

A BIRD'S-EYE VIEW ON LATIN AMERICAN AND CARIBBEAN SERVICE EXPORTS

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1. Introduction

Although the services sector represents two-thirds of GDP in Latin America and the Caribbean (LAC) (ECLAC, 2016), its export culture is still in an embryonic stage, unlike trade in commodities and industrialized goods. In 2021, LAC's manufacturing exports reached a historic record of USD 1,208 billion (UNCTADSTAT, 2023), representing some 5% of world exports. However, that same year saw LAC countries exporting a meager USD 213 billion in services, a decline from the 2019 record of USD 242 billion (OECD, 2023).

Moreover, LAC's goods and services exports trajectory differs. While trade in merchandises has grown steadily throughout the decades, increasing fourfold - or USD 841 billion - since the turn of the century, the international commercialization of services only doubled; and at much lower values: a USD 64 billion growth. The scenario is even less optimistic once we observe that service exports have not fully recovered from the Covid-19 pandemic's impact.

In spite of that, it is possible that LAC states present competitive sectors in specific services. For example, the Balanced Trade in Services Dataset (BaTIS) developed by the Organization for Economic Cooperation and Development (OECD) and the World Trade Organization (WTO) estimates Barbados 2021 service exports at USD 15 billion, out of which more than half were in financial and insurance and pension services. In this sense, Barbados' ratio of exports of insurance and pension services to its total service exports surpasses the region's, as well as the world's. Thus, it could be inferred that Barbados has a revealed comparative advantage (RCA) in this specific industry (Balassa, 1965; Yu, Cai & Leung, 2009).

To possess an RCA indicates that a country might have structural characteristics which enable it to compete at the highest level in world markets. These characteristics can be related to aspects in labor markets, taxation, infrastructure,

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among others. Thus, by casting light on RCA indices of service industries, we are able to identify success stories that might be replicated or even bettered in partner countries.

In essence, this study contributes to the literature on LAC service exports by mapping country and services whose stories might inspire change and greater integration in the region. This is a first overview of service exports through this lens and further studies might build upon its findings.

2. Methodology

Research on service exports faces a great barrier in the scarcity of available, reliable data. A great number of countries simply does not report service exports and, oftentimes, the reported export value is not the same as its partner reported import value. Therefore, a few tools have been developed to address this gap.

One of the more robust tools is the OECD-WTO's BaTIS dataset. The BaTIS dataset applies econometric methods to fill-in missing trade data for 202 economies and 12 service sectors, arriving at the best estimations for trade in services at a global scale. While the dataset is quite comprehensive, its authors are very clear that around 96% of total datapoints and nearly half of the trade value had to be estimated (Liberatore and Wettstein, 2021).

That notwithstanding, the aggregated data provided by BaTIS deviates from reported export values at only around 3%. However, in some specific cases, such as Barbados (abovementioned), the reported values deviate by large margins. Indeed, Barbados reported only USD 1 billion in service exports in 2021, a USD 14 billion difference from the BaTIS estimation. This deviation comes from Barbados importers, which have reported much higher values coming from this economy.

Despite its shortcomings, the BaTIS dataset provides the greatest level of detail available for research on trade in services, separating exports by specific service sectors and countries. This level of disaggregation enables the application of RCA techniques which have the potential to display comparative advantages at the economy-industry level.

In this sense, I use the BaTIS dataset and apply Yu, Cai and Leung's (2009) normalized revealed comparative advantage (NRCA) index to offer an overview of

the competitiveness of service exports in the LAC region. The option for the NRCA metric instead of the classical Balassa index (1965) is due to the latter's inconsistencies in comparative studies (Yeats, 1985), which were corrected by the NRCA and tested in literature (Sanidas and Shin, 2010; Sarker and Ratnasena, 2014; Hoang, 2020). Thus, equation (1) presents the NRCA metric used in the analysis.

$$NRCA_j^i = \frac{E_j^i}{E} - \frac{E_j}{E} * \frac{E^i}{E} \quad (1), \text{ where:}$$

$NRCA_j^i$ = normalized comparative advantage index for service i in country j ;

E = global exports of services;

E^i = global exports of service i ;

E_j = service exports of country j ;

E_j^i = exports of service i in country j .

