

Costa Rica: An Extended Supply-Use Table.

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Abstract

The use of the data contained in supply and use table and input-output tables in the economic analyses as well as for trade in value added, researches and projections has grown steadily. Costa Rica has traditionally been a very open economy; exports represent 32% of GDP and imports 36%. A significant share of these exports and imports are being driven by foreign affiliates allocated in free zones and others agricultural economic activities which production is mainly oriented to the external market (80% of its total production). On recent years it is noticeable the increasingly importance of exporting services firms from free zones. Companies in free zones are connected up to different stages within global value chains and because of that there are different levels of relation between each firm and the inputs from domestic firms. Most industries practically do not have connection with domestic market while others have some domestic firms as their main suppliers. This dynamic causes heterogeneity in terms of income payments from abroad, production functions and foreign content ratios. In order to face this heterogeneity, Costa Rican national accounting has decided to use extend supply and use table separating free zones within each economic activity and as well as in the input output table, following the accounting guidelines recommended by the SNA 2008.

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1. Overview

Supply and use table records how supplies of different kinds of goods and services from domestic industries and imports are allocated between intermediate or final uses, including exports. This table is the necessary first step in order to prepare input-output tables.

Over the last years policymakers and researchers have been showed their interest on investigations related with the impact of exports and external shocks on the domestic economy. This kind of analysis has been limited because supply and use table doesn't fulfill the data requirements, there's a need to identify the major exports groups. An extended supply and use table and input-output table as well capable to show explicitly the industry information of free zones and other economic activities whose production is mainly oriented to external market, so there is a need to provide highly policy makers relevant information about supply and demand relationships as well as the linkages between exporters industries and domestic firms.

Costa Rica has traditionally been an exporting and importing country, exports represent 32% of GDP and imports 36%. Firms in free zones and others agricultural economic activities whose production is mainly oriented to the external market (82% of its total production) are accountable for around 66% of net exports of Costa Rican goods. Evidence leads to a difference in production functions and foreign content ratios of companies in free zones and non-free zones ones.

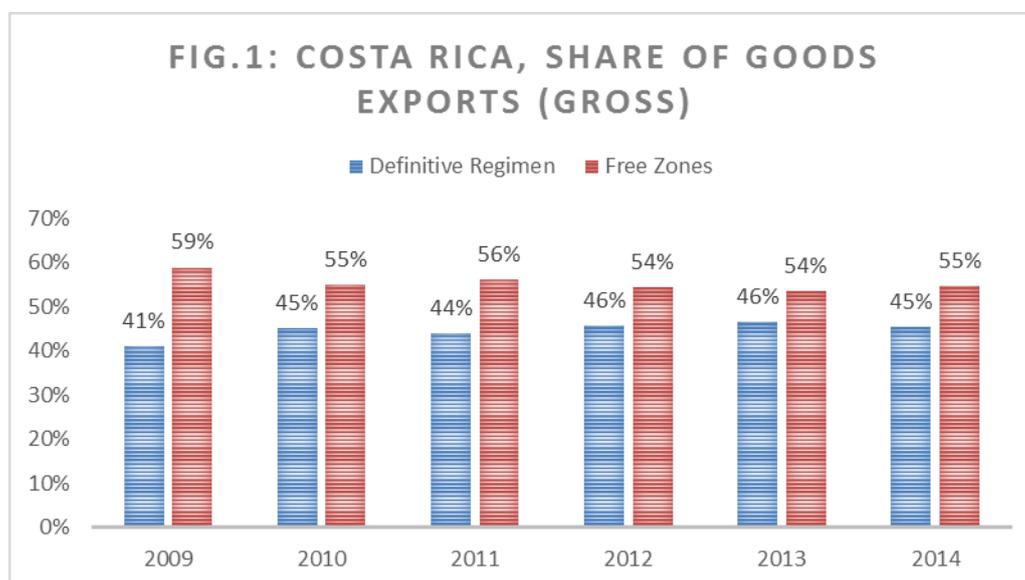
Furthermore, this project also looks for the improvement in the quality for TiVA estimates. The extended supply and use table 2012 and input-output table 2012 are expected to be released by December 2015.

