption at market prices for these branches of activity. However, the resulting VAT amount cannot be estimated precisely for these exempt branches, because the VAT value due to intermediate demand is overestimated in the equilibrium.

12.   Import Taxes and Duties should be distributed in accordance with the structure outlined in the CIF import use table. However, the distribution in the balance of import taxes on components of demand has been carried out according to total use at buyer prices, which can cause inconsistencies when estimating import taxes on demand components that may not be the final use of that product's importation.

13.   The remaining taxes on goods are distributed in proportion to the use table's intermediate consumption of the total economy at market prices for taxed goods.

14.   Subsidies on goods only apply to two products with regards to Intermediate Consumption: 3205, Petroleum gases and other gaseous hydrocarbons. The latter is distributed in proportion to the use table's intermediate consumption of the total economy at market prices, and 4502, Road passenger transport services and chauffeur-driven hire vehicles, which are allocated to land transport activity, which is subsidized.

15.   Regarding trade and transport margins, ideally, they would be separately estimated for wholesale, retail trade, and transport margins (according to transport type). In fact, in the initial 2005 base year studies, a detailed analysis was carried out on margins that included calculations by demand components of these margins, one for imported goods and another for domestic goods. However, these margins did not consider market purchases either by the government or by Non-profit Institutions for the Service of Households (NPISH) margins. Consequently, there is an incorrect distribution of these margins across demand components, or margins, and therefore trade production is underestimated. We recommend that this allocation process be resumed for the next base year.

16.   Furthermore, regarding changes in stocks, the Eurostat Manual of Supply, Use and Input-Output Tables and the recently published United Nations handbook on Supply, Use and Input-Output Tables with Extensions and Applications, recommends to only focus on wholesale trade margins. Margins with respect to finished products, work in progress or stock outflows do not apply, since only the margins produced in the accounting period should be considered. We recommend that this allocation process be resumed for the next base year.

Recommended Actions:

- *Create separate valuation tables for domestic and imported use.*
- *Distribute taxes on imports similar to the distribution of CIF import use table.*
- *Within the new base framework, create separate valuation tables for wholesale trade, retail trade and transport margins, which take into account imported and domestic goods, and*

include a margin in respect to expenditure on final consumption by the government and NPISH.

- *Prepare a detailed study of VAT allocation to the various demand components in the form of a valuation table.*
- *Balance the SUT at basic prices, for which robust and well-defined valuation tables are paramount.*

C. Construction of the Import Use Table, Valued CIF

17.   The import use matrix table (*matriz de utilización de las importaciones*) is used to separate the use of imported goods and services from domestic ones. This matrix has the same structure as the use table (*cuadro de utilización*) and illustrates the intermediate demand for imported goods and services (by product by industry), as well as the final demand for them, by product and final demand component.

18.   Obtaining the table for the domestically produced supply of goods and services at basic prices and subtracting the term-to-term imports use table from the total use table is paramount, for economic analysis, and for national accounts balances. This is also important for Gross Domestic Product (GDP) estimate in volume terms from the supply and use table, since the separate estimate of the changes in prices and volume for domestic production and imports is far more consistent than such calculations together.

19.   Ideally, a survey should be carried out of key importers from each economic activity branch requesting information on the ultimate use of the three main products that they have imported in the last year. However, experience in other countries in the region suggests that these types of surveys do not have a high enough response rate to ensure an adequate level of accuracy in the estimates.

20.   An import is said to be competitive when viewed in relation to products that are also produced domestically. Imported goods that are not produced domestically are called complementary imports. For these goods, the imported use coincides with the estimated use in the destination table for the total economy at basic prices.

21.   In the case of import data, the first thing that strikes us is that they are not consistent with the balance of payments. For imports, an economic classification of goods is used in the balance of payments, allowing for classification of these imports at the level of tariff codes in respect of intermediate demand, expenditure on final consumption and capital goods.

