

# An analysis of the Latin America Global Value Chain of Tourism

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This paper analyzes the value chain of Tourism in a set of countries in Latin America. The global value chain analysis identifies and evaluate economic impact across industries and countries. In Tourism, this requires understanding how service providers (lodging, transportation, hospitality, activities) and distribution intermediaries (tour operators, travel agents, online platforms) interact within and across the border of the countries. The analysis uses information of the National Account of Brazil, Argentina, Chile, Uruguay, Colombia, México, Peru, Ecuador and Paraguay, the trade between these countries captured by the multi country Input-Output matrix produced by the Economic Commission for Latin America and the Caribbean and a general structure of the Tourism Satellite Accounts to describe the global value chain in the sector. Given some of the restrictions of the data, some scenarios are built to show the main features of this Latin America value chain.

**Key words:** Global Value Chain; Latin America; National Account

## Introduction

A value chain describes the full range of activities that firms and workers do to bring a product/good or service from its conception to its final consumption. This includes activities such as design, production, marketing, distribution, and support to the final consumer. By extension, a Global Value Chain (GVC) arises when this set of activities is split across multiple countries. GVCs are characterized by narrow patterns of specialization at a country level, accompanied by frequent movements of intermediate goods and services across borders during production.

This paper analyzes the GVC of the Tourism sector for a set of countries in Latin America. The analysis is made using information about the patterns of expenditure made by the tourists within the countries and the multi country Input-Output matrix produced by the Economic Commission for Latin America and the Caribbean, ECLAC (2016).

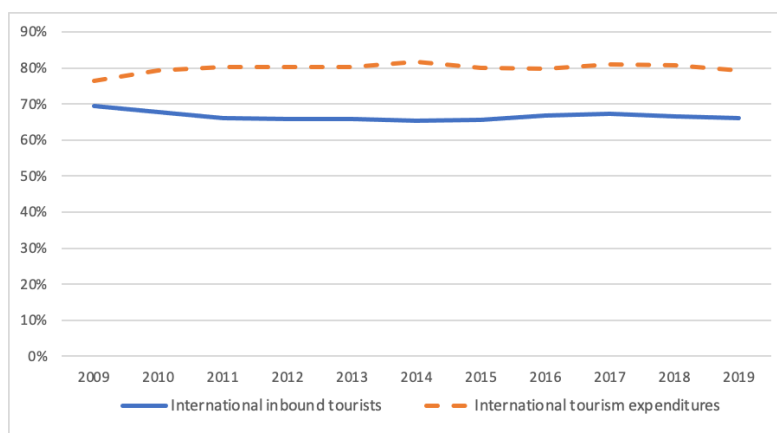
Tourism is a sophisticated activity integrating the provision of good and services. Behind the provision of the tourism experience there are processes that can be decomposed in microworks that can be provided as virtual offshoring. In this logic, countries do not need to have tourism attractions for participating in the value-added chain of tourism. The third unbundling of the globalization of Richard Baldwin (2016) refers to the process of fractionalization and globalization of services, which has its origin in the differences in salary that exist in the world for human capital and the ability that the technology of information and communication provides to fractionalize the production of business services. The virtual offshoring that telepresence and microwork make possible, open a new set of possibilities in the tourism sector. Indeed, a country with a great platform to provide call center support could be collecting the value added of the expenditure made by tourist in other side of the world.

The analysis of the value chain in tourism has a long tradition using different techniques. The work of (Freeman and Sultan 1997) analyzes in the framework of a multi-regional Input-Output the value-added from indirect and induced output and its spatial distribution in Israel. The authors estimate the magnitude of the impacts within the region, the related

impacts in other regions, and the feedback impacts due to the other regions' demand. The relevance of these results leads to a better characterization of the demand of tourism through the Tourism Satellite Accounts (TAS). As shown in the paper of (Rutter and Berwert 1999) the complementarity of the TAS with the national accounts have made possible to provide a better understanding of the demand and supply of the tourism value chain. A more descriptive analysis of the value chain has been extremely useful as well for the development of policies, like the paper by (Kai and Zusammenarbeit) 2020) where the authors build a map of the value chain of the tourism with the purpose of showing a practical approach for cooperation projects. As consequence of the construction of national accounts integrated between countries, during the last years there has been more analysis into the global value chain of Tourism as the work of (Yoko 2019) where the author identifies the contribution of tourism for the Japanese economy.

The main contribution of this paper is the first attempt to characterize the GVC of Tourism in Latin America. The countries included in the analysis are Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, México, Perú and Uruguay. Figure 1 makes a characterization of the participation of these set of countries in Latin America tourism. Since 2009 to 2019 these countries represented close to 65% and 80% of the international inbound tourists and international tourist expenditure respectively of the region.

*Figure 1: Ratio of International inbound and expenditure of the countries analyzed in this paper to all Latin American countries*



Note: own elaboration, World Tourism Organization, Yearbook of Tourism Statistics, Compendium of Tourism Statistics and data files

Ratio of Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, México, Perú and Uruguay to all Latin American Countries.