2. Background

2.1 Goods matter

Free zones exports from Costa Rica count for almost 55% across all exports of goods and 67% of overall manufactured commodities (Figure 1). These exporting firms belong basically to industries such as electronic components (batteries, cables, motors), medical appliances, orange and pineapple juices, fruit provisionally preserved not for immediate consumption, rubber tires and others. These exports go mainly to United States and European Union

markets. Exports carried out by non-free zones (also known as definitive regimen) are basically food and electric products and are destined mainly to Central America.



Some agricultural industries (pineapple, bananas, melon, coffee beans, plants, flowers) do not export under free zones and accounts of the 25% of total Costa Rican exports. These are particular industries because most of the production is exported (United States) and they are dominated by foreign controlled firms. Each one of these products is shown explicitly in the extended supply use table.

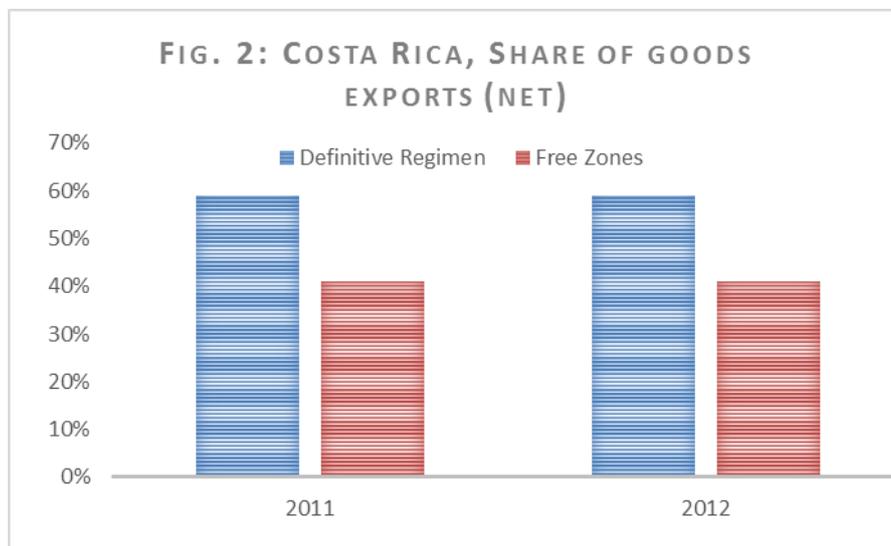
2.1.1 Manufacturing services on physical inputs owned by others

In recent years, globalized production processes have acquired more relevance, in this context, some companies in free zones received goods, without changing economic ownership, for transformation purposes. Accordingly to Sixth Edition Balance of Payments Manual (BPM6), these goods for processing which ownership remain to non-residents should be excluded from the goods account and the value of service is accounted as an export of manufacturing services. The recommended treatment in BPM6 for the processing of goods on behalf of others has an impact on the level of trade flows which are ultimately recorded in the balance of payments.

Since, Costa Rican, followed the recommended treatment in BPM6 about the registration for these particular cases of manufacturing services, the extended supply use table rule out exports and imports of commodities for processing firms and instead records an export of a manufacturing service.¹

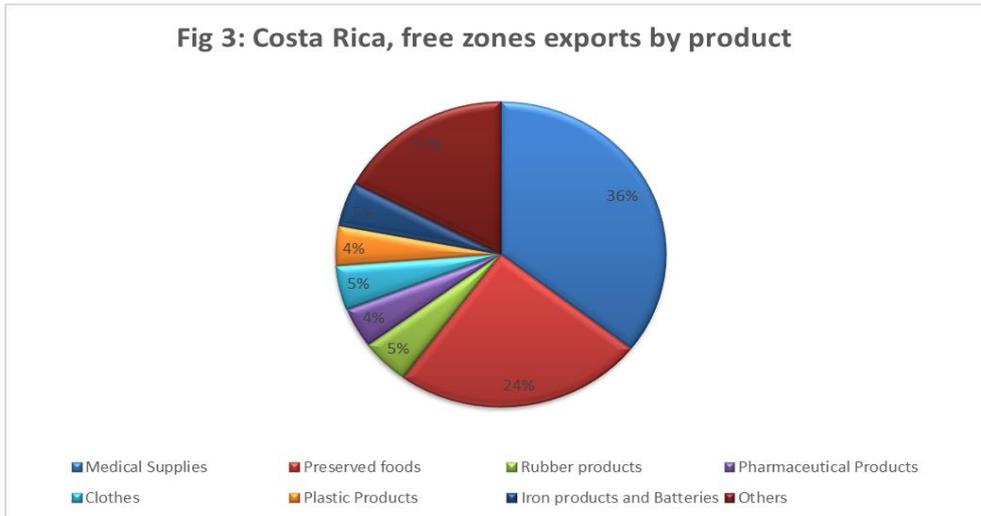
In Costa Rica, exportations of companies involved in manufacturing services represent about 23% of total exports and 15% of total imports. These exporting firms are import-intensive and due to transfer pricing some top exporters companies show imports higher than exports.