22.   Prior to the mission, the compilers of statistics by branch of economic activity carried out a study of domestic production distribution (on the main product in each activity) in its different uses, as well as on the distribution of imported goods. This distribution also had five major demand categories: intermediate demand; expenditure on final consumption; gross fixed capital formation; changes in stocks; and exports.

23.   Only the second of these two studies carried out by BCN staff was used, since it related to the distribution of imported goods, and the results showed greater economic consistency. In order to estimate the demand categories not considered in the exercise carried out by DNA staff, the distribution of the use table for the economy was used.

24.   Once the disparity between the use table at basic prices for the total economy and this CIF imports use table was determined using information provided by CBR technical personnel, negative values were obtained in only 10 products of the 182 studied by the detailed (unpublished) SUT. With such products presenting a considerable imbalance between imported and domestic supply, it does not seem too unrealistic to assume a distribution that is equal to that of the use table at basic prices.

Recommended Actions for the Change of the Next Base Year:

- *Record the end-use of domestic production to provide input to the SUT. This would imply that for each activity a complete use table will be required.*
- *Estimate a CIF import use table to provide input to the SUT.*

D.   Inconsistencies Detected

25.   Throughout this mission, a series of inconsistencies were observed in the SUT. The most significant of these are listed below:

a. There are various discrepancies, and the most significant of these are greater than 0.5 percent of product taxes, between the VAT values for the EQOU, the file containing the balance for each SUT product, and the VAT column in the supply table. These discrepancies cancel each other out so that the sum of all of these is 0.
b. In the intermediate consumption for product 4101, Jewelry and related items, of activity 27.2, manufacturing industries, there is a negative value of 0.2 thousand dollars due to an adjustment that was made without taking decimals into account.
c. The final demand for product 0301 Sugarcane is negative in 2014, since changes in stocks are negative and there is barely even a minimal household demand for this product, which is inconsistent.

Recommended Action:

- *Improve the detection of SUT negative values using Excel data tools, as well as for supply and demand imbalances, including issues that are not displayed in the publication but that still affect the valuation tables.*

E.   Compilation of Input-Output Table

26.   The observations made are not considered an obstacle to publishing the IOT, given that it is fully consistent with the 2014 SUT data already published.

27.   The mission has compiled a product-product and industry-industry IOT for the Salvadoran economy for the year 2014 in accordance with the 2014 SUT balance information and the CIF import use table created by DNA technical personnel.

28.   A preliminary version has been obtained that contains 53 branches of homogeneous production and 53 homogeneous products; the result of these must be reviewed and validated. The consistency of the IOT has been reviewed during the mission and no data anomalies have been found.

29.   The mission provided the following files to the CBR technical personnel:

* the valuation tables,

* the conversion of the use table from market prices to basic prices,

* the grouping of activities carried out to ensure matrix symmetry,

* the macros applied to obtain the input-output matrices using the two most common assumptions (fixed product technology and fixed market structure by product), the verification of the two basic equations for the two most used input-output models, that of Leontief, $x = (IA)^{-1}y$, and that of Gosh, $p = (IB)^{-1}d$, where x is the production, p the price level, I the identity matrix, A the matrix of technical coefficients, and B the coefficients of distribution matrix, and

* the identification of key homogeneous industries in the Salvadoran economy according to technical and distribution coefficients.

30.   The IOT compilation work has been carried out across three files: one for the creation of valuation tables; another for grouping the tables; and the final one which contains the matrix calculation, calculation of coefficients, verification of the model's equations and some of the applications that were performed.

31.   A draft methodological note has been made with some basic notes on the application of the input-output matrix.

32.   A presentation has also been given to the Department of National Accounts staff explaining the methodology that should be followed to obtain the IOT and some of its applications and extensions. This file has also been provided to the CBR authorities.

