

The Internal Geography of Services Value-Added in Exports: A Latin American Perspective

—

Eduardo A. Haddad
Inácio F. Araújo

About Policy Center for the New South

The Policy Center for the New South (PCNS) is a Moroccan think tank aiming to contribute to the improvement of economic and social public policies that challenge Morocco and the rest of the Africa as integral parts of the global South.

The PCNS pleads for an open, accountable and enterprising «new South» that defines its own narratives and mental maps around the Mediterranean and South Atlantic basins, as part of a forward-looking relationship with the rest of the world. Through its analytical endeavours, the think tank aims to support the development of public policies in Africa and to give the floor to experts from the South. This stance is focused on dialogue and partnership, and aims to cultivate African expertise and excellence needed for the accurate analysis of African and global challenges and the suggestion of appropriate solutions.

As such, the PCNS brings together researchers, publishes their work and capitalizes on a network of renowned partners, representative of different regions of the world. The PCNS hosts a series of gatherings of different formats and scales throughout the year, the most important being the annual international conferences «The Atlantic Dialogues» and «African Peace and Security Annual Conference» (APSACO).

Finally, the think tank is developing a community of young leaders through the Atlantic Dialogues Emerging Leaders program (ADEL) a space for cooperation and networking between a new generation of decision-makers and entrepreneurs from the government, business and social sectors. Through this initiative, which already counts more than 300 members, the Policy Center for the New South contributes to intergenerational dialogue and the emergence of tomorrow's leaders.

Policy Center for the New South

Suncity Complex, Building C, Av. Addolb, Albortokal Street, Hay Riad, Rabat, Morocco.

Email : contact@policycenter.ma

Phone : +212 5 37 54 04 04 / Fax : +212 5 37 71 31 54

Website : www.policycenter.ma

©2020 Policy Center for the New South. All rights reserved

The views expressed in this publication are those of the authors and do not reflect those of their institutions.



THINK • STIMULATE • BRIDGE

The Internal Geography of Services Value-Added in Exports: A Latin American Perspective

Eduardo A. Haddad
Inácio F. Araújo

About the Authors

Eduardo A. Haddad

Professor Haddad received his B.A. in Economics from the Federal University of Minas Gerais, Brazil, in 1993 and his Ph.D. in Economics from the University of Illinois at Urbana-Champaign in 1997. In 1998 he held a post-doctoral position at the University of Oxford. He has served as the president of the Brazilian Regional Science Association (2008-2010), and as the first president of the Regional Science Association of the Americas (2008-2010). He was the Director of Research of the Institute of Economic Research Foundation – FIPE – from 2005 to 2013. He has spent the period January 2014 to June 2015 on sabbatical as a visitor at the Department of Economics (International Economics Section) at Princeton University, and at the Edward J. Bloustein School of Public Policy and Planning at Rutgers University. Professor Haddad has published widely in professional journals on regional and interregional input-output analysis, computable general equilibrium modeling, and various aspects of regional economic development in developing countries; he has also contributed with chapters in international books in the fields of regional science and economic development. His research focuses on large-scale modeling of multi-regional economic systems, with special interest in modeling integration applied to transportation, climate change and spatial interaction.

Inácio F. Araújo

Inácio Fernandes Araújo is a post-doctoral fellow at the Department of Economics and at the Regional and Urban Economics Lab (NEREUS) at the University of Sao Paulo, Brazil. He also holds a position as Assistant Editor of the journal *Brazilian Review of Regional and Urban Studies*, the official publication of the Brazilian Regional Science Association. His major research interests lie in the field of regional analysis. He has experience in the implementation and application of economic models, especially input-output and computable general equilibrium models.

Abstract

We estimate the contents of services value-added incorporated in goods exports in different countries in Latin America, exploring the local dimension of the results. We use inter-regional input-output analysis to trace and map domestic value-added embedded in those countries' exports. We add to the discussion of global value chains the internal, within-country geography of trade in value-added, since the set of locational preferences that help understanding the spatial patterns of natural resource-intensive activities differ dramatically from that for services. The decoupling of the patterns of value-added in non-services and services activities reveals a potential new form of “geography of discontents” in the region.

The Internal Geography of Services Value-Added in Exports: A Latin American Perspective¹

1. Introduction

Services are becoming more and more important all over the world, with their share in global GDP reaching 65% in 2018, according to World Bank data. In Latin America and the Caribbean, services accounted for 60.3% of the region's GDP (e.g. Brazil: 62.6%; Chile: 57.9%; Colombia: 57.8%; and Mexico: 60.2%). Moreover, services also present a large and increasing share of value-added in global and regional value chains, with an overall contribution to the value of global manufacturing exports above 60% (Miroudot and Cadestin, 2017).

The rise of global value chains (GVC) has led to production stages for individual goods being scattered across countries. For measuring GVC linkages, there has been progress in data and methods, especially through input-output analysis (Johnson and Noguera, 2012a; Koopman et al, 2014; Los et al, 2016). This has allowed the tracing of value-added content of trade flows in vertically linked stages of the production process and the development of a coherent empirical portrait of GVCs (Johnson, 2018). A fact about trade in value-added is that services trade is relatively larger when measured in value-added terms (Johnson, 2014). In addition, the ratio of value-added to gross exports between 1970 and 2009 fell in manufacturing, but rose in nonmanufacturing sectors worldwide (Johnson and Noguera, 2017).

The World Trade Organization has made available a trade in services dataset by sector and mode of supply (TISMOS)². WTO's General Agreement on Trade in Services (GATS) defines four modes of supply, indicating how and where services are supplied and defining the applicable trade rules. Understanding such definitions is important for ongoing and future negotiations, monitoring and implementation of existing trade agreements, and ex-post evaluation, since they are used in almost all bilateral and regional trade agreements. The four modes of supply, which according to TISMOS globally reached almost \$13.5 trillion in 2017, include:

- i. Cross border supply (mode 1), i.e. services supplied from the territory of one country into the territory of any another country, which accounted for 30% of global supply of services in 2017;
- ii. Consumption abroad (mode 2), i.e. services supplied in the territory of one country to the service consumer of any other country, accounting for around 10% of global supply of services in 2017;
- iii. Commercial presence (mode 3), i.e. services supplied by any type of business or professional establishment of a country, through commercial presence in the territory of any another country, almost 60% of the total supply; and
- iv. Presence of natural persons (mode 4), i.e. services supplied by individuals of a country through temporary presence in the territory of another country, around 3% in 2017.

However, there is substantial value-added of services incorporated in goods exports, from intermediate

1. The first version of this paper was prepared for the seminar 'The New International Scenario and Brazil's Foreign Policy', jointly hosted by the Policy Center for the New South and its Brazilian partner CINDES, in Rio de Janeiro, on Wednesday October 30th, 2019.
2. https://www.wto.org/english/res_e/statis_e/daily_update_e/Tismos_methodology.pdf.

services and from services bundled with goods, which is not captured in these modes of supply. In the context of increasing international fragmentation of production chains and the emergence of GVC, gross export statistics may be inaccurate measures of a country's participation in international trade. Looking directly at gross exports of goods and services may affect how a country chooses priority partners in trade agreement negotiations, and may bias the impact analysis of international demand shocks, for instance. A more appropriate measurement should consider the value added by each country in the production of goods and services that are consumed worldwide. Moreover, if one were interested in sectoral-specific trade policies, it would be important to map the contribution of value-added to trade flows by sector or group of sectors (e.g. services) in different countries. Thus, a fifth mode of supply, mode 5, was defined to account for services that are incorporated into goods, which are then traded across international borders.

We focus mainly on mode 5 in selected countries in Latin America (LA; Brazil, Chile, Colombia, and Mexico), a region that shows a historical dependence on natural resource-intensive exports (Ocampo, 2017). The main objective is to trace and map domestic value-added embedded in these countries' exports, exploring the regional (sub-national) dimension of the results. We put our results into the context of the collapse of the boom or 'super-cycle' of commodity prices that has generated major macroeconomic challenges in recent years in the region. Moreover, we add to the discussion the internal, within-country geography of trade in value-added, since the set of locational preferences that help understand the spatial patterns of natural resource-intensive activities differ dramatically from that for services. The decoupling of the patterns of value-added in non-services and services activities may potentially generate a new form of "geography of discontents" (Rodríguez-Pose, 2018), as we will see in the case of our set of LA countries.

Value chains have become increasingly internationally fragmented (Los et al, 2015), and geographical proximity influences the extent to which countries take part in regional or global value chains (Johnson and Noguera, 2012b; Lejour, 2017; Antràs and Gortari, 2019). However, value chains have a domestic dimension, which has received less attention in the literature (Meng et al, 2017). GVCs have implications for trade policy (Gereffi, 2018). Improving empirical approaches to the measurement of value chains is important for advancing the understanding of how the modern global economy works and for addressing different policy questions (Johnson, 2018). Therefore, our approach, involving measuring the services' value-added in domestic (local) production chains, becomes important in this context.

Our focus on services reflects the understanding of the key role of services' value-added in development, given their direct and indirect contributions to production, trade, and employment, providing the linkages between services and goods competitiveness. Data on services value-added incorporated in both services and non-services sectors is necessary to better understand how and where the services sectors contribute more to competitiveness. This will inform policymakers about the services, trade, and regional policies that are required to harvest the potential of services' value-added. Best-fit regulatory and institutional frameworks are necessary to address local supply-side constraints, externalities, and coordination issues in services. Linkages to interregional and international markets—by allowing access to services' inputs, production factors, and market incentives that strengthen domestic services—can enhance the role of services in contributing to the whole economy³.

3. "Concept Note", International Meeting on Services Value-added in Exports Services and Trade Policies for Diversification and Upgrading, Brasília, 22-23 October 2019, p. 3.

2. Location of Services Activities

While location of agricultural and mining activities is heavily influenced by the location of natural resources, this factor does not take us far in accounting for most location decisions (Hoover, 1948). As far as the manufacturing sector is concerned, numerous theories have been developed about the location of firms. The place where enterprises are located often depends on specific factors including the availability of basic resources or their accessibility in any place or region, transport costs, the labor supply, and the agglomeration economies (Cuadrado-Roura, 2013).

In the case of producer services, activities are usually highly concentrated, but not in a simple hierarchical pattern, suggesting the importance of both specialized labor pools and urban externalities (Coffey and Polése, 1987). Whether this is true for other types of services, making generalizations about the main factors that can have an influence on the location of services would not be advocated.