The NRCA metric is used for the 2016-2021 period, thereby indicating the development of service exports competitiveness in the region for the 11 of the 12 service sectors in the BaTIS dataset. The category that comprises trade in government goods and services not included elsewhere (n.i.e.) is not comprehended in the study, for it has no bearing on a country's overall competitiveness.

Moreover, unlike traditional research on revealed comparative advantage indices, I use two different calculations to assess the competitiveness of LAC economies. The first one, NRCAworld, considers the competitiveness of LAC countries facing global markets. The second, NRCAlac, considers only regional (intra-LAC) trade. Through these different methods, I am able to identify the competitiveness differences for each LAC economy within and outside of the region.

Thus, the study shows each LAC country's revealed comparative advantage in the following 11 service sectors scrutinized by the BaTIS database: 1) manufacturing services on physical inputs owned by others; 2) maintenance and repair services; 3) transport; 4) travel; 5) construction; 6) insurance and pension services; 7) financial services; 8) charges for the use of intellectual property n.i.e.; 9) telecommunications, computer, and information services; 10) other business services, and ; 11) personal, cultural, and recreational services.

Finally, all these sectors are aggregated at the commercial services category, in order to analyze them in a holistic sense. The sectoral comparative advantages are set according to each economy in a global and in a regional display.

Furthermore, the analysis comprehends six years, running from 2016 to 2021. In doing that, it captures export patterns before, during and after the Covid pandemic. While this study is not concerned with external factors that might have influenced these patterns, by casting light onto them the article helps the literature to skim the waters of LAC service exports.

The following sections detail the patterns and competitive advantage indices of each service sector, pointing to possible cases of success in the region. It is important to highlight, moreover, that the study does not seek to delve into why a country is competitive in any given sector, as each case study would comprise an article of its own. Rather, the focus is on the overall trends and demonstrated competitive indices.

3. Manufacturing services on physical inputs owned by others (SA)

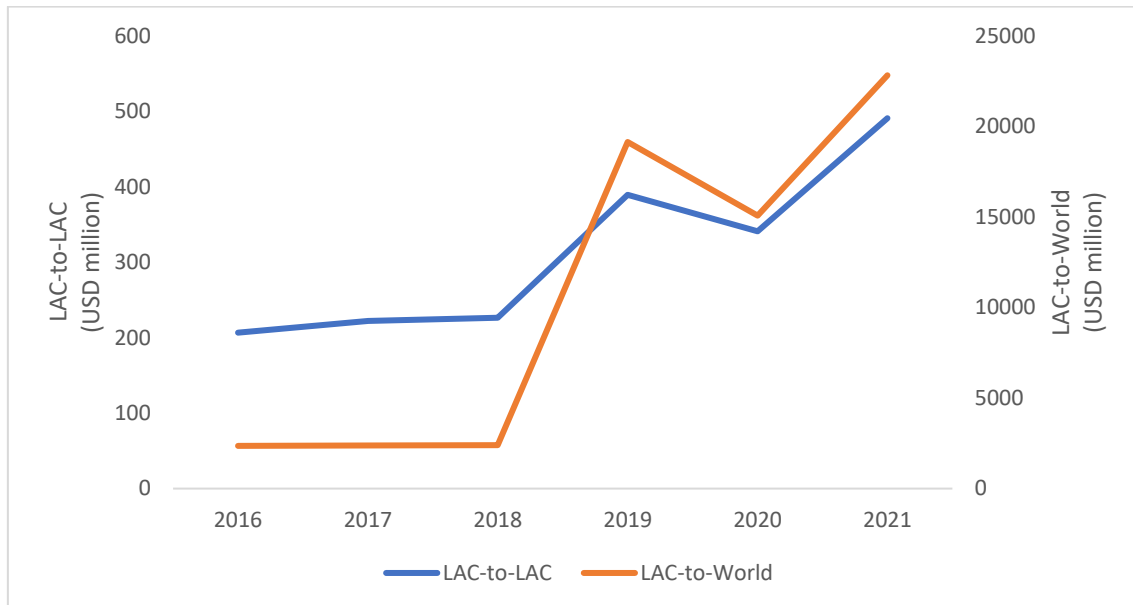
We begin our exploration with data concerning manufacturing services on physical inputs owned by others (SA, according to the UNSTATS classification). This category includes the assembly, labelling, packing, and processing of goods owned by one company by another firm. With increasing globalization, many goods are produced somewhere but have services directed to them in other countries. For example, many companies refine oil in Singapore, without necessarily selling the property of the oil to Singaporean companies (Toledano and Maennling, 2018).