Processing firms are allocated mainly in electronic industries and once processing firm's trade flows have been shutting out, free zones exports accounts for 41% of goods exports on a net basis.



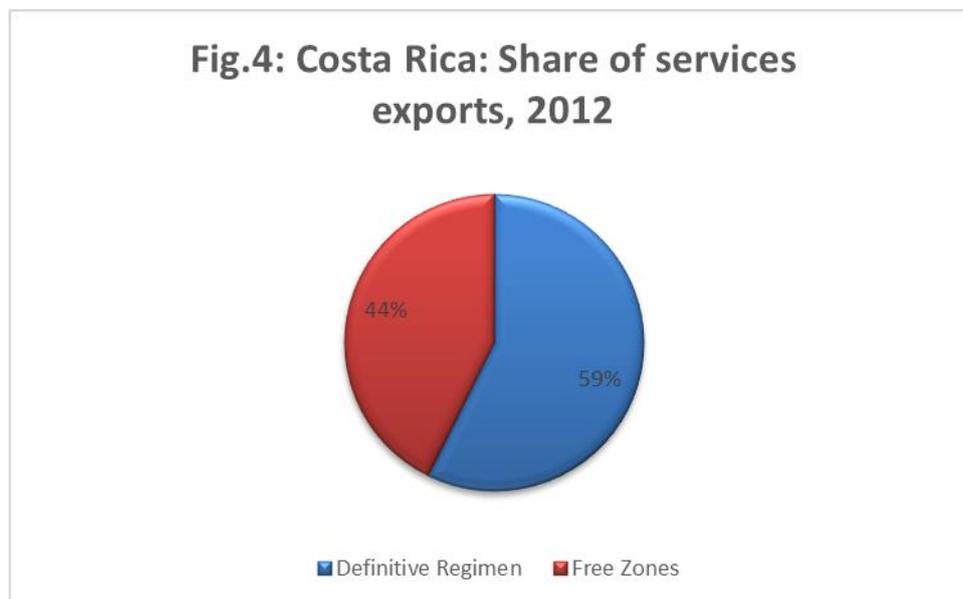
Around fifty economic activities are carried out in free zones. Companies in free zones are linked up to different stages within global value chains and because of it, the relation of each firm in terms of inputs with domestic economy is different. Medical supplies inputs are mainly imported and on last years, on the other hand, foreign controlled firms producing preserved foods (for immediate or not immediate consumption) have been allocated in Costa Rica and they have a strong relation with domestic economy in terms of agricultural inputs.

¹ Administrative records available to the country make it easier the implementation of the recommendation because companies report directly the rate charged by the prosecution, so breaking down industries between free zones and non-free zones do not require additional data collections.



2.2 Services matter

Services comprise over forty percent of all exports in Costa Rica and around sixty percent of GDP. Free zones services exports are concentrated in management consulting, telephone call center, share services, packaged software and manufacturing services. Excluding tourism related activities, they can explain around 65% of the total exportations of services.



3. Deriving an extended supply and use table

Costa Rica supply and use table follows the accounting standards recommended in the SNA 2008. The supply and use table involves the compilation of a set of integrated production and generation income accounts by drawing upon detailed data from surveys and census.

Furthermore, with a complete set of product balances, supply and use tables can be generated.