The main restriction for this type of analysis is the data availability at the country level for the pattern of expenditures of tourism. In this paper this restriction was solved using data from different sources. This is the main weakness of the paper, and an exhaustive analysis of this restriction is made in the discussion of the paper. The results presented, must be analyzed with the limitations that the use of multiple sources of data built with heterogenous criteria introduces in any empirical analysis. The model for computing the measures of GVC are obtained from the work made by (Aslam, Novta, and Rodriguez-Bastos 2017) and (Koopman, Wang, and Wei 2014).

The paper is organized in four sections. In the next section the model for computing the GVC is presented. In section three the data for the computation is presented and the main results are analyzed. Section four made a discussion of the caveats of the method and finally the conclusions are presented with the future work to be done.

## The Model

The international trade literature has developed methods for tracking trade within value chains with different amount of data requirements. Most of the methods requires an Input-Output table using standard international categories, along with bilateral trade data by sector in goods and services. This table captures the information about how the N sectors of G economies exchange goods and services to produce goods and services.

The starting point is the Input-Output information for all the economies. An IO table has three basic components: a matrix of intermediate goods demand, a matrix of final demand, and a matrix of value added or primary inputs. The concepts can easily be extended to a multi-country case with G countries having N sectors each one of them. For the sake of exposition, it will be represented in Table 1 the case of two economies ( $G=2$ ) and two sectors ( $N=2$ ).

In the intermediate use matrix, the  $z^{A,A}$  and  $z^{B,B}$  elements represent domestic use of domestically sourced intermediates, while the  $z^{A,B}$  and  $z^{B,A}$  off diagonal elements represent exports of intermediates.

Similarly, in the final demand matrix, diagonal elements,  $f^{A,A}$  and  $f^{B,B}$  represent domestic final use of domestic output, while off diagonal elements  $f^{B,A}$  and  $f^{A,B}$  represent exports of final goods and services.

Summing elements across a row or a column gives each country's gross output. For instance, the gross output of sector 1 of country A can be calculated by row as

$$x_1^A = z_{1,1}^{A,A} + z_{1,2}^{A,A} + z_{1,1}^{A,B} + z_{1,2}^{A,B} + f_1^{A,A} + f_1^{A,B} \quad (1)$$

Or by column as

$$x_1^A = z_{1,1}^{A,A} + z_{2,1}^{A,A} + z_{1,1}^{B,A} + z_{2,1}^{B,A} + v_1^A \quad (2)$$

Gross export is obtained by summing the relevant off diagonal elements from the intermediate use matrix and the final demand matrix. For instance, the gross export  $e_1^A$  of sector 1 of country A is

$$e_1^A = z_{1,1}^{A,B} + z_{1,2}^{A,B} + f_1^{A,B}$$

Table 1: Simple MRIO example of 2x2x2

		Intermediate Use				Final Demand		Gross Output
		Country A		Country B		Country A	Country B	
		Sector 1	Sector 2	Sector 1	Sector 2			
Country A	Sector 1	$z_{1,1}^{A,A}$	$z_{1,2}^{A,A}$	$z_{1,1}^{A,B}$	$z_{1,2}^{A,B}$	$f_1^{A,A}$	$f_1^{A,B}$	$x_1^A$
	Sector 2	$z_{2,1}^{A,A}$	$z_{2,2}^{A,A}$	$z_{2,1}^{A,B}$	$z_{2,2}^{A,B}$	$f_2^{A,A}$	$f_2^{A,B}$	$x_2^A$
Country B	Sector 1	$z_{1,1}^{B,A}$	$z_{1,2}^{B,A}$	$z_{1,1}^{B,B}$	$z_{1,2}^{B,B}$	$f_1^{B,A}$	$f_1^{B,B}$	$x_1^B$
	Sector 2	$z_{2,1}^{B,A}$	$z_{2,2}^{B,A}$	$z_{2,1}^{B,B}$	$z_{2,2}^{B,B}$	$f_2^{B,A}$	$f_2^{B,B}$	$x_2^B$
Value Added		$\omega_1^A$	$\omega_2^A$	$\omega_1^B$	$\omega_2^B$			
Gross Output		$x_1^A$	$x_2^A$	$x_1^B$	$x_2^B$			

Equation ( 1 ) can be expressed in matrix notation as

$$\mathbf{X} = \mathbf{Z}\mathbf{i} + \mathbf{F}\mathbf{i}$$

Where  $\mathbf{X}$  is a  $(G*N \times 1)$  vector of gross output matrix,  $\mathbf{Z}$  is a matrix of dimension  $(G*N \times G*N)$  with all the intermediate transactions between all the pair of sectors of all the countries and  $\mathbf{F}$  is a  $(G*N \times G)$  matrix of good and services used for final demand in all the countries and  $\mathbf{i}$  is a unitary vector of dimension  $(G*N \times 1)$  in  $\mathbf{Z}\mathbf{i}$  and dimension  $(G \times 1)$  in  $\mathbf{F}\mathbf{i}$ .