In 2021, SA exports tallied USD 167 billion, the highest trade level ever recorded for this category. Latin America and Caribbean exports represented 13.7% of global trade, at USD 22 billion. While this is a representative share of global exports, trade internal to the region in this category was rather meager. LAC-to-LAC exports were of USD 490 million: just 2% of all exports of the region in that year.

That notwithstanding, intra-LAC trade in the industry has been steadily increasing. In 2016, the region exported 206 USD million. That is, trade in manufacturing services on physical inputs owned by others has skyrocketed in the period. A few cases are remarkable, such as Paraguay, whose 2016 exports totaled USD 31 billion

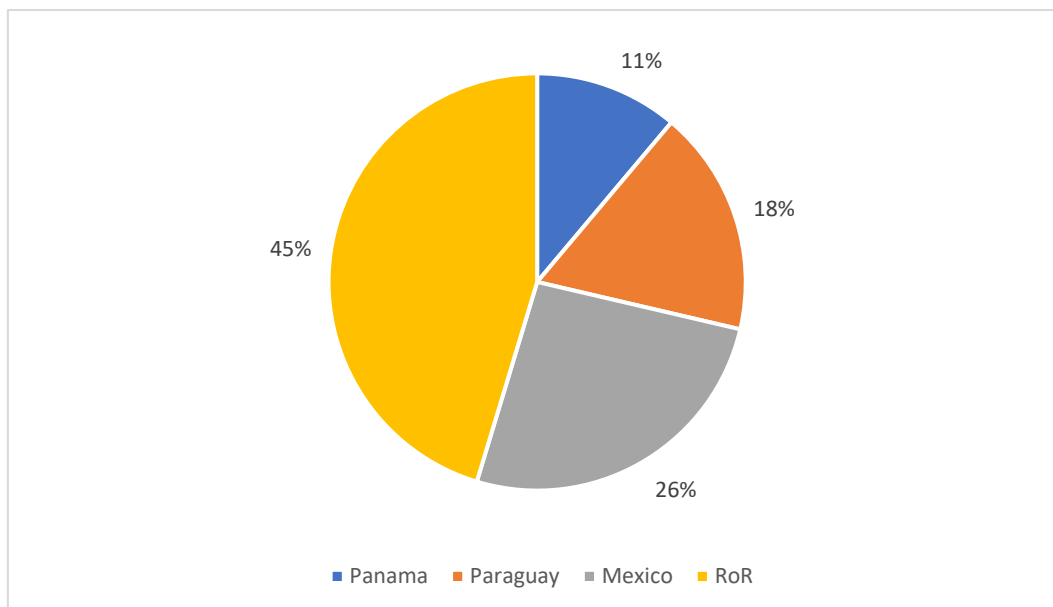
while 2021 exports had reached USD 73 billion. Even more remarkable are Mexico's exports, which reached 36% of all intra-LAC exports in 2021.

Figure 1: Regional and global LAC exports of manufacturing services on inputs owned by others from 2016 to 2021.



Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

Figure 2: Regional exports of manufacturing services on inputs owned by others in the 2016-2021 period, where RoR equals the sum of the exports of the rest of the region.



Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

Indeed, Mexico and Paraguay are also the two countries with the largest NRCA index when we narrow the analysis to an regional context. It is also interesting to highlight that these two countries have strong *maquila* strategies serving regional powerhouses in Brazil and the United States of America. In 2022, for instance, 239

Paraguayan *maquiladoras*, 61% of which from Brazil, exported 70 USD million according to official data compiled by this country's government (Agencia de Información Paraguaya, 2022).