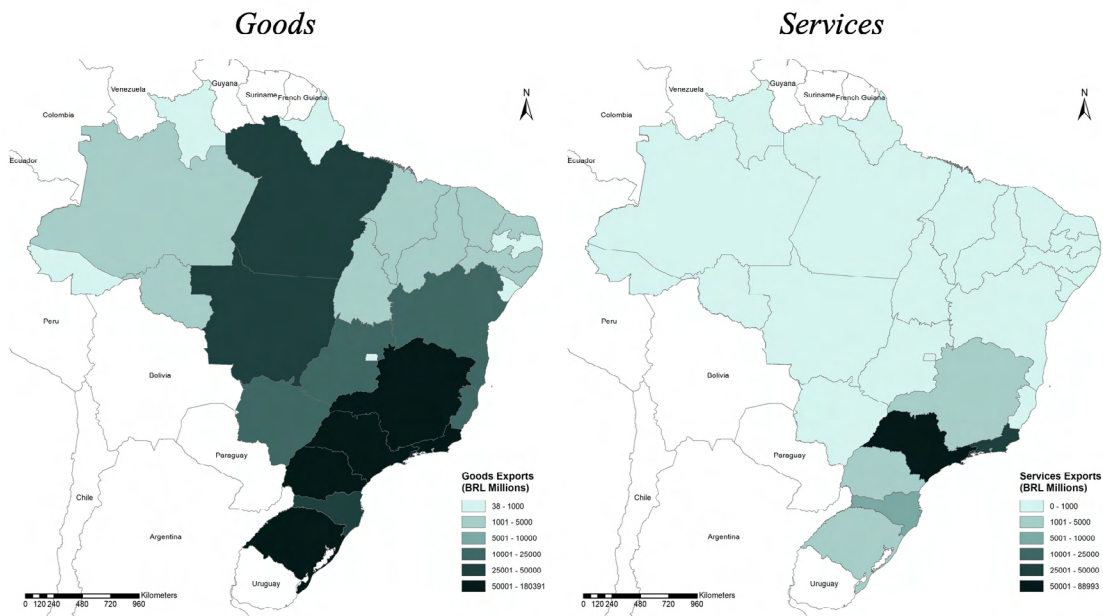
Nonetheless, recent developments have had major effects on the production and supply of services: (i) the development of ICTs, which are promoting the emergence of new services and enabling new forms of provision of existing services; (ii) the greater accessibility of transport for people has extended substantially the possible areas for rendering a great amount of services; (iii) the significance of services internationalization cannot be disregarded as this has promoted not only the growth in trade in services, but also international off-shoring and outsourcing processes, which are gaining more and more importance from the viewpoints of production and demand (Cuadrado-Roura, 2013).

Empirical evidence shows that, compared to non-services activities, the location pattern of services tend to be more concentrated. The interurban location of high-order service activities (i.e. producer services and finance, insurance, and real estate services) was one of the principal issues investigated by service industries researchers during the 1980s. In virtually all developed nations, the spatial concentration of high-order services in a relatively small number of large metropolitan areas is a well-documented fact (Coffey et al, 1996). Location studies for Latin American countries have also found patterns of concentration in primal urban agglomerations (Domingues et al, 2006; Cardoso, 2014; Aroca et al, 2018).

It is easy to relate local patterns of sectoral output of grains, iron-ore, and oil in Brazil, coffee, coal, and oil in Colombia, fruit, wine, and copper in Chile, and agriculture and oil in Mexico, to the spatial distribution of natural resources in those countries. Given their importance in the respective countries' exports, the geographical occurrence of such activities is also reflected in the maps of gross exports (Figure 1). Figure 1 also shows other geographical patterns of exports, such as the location of maquiladoras on the U.S.-Mexico border and the importance of manufactures exports to Brazil's south-southeast, Chile's Santiago-Valparaíso corridor, and Colombia's golden manufacturing triangle (Bogotá-Meddlín-Cali). It is clear as well that services exports are relatively much more concentrated in a few regions polarized by the main urban agglomerations.

Figure 1: Spatial Patterns of Gross Exports of Goods and Services: Brazil, Chile, Colombia and Mexico (in local currency)

1.a. Brazil



1.b Chile

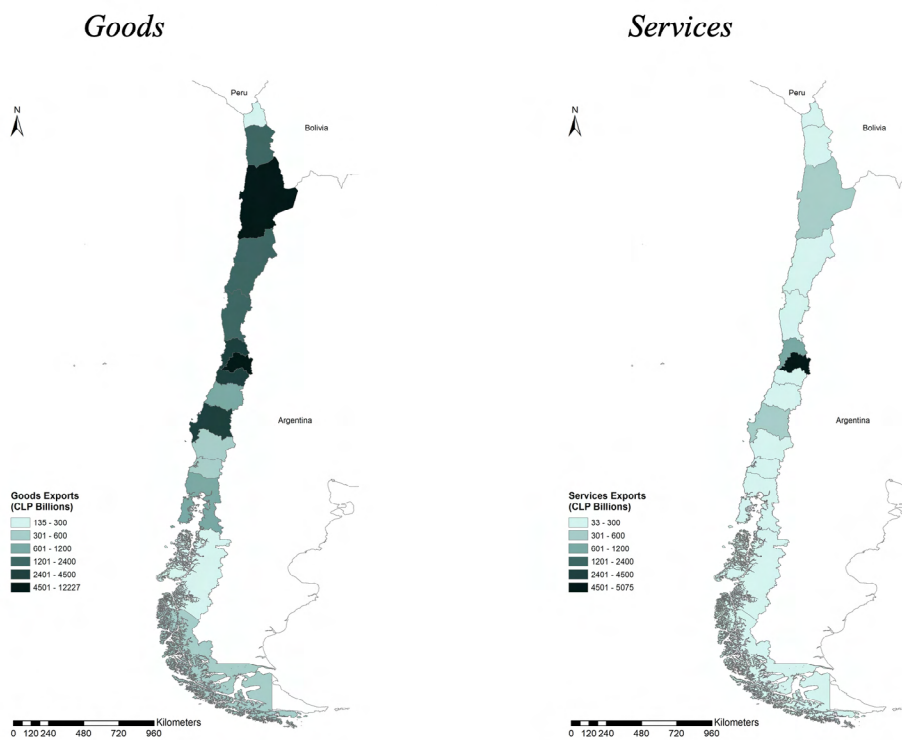
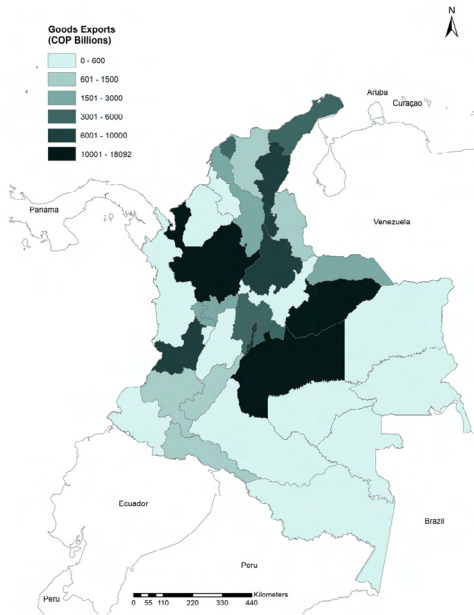


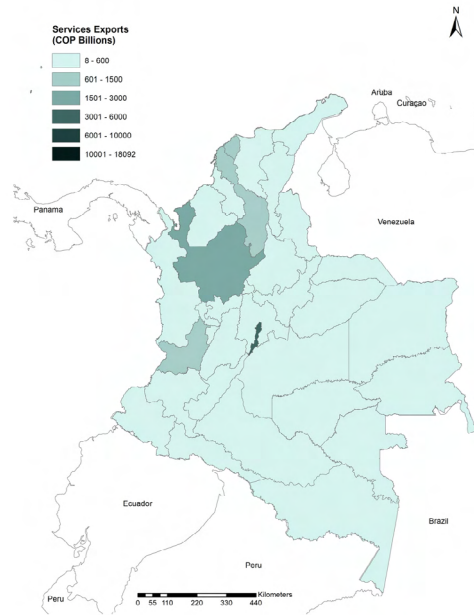
Figure 1: Spatial Patterns of Gross Exports of Goods and Services: Brazil, Chile, Colombia and Mexico (in local currency) (cont.)

1.c. Colombia

Goods

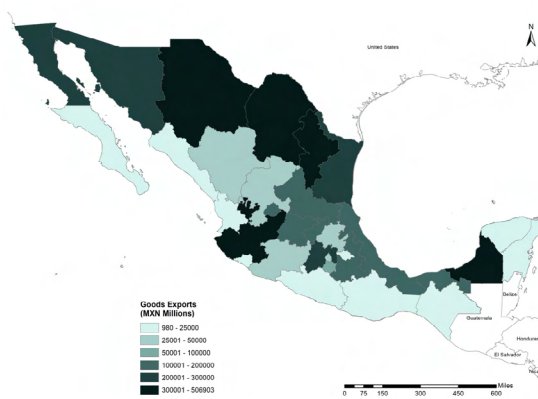


Services

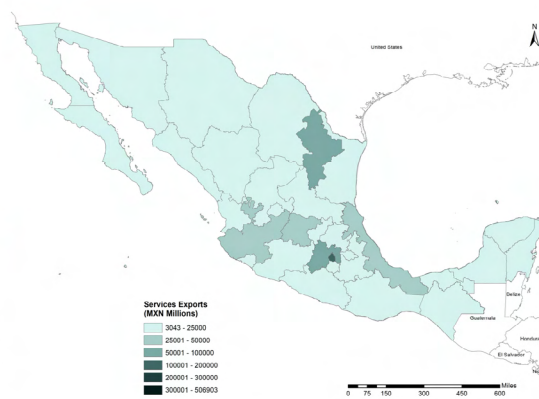


1.d Mexico

Goods



Services



3. Methodology

The method used in this paper builds on the approaches of Johnson and Noguera (2012a) and Haddad (2019), deepening and adapting their work to assess the effects that services have on goods exports in the context of local value chains (LVC). We further elaborate the model with respect to the within-country geography of trade in value-added by breaking up the interindustry patterns of interregional and intra-regional trade related to domestic value-added embedded in foreign exports.