Considering that  $\mathbf{i} = \widehat{\mathbf{X}}^{-1}\mathbf{X}$ , the first term of the right hand can be represented as  $\mathbf{Z}\widehat{\mathbf{X}}^{-1}\mathbf{X}$  or  $\mathbf{A}\mathbf{X}$ , with  $\mathbf{A} = \mathbf{Z}\widehat{\mathbf{X}}^{-1}$  defined as the matrix of technical coefficients. Every element  $a_{ij}^{CD} = \frac{z_{ij}^{CD}}{x_i^C}$  of the matrix  $\mathbf{A}$  represents the direct requirement in sector  $i$  of the country  $C$  for the demand in the sector  $j$  of the country  $D$ .

Using matrix notation, the production system can be represented as

$$\mathbf{X} = \mathbf{A}\mathbf{X} + \mathbf{F}\mathbf{i}$$

From this equation it is possible to rearrange the matrixes so that

$$\mathbf{X} = (\mathbf{I} - \mathbf{A})^{-1}\mathbf{F}\mathbf{i}$$

$$\mathbf{X} = \mathbf{L}(\mathbf{F}\mathbf{i})$$

Where  $\mathbf{L} = (\mathbf{I} - \mathbf{A})^{-1}$  is the Leontieff inverse, where the element  $l_{i,j}^{C,D}$  is the total activity that generates in the sector  $i$  of the country  $C$ , an additional monetary unit of final demand in the sector  $j$  of the country  $D$ .

In order to analyze how the value-added flow through the sectors and country, the vector of share of value added is computed so that,

$$\mathbf{v} = \{v_1^1, v_2^1, \dots, v_N^1, v_1^2, \dots, v_N^2, \dots, v_1^G, \dots, v_N^G\}$$

where  $v_i^C = \frac{\omega_i^C}{x_i^C}$  is the proportion of value added that generates the expenditure in the sector  $i$  of the country  $C$ . Thus, the vector  $\mathbf{v}$  is of dimension  $(1 \times N \times G)$ . With this information the matrix of share of value added  $\mathbf{V}$  is a  $(N \times G \times N \times G)$  matrix defined as the diagonal of the vector  $\mathbf{v}$ ,

$$\mathbf{V} = \text{diag}(\mathbf{v})$$

Combining the information of the Leontief inverse with the matrix of share of value added the matrix  $\mathbf{T}_v$  is obtained as

$$\mathbf{T}_v = \mathbf{V}\mathbf{L}$$

$\mathbf{T}_v$  contains the value-added content of production in each country shipped to each other country. Formally each element of the matrix  $\mathbf{T}_v$  can be described as

$$t_{i,j}^{c,d} = v_i^c l_{i,j}^{c,d}$$

So that  $t_{i,j}^{c,d}$  represents the value added produced in sector  $i$  of country  $c$ ,  $v_i^c$ , as consequence of the production generated in sector  $i$  of country  $c$  to satisfy the expenditure made in sector  $j$  of country  $d$ ,  $l_{i,j}^{c,d}$ .

To make the concept more concrete, let  $j$  be the Hotel and Restaurants sector in country  $C$  and  $i$  the Manufacture sector in country  $D$ . The value  $t_{i,j}^{c,d}$  represents how much value added

(the sum of wage, profit and taxes) is generated in Manufacture of country C, when a tourist spends a unit of money in Hotel and Restaurants of the country D. When a tourist pays a room in Perú, the manager of the hotel in Perú might buy soaps for the rooms in a wholesaler of Peru that imports the soap from a producer in Brazil. The producer in Brazil requires inputs coming from different sectors from the Brazilian economy to produce the soap. The soap producer in the Brazilian manufacturing sector pay wages, make profit, and pay taxes as consequence of the unit of money spent in the hotel in Perú. The value added of this example is captured in the model by  $t_{i,j}^{c,d}$ , with  $c = Brazil$ ,  $d = Peru$ ,  $i = Manufacture$  and  $j = Hotel and Restaurants$ . In this sense,  $t_{i,j}^{c,d}$ , is the representation of the global value chain of Tourism used in this paper.

### Tourism Expenditure

Tourism expenditure refers to the expenditure made by a visitor for goods and services during a trip and stay at a destination place. The expenditure is represented in an extensive and intensive format. The intensive format is represented by a vector of expenditure  $e^C$  for each country C and the figures are in a monetary unit. The extensive format represents the share of the expenditure expressed as the vector  $g^C$  where the relationship between the two formats is given by

$$g_i^C = \frac{e_i^C}{\sum_{i=1}^N e_i^C}$$

Both vectors have a dimension  $(N \times 1)$  with  $\sum_{i=1}^N g_i^C = 1$ , and  $\sum_{i=1}^N e_i^C = E^C$ , where  $E^C$  represents the total expenditure in the country C.