3.1 Production account and generation of income account

Production account shows the output of production and the various inputs to it. Generation of income account shows how much of value added is generated by labor in the form of compensation of employees, how much is payable to government in taxes less subsidies on products and how much goes to the contribution of capital.

Currently in Costa Rica, there are almost four hundred companies in free zones. These firms differ in many aspects from firms that mainly produce to domestic market in terms of employ skilled workers, wages, ownership and investment.

Production account and generation of income account for free zones and by industry are compiled using detailed data from a census ². Non free zones data is collected from a survey. Detailed data is obtained about wages, employment, sales (external and domestics), investment and inputs by product.

Each company is classified according to their main activity. The industry classification used for compiling production and generation account is based on the International Standard Industrial Classification of all Economic Activities, revision 4 (ISIC Rev. 4).

THE PRODUCTION AND GENERATION OF INCOME ACCOUNT

Transactions and balancing items	Total economy	Non-financial corporations			Financial corporations	General government	Households	NPISHs
		Public non-financial corporations	Private non-financial corporations					
			Free Trade Zone	Definitive regime				
OUTPUT								
Market output								
Output for own final use								
Non-market output								
INTERMEDIATE CONSUMPTION								
TOTAL GROSS VALUE ADDED/GDP								
Compensation of employees								
Taxes less subsidies on production and imports								
Mixed income, gross								
Operating surplus, gross								
Consumption of fixed capital -mixed								
Consumption of fixed capital - other								

² Financial information is submitted to the Costa Rican Export Promotion Agency by firms operating under the free-trade zone special regime. National Accounts has access to this information. Data from all firms are processed.

Detailed information, collected for tax purposes, reveal intercompany transactions so it is possible to identify free zones firms purchases in domestic market. These data and products balances allow estimate domestic and imported inputs.

3.2 Product Balances

The amount of product available for use within the economy must have been supplied either by domestic producers or by imports. The same amount of a product coming into the economy within an accounting period must be used for intermediate consumption, final consumption, capital formation (including change in inventories) or exports.

Output + imports = intermediate consumptions+ final consumption + capital formations + exports.

Product's uses are usually valued at purchaser's prices but production at basic prices its necessary to add trade, transport margins, taxes on products less subsidies on products.

There is a distinction in each product balance between free zones and definitive regimen, furthermore there is a distinction between imported and domestic component. The main source of import and export values for goods is the customs trade data, imports and exports are identified by firm. Imported and exported products are aggregated according to the Central Product Classification, rev 2.0 (CPC 2.0) and then aggregated by Costa Rican Standard Products in order to incorporate it in balance products. Free zones output data comes from financial reports, as well the use of the products (local sales or exports), except some isolated cases, local sales have a low share.

THE PRODUCT BALANCES

	TOTAL			IMPORTED COMPONENT			DOMESTIC COMPONENT		
	Definitive regime	Free Trade Zone	Total	Definitive regime	Free Trade Zone	Total	Definitive regime	Free Trade Zone	Total
SUPPLY	OUTPUT								
	Market output								
	Output for own final use								
	Non-market output								
	IMPORTS								
	TAXES ON PRODUCTS								
	SUBSIDIES ON PRODUCTS								
	TRADE AND TRANSPORT MARGINS								
	TOTAL OF THE SUPPLY								

	TOTAL			IMPORTED COMPONENT			DOMESTIC COMPONENT		
	Definitive regime	Free Trade Zone	Total	Definitive regime	Free Trade Zone	Total	Definitive regime	Free Trade Zone	Total
USES	INTERMEDIATE CONSUMPTION OF INDUSTRIES								
	FINAL CONSUMPTION EXPENDITURE								
	Households								
	NPISHS								
	General government								
	GROSS CAPITAL FORMATION								
	Gross fixed capital formation								
	Changes in inventories								
	Acquisition less disposals of valuables								
	EXPORT FOB								
	TOTAL OF THE USES								

3.3 Extended Supply and Use table

Supply and use table is a necessary first step in order to make input-output tables. Supply and use tables record how supplies of different kinds of goods and services originate from domestic industries and imports are allocated between intermediate or final uses, including exports so total supplies and uses of individual types of goods and services have to balance out.