33.   Lastly, the CBR technical personnel have [applied] the methodology developed to obtain the 2014 input-output table to the base year 2005 data, thus obtaining a base year, industry-industry and product-product IOT. This data will enhance the input-output analysis with the study of the structural change in the Salvadoran economy between 2005 and 2014.

34.   In order to be able to use the 2014 IOT for future SUT estimates, a method based on the same basic RAS idea was suggested. This involves using macroeconomic estimates as an exogenous input for an iterative procedure in which both intermediate inputs and final demand are derived as endogenous variables rather than being accepted exogenously from unspecified sources. The starting point is an input-output matrix that is known for a given year, and the assumption is made that one knows the value for GDP, imports, components of final demand and the value-added of activities, thereby deriving through successive approximations an input-output matrix that is consistent, within a certain predetermined confidence interval, with known values. During the mission, the procedure was not pursued in detail, but this remains a possibility for future missions.

Recommended Actions:

- *Review and validate the results, for both the valuation tables and import use tables from 2005 and 2014, aggregating at basic and buyer prices in respect of supply and demand.*
- *Creation of the IOT applications document.*
- *Publication of 2005 and 2014 IOT pending finalization of the 2014 SUT, which is still pending review.*

F.   Monitoring of the National Accounts System of El Salvador 2005

35.   In meetings held with the authorities, they have expressed interest to the development of a new base year. It would be possible through this new project to correct for previous inconsistencies, and to implement further improvements in areas where the growing maturity of the new system of accounts is needed.

36.   Updates to the annual review calendar are also recommended to allow for a greater disaggregation of the data when the SUT is not yet available. There is a considerable amount of demand for more disaggregated data.

37.   In this regard, the authorities have expressed their commitment to continue publishing annual SUTs, thus providing greater consistency to the accounting framework.

Recommended Actions:

- *Update the annual review calendar so that in August-September of year t a greater disaggregation for year t-1 is incorporated.*
- *Consider the use of information in the valuation tables and the IOT to estimate the annual data for periods when there is still no SUT available, based on the observed coefficients and projections in accordance with paragraph 31.*
- *Have a calendar of data revisions that allow for a definitive SUT to be published annually, not subject to revision.*

DETAILED TECHNICAL ASSESSMENT AND RECOMMENDATIONS

Priority	Action/ Milestone	Risk Assumptions/ Verifiable Indicators	Target Completion Date	Actual Completion Date	Implementation Status
Outcome: Improve the coordination between the national accounts section and the balance of payments section.					
H	The CBR should seek to make the SUT foreign trade figures compatible with those of the balance of payments figures. *Priority Recommendation*	SUT balance of payments and foreign trade data.	December 2020		The CBR staff are aware of the problem and are taking action.
Outcome: Compilation of the use of domestic production and CIF imports.					
H	Compile a table of domestic production utilization based on the information provided by each branch operator (*elaborador de rama*). *Priority Recommendation*	Table of domestic production utilization at basic prices.	May 2018		The exercise already carried out must have continuity and be extended to include all demand components and acquiring branches.
Outcome: Compilation of retail and wholesale trade valuation tables within the new base year framework.					
H	Compile independent retail and wholesale trade valuation tables for imported	Wholesale and retail trade margins.	December 2020		A guideline have been established to ensure a correct measurement

Priority	Action/ Milestone	Risk Assumptions/ Verifiable Indicators	Target Completion Date	Actual Completion Date	Implementation Status
	and domestic goods. *Priority Recommendation*				of these margins.
Outcome: Update of the annual review calendar.					
H	Update the annual review calendar. *Priority Recommendation*	Disaggregated data and annual SUTs.	December 2019		Under consideration

A. Officials Who Participated in the Mission

Name	Institution	Position
Edgar Cartagena	CBR	Economic Statistics Manager
Yudis Bonilla	CBR	Head of the National Accounts Department
Wilfredo Viera	CBR	National Accounts Coordinator
Neftalí Gallardo	CBR	Senior National Accounts