We start from a standard Interregional Input-Output (IIO) model with N industries (labelled i or j), R regions (labelled r or s), and C final demand components (for domestic use and international exports) in each region. The output of industry i in region r (x_i^r) is defined by the $(NR \times 1)$ vector x of gross output. The flows of commodities from industry i in region r to industry j in region s (z_{ij}^{rs}) are represented in $(NR \times NR)$ matrix Z with the intermediate interindustry and interregional intermediate demand. Define A to be the interregional matrix of technical coefficients, in which $A = Z(\hat{x})^{-1}$; F is $(NR \times C)$ matrix with final demand components; I is the identity matrix; L is the Leontief inverse matrix; and i represents a column vector of 1's of the appropriate dimension. The interregional input-output system can be expressed by:

$$x = Z + Fi = Ax + Fi \tag{1}$$

and

$$x = (I - A)^{-1}Fi = LFi \tag{2}$$

Following Haddad (2019), we consider an interregional input-output system with two groups of sectors (services and non-service activities)⁴. We also consider the exports (EXP) as a specific column vector from industry i in region r ($f_i^{r,exp}$) separated from the other components of domestic final demand ($f_i^{r\bullet}$) from industry i in region r to all domestic regions in the final demand matrix (F), so that (2) can be represented as:

$$\begin{bmatrix} x_1^r \\ x_2^r \\ \vdots \\ x_1^R \\ x_2^R \end{bmatrix} = \begin{bmatrix} L_{11}^{rr} & L_{12}^{rr} & \dots & L_{11}^{rR} & L_{12}^{rR} \\ L_{21}^{rr} & L_{22}^{rr} & \dots & L_{21}^{rR} & L_{22}^{rR} \\ \vdots & \vdots & \ddots & \vdots & \vdots \\ L_{11}^{Rr} & L_{12}^{Rr} & \dots & L_{11}^{RR} & L_{12}^{RR} \\ L_{21}^{Rr} & L_{22}^{Rr} & \dots & L_{21}^{RR} & L_{22}^{RR} \end{bmatrix} \begin{bmatrix} f_1^{r\bullet} & f_1^{r,exp} \\ f_2^{r\bullet} & f_2^{r,exp} \\ \vdots & \vdots \\ f_1^{R\bullet} & f_1^{R,exp} \\ f_2^{R\bullet} & f_2^{R,exp} \end{bmatrix} i \tag{3}$$

The total value added in the sub-group of sectors 1 in region r (VA_1^r) can be expressed as:

$$VA_1^r = \hat{v}_1^r (I - A^{rs})^{-1} F^{rs} i \tag{4}$$

where \hat{v}_1^r is a diagonal matrix with ratios of value added to gross output in industries that belong to the sub-group 1 in the region as first elements (\hat{v}_1^r) and zeros elsewhere ($v_1^r = [\hat{v}_1^r \ 0 \ \dots \ 0 \ 0]$), and i is a column vector in which all elements are unity.

4. In what follows, we will use group 1 for non-service activities, and group 2 for services activities.

Similarly, total value added in the sub-group of sectors 2 in region r (VA_2^r) can be expressed as:

$$VA_2^r = \hat{v}_2^r (\mathbf{I} - \mathbf{A}^{rs})^{-1} \mathbf{F}^{rs} \mathbf{i} \quad (5)$$

where \hat{v}_2^r is a diagonal matrix with ratios of value added to gross output in industries that belong to the sub-group 2 in the region as first elements (\hat{v}_2^r) and zeros elsewhere ($\mathbf{v}_2^r = [\mathbf{0} \ \hat{v}_2^r \ \dots \ \mathbf{0} \ \mathbf{0}]$).

In order to attribute the amount of intra-group domestic value added in foreign exports from sub-group 1 from region r (i.e. value added generated in the sub-group 1 in each region associated with exports of 1 from a specific region r), we simply consider the relevant component of final demand and value added coefficients vectors. In this case, the VA generated by such export flows can be represented as:

$$\begin{aligned} VA_{11}^{r,\text{exp}} &= \hat{v}_1^r (\mathbf{I} - \mathbf{A}^{rs})^{-1} \begin{bmatrix} \mathbf{f}_1^{r,\text{exp}} \\ \mathbf{0} \end{bmatrix} \mathbf{i} \\ &\vdots \\ VA_{11}^{R,\text{exp}} &= \hat{v}_1^R (\mathbf{I} - \mathbf{A}^{rs})^{-1} \begin{bmatrix} \mathbf{f}_1^{r,\text{exp}} \\ \mathbf{0} \end{bmatrix} \mathbf{i} \end{aligned} \quad (6)$$

Similarly, the intra-group value added generated by exports from sub-group 2 to the EXP can be expressed as:

$$\begin{aligned} VA_{22}^{r,\text{exp}} &= \hat{v}_2^r (\mathbf{I} - \mathbf{A}^{rs})^{-1} \begin{bmatrix} \mathbf{0} \\ \mathbf{f}_2^{r,\text{exp}} \end{bmatrix} \mathbf{i} \\ &\vdots \\ VA_{22}^{R,\text{exp}} &= \hat{v}_2^R (\mathbf{I} - \mathbf{A}^{rs})^{-1} \begin{bmatrix} \mathbf{0} \\ \mathbf{f}_2^{r,\text{exp}} \end{bmatrix} \mathbf{i} \end{aligned} \quad (7)$$

Given the interindustry interdependence embedded in the input-output framework, it is also possible to compute the inter-group effects of exports. In other words, one can compute both the effects of exports of sub-group 1 on value added generated by sectors belonging to sub-group 2, and vice-versa. The relevant equations for value added generate by exports from region r follow.

$$\begin{aligned} VA_{21}^{r,\text{exp}} &= \hat{v}_2^r (\mathbf{I} - \mathbf{A}^{rs})^{-1} \begin{bmatrix} \mathbf{f}_1^{r,\text{exp}} \\ \mathbf{0} \end{bmatrix} \mathbf{i} \\ &\vdots \\ VA_{21}^{R,\text{exp}} &= \hat{v}_2^R (\mathbf{I} - \mathbf{A}^{rs})^{-1} \begin{bmatrix} \mathbf{f}_1^{r,\text{exp}} \\ \mathbf{0} \end{bmatrix} \mathbf{i} \end{aligned} \quad (8)$$

and

$$VA_{12}^{r,exp} = \hat{v}_1^r (\mathbf{I} - \mathbf{A}^{rs})^{-1} \begin{bmatrix} \mathbf{0} \\ \mathbf{f}_2^{r,exp} \end{bmatrix} \mathbf{i}$$

$$\vdots$$

$$VA_{12}^{R,exp} = \hat{v}_1^R (\mathbf{I} - \mathbf{A}^{rs})^{-1} \begin{bmatrix} \mathbf{0} \\ \mathbf{f}_2^{r,exp} \end{bmatrix} \mathbf{i}$$
(9)

This decomposition defines the within country local value chain (LCV) into four separate components. Equation (6) represents the value-added of non-service sectors in goods exports; equation (7) describes the value-added of service sectors in services exports; equation (8) corresponds to the value-added of service sectors in goods exports; equation (9) depicts the value-added of non-service sectors in services exports.

3.1. Database

In this paper, we focus on selected countries in Latin America: Brazil, Chile, Colombia, and Mexico. Therefore, the data to analyze the value-added of services incorporated in goods exports come from four specific interregional input-output tables for Brazil (Haddad et al, 2019a), Chile (Haddad et al, 2018), Colombia (Haddad et al, 2019b), and Mexico (Haddad et al, 2019c). The construction of the tables follows a common conceptual framework based on officially published input-output tables in conjunction with regional accounts from each country's official statistical institute. Table 1 summarizes the information from the database we use in our analysis.

Table 1 - Interregional Input-Output Tables Database

	Brazil	Chile	Colombia	Mexico
Region (R)	27	15	33	32
Industry (N)	67	12	54	37
Dimensions (NR x NR)	1539 x 1539	180 x 180	1782 x 1782	1184 x 1184
Year	2015	2014	2015	2013
Currency	BRL Millions	CLP Billions	COP Billions	MXN Millions

4. Trade in Value-Added

The idea that trade in intermediate inputs can have an effect on production and factor prices that is different from trade in final goods has gained widespread acceptance among trade economists (Feenstra, 2004). Accepting this notion has promoted the design of policy strategies in Latin American and other developing economies aiming at leveraging international supply chain linkages to improve a country's role in GVCs. The focus is more on vertical specialization and the possibility of moving into higher-value niches, rather than nurturing national champions. Larger economies in the region (e.g. Brazil and Mexico) would have greater scope for leverage than small ones, which gives the emerging economies a distinct advantage (Gereffi and Sturgeon, 2013).

Measuring services value-added in exports (mode 5) is particularly important to help analyze policies that affect a country's overall competitiveness. Fortunately, the available tool kits in input-output analysis can be readily applied to deal with services value-added in exports in a country's LVC. We extend to inter-regional input-output systems the methodology proposed by UNCTAD (Haddad, 2019), on 'Measurement of the Services Value Added in Brazilian Exports'. We then apply the amended framework to the inter-regional input-output systems for Brazil (2015), Chile (2014), Colombia (2015), and Mexico (2013). In what follows, we present an overview of the results, highlighting some of the findings for the four Latin American countries. For presentation purposes, we have aggregated the services sectors into seven groups following WTO⁵.

4.1. Discussion of Results

How much services value-added is in exports and how does it compare to direct services exports?

Table 2 summarizes the contribution of exports (by group and total) to domestic value-added generation. Overall, the domestic value-added content of exports is 76.6% of the total value of gross exports for Brazil, 79.7% for Chile, 82.1% for Colombia, and 66.4% for Mexico. Of total domestic value-added in exports, services value added accounts for 48.7% in Brazil, despite the fact that services represent only 18.1% of total gross exports. This reveals the direct and indirect relevance of services to local value chains, to which they contribute at different stages in the production of both goods and services. Comparable figures for the other countries are: (i) Chile, 38.9% and 16.8%; (ii) Colombia, 32.2% and 12.9%; and (iii) Mexico, 40.2% and 13.1%.

Accounting for the services value-added content of exports more than doubles the estimated size of the services in the exports of Latin American countries. Johnson (2014) showed that services exports increase the share in total exports of 20% to 41% when considering total world value-added exports in 2008, according to the World Input-Output Database (WIOD), for 27 European Union countries and 13 other major countries. A consequence of this increase in the importance of services in exports, when accounting for the value-added services exports, is that the exposure of national economies to international trade is potentially higher, although because of the geographic concentration of production of tradable services, it might be that not all regions are equally exposed (Gervais and Jensen, 2019).

5. <http://www.mdic.gov.br/comercio-servicos/a-secretaria-de-comercio-e-servicos-scs-2/9-assuntos/categ-comercio-exterior/347-certificado-form-17>.