Intensive properties are those that depend on the size or amount of the expenditure. These properties are additive, meaning that the total value of the property is proportional to the size or amount of the system. By expressing the expenditure in intensive format it is developed a good understanding of the effective impact in different sectors.



Extensive properties, on the other hand, describe in the more structural way how the expenditure affect the value-added chain. These properties are not additive and remain the same regardless of the total expenditure made in each country. The extensive analysis bring information about the sectors involved in the value-added chain.

By expressing the expenditure in both extensive and intensive formats, we can gain a more complete understanding of its total impact in the value-added chain. The extensive information helps to select what are the key sectors

With this information it is possible to build the vector of intensive and extensive expenditure for all the countries,

$$\mathbf{g} = \{\mathbf{g}^1, \mathbf{g}^2 \dots, \mathbf{g}^G\}$$

$$\mathbf{e} = \{\mathbf{e}^1, \mathbf{e}^2 \dots, \mathbf{e}^G\}$$

The dimension of both vectors is (1 x NG).

it is possible to compute the matrix of information about how the value added is distributed between countries. This is,

$$\mathbf{H} = \mathbf{T}_v \mathbf{G}$$

Where the matrix  $\mathbf{H}$  can be represented with more detail for one specific case of a three countries with two economic sectors each of them, has follows:

$$\mathbf{H} = \begin{bmatrix} t_{1,1}^{1,1} g_1^1 & t_{1,2}^{1,1} g_2^1 & t_{1,1}^{1,2} g_1^2 & t_{1,2}^{1,2} g_2^2 & t_{1,1}^{1,3} g_1^3 & t_{1,2}^{1,3} g_2^3 \\ t_{2,1}^{1,1} g_1^1 & t_{2,2}^{1,1} g_2^1 & t_{2,1}^{1,2} g_1^2 & t_{2,2}^{1,2} g_2^2 & t_{2,1}^{1,3} g_1^3 & t_{2,2}^{1,3} g_2^3 \\ t_{1,1}^{2,1} g_1^1 & t_{1,2}^{2,1} g_2^1 & t_{1,1}^{2,2} g_1^2 & t_{1,2}^{2,2} g_2^2 & t_{1,1}^{2,3} g_1^3 & t_{1,2}^{2,3} g_2^3 \\ t_{2,1}^{2,1} g_1^1 & t_{2,2}^{2,1} g_2^1 & t_{2,1}^{2,2} g_1^2 & t_{2,2}^{2,2} g_2^2 & t_{2,1}^{2,3} g_1^3 & t_{2,2}^{2,3} g_2^3 \\ t_{1,1}^{3,1} g_1^1 & t_{1,2}^{3,1} g_2^1 & t_{1,1}^{3,2} g_1^2 & t_{1,2}^{3,2} g_2^2 & t_{1,1}^{3,3} g_1^3 & t_{1,2}^{3,3} g_2^3 \\ t_{2,1}^{3,1} g_1^1 & t_{2,2}^{3,1} g_2^1 & t_{2,1}^{3,2} g_1^2 & t_{2,2}^{3,2} g_2^2 & t_{2,1}^{3,3} g_1^3 & t_{2,2}^{3,3} g_2^3 \end{bmatrix}$$

The third row of the matrix  $H$  has information about the value added generated in the sector 1 of country 2 as consequence of the tourism expenditure made in each one of the two sectors of the three countries of the example.

The third and fourth rows of the matrix  $H$  represent all the value added generated in country 2 by the tourism in all the other countries.

The Domestic Value Added (DVA) in tourism for the country 2 is computed as,

$$DVA^2 = t_{1,1}^{2,2}g_1^2 + t_{1,2}^{2,2}g_2^2 + t_{2,1}^{2,2}g_1^2 + t_{2,2}^{2,2}g_2^2$$

Considering summing all the other element in the third and fourth rows of the matrix which are not included in the  $DVA^2$  is domestic value added that is used in the production of other countries' tourism (forward linkages, or  $DVX$ ).

Looking at the information of matrix  $H$  by column it is possible to distinguish the foreign value added in the local tourism expenditure, FVA or backward linkages/participation. Taking the example for the first country, the first two columns are necessary to obtain the measures. On the one hand there is the  $DVA^1$  of country 1,

$$DVA^1 = t_{1,1}^{1,1}g_1^1 + t_{1,2}^{1,1}g_2^1 + t_{2,1}^{1,1}g_1^1 + t_{2,2}^{1,1}g_2^1$$

And the sum of all the other elements within the first two columns is the FVA of country 1.

To keep the exposition clear, the information is presented at the country level, but it can equally well be repeated at the country-sector level.

## Data and Results

There are two main sources of information for the analysis in the paper. On the one hand, the information about the MRIO for Latin-America and on the other hand the information about the expenditure in tourism for each one of the countries.

