

CONTINUOUS STATISTICS AREA

Economic Statistics

METHODOLOGY FOREIGN TRADE STATISTICS

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Economic Statistics / Foreign Trade

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1. Introduction

In recent decades, Foreign Trade Statistics have undergone significant changes worldwide, due not only to the diversity of the products that participate in the commercial exchange flow, but also to industrial and commercial development at a global scale.

In the particular case of Costa Rica, the main changes consisted firstly in improving the collection of basic data in the customs system by implementing the Information Technology for Customs Control System [*Tecnología de Información para el Control Aduanero* TICA], in all customs offices in the country. This implementation allows for data to flow through magnetic media, eliminating the need for printed customs declarations. Secondly, an interinstitutional¹ committee was created to evaluate the source of discrepancies in the data provided to the public and the latest recommendations by the United Nations.

The main purpose of the Foreign Trade Statistics produced by INEC is to provide the public with general, high-quality and timely information on the exchange of goods (exported and imported) between Costa Rica and the rest of the world.

The production of these statistics began over a century ago with different ways to encode sold or purchased goods. It was until 1996 that Costa Rica adopted the Tariff System [*Sistema Arancelario* SA] for the encoding of goods² through a harmonized system of tariff schedules, including a series of its main indicators: customs value³, weight⁴, trading partner⁵ and customs office.

Foreign Trade Statistics come from one source, the Single Customs Document [*Documento Único Aduanero* DUA], managed electronically by the TICA System of the Ministry of Finance. The DUA is a document where export and import customs controls are recorded. The use of TICA began gradually only for the registration of final imports. Posteriorly, other import regimes were added, with exports being the final addition. All International Trade processes have since been handled by TICA, from 2011 onward. Foreign Trade Statistics processed by INEC result from administrative records.

¹ The following institutions are part of the interinstitutional committee: Central Bank of Costa Rica, Ministry of Foreign Trade, Costa Rican Promoter of Foreign Trade, Directorate-General of Customs and National Institute of Statistics and Censuses.

² Marketed products are also called 'goods'.

³ Customs value is calculated in American dollars. Exports are valued f.o.b, (free on board), and imports are valued c.i.f. (cost, insurance and freight).

⁴ Weight is calculated in kilograms and both net weight and gross weight are considered.

⁵ 'Trading partner' refers to countries Costa Rica exports goods to and imports goods from.

Since 2011 and until 2015, INEC has received all the data from the DUAs downloaded by the Central Bank of Costa Rica [*Banco Central de Costa Rica BCCR*]; this is due to technological limitations that prevented data to be downloaded directly from the TICA system.⁶

2. Data Processing

Before starting the process, the trading system⁷ used is mentioned. Due to the development of Duty-Free Zones and Free-Trade Agreements, the trading system used for many years was the Special Amplified⁸; however, the General Trading System⁹ is currently used due to the recent amendments to the Duty-Free Zone Law and its regulations, as well as to the implementation of the latest international recommendations regarding the collection of international trade, National Accounts and Balance of Payments statistics.

2.1 Data Gathering

The DUA record starts in the different customs agencies upon declaring an import/export; as mentioned previously. It is a customs record document, and is thus active¹⁰ throughout the 2-year period set by the Customs Law for confirming or modifying DUA information.

The reception of the DUAs is coordinated with the General Office of Technology Services [*Dirección General de Informática DGI*] of the Ministry of Finance. Once the required variables are defined for the production of foreign trade statistics, the mount of DUAs to be received and the download time are also defined. Single DUAs are not processed. They must come in XML file format. Each XML file sent to INEC contains 15 compressed and encrypted DUAs. Downloads start every 15 minutes and go on continuously, seven days a week, throughout the entire year. They are sent through a VAN connection and a security TOKEN.

The DUA is composed of two sections, the heading and the body. The heading contains the following summarized variable information (total): *customs value, weight, parcels and taxes paid, customs where document is declared, date, means of transportation, regime* and the specific customs office. The importer/exporter information is also included.

⁶ The main limitation was the INEC bandwidth. This situation was later overcome, allowing for direct downloads from TICA to be attempted again in 2013, this time with success. This allowed for a new system to be designed for processing the statistical operations of the TICA Foreign Trade System [*Sistema de Comercio Exterior del TICA SICETICA*].

⁷ 'Trading system' refers to the set of elements that interact in order to allow for a trading relationship; in foreign trade, these elements include duty-free zones contracts and administration, inward processing companies and customs warehouses. A contract may consider the aforementioned elements as part of the economic territory of the country, with no customs restrictions; or it may not consider them, and consequently, any trade negotiation would be subject to customs control.