Table 2: Trade in Value Added: Brazil, Chile, Colombia and Mexico

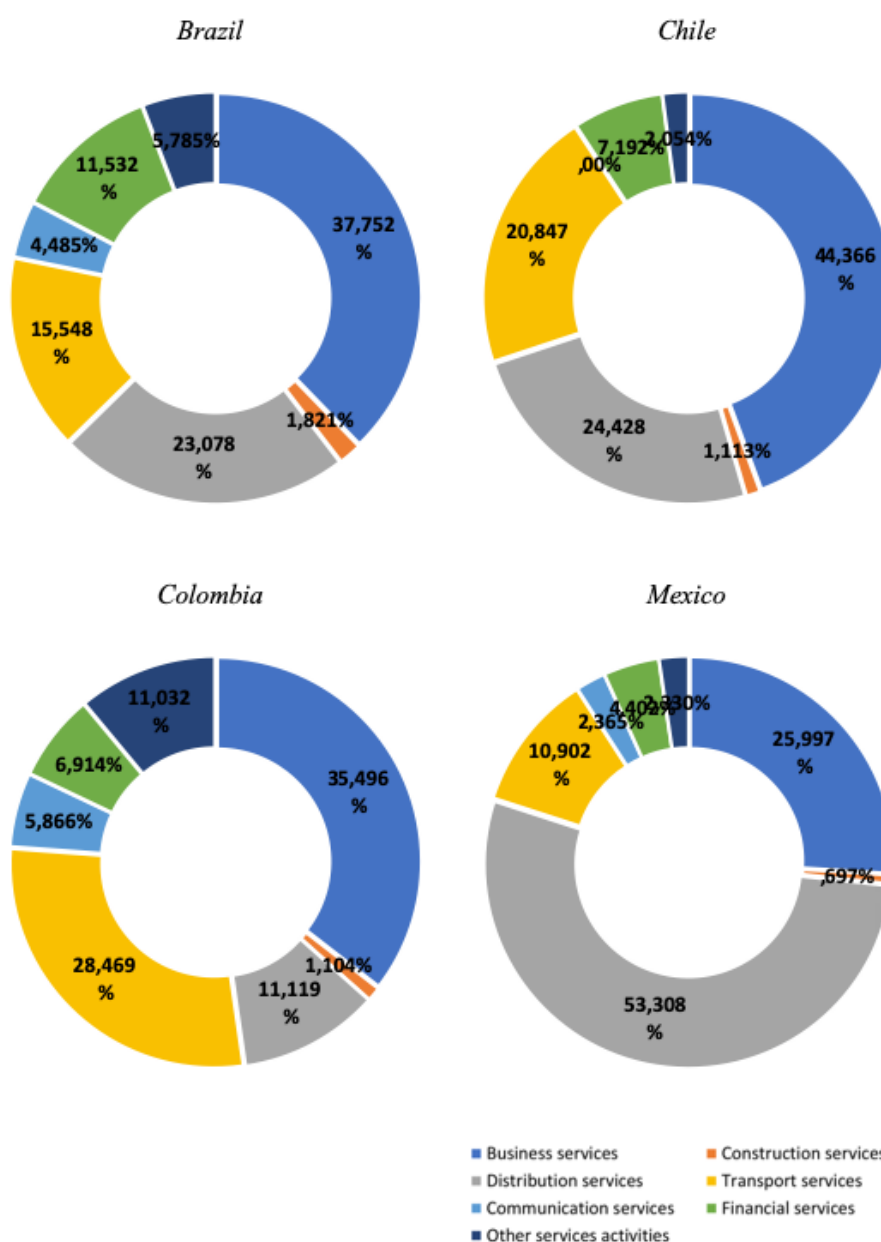
	<i>Brazil</i>	<i>Chile</i>	<i>Colombia</i>	<i>Mexico</i>
<i>Exports of goods</i>				
VA in service sectors	172,076	8,522	19,612	736,351
VA in non-service sectors	295,893	22,976	64,937	1,931,817
Total VA	467,969	31,498	84,550	2,668,168
<i>Exports of services</i>				
VA in service sectors	113,938	6,362	11,817	577,257
VA in non-service sectors	5,907	369	1,280	20,676
Total VA	119,845	6,730	13,097	597,933
<i>Total exports</i>				
VA in service sectors	286,014	14,883	31,429	1,313,607
VA in non-service sectors	301,799	23,345	66,218	1,952,493
Total VA	587,813	38,228	97,647	3,266,100
<i>Gross exports</i>				
Goods	628,020	39,909	103,683	4,274,221
Services	139,012	8,074	15,314	641,657
Total	767,032	47,982	118,997	4,915,878

Obs. Estimates for Brazil in 2015 BRL millions; Chile in 2014 CLP billions, Colombian in 2015 COP billions, and Mexico in 2013MXN millions

What services sectors contribute more to overall domestic services value-added embodied in total exports?

Figure 2 shows the contribution of each group of services sectors to services value-added in total exports of goods and services, in each of the four countries. In other words, Figure 2 presents estimates of domestic value-added in services sectors embedded in each country's total exports, distributed across different activities. The top three sectors that contribute most to services value-added are business services, distribution services, and transport services. Taken together, they account for at least 75% of total value-added in each country. There also seems to be a segmentation in terms of on one hand intermediate services used to support activities and enhance linkages of tasks within and across national economies, and on the other hand directly exported business services.

Figure 2: Sectoral Distribution of Services Value-Added in Total Exports: Brazil, Chile, Colombia and Mexico



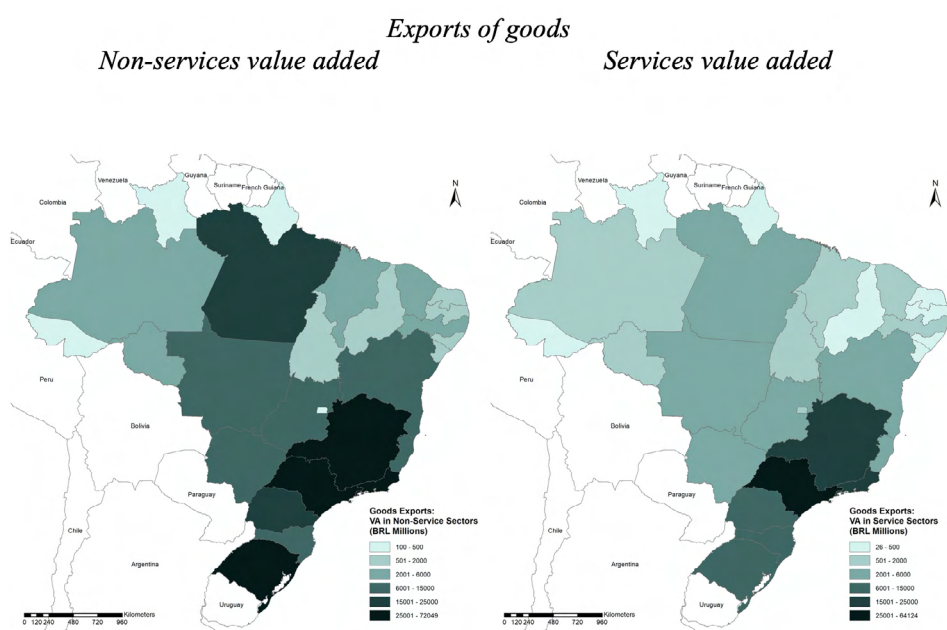
What are the main regions that contribute to domestic value-added in the local value chains of (goods and services) exports?

Figures 3-6 present the geographical distribution of domestic non-services and services value-added embodied in both goods and services exports. Considering value-added associated with exports of goods, the spatial patterns that emerge for non-services value-added are strongly influenced by the location patterns of natural resource-intensive export activities in each country. However, the distribution of (indirect) services value-added associated with the same exports of goods in each country is very concentrated in the economic core regions, where we find the main urban agglomerations.

Services sectors have lower trade costs than the mining and manufacturing industries. When trade costs are low, interregional sales are high and local production does not more closely match local demand (Gervais and Jensen, 2019). Thus, this difference in terms of transport costs favors the uneven distribution of the location of the service and non-service industries, and consequently the spatial patterns of services value-added embodied in exports. In addition, services are skill- and capital-intensive, which leads to a greater geographic concentration in big cities, benefitting from agglomeration economies.

As for exports of services, services value-added follows closely the higher-level urban hierarchies in each country: in Brazil, relatively more concentrated in São Paulo, Rio de Janeiro and the Southern States; in Chile, heavily concentrated in Santiago Metropolitan Region; in Colombia, a predominance of the axis Bogotá-Medellin and a secondary role played by other Departamentos within the “Colombian Ostrich”⁶ economic core; and in Mexico, a relatively less concentrated sprawl from Mexico City, including Guadalajara and Monterrey, as well as services associated with oil-exporting and maquiladoras states. Noteworthy is that the indirect effects of exports of services on non-services value-added are relatively small everywhere, accounting for 4.9% of total value added in Brazil, 5.5% in Chile, 9.8% in Colombia, and 3.5% in Mexico (Table 1).

Figure 3: Spatial Patterns of Non-Services and Services Value-Added Embodied in Exports of Goods and Services: Brazil (in 2015 BRL millions)



6. On the “Colombian Ostrich”, see Haddad et al (2009).

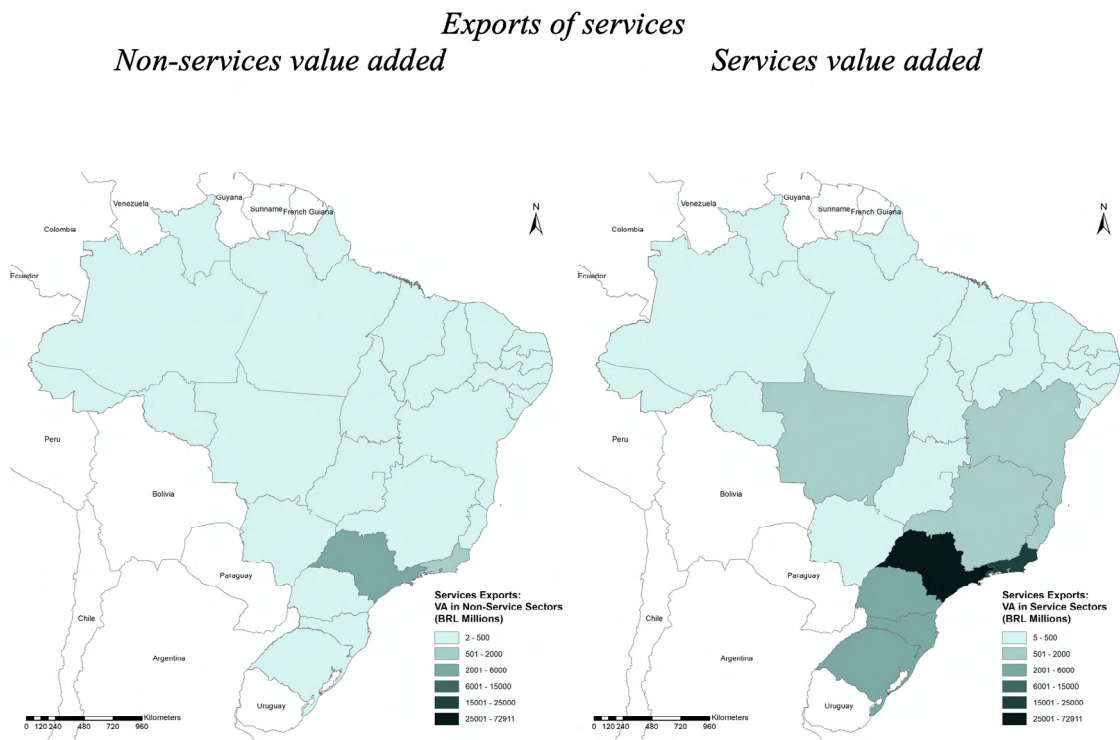
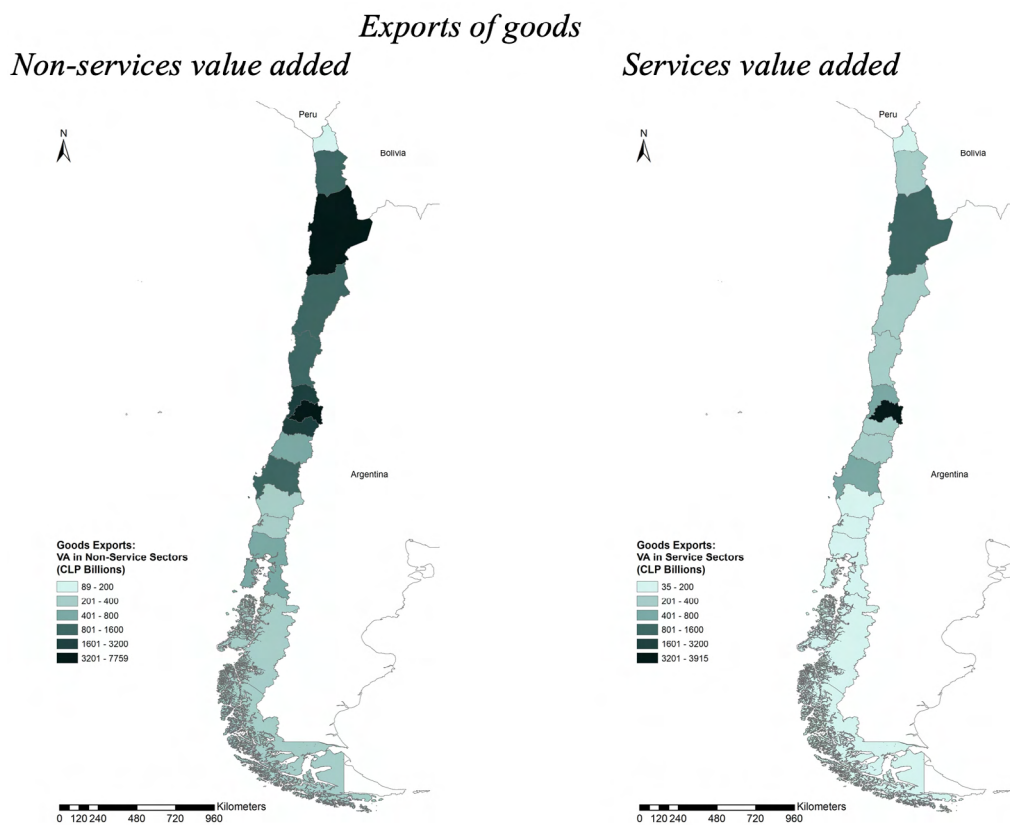