### MRIO for Latinoamerica

The Latinoamerican Input-Output matrix is obtained from the work made by ECLAC (CEPAL 2016) and the Global Input-Output Tables for 2011 that were released including 38 economic sectors, based on the collaboration between the Economic and Social Commission for Asia and the Pacific (ESCAP) and the Asian Development Bank (ADB). The files made public include a correlation table between the initiatives developed by the World Input-Output Database (WIOD), ECLAC and the ADB<sup>1</sup>.

### Information on the Tourism Expenditure

The information of tourism expenditure was obtained from the Tourism Satellite Account of tourism of every country. It was not possible to obtain the information from all the Latin America countries, therefore only the data for Colombia, Mexico, Perú, Chile, Bolivia y Uruguay was obtained. In the appendix there is the explanation of how the TSA of every country was modified to be compatible with the Latin America Input-Output Table.

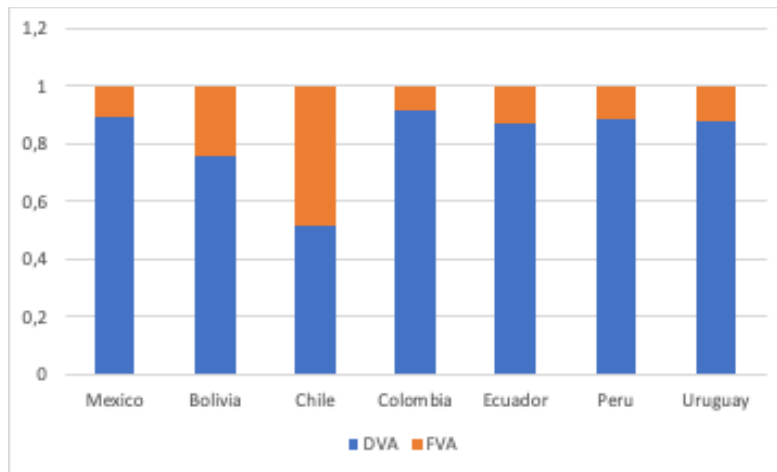
### Results

The Domestic and the Foreign Value Added generated by tourism in all the countries with data is represented in Figure 2. There are two countries with a different pattern of distribution between the DVA and FVA. Chile has a considerable difference compared to other countries of the region. Part of the value added generated in Chile comes from the tourism in other countries.

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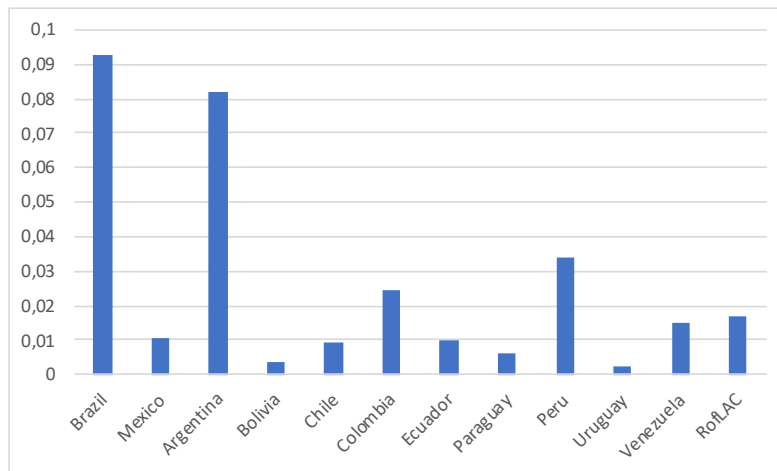
<sup>1</sup> More information can be obtained from <https://www.cepal.org/en/events/global-input-output-tables-tools-analysis-integration-latin-america-world>

Figure 2: DVA and FVA



In Figure 3 there is the Forward Linkage of Tourism. In this case the two biggest country of South America collect the forward linkages of the structure of expenditure in tourism.

Figure 3: Forward Linkages of Tourism (DVX)



## Conclusions

This paper had the purpose of analyzing the Latin America values chains of the expenditure in Tourism. To accomplish that, a model of multi-national account was presented and integrated with the Tourism Satellite Account of a set of countries in the region.

The results shows that there is heterogeneity about the sectorial structure on the tourism expenditure in LA. On the one hand Chile shows that it has an almost equally distributed value added between the domestic and the foreign sources. On the other hand, the two biggest country of the South America region collect a big proportion of value added as consequence of the expenditure in tourism in the region.

This scenario open two broad strategies for the countries. On the one hand, for the countries having great tourist attraction is not an invitation to the substitution of imports within the activities of the tourism sector, but to the construction of high-quality value-added chain, so that the value chain generates an great demand for tourism in the country. On the other hand, the challenge of every country to be part of the global value chain of tourism of other countries.

The results are strongly conditioned by the quality of the data. There are few countries in the region with available Tourism Satellite Account, and this is probable the hardest restriction of this project.