Costa Rican supply and use table is compiled product by product at the level of 183 products and 136 economic activities. For 2012, the new reference year, there is a break down (free zones and definitive regimen) in fifty economic activities including services. Also, exports and imports by product will be released identifying free zones and definitive regimen separately.

There is a separate estimate of re-exports, any import recorded in the import trade statistics (column of the supply table) that are subsequently exported without any further transformations. Also non-resident expenditures in the domestic economy and resident's expenditure abroad are recorded.

THE SUPPLY AND USE TABLES (SUT)

SUPPLY TABLE	INDUSTRIES		OUTPUT BY INDUSTRIES						TOTAL ECONOMY	IMPORTS			CIF/FOB ADJUSTMENTS ON IMPORTS	TARIFFS ON PRODUCTS	SUBSIDIES ON PRODUCTS	TRADE AND TRANSPORT SERVICES
	Industry 1		Industry 2		Total		GOODS	SERVICES		TOTAL						
	Free Trade Zone	Definitive regime	Free Trade Zone	Definitive regime	Free Trade Zone	Definitive regime										
	PRODUCTS															
Product1																
Product2																
Product3																
Total																

USE TABLES	INDUSTRIES		INTERMEDIATE CONSUMPTION OF INDUSTRIES						TOTAL ECONOMY	EXPORTS			FINAL CONSUMPTION EXPENDITURE				GROSS CAPITAL FORMATION		
	Industry 1		Industry 2		Total		GOODS	SERVICES		TOTAL	HOUSEHOLDS	INDIVIDUALS	GENERAL GOVERNMENT	TOTAL	GROSS FIXED CAPITAL FORMATION	CHANGES IN INVENTORIES	ACQUISITION LESS DISPOSALS OF VALUABLES	TOTAL	
	Free Trade Zone	Definitive regime	Free Trade Zone	Definitive regime	Free Trade Zone	Definitive regime													
	PRODUCTS																		
Product1																			
Product2																			
Product3																			
Total																			

VALUE ADDED	TOTAL GROSS VALUE ADDED/GDP					
	Compensation of employees					
	Taxes less subsidies on production and imports					
	Mixed income, gross					
	Operating surplus, gross					
	Consumption of fixed capital - mixed					
	Consumption of fixed capital - other					
	LABOUR INPUTS					

3.4 Input Output table

Currently Costa Rica National Accounting office is working in an input output table breaking down by economic activities in free zones and definitive regimen. An additional split of the symmetric input output table in two tables: one containing only the use of domestically produced products and other containing the use of imported products. In each one of these symmetric matrices there will be made the breakdown between free zones and definitive regimen. The breakdown will be held both at the level columns and rows as well. An import matrix is prepared in order to give more consistency to the use of imported products.

This breakdown will be made for both intermediate consumption and the components of final demand (final consumption, capital formation and exports).The information for this breakdown is based on the used components from product balances. Also there will be a breakdown by employment.

4. Final considerations

The breakdown in free zones and definitive regimen make it easier to conciliate and detailed analysis of production and flows of goods and services by type of products. This allows a higher consistency within the national accounting central framework and improves the quality of the supply and use table. Furthermore, this breakdown could make it easier for some forecasts and economic analysis carried out through input output tables.

Preliminary data shows a share in value added of free zones is 7.3% and accounts for 13% of non-financial private sector value added. Free zones exports are focused in medical devices, preserved foods, manufacturing services produced by manufacturing companies and other services as management consulting. These activities in terms of value added are in the top seven market economic activities of the country. It is noticeable the importance of preserved foods across all free zones exports because it's strong link to agricultural industry.

Furthermore, 6% in employment is generated directly in free zones and salaries and gross value added per person employed are 63% and 200% higher than rest of the economy, respectively. Salaries paid in free zones accounts for 14% across all salaries paid by non-financial private sector.

Employment and value added in exporter's activities increases to 8% and 10%, respectively taking into account other economic activities mainly oriented to international markets such as producing agricultural products.

In the midterm is expected to develop a procedure that allows the record of property income payments to abroad and from abroad by economic activities in free zones.

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