Figure 4: Spatial Patterns of Non-Services and Services Value-Added Embodied in Exports of Goods and Services: Chile (in 2014 CLP billions)



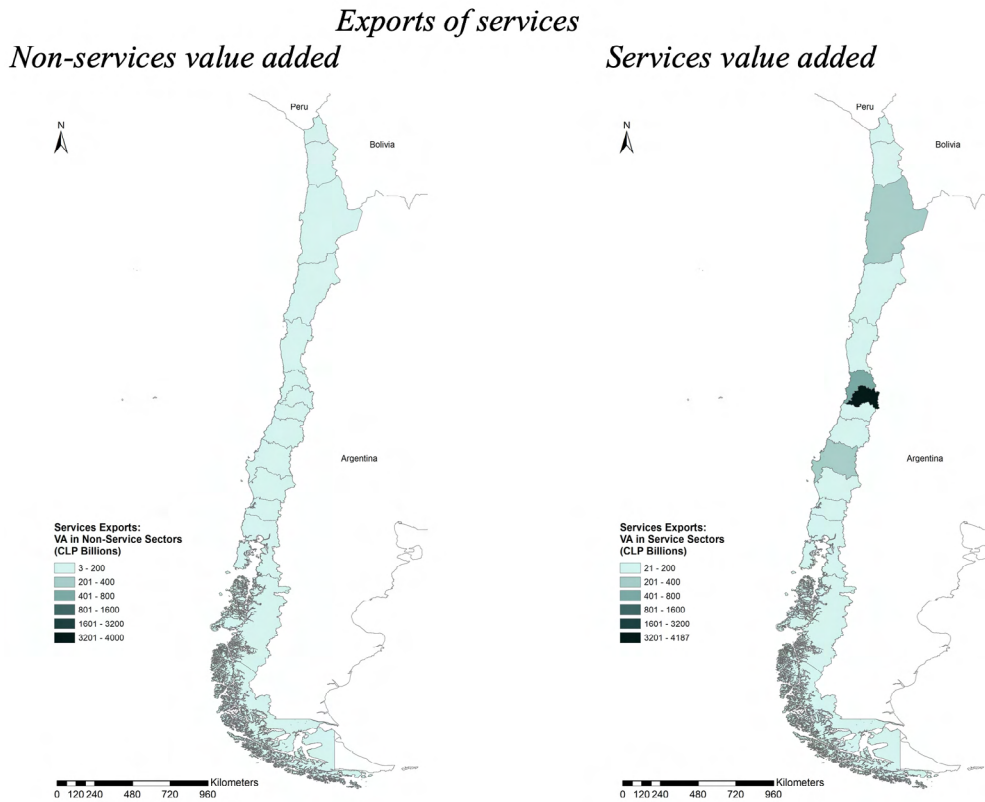
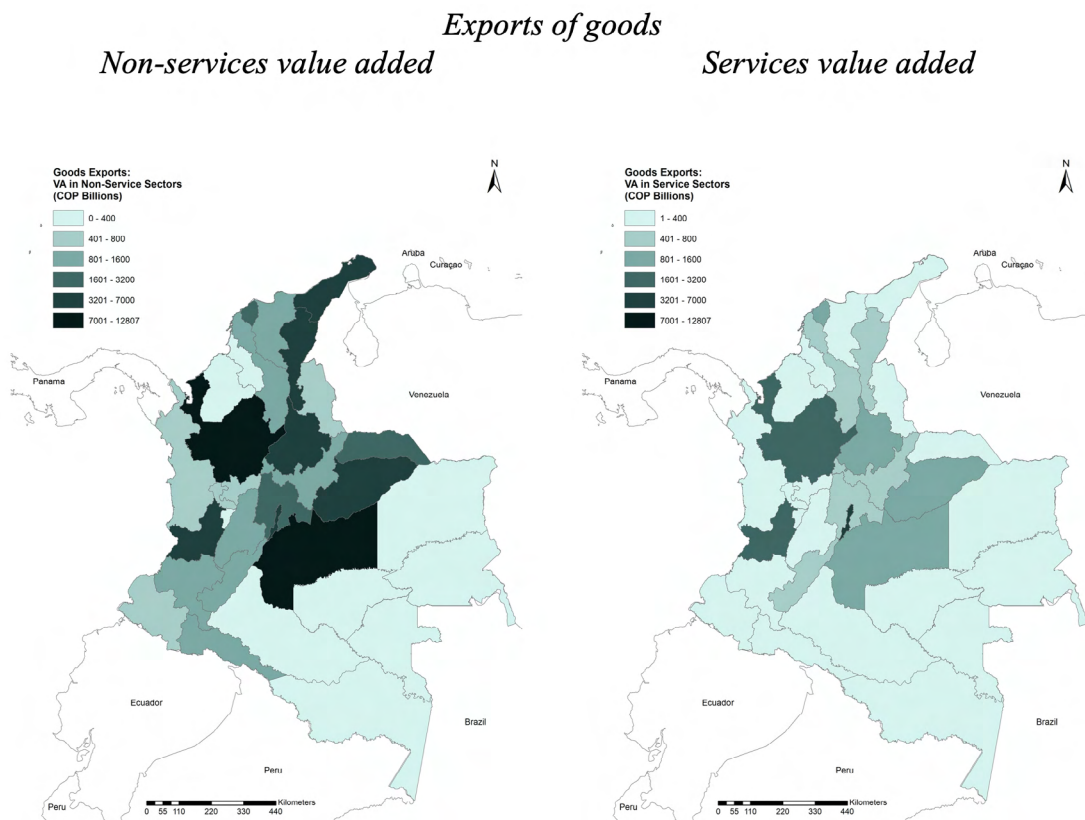


Figure 5: Spatial Patterns of Non-Services and Services Value-Added Embodied in Exports of Goods and Services: Colombia (in 2015 COP billions)



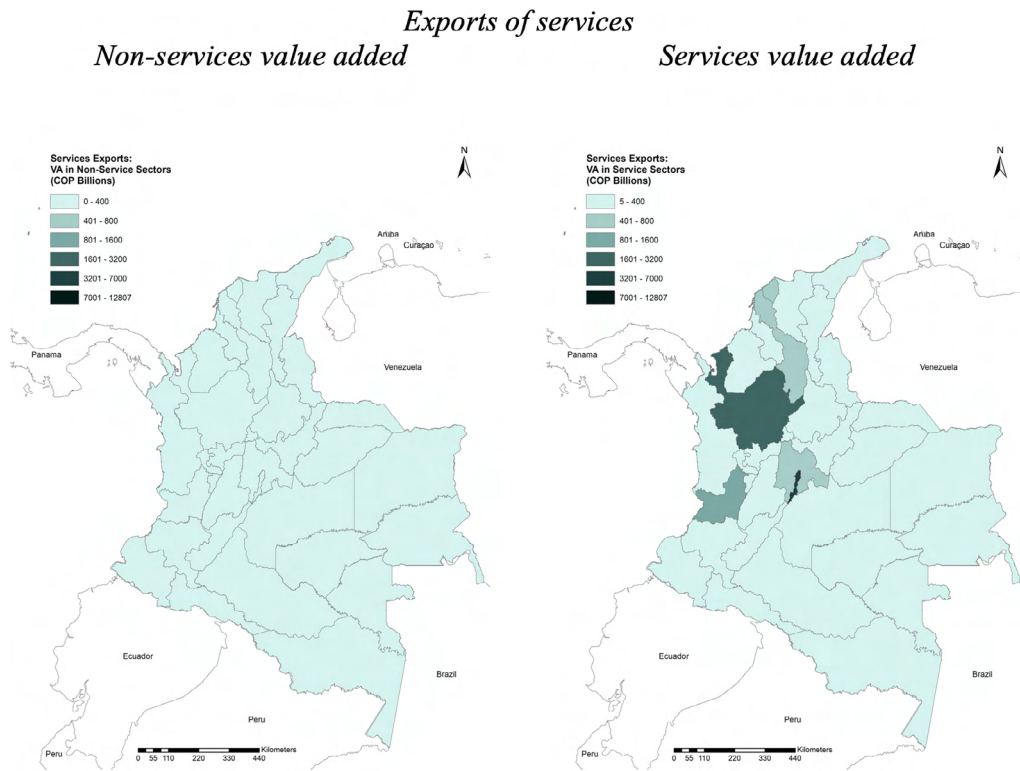
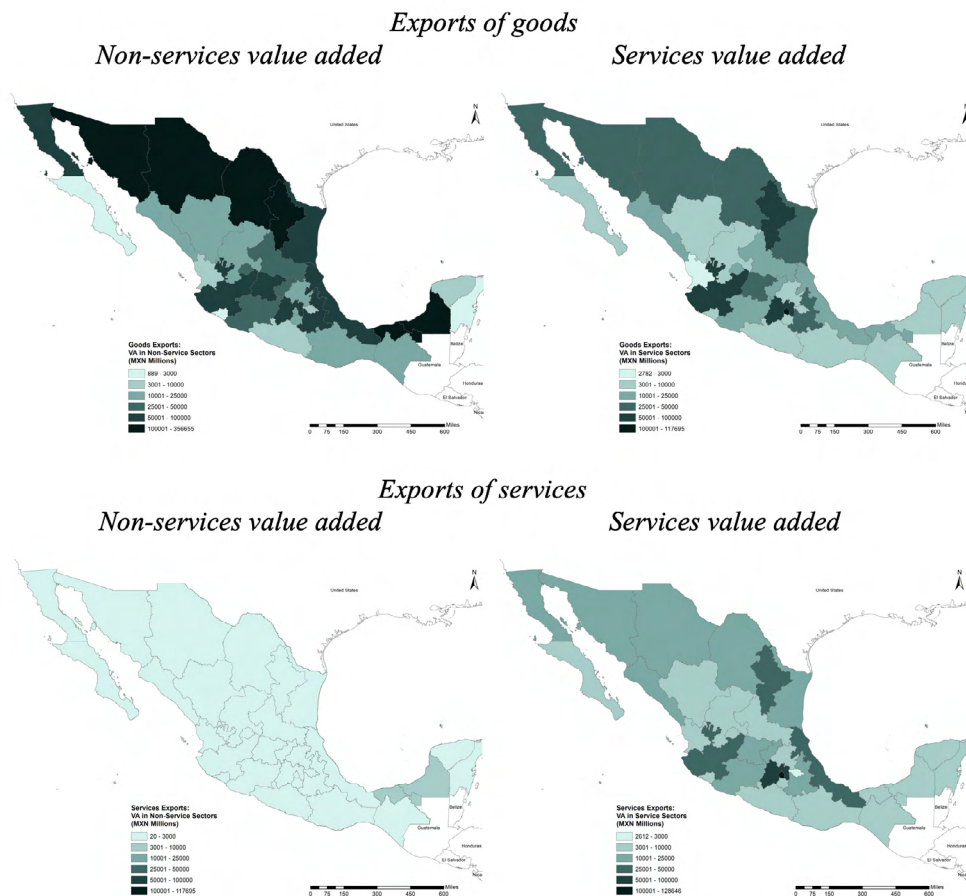