## References

- Aslam, Aqib, Natalija Novta, and Fabiano Rodriguez-Bastos. 2017. *Calculating Trade in Value Added*.
- Baldwin, Richard (2016) *The great convergence. Information Technology and the New Globalization*. The Belknap Press of Harvard University Press.
- ECLAC. 2016. *The South American Input-Output Table: Key Assumptions and Methodological Considerations*.
- Freeman, Daniel, and Esther Sultan. 1997. "The Economic Impact of Tourism in Israel: A Multi-Regional Input—Output Analysis." *Tourism Economics* 3(4): 341–59. <https://doi.org/10.1177/135481669700300404>.
- Kai, Partale (Deutsche Gesellschaft für, and Internationale Zusammenarbeit). 2020. *The Tourism Value Chain*. [https://www.switch-asia.eu/site/assets/files/2460/giz\\_tourism\\_value\\_chains\\_en.pdf](https://www.switch-asia.eu/site/assets/files/2460/giz_tourism_value_chains_en.pdf).
- Koopman, By Robert, Zhi Wang, and Shang-jin Wei. 2014. "American Economic Association Tracing Value-Added and Double Counting in Gross Exports." *American Economic Review* 104(2): 459–94.
- Rutter, H., and A. Berwert. 1999. "A Regional Approach for Tourism Satellite Accounts and Links to the National Account." *Tourism Economics* 5(4): 353–81.
- Yoko, Konishi. 2019. "Global Value Chain in Services: The Case of Tourism in Japan." *Journal of Southeast Asian Economies*: 183–203. [https://www-jstor-org.recursosbiblioteca.unab.cl/stable/26798832?searchText=%22value+chain%22+tourism&searchUri=%2Faction%2FdoBasicSearch%3FQuery%3D%2522value%2Bchain%2522%2Btourism%26so%3Drel&ab\\_segments=0%2Fbasic\\_phrase\\_search%2Fcontrol&refreqid=fastly-default%3A100e6ffb1d26910702509e8e4c17f12e&seq=1](https://www-jstor-org.recursosbiblioteca.unab.cl/stable/26798832?searchText=%22value+chain%22+tourism&searchUri=%2Faction%2FdoBasicSearch%3FQuery%3D%2522value%2Bchain%2522%2Btourism%26so%3Drel&ab_segments=0%2Fbasic_phrase_search%2Fcontrol&refreqid=fastly-default%3A100e6ffb1d26910702509e8e4c17f12e&seq=1) (May 15, 2022).

## Appendix

In this appendix the equivalences between the economics sectors of the LAC input-output tables and the Tourism Satellite Accounts for each country is explained for each country.

### Colombia

The data pertaining to the 2015 Tourism Satellite Accounts in Colombia is sourced from the National Administrative Department of Statistics (DANE), and is presented in Table 2.

Table 2: Equivalences for Colombia in MM of dollars

Sector in the National TSA	Inbound Tourism	Domestic Tourism	Sector in LAC
Accommodation services for visitors	2,220	1,433	Hotel and restaurants
Food and beverage provision services	3,267	2,694	Retail Trade
Rail passenger transport services			Inland transport
Road passenger transport services	1,371	1,338	Inland transport
Water passenger transport services			Water transport
Passenger air transport services	2,437	1,231	Air Transport
Transport equipment rental services		24	Other supporting and auxiliary transport activities
Travel agencies and other reservation services	99	98	Other supporting and auxiliary transport activities
Sports and recreational cultural services	495	424	Other community, social and personal services
Consumption goods	1,593	1,180	Retail Trade
Other Services	454	1,471	Other community, social and personal services

The expenditure was converted into U.S. dollars using the PPP conversion factor of 1,276.41 (COP\$/USD\$) according to the World Bank data

## Mexico

The correspondence between the Tourism Satellite Accounts for Mexico in 2015 is given in Table 3. The TSA for México is computed by the Instituto Nacional de Estadística, Geografía e Informática INEGI at (<https://www.inegi.org.mx/temas/turismosat/#Tabulados>)

Table 3: Mexico Correspondence in MM of dollars

Sector in the National TSA	Inbound Tourism	Domestic Tourism	Sector in LAC
Tents, beachwear and others		810	Retail Trade
Suitcases and others		209	Retail Trade
Maps, guides and tourist magazines		208	Other Supporting and auxiliary transport activities
Passenger air transport services	4,282	13,175	Air Transport
Rail passenger transport services		436	Inland Transport
Water passenger transport services		289	Water Transport
Road passenger transport services	2,903	48,389	Inland Transport
Transportation related services	8	2,248	Other Supporting and auxiliary transport activities

Transport equipment rental services		1,025	Other Supporting and auxiliary transport activities
Travel agencies and other reservation services	79	2,680	Other Supporting and auxiliary transport activities
Supporting services		336	Other Supporting and auxiliary transport activities
Accommodation services for visitors	11,349	55,405	Hotels and restaurants
Handicrafts	3,256	16,852	Retail Trade
Food and drinks	8,939	24,555	Retail Trade
Clothes and shoes	721	3,388	Retail Trade
Books, newspapers and magazines	280	335	Retail Trade
Pharmaceutical and personal hygiene products	1,834	2,904	Retail Trade
Photographic film and apparatus		7	Retail Trade
Others	2,593	33,377	Retail Trade
Local Transport	205	4,113	Inland, Water and Air Transport (33% each)
Information Services		1,582	Post and Telecommunications
Financial Services		261	Financial Intermediation
Real estate and rental services		2,273	Real estate activities
Professional services	4	320	Other community, social and personal services
Health Services	77	4,605	Health and social work
Cultural Services	1,514	614	Other community, social and personal services
Sports and recreational services	2,996	1,992	Other community, social and personal services
Restaurants, bars and nightclubs	1,659	20,726	Hotels and Restaurants
Other services	43	13,204	Other community, social and personal services