⁸ 'Special Amplified Trading System' refers to when the economic territory of the country does not consider the aforementioned elements (note 5); nonetheless, a separate record is kept of the commercial activities of each element, and the total foreign trade statistics are included for statistical purposes.

⁹ 'General Trading System' refers to when the elements in note 5 are part of the economic territory, and thus the trading dynamics within the economic territory are not considered in the foreign trade statistics.

¹⁰ 'Active' means it may be modified.

The other section called the 'body' contains descriptions of marketed products; each line corresponds to a product, and a DUA can have from one line to 'x' amount of lines. The product variables are the tariff code to its maximum disaggregation¹¹ and the description, as well as the description of the *commercial invoice*, *customs value*, *freight*, *insurance*, *net* and *gross weight* and *unit of measurement*. Also downloaded from the DUAs are the taxes, which may or may not be negotiated through a trade agreement.

Both sections constitute a single DUA by means of a key defined with the following variables: *year of DUA*, *number of DUA*, *type of trade*¹² and *customs code*.

2.2 Validation and Depuration

Activities involved in depurating exports and imports are mentioned below.

Two important stages are involved in order to ensure quality and coverage throughout the entire process. One of these stages consists of updating the table with the tariff items catalog¹³ with their respective descriptions. Update is necessary, as considerable movement exists (opening and closing of tariff items) at a 10-digit level because of the dynamism of international trade, for example, free-trade agreements with different countries. The updated catalog is used by the processing system to operate the tariff item inconsistency module.

The second activity refers to the revision of the sequence number of XML files downloaded continuously in the INEC server, as mentioned previously. Each XML file contains a sequence number, which must be verified in order to avoid interruptions. In brief, the process includes the following steps. One week after the reference month ends, the list of XML files received in the INEC server is downloaded - each XML file contains 15 DUAs -. If the sequence number in the XML file does not follow the order, the missing number is added. Upon revising the entire month, the remaining files are downloaded by accessing the website of the Ministry of Finance. A second revision is performed, and missing sequence numbers are requested directly from the General Office of Technology Services of the Ministry of Finance.

The foreign trade system that processes the TICA downloads (called SICETICA) uses ORACLE mapped tables and an SQL SERVER database. This system is able to update information in already processed DUAs, which is possible due to the time period granted by the Customs Law for the update of DUA information. Consequently, downloads may include already processed DUAs whose variable information was updated. Validated and corrected DUAs are not updated in subsequent downloads.

Downloaded DUAs are stored in the server and are requested by SICETICA month by month. The existence of downloaded DUAs from already processed months is also revised with the purpose of assessing whether the amount reported in customs value and the amount of DUAs received is significant enough to begin its processing.

The DUA does not contain information of statistical interest¹⁴, as it records all customs movements required for the purchase or sale of a product by the country. In the process of moving the original tables (downloaded in

¹¹ In Costa Rica, the tariff code is made up of 10 digits; in Central America, it is an 8-digit code, and the HS, common for all countries, is made up of 6 digits.

¹² Types of trade include import, export and transit.

¹³ 'Tariff items' refers to the classification, based on the general nomenclature or coding used internationally, of products imported and exported; the Harmonized System (HS) is currently used since 2012.

¹⁴ The United Nations Statistics Division of the Department of Economic and Social Affairs, on its ST/ESA/STAT/SER.M/52/Rev.3 statistical report, published the latest recommendations for the collection of foreign trade statistics. The ECIM 2010, Chapter I, contains a list of guidelines on what must be included in foreign trade statistics. SICETICA considers these guidelines.

the server) to the preliminary tables (processing), the system applies a filter whose objective is to move only statistically useful information; the filters are applied to the *regime*¹⁵ and *modality* variables. These two variables define the customs process of marketed products. International recommendations are based on the type of customs process in order to determine if it must be included in the processing of statistics.

Moreover, the validity of corporate identification numbers is verified using the identification number record of the National Registry.

Foreign trade data processing, validation and filtering activities are performed in the preliminary table. The first validation performed is of codes and description of the following variables: *regime*, *modality*, *tariff items*, *customs office*, *transportation*, *country of origin*, *country of destination*, *port of arrival*, *port of exit*, *type of parcel* and *unit of measurement*. The system validates the DUA information using that recorded in the tables; out-of-range or inexistent codes are listed for verification and correction.

In addition, extreme values in *customs value* and *weight* are also validated. The lines obtained are searched in the corresponding DUA directly from the website of the Ministry of Finance. If data are determined inconsistent, institutions dealing with foreign trade information are inquired of by phone with the purpose of obtaining the correct data.

Furthermore, imputation is performed for variables (customs value and weight) showing a zero; information is assigned following one rule: keep the same tariff item, date, country, DUA and DUA line. Imputed information does not exceed 1% of the annual total.