Figure 6: Spatial Patterns of Non-Services and Services Value-Added Embodied in Exports of Goods and Services: Mexico (in 2013 MXN millions)



Where is the value-added from services in exports more concentrated?

Table 3 identifies the top five regions in each country listed by their respective shares in non-services and services value-added embodied in both exports of goods and exports of services. The decoupled regional patterns of non-services and services value-added can be further revealed as we compare the first and second columns of the table, which show the respective largest regional shares of value-added for each group of activities embodied in exports of goods. Overall, value-added generation is spatially concentrated, with the main regions accounting for at least close to 50% of the total. However, with the exception of Mexico, which shows somehow equivalent accumulated shares for value-added in both non-services and services sectors (around 50%), for the remaining countries, services value-added is undoubtedly more concentrated.

Moreover, Table 3 also reveals distinct geographies in terms of the internal distribution of non-services and services value-added in exports. While the latter benefits natural resource-rich regions in Brazil (iron-ore, oil and high value-added agriculture), Chile (copper), Colombia (oil and coal), and Mexico (oil), the former is closely associated with each country's urban hierarchy.

The implications for value addition of the concentration of most (producer) services in urban agglomerations are even clearer when looking at the regional distribution of value-added in exports of services. In some cases (e.g. São Paulo and Santiago), value-added in services sectors may account for almost two-thirds of the total. Our results are consistent with the findings of Timmer et al (2019) on the specialization of Chinese export regions. They show that large urban regions like Beijing and Shanghai are heavily specialized in headquarter activities, such as R&D, management, and marketing, while most other Chinese regions are specialized in fabrication activities.

Table 3: Regional Concentration of Value-Added in Exports: Brazil, Chile, Colombia and Mexico

Brazil			
<i>Exports of goods</i>		<i>Export of services</i>	
<i>VA in non-service sectors</i>	<i>VA in service sectors</i>	<i>VA in non-service sectors</i>	<i>VA in service sectors</i>
São Paulo 24.3%	São Paulo 37.3%	São Paulo 35.2%	São Paulo 64.0%
Minas Gerais 12.6%	Minas Gerais 11.2%	Rio de Janeiro 16.7%	Rio de Janeiro 19.1%
Rio de Janeiro 10.3%	Rio de Janeiro 10.6%	Paraná 8.0%	Santa Catarina 3.9%
Rio Grande do Sul 10.1%	Paraná 7.9%	Santa Catarina 7.7%	Paraná 3.8%
Paraná 8.3%	Rio Grande do Sul 7.3%	Minas Gerais 6.5%	Rio Grande do Sul 3.4%
TOTAL 65.7%	TOTAL 74.2%	TOTAL 74.0%	TOTAL 94.2%
Chile			
<i>Exports of goods</i>		<i>Export of services</i>	
<i>VA in non-service sectors</i>	<i>VA in service sectors</i>	<i>VA in non-service sectors</i>	<i>VA in service sectors</i>
Región Metropolitana de Santiago 16.0%	Región Metropolitana de Santiago 45.9%	Región Metropolitana de Santiago 32.3%	Región Metropolitana de Santiago 65.8%
De Antofagasta 33.8%	De Antofagasta 18.2%	De Valparaíso 13.3%	De Valparaíso 7.9%
De Valparaíso 8.8%	De Valparaíso 7.1%	Del Biobío 12.3%	Del Biobío 5.3%
Del Libertador General Bernardo O'Higgins 8.8%	Del Biobío 6.3%	Del Libertador General Bernardo O'Higgins 9.1%	De Antofagasta 4.4%
De Coquimbo 5.9%	De Atacama 4.3%	De Antofagasta 7.1%	Del Libertador General Bernardo O'Higgins 2.7%
TOTAL 73.2%	TOTAL 81.9%	TOTAL 74.1%	TOTAL 86.1%
Colombia			
<i>Exports of goods</i>		<i>Export of services</i>	
<i>VA in non-service sectors</i>	<i>VA in service sectors</i>	<i>VA in non-service sectors</i>	<i>VA in service sectors</i>
Bogotá D.C. 22.3%	Bogotá D.C. 22.3%	Bogotá D.C. 13.6%	Bogotá D.C. 33.5%
Antioquia 12.2%	Antioquia 15.8%	Valle del Cauca 11.1%	Antioquia 14.1%
Casanare 9.4%	Valle del Cauca 10.2%	Bogotá D.C. 11.0%	Valle del Cauca 10.2%
Cesar 7.7%	Meta 6.8%	Cundinamarca 9.8%	Atlántico 5.5%
Santander 6.1%	Atlántico 6.8%	Meta 8.2%	Cundinamarca 4.4%
TOTAL 55.1%	TOTAL 61.8%	TOTAL 53.6%	TOTAL 67.6%
Mexico			
<i>Exports of goods</i>		<i>Export of services</i>	
<i>VA in non-service sectors</i>	<i>VA in service sectors</i>	<i>VA in non-service sectors</i>	<i>VA in service sectors</i>
Ciudad de México 16.0%	Ciudad de México 16.0%	Ciudad de México 20.3%	Ciudad de México 22.3%
Campeche 18.5%	Nuevo Leon 11.3%	Tabasco 14.5%	Mexico 9.5%
Tabasco 9.3%	Jalisco 7.4%	Mexico 8.7%	Nuevo Leon 8.3%
Coahuila de Zaragoza 8.6%	Mexico 7.0%	Veracruz de Ignacio de la Llave 7.5%	Jalisco 7.1%
Nuevo Leon 7.6%	Coahuila de Zaragoza 6.2%	Ciudad de México 6.5%	Veracruz de Ignacio de la Llave 4.5%
Chihuahua 5.7%			
TOTAL 49.6%	TOTAL 47.9%	TOTAL 57.5%	TOTAL 51.7%

What types of services are associated with more concentrated patterns of value-added embodied in exports?

We have computed, for each country, the share of the primal region in the services value-added embodied in exports of goods and services. Table 4 presents the results for the seven groups of services sectors. In general, primal areas tend to concentrate even more value addition in communication and financial services, which tend to be more knowledge-intensive services activities. Other KIBS (Knowledge-Intensive Business Services), which include business services, are also relatively concentrated in primal regions, but their regional distributions are more strongly associated with direct exports of services. From this perspective, the major urban areas are critical nodes in global production networks due to their clustering of producer service firms (Parnreiter, 2019).

One interesting result refers to the less spatially aggregated nature of connectivity services, mainly transportation services, the location patterns of which are associated with both production and consumption, which are both less dispersed spatially.

Table 4: Share of Primal Regions in Services Value-Added of Exports of Good and Services: Brazil, Chile, Colombia and Mexico

	<i>Brazil</i>		<i>Chile*</i>		<i>Colombia</i>		<i>Mexico</i>	
	<i>Goods</i>	<i>Services</i>	<i>Goods</i>	<i>Services</i>	<i>Goods</i>	<i>Services</i>	<i>Goods</i>	<i>Services</i>
Business services	35.3%	64.0%	43.0%	69.8%	23.4%	33.3%	25.9%	37.5%
Construction Services	26.5%	33.6%	27.6%	40.5%	13.7%	22.6%	3.8%	9.7%
Distribution services	35.1%	60.2%	60.9%	71.1%	29.9%	37.7%	5.6%	17.8%
Transport services	31.2%	58.4%	38.4%	54.6%	11.2%	40.4%	7.1%	21.2%
Communication services	50.7%	70.7%	-	-	34.1%	42.0%	50.6%	60.1%
Financial services	57.7%	80.2%	60.2%	76.8%	42.5%	51.7%	32.8%	44.1%
Other services activities	29.3%	60.8%	32.5%	53.1%	18.9%	20.1%	8.4%	18.7%

* Transport services include communication services.