The original data is for year 2015 but expressed in 2013 Mexican pesos. The data was corrected with Consumer price inflation to 2015, using the information from the World Bank data.

The expenditure was converted into U.S. dollars using the PPP conversion factor of 8.33 (MXN\$/USD\$) according to the World Bank data.

## Perú

In Peru, the Tourism Satellite Accounts (STA) for the year 2015 are generated by the Ministry of Trade and Tourism. The corresponding details can be found in Table 4. Data acquisition stems from



([https://cdn.www.gob.pe/uploads/document/file/553092/Perú\\_Cuenta\\_Satélite\\_de\\_Turismo\\_\\_evaluacion\\_2015.pdf](https://cdn.www.gob.pe/uploads/document/file/553092/Perú_Cuenta_Satélite_de_Turismo__evaluacion_2015.pdf))

Table 4: Peru Correspondence in MM of dollars

Sector in the National TSA	Inbound Tourism	Domestic Tourism	Sector in LAC
Hosting Service	1,678	1,231	Hotels and Restaurants
Food and beverage provision service	1,280	4,102	Retail Trade
Passenger transport service	2,644	5,615	Inland and Air Transport (50%)
travel agency service	586	165	Other Supporting and auxiliary transport activities
Cultural and entertainment services	653	1,240	Other community, social and personal services
Craft Products	475	491	Retail Trade
Others	390	2,176	Other community, social and personal services

The expenditure was converted into U.S. dollars using the PPP conversion factor of 1.71 (SOL/USD\$) according to the World Bank data.

## Uruguay

For the year under study, no Satellite Account is accessible for Uruguay. To calculate tourism expenditures in Uruguay, data on domestic tourism was sourced from the official website of the Ministry of Tourism [<https://www.gub.uy/ministerio-turismo/politicas-y-gestion/anuarios-estadisticos>]. Similarly, information pertaining to inbound tourism was retrieved from [<https://www.gub.uy/ministerio-turismo/datos-y-estadisticas/estadisticas/turismo-receptivo-2016>]. Correspondences are detailed in Table 5.

Table 5: Uruguay Correspondences in MM of dollars

Sector in the statistics yearbook 2015	Inbound Tourism	Domestic Interno	Sector in LAC
Food	567	421	Hotels and Restaurants
Accommodation	714	266	Hotels and Restaurants
Shopping	240	84	Retail trade, except of motor vehicles

Leisure (Tours and Culture and recreational)	148	63	Other supporting and auxiliary transport activities
Transport	186	307	Inland Transport (60-20-20) and (90-10)
Others	423	5	Other supporting and auxiliary transport activities

The original data for Uruguay is denominated in U.S. dollars. For the purpose of enabling international comparison using Purchasing Power Parity (PPP), these figures were initially reverted to Uruguayan pesos using the 2015 official exchange rate of 27.33 Local Currency Units (LCU) per U.S. dollar. Subsequently, these sums were reconverted into U.S. dollars utilizing the World Bank's PPP conversion factor of 21.1 (Uruguayan pesos per U.S. dollar).

### Bolivia

The information was obtained from the Tourism Satellite Account computed for the Country Members of the Andean Community ([https://www.comunidadandina.org/StaticFiles/2012517165025cuentas\\_satelites.pdf](https://www.comunidadandina.org/StaticFiles/2012517165025cuentas_satelites.pdf)).

The data for Bolivia is from 2007.

The figures were updated in two steps. First the growth in the expenditure in tourism reported from 2007 to 2015 according to the National Institute of Statistics was used to represent the expenditure in Local currency units. In the second steps the value was converted into U.S dollars. The results and correspondence is presented in

*Table 6: Bolivia Correspondences in MM of dollars*

Sector	Inbound Tourism	Domestic Interno	Sector in LAC
1.a Accommodation services for visitors	89	463	Hotels and Restaurants
1.b Lodging services associated with all types of vacation home ownership		2	Hotels and Restaurants
2 Food and beverage provision services	118	684	Hotels and Restaurants
3 Rail passenger transport services		45	Inland Transport
4 Road passenger transport services	514	884	Inland Transport
5 Water passenger transport services	26	19	Water Transport
6 Passenger air transport services	374	26	Air Transport
7 Transport equipment rental services	5	23	Other supporting and auxiliary transport activities

8 Travel agencies and other reservation services	90	54	Other supporting and auxiliary transport activities
9 Cultural services	1	85	Other community, social and personal services
10 Sports and recreational services	2	67	Other community, social and personal services
11 Goods characteristic of tourism, specific to each country	205	7	Retail trade, except of motor vehicles
12 Services characteristic of tourism, specific to each country	9	39	Retail trade, except of motor vehicles
Other consumption goods	36	10	Retail trade, except of motor vehicles

The numerical data was transposed into U.S. dollars by applying the Purchasing Power Parity (PPP) conversion factor of 2.35 (Bs\$/USD) for the year 2007.