Foreign trade statistics follow international classifications besides the Harmonized System for classification of marketed products or goods; the present statistics use the following: 4th International Standard Industrial Classification (ISIC Rev. 4), Classification by Economic Use or Destination, (CUODE Rev. 2) and Standard International Trade Classification (SITC Rev. 4). The use of these economic classifications responds to international recommendations and is vital for the standardization of Costa Rican statistics with that of the rest of the world.

Upon completion of the validation and filtering stage, the summarized database is completed and made available for access from the INEC website. This database reduces the likelihood of identifying a specific product.

2.3 Quality control

It is performed before and after each processing stage, generating control totals for the *value* and *weight* variables. Furthermore, each regime has monthly figures and graphs of the last 5 years, for which reason each new total is compared to its respective historical series. If an extreme point is detected, the data are analyzed in further detail.

The above-mentioned institutions and the DGA participate in an interinstitutional foreign trade statistics committee to follow-up on work done by each institution, validate published data and find solutions to the external problems and risks directly affecting the quality of statistics.

¹⁵ 'Customs regime' refers to the different possible destinations of merchandise under customs control, in accordance with the terms of the declaration submitted before the customs authority.

3. Data Publication

INEC presents total data and disaggregated data by weight in kilograms and the value of exports (f.o.b. value) and imports (c.i.f. value) according to the Central American Harmonized System [*Sistema Armonizado Centroamericano* SAC], *country, customs office, regime, modality* and the following economic classifications: ISIC 4, CUODE and SITC 4.

The regimes employed in exports and imports publications are *Final, Inward Processing* and *Free-Trade Zone*.

In the INEC Data Center, reports are generated depending on user needs; in addition, an Annual Bulletin is created containing the main data regarding Foreign Trade of a given year. Data from 1996 onward are available on <http://www.inec.go.cr/sicceweb/default.aspx>. Preliminary information is available on the third week after the reference month ends and is updated up to the last month.