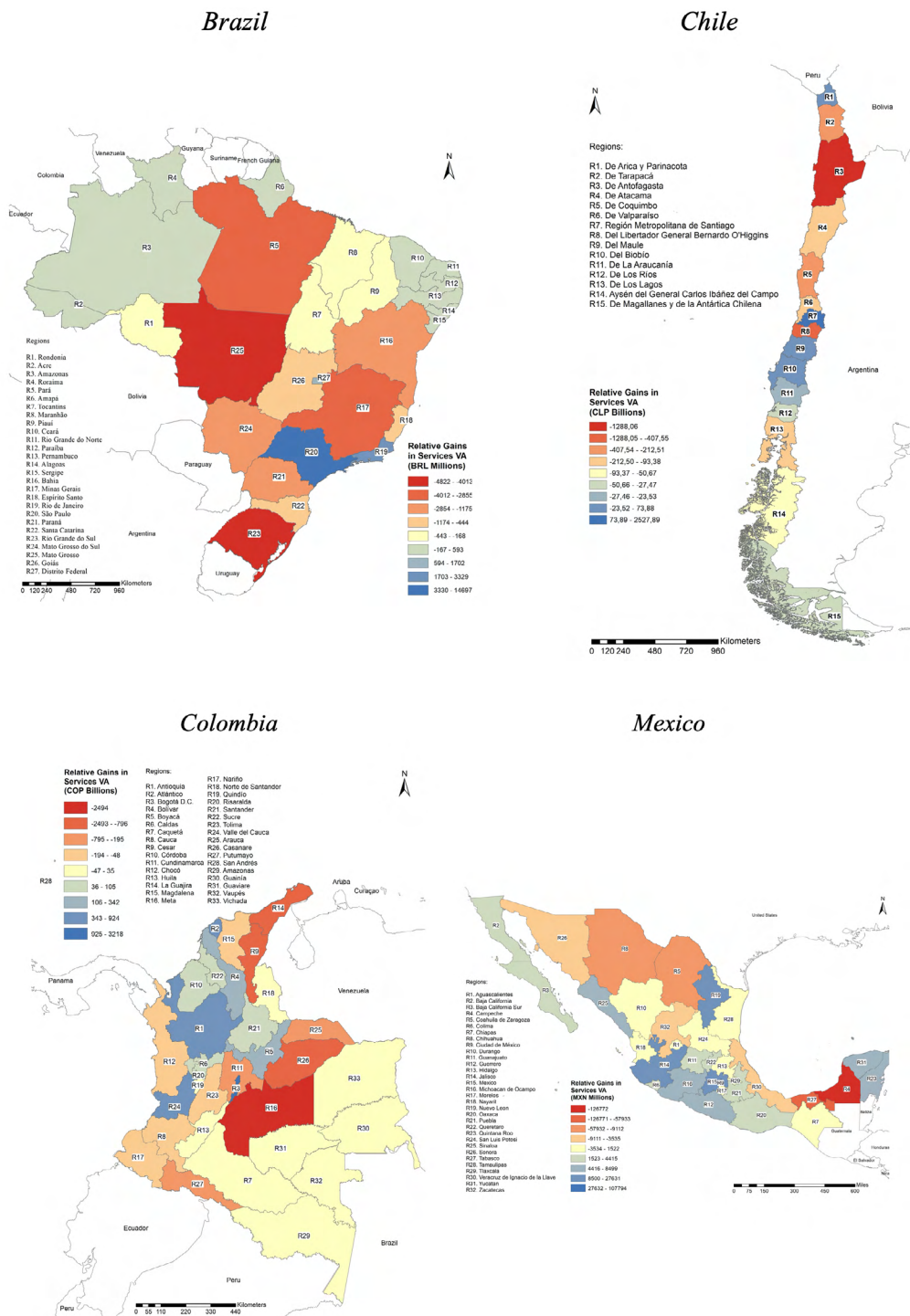
Obs.: Primal regions in each country are: São Paulo (Brazil), Santiago (Chile), Bogotá (Colombia), and Mexico City (Mexico).

What regions would have lost (gained) most, had the spatial distribution of exports of goods prevailed in the local generation of services value-added?

To answer this question, we have computed the hypothetical distribution of services value-added of goods exports, using the same regional participations observed in the distribution of gross exports of goods. This information, depicted in Figure 7, gives the extent of the interregional transfers of income through production linkages. Positive differences identify the regions that benefit from the current production structure. They are mainly associated with each country's largest urban agglomerations (dark blue): São Paulo, and, to a lesser extent, Rio de Janeiro and Brasília, in Brazil; Santiago Metropolitan Region, in Chile; Bogotá, Antioquia (Medellin) and Valle del Cauca (Cali) in Colombia; and Ciudad de Mexico-Mexico, Nuevo Leon (Monterrey) and Jalisco (Guadalajara) in Mexico. Thus, we can have an idea about the presence of relevant leakages from peripheral regions to central regions. Some regions create services value-added 'beyond their contribution', i.e. their share of services value-added embodied in gross exports of goods is greater than their share of gross exports of goods.

Moreover, the hypothetical geographical shift favoring the creation of services value-added towards the goods-exporting region would have benefitted (dark orange and red) the main agricultural and mining Brazilian regions, the copper regions in Northern Chile, the oil and coal producing Departamentos in Colombia, and the Mexican oil regions in the Gulf of Mexico, together with the maquiladoras regions in the US-Mexico border. Exports of goods and the generation of services value-added are unevenly distributed across regions because of the disparity between local supply and local demand. This context causes the emergence of an interregional transfer of income, which in turn increases and accelerates inter-regional inequality.

Figure 7: ‘Gainers’ and ‘Losers’ of Services Value-Added Embodied in Exports of Goods: Brazil, Chile, Colombia and Mexico (in local currency)



5. Relevance for Policy

Latin American countries face major challenges from the ‘servicification’ of the global economy in the context of GVCs. While more sophisticated services sector exports are largely and increasingly dominated by developed economies, emerging countries’ services exports are mainly dominated by lower-value activities, including back office services, some cost services, and tourism. There is, thus, a clear need for policy responses to ensure that developing countries are not left behind.

Moreover, when one takes into account LVCs of exports, especially in natural resource-rich countries, ‘servicification’ tends to benefit larger urban agglomerations in the more-developed regions, reinforcing regional inequality. While the geography of natural resources may act as a driver to reduce regional inequality, interregional and intersectoral linkages are likely to act in the opposite direction.

The importance of some services modes of supply requires adequate policies aimed at supporting these key drivers. The growth in services has been accompanied by an increase in services in international transactions: trade in services has grown faster than trade in goods. Besides, there has been a marked shift in foreign direct investment (FDI) from the manufacturing sector towards the services sector worldwide. In Latin America, the importance of mode 3 (FDI-driven services) has flourished mainly through acquisitions and privatizations. The Chilean experience, as well as that of other countries in the region, shows that the bulk of these investments have been in activities related to almost inelastic demand and the attainment of a ‘secure’ market, following market-capturing activities rather than pure market-seeking (Robles and Hewings, 2006). Recent FDI in the service sector in LA countries has seemed to maintain this pattern, with additional implications for regional concentration of value-added, as the bulk of the tasks are undertaken in offices located in big cities⁷.

The preceding analysis of (local) services bundled in exports goods (mode 5) also raises concerns about regional inequality in natural-resource-rich Latin American countries. While exports of goods put pressure on regional deployable resources, interregional transfers of income through trade linkages benefit human capital-intensive sectors, favoring larger urban areas in richer regions.

In the quest to increase and sustain its competitiveness in GVCs, Latin America still requires policies, capabilities, and infrastructure to promote intermediate services. On one hand, the continuing development and upgrade of its connectivity infrastructure, in order to enhance productivity of distribution, transportation, and communication services, will help to promote linking tasks within and across countries. Locational aspects of these groups of sectors, especially transportation services, are associated with relatively less-concentrated spatial patterns, as production and consumption are more strongly locationally interdependent. On the other hand, KIBS tend to be highly concentrated at a country level. However, this does not exclude some movement towards dispersion observed in some business services, as long as working-skills limitations are dealt with, which may create room for coordinated regional and trade policies to enhance participation in value addition in LVCs of peripheral, natural resource-rich, exporting regions.

Despite its relevance, mode 5 is not subject to the existing international trade regime under GATS. However, negotiations included in mode 3 and in the increasingly important mode 1 (digital services), involving cuts to tariffs and other policies linked to services’ content shares and services’ trade

7. In 2016, 14 out of the 20 largest cross-border mergers and acquisitions in Latin America and the Caribbean were in services, with only three operations outside the main metropolitan areas (ECLAC, 2017).

facilitation, may lead to the removal of significant trade frictions, helping to increase competitiveness, productivity and well-being, at least in the short-term.

At an international level, but also within each country, globalization processes gives the advantage to the large cities, and particularly capital cities, boosting the concentration of the headquarters of large services companies. Agglomeration economies favor increasing concentration of services and headquarters, as the human capital supply, good connections, and easy accessibility at an international scale contribute to do (Taylor et al, 2013). ‘Servicification’ has then potential asymmetric locational impacts, benefiting developed economies at a global scale, and primal cities at the national level.

The commodity boom that started in 2003-04 and lasted for a decade generated what the United Nations Economic Commission for Latin America and the Caribbean has called a “re-primarization” (or ‘re-commoditization’), understood as a renewed growing share of natural resource goods in the export basket of many Latin American countries (Ocampo, 2017). Given the internally heterogeneous pattern of reliance on natural resources, regions with less-diversified economic bases faced greater disruption with the collapse in commodity prices. In the context of a new cycle of expansion of exports of natural resources goods in the region, there is a very real danger that the benefits of new inward investment will not be fully internalized by the regions that would potentially attract investment. In this regard, from a local perspective, it is important that effective strategies are devised to minimize this risk. This is especially so given the substantial financial resources that are necessary in order to attract (and retain) more sophisticated services providers to commence operations in non-traditional areas. From a policy perspective, it would be possible to more fully internalize the benefits of a new commodity export boom only if certain conditions are in place. One of the most important such conditions is that there be in place a planning framework aimed at encouraging the establishment and maintenance in place of an effective chain of local services suppliers. Another important condition is that the creation of agglomeration economies through time requires sustained investment in infrastructure, especially in energy, transportation, and telecommunications. Investment in human capital is equally, if not more important. To this effect, there should be in place an active local workforce training program to overcome skills limitations in the peripheral regions.

Regarding the overall spatial results, in terms of value-added embodied in exports, there appear to be three clear spatial regimes in the LA economies under consideration. First, a space associated with ‘primary exporters’ in which the services infrastructure is sparse and the connections are easily associated with specific and scattered export activities. These areas tend to benefit from lower connectivity costs associated with their export activities and the presence of specialized logistics corridors. Second, there appears an ‘intermediate space’ in each country, which assumes a role of transition in the context of the interface between the country’s interregional system and the world economy, and is more articulated with the domestic markets. Third, there appears a denser economic space, more integrated with the world economy, where efficiency in services activities plays a crucial role in affecting countries’ overall competitiveness. This third group includes some of Latin America’s ‘global traders’ located in the more developed, highly urbanized, core regions of Brazil (São Paulo), Chile (Santiago), Colombia (Bogotá-Medellin), and Mexico (Mexico City).