## Ecuador

The base information was obtained from the Tourism Satellite Account for the Country Members of the Andean Community ([https://www.comunidadandina.org/StaticFiles/2012517165025cuentas\\_satelites.pdf](https://www.comunidadandina.org/StaticFiles/2012517165025cuentas_satelites.pdf)).

*Table 7: Ecuador Correspondences in MM of dollars*

	Inbound Tourism	Domestic Interno	Sector in LAC
1.a Accommodation services for visitors that are not contemplated in 1.b	170	278	Hotels and Restaurants
1.b Lodging services associated with all types of vacation home ownership	0	130	Hotels and Restaurants
2 Food and beverage provision services	294	859	Hotels and Restaurants
3 Rail passenger transport services	0	1	Inland Transport
4 Road passenger transport services	163	744	Inland Transport
5 Water passenger transport services	0	13	Water Transport
6 Passenger air transport services	120	777	Air Transport
7 Transport equipment rental services	0	7	Other supporting and auxiliary transport activities
8 Travel agencies and other reservation services	129	357	Other supporting and auxiliary transport activities
9 Cultural services	1	77	Other community, social and personal services
10 Sports and recreational services	10	160	Other community, social and personal services

11 Goods characteristic of tourism, specific to each country	0	0	Retail trade, except of motor vehicles
12 Services characteristic of tourism, specific to each country	207	0	Retail trade, except of motor vehicles
<b>A.2. Other consumption goods</b>			Retail trade, except of motor vehicles

The figures were converted into U.S. dollars using the PPP conversion factor of 0.43 (Ecuador Dollar/USD\$) in year 2007 and the total figures were updated using the comprehensive values available in the 2015 Tourism Satellite Accounts, produced by the Ministry of Tourism of Ecuador. This data can be accessed at <https://servicios.turismo.gob.ec/visualizador>.

## Chile

For Chile there is a Tourism Satellite Account built in 2005. It was assumed that the Inbound and Domestic expenditure in tourism growth in the period 2005 to 2015 according to the number of foreign visitors and the number of pernoctation made by internal tourists respectively. The information was obtained from the National Service of Tourism (SERNATUR). The results is represented in Table 8.

*Table 8: Chile correspondences in US dollars*

	Inbound Tourism	Domestic Interno	Sector in LAC
Accommodation Services	1015	1181	Hotels and Restaurants
Food Services	400	2895	Hotels and Restaurants
Railway Transport	2	25	Inland Transport
Other land passenger transport	1	16	Other supporting and auxiliary transport activities
Marine transport	12	60	Water Transport
Air Transport	685	2800	Air Transport
Ground transportation support activities	164	2753	Inland Transport
Cultural Services	6	43	Other community, social and personal services
Sports and Recreational Services	20	34	Other community, social and personal services
Goods characteristics of Tourism	729	2879	Retail trade, except of motor vehicles
Services characteristics of tourism	25	206	Other community, social and personal services

Other consumption goods	94	663	Retail trade, except of motor vehicles
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The figures were converted into U.S. dollars using the PPP conversion factor of 391,18 (CLP Pesos /USD\$) in year 2007

## Argentina

The Ministry of Tourism produces the Satellite Account (<https://www.yvera.tur.ar/sinta/informe/info/cuenta-satelite-de-turismo>). The figures are expressed in millions of Argentine pesos from 2018.

Sectors in the Satellite Account	Inbound Tourism	Domestic Interno	
1.a Accommodation services for visitors that are not contemplated in 1.b	2,817	2,187	Hotels and Restaurants
1.b Lodging services associated with all types of vacation home ownership	166	653	Hotels and Restaurants
2 Food and beverage provision services	2,757	2,457	Hotels and Restaurants
3 Rail passenger transport services	0	0	Inland Transport
4 Road passenger transport services	911	1,147	Inland Transport
5 Water passenger transport services	0	0	Water Transport
6 Passenger air transport services	1,102	10,013	Air Transport
8 Travel agencies and other reservation services	238	2,435	Other supporting and auxiliary transport activities
A.2. Other non-characteristic products	2,062	4,873	Retail trade, except of motor vehicles
<b>A.2. Other consumption goods</b>	278	1,147	Retail trade, except of motor vehicles
<b>Notes:</b> The figures were converted into U.S. dollars using the PPP conversion factor of 14.23 (Argentinian Pesos /USD\$) in year 2018, and deflated with USA inflation.			

## Brasil