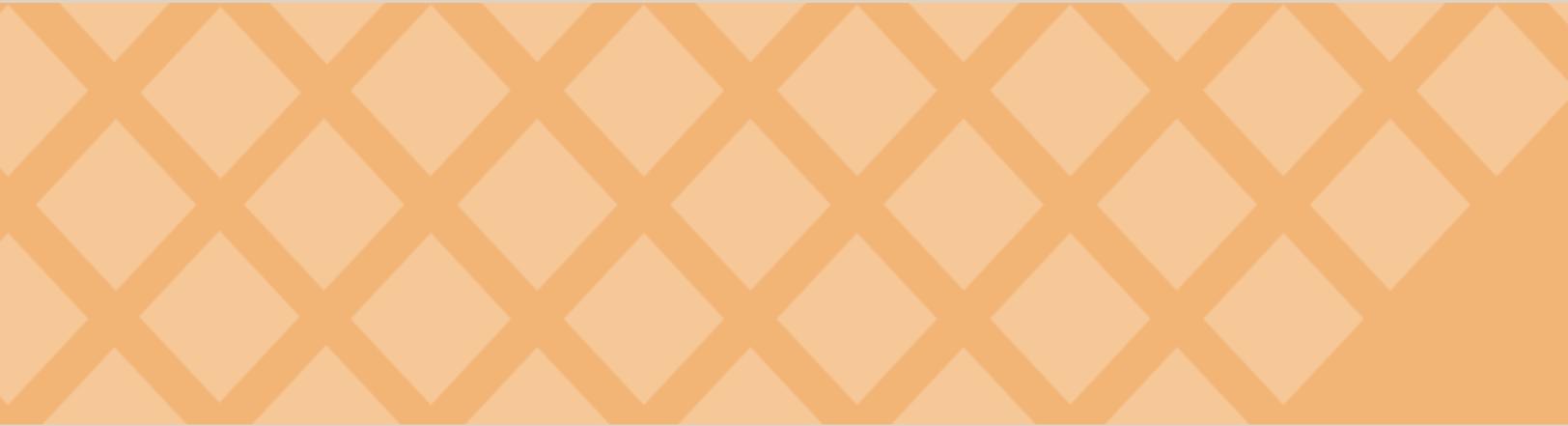
4. Annex

SICETICA VARIABLES

Imports	Exports	Description
dateDUA	dateDUA	Date of single customs document (DUA)
dateValidationDUA	dateValidationDUA	Validation date of single customs document (DUA)
angoDUA	angoDUA	Year of DUA
numberDUA	numberDUA	Number of single customs document (DUA)
numberValidationDUA	numberValidationDUA	Validation number of single customs document (DUA)
modality	modality	Modality Number
idRegime	idRegime	Regime number of definitive or current imports
idCustoms	idCustoms	Number of custom where document is declared
idCustomEntryDestination	idCustomEntryDestination	Number of custom where document is declared
idTypeImporter	idTypeExporter	Type of ID: Personal ID, Corporate ID, Passport
idNumberImporter	idNumberExporter	Person's ID number
nameConsignee	nameConsignee	Consignee name or company name
idTypeDeclarant	idTypeDeclarant	Type of ID: Personal ID, Corporate ID, Passport
idNumberDeclarant	idNumberDeclarant	Declarant's ID number
idCountryOrigin	idCountryOrigin	Country of origin/destination of merchandise
idCountryPurchase	idCountryPurchase	Country of Purchase, currently called origin
countryPortShipping	countryPortShipping	Country or port of shipping
portArrival	portArrival	Port of arrival
portExit	portExit	Port of exit
idTransportation	idTransportation	Transportation identification: Air, vSea, Land
numLine	numLine	Line number
quantityParcels	quantityParcels	Total declared quantity in the field
sumQuantityParcels	sumQuantityParcels	Sum of all lines in parcels variable
quantityUnits	quantityUnits	Quantity of units declared at customs
descriptionProductSummary	descriptionProductSummary	General description of the product
descriptionProductDetailed	descriptionProductDetailed	Detailed description of the product
idExitTax	idExitTax	Exit Number
valueCustomsFOB	valueCustomsFOB	Free on board
valueInsurance	valueInsurance	Insurance amount
valueFreight	valueFreight	Freight amount
valueOthers	valueOthers	Other values amount
valueInvoice	valueInvoice	Invoice amount to verify customs value
valueCustomsCIF	valueCustomsCIF	Value CIF/FOB
validationCustomsValueCIF	validationCustomsValueFOB	Validate
grossWeight	grossWeight	Total declared quantity in the gross field
totalGrossWeight	totalGrossWeight	Total declared quantity in the field
netWeight	netWeight	Total declared quantity in the field

totalNetWeight	totalNetWeight	Sum of all lines in Net weight variable
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Imports	Exports	Description
exchangeRateDollar	exchangeRateDollar	Value of dollars on a specific date
idtreatyInternationalAgreement	idtreatyInternationalAgreement	Agreements, conventions, treaties
totalCurrencyColones	totalCurrencyColones	Total due in national currency
taxDAI	taxDAI	Value of DAI tax
taxSelectiveConsumption	taxSelectiveConsumption	Value of the selective consumption tax
taxLaw6946	taxLaw6946	Value of tax set by Law 6946
taxIDA	taxIDA	Value of IDA tax
taxIFAM	taxIFAM	Value of IFAM tax
taxLaw7972	taxLaw7972	Value of tax set by Law 7972
taxLaw8114	taxLaw8114	Value of tax set by Law 8114
taxForest	taxForest	Value of Forest tax
taxCaldera	taxCaldera	Value of Caldera tax
taxSales	taxSales	Value of sales tax
taxSafeguard	taxSafeguard	Value of safeguard tax
taxGolfito	taxGolfito	Value of Golfito tax
taxTotal	taxTotal	Value of total tax
codeExemption	codeExemption	Exemption Code
exemptionDAI	exemptionDAI	Value of DAI exemption
exemptionSelectiveConsumption	exemptionSelectiveConsumption	Value of the selective consumption exemption
exemptionSales	exemptionSales	Value of sales exemption
exemptionTotal	exemptionTotal	Value of total exemption
idConditionDelivery	idConditionDelivery	DeliveryCondition (delivery personnel-customs-home)



NATIONAL INSTITUTE OF STATISTICS AND CENSUSES

INEC was created by Act N° 7839, published in the Official Newspaper, "La Gaceta", on November 4th, 1998, as an autonomous institution under public law, with legal status and its own assets. Its responsibility is to be the technical governing body of national statistics and coordinator of the National Statistics System.

INEC has the duty to provide the public with the results of statistical activity, as well as the methods employed, in a clear and timely fashion. It also promotes the investigation, development, perfection and implementation of statistical methods.

Among the main national statistics that it must generate are: vital, demographic, foreign trade and construction statistics. Also generated are statistics resulting from national censuses regarding population, housing, agriculture and the economy; additionally, those related to household surveys with various aims, to surveys concerning agriculture, to surveys covering household income and expenses, and to surveys regarding the economy and price indexes, among others.

INEC, 450 meters west of La Bandera roundabout, Los Negritos street,
Ana Lorena Buidling, Mercedes, Montes de Oca, Costa Rica.
INTERNET: www.inec.go.cr - Email: informacion@inec.go.cr
Telephone: 2280-9280 ext. 326 - 327 - Fax: 2224-2221