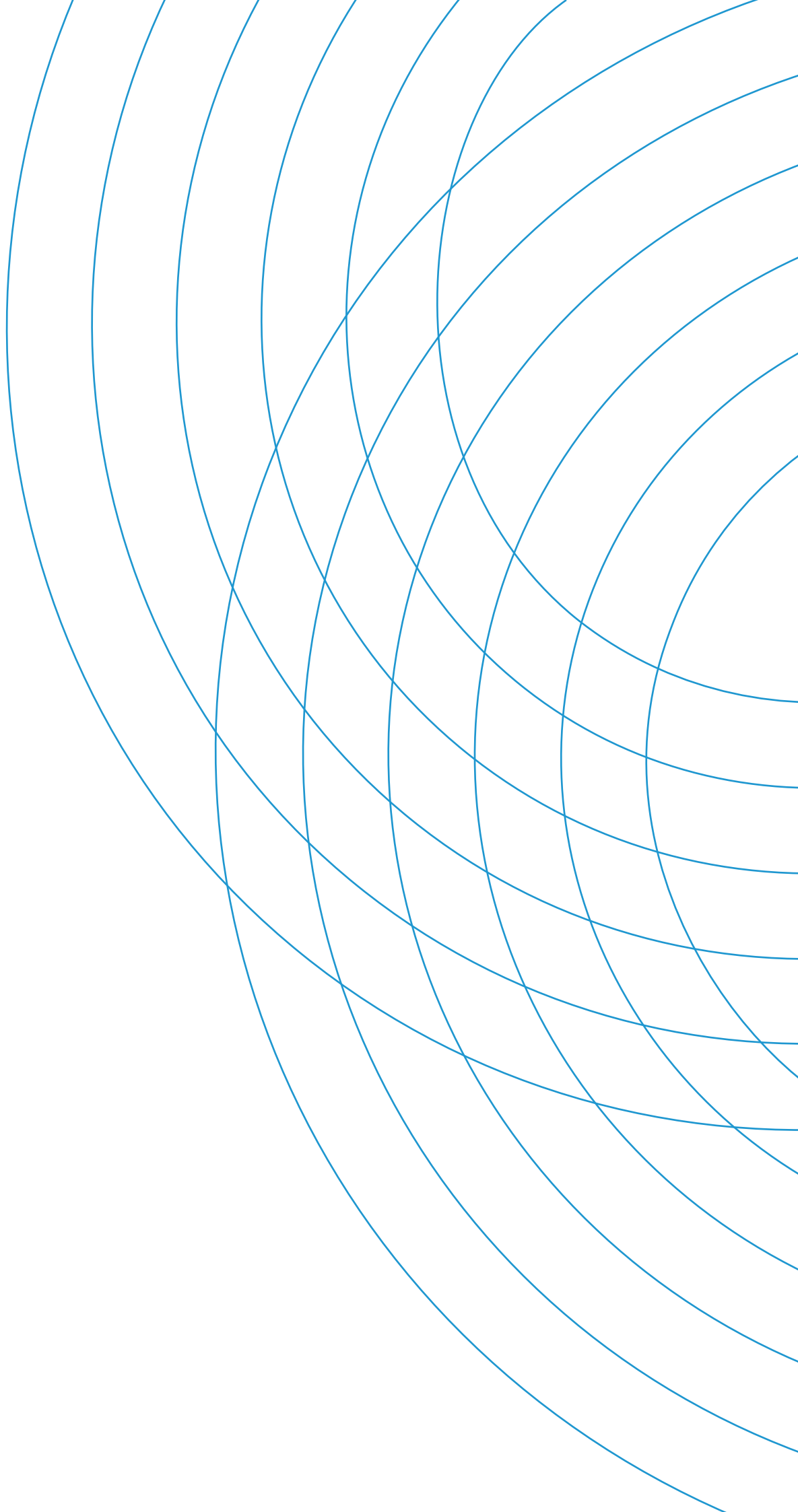
In summary, the internal geography of services value-added in exports vis-à-vis the location patterns of natural resources in Latin American countries may add another source of tension to the contemporary trade negotiations in the region. To the extent that there will be mismatches between the sequencing, nature, and intensity of policies promoting a greater insertion of LA countries into RVC and GVC, it may lead to a novel form of geography of discontent in the region.

References

- Antràs, P., & De Gortari, A. (2019). On the Geography of Global Value Chains (Working Paper, No. w23456). National Bureau of Economic Research.
- Aroca, P., Azzoni, C., & Sarrias, M. (2018). Regional Concentration and National Economic Growth in Brazil and Chile. *Letters in Spatial and Resource Sciences*, 11(3), 343-359.
- Cardoso, V. L. (2014). O Setor de Serviços no Brasil: uma Abordagem Regional. Master Thesis. Federal University of Juiz de Fora.
- Coffey, W. J., & Polèse, M. (1987). Trade and Location of Producer Services: a Canadian Perspective. *Environment and Planning A*, 19(5), 597-611.
- Coffey, W. J., Drolet, R., & Polèse, M. (1996). The Intrametropolitan Location of High Order Services: Patterns, Factors and Mobility in Montreal. *Papers in Regional Science*, 75(3), 293-323.
- Cuadrado-Roura, J. R. (2013). The Location of Service Industries. In Cuadrado-Roura, J. R. (Ed.). *Service Industries and Regions: Growth, Location and Regional Effects*. Springer, Berlin, Heidelberg.
- Domingues, E. P., Ruiz, R. M., Moro, S., & Lemos, M. B. (2006). Organização Territorial dos Serviços no Brasil: Polarização com Frágil Dispersão. In Negri, J. A., & Kubota, L. C. *Estrutura e Dinâmica do Setor de Serviços no Brasil*. Brasília: IPEA.
- ECLAC. Economic Commission for Latin America and the Caribbean (2017). *Foreign Direct Investment in Latin America and the Caribbean* Robles and Hewings. United Nations.
- Feenstra, R. C. (2004). *Advanced International Trade: Theory and Evidence*. Princeton university press.
- Gereffi, G. (2018). *Global Value Chains and Development: Redefining the Contours of 21st Century Capitalism*. Cambridge University Press.
- Gereffi, G., & Sturgeon, T. (2013). Global Value Chain-Oriented Industrial Policy: The Role of Emerging Economies. In Elms, D. K., & Low, P. (Eds.) *Global Value Chains in a Changing World*. World Trade Organization (WTO), 2013.
- Gervais, A., & Jensen, J. B. (2019). The tradability of services: Geographic concentration and trade costs. *Journal of International Economics*, 118, 331-350.
- Haddad, E. A. (2019), Measurement of the Services Value Added in Brazilian Exports. UNCTAD. Unpublished report.
- Haddad, E. A., Araújo, I. F., Galvis-Aponte, L. A. (2019b). Interregional Input-Output System for Colombia 2015. TD NEREUS 10-2019, The University of São Paulo Regional and Urban Economics Lab (NEREUS).
- Haddad, E. A., Araújo, I. F., Ibararán, M. E., Boyd, R., Elizondo, A., Liedo, P., Belausteguigoitia, J. C., and Menchero, M. (2019c). Interregional Input-Output System for Mexico, 2013. TD NEREUS 07-2019, The University of São Paulo Regional and Urban Economics Lab (NEREUS).
- Haddad, E. A., Aroca, P. A., Arantes, S. M., Dias, L. C. C., Fernandes, R. P., Li, D. L., Pimenta, B. P. P., Rocha, A. A. M., Sass, K. S., Ussami, K. A. (2018). Interregional Input-Output System for Chile, 2014. The University of São Paulo Regional and Urban Economics Lab (NEREUS), mimeo.
- Haddad, E. A., Bonet, J., Hewings, G. J., & Perobelli, F. S. (2009). Spatial Aspects of Trade Liberalization in Colombia: A General Equilibrium Approach. *Papers in Regional Science*, 88(4), 699-732.
- Haddad, E. A., Rocha, A. A. R., Pimenta, B. P. P., Gonçalves, C. A., Azzoni, C. A., Perobelli, F. S., Araújo, I. F., Sass, K. C., Dias, L. C. C., Istake, M., Fernandes, R. P., Vale, V. A. (2019a). *Matriz Interestadual de Insumo-Produto para o Brasil, 2015*. Fundação Instituto de Pesquisas

Econômicas, Universidade de São Paulo.

- Hoover, E. M. (1948). *Location of Economic Activity*. McGraw-Hill Book Company, Inc., New York.
- Johnson, R. C. (2014). Five facts about value-added exports and implications for macroeconomics and trade research. *Journal of Economic Perspectives*, 28(2), 119-42.
- Johnson, R. C. (2018). Measuring Global Value Chains. *Annual Review of Economics*, 10, 207-236.
- Johnson, R. C., & Noguera, G. (2012a). Accounting for Intermediates: Production Sharing and Trade in Value Added. *Journal of International Economics*, 86(2), 224-236.
- Johnson, R. C., & Noguera, G. (2012b). Proximity and Production Fragmentation. *American Economic Review*, 102(3), 407-11.
- Johnson, R. C., & Noguera, G. (2017). A Portrait of Trade in Value-Added over Four Decades. *Review of Economics and Statistics*, 99(5), 896-911.
- Koopman, R., Wang, Z., & Wei, S. J. (2014). Tracing Value-Added and Double Counting In Gross Exports. *American Economic Review*, 104(2), 459-94.
- Lejour, A., Rojas-Romagosa, H., & Veenendaal, P. (2017). Identifying Hubs and Spokes in Global Supply Chains Using Redirected Trade in Value Added. *Economic Systems Research*, 29(1), 66-81.
- Los, B., Timmer, M. P., & de Vries, G. J. (2015). How Global are Global Value Chains? A New Approach to Measure International Fragmentation. *Journal of Regional Science*, 55(1), 66-92.
- Los, B., Timmer, M. P., & de Vries, G. J. (2016). Tracing Value-Added and Double Counting in Gross Exports: Comment. *American Economic Review*, 106(7), 1958-66.
- Meng, B., Fang, Y., Guo, J., & Zhang, Y. (2017). Measuring China's Domestic Production Networks Through Trade in Value-Added Perspectives. *Economic Systems Research*, 29(1), 48-65.
- Miroudot, S., & Cadestin, C. (2017). *Services in Global Value Chains: From Inputs to Value-Creating Activities*. OECD Trade Policy Papers, No. 197, OECD Publishing, Paris. <http://dx.doi.org/10.1787/465f0d8b-en>.
- Ocampo, J. A. (2017). Commodity-Led Development in Latin America. *International Development Policy | Revue Internationale de Politique de Développement*. [Online], 9 | 2017, Online since 11 October 2017, connection on 27 October 2019. URL: <http://journals.openedition.org/poldev/2354>; DOI: 10.4000/poldev.2354.
- Parnreiter, C. (2019). Global cities and the geographical transfer of value. *Urban Studies*, 56(1), 81-96.
- Robles, J. D., & Hewings, G. The Determinants of the Regional Foreign Direct Investment in Chile. In Aroca, P., & Hewings, G. (Eds.). (2006). *Structure and Structural Change in the Chilean Economy*. Springer.
- Rodríguez-Pose, A. (2018). The Revenge of the Places that Don't Matter (and what to do about it). *Cambridge Journal of Regions, Economy and Society*, 11(1), 189-209.
- Taylor, P. J., Hoyler, M., & Sánchez-Moral, S. (2013). European Cities in Globalization: a Comparative Analysis Based on the Location Strategies of Advanced Producer Services. In Cuadrado-Roura, J. R. (Ed.). *Service Industries and Regions: Growth, Location and Regional Effects*. Springer, Berlin, Heidelberg.
- Timmer, M. P., Miroudot, S., & de Vries, G. J. (2019). Functional specialisation in trade. *Journal of Economic Geography*, 19(1), 1-30.





Policy Center for the New South

Complexe Suncity, Immeuble C,
Angle Boulevard Addolb et rue Albortokal,
Hay Riad, Rabat - Maroc.

Email : contact@ocppc.ma
Phone : +212 5 37 27 08 08
Fax : +212 5 37 71 31 54
Website : www.policycenter.ma