Other three countries with SA exports that are high in proportion to their total exports are El Salvador, Guatemala, and Honduras. These three Central American countries have elevated ratios of manufacturing services among themselves and with Mexico, which oftentimes places them in the top 5 highest NRCAs when looking at the world as a whole or exclusively to the LAC region. Table 1, below, presents the best positioned LAC countries in terms of competitiveness.

Table 1: Top 5 LAC countries in terms of the NRCA index for world trade and LAC-only trade. Average value for the 2016-2021 period. Values relate to manufacturing services on inputs owned by others.

NRCAsworld	Value	NRCAlac	Value
Mexico	1.294	Mexico	2.879
Honduras	0.088	Paraguay	1.391
Guatemala	0.041	Honduras	1.016
El Salvador	0.047	Peru	0.656
Paraguay	0.039	Guatemala	0.634
LAC average	0.039	LAC average	0.000

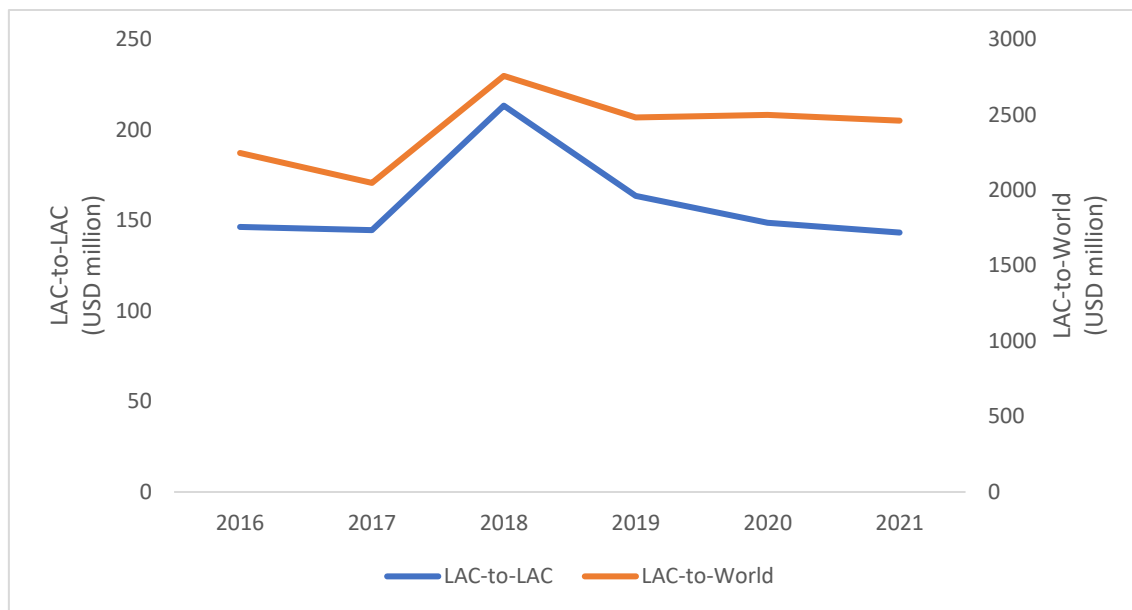
Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

4. Maintenance and repair services n.i.e. (SB)

The maintenance and repair services not included elsewhere (n.i.e.) category contemplates all work of such fashion, excluding those related to construction sites. In 2021, global exports of maintenance and repair services n.i.e. reached USD 91 billion, down from the USD 109 billion traded in 2019; likely a consequence of the Covid-19 pandemic, which reduced the flow of ships and aircrafts globally and, therefore, the repair services associated to them.

The Covid-19 pandemic also caused intra-LAC exports to drop; and to levels similar to the pre-Covid period. While the region exports internal to it were of USD 146 billion in 2016, they reached only USD 143 billion in 2021. In some cases, like Chile, exports were reduced to 1/3 of the pre-Covid period.

Figure 3: Regional and global LAC exports of maintenance and repair services from 2016 to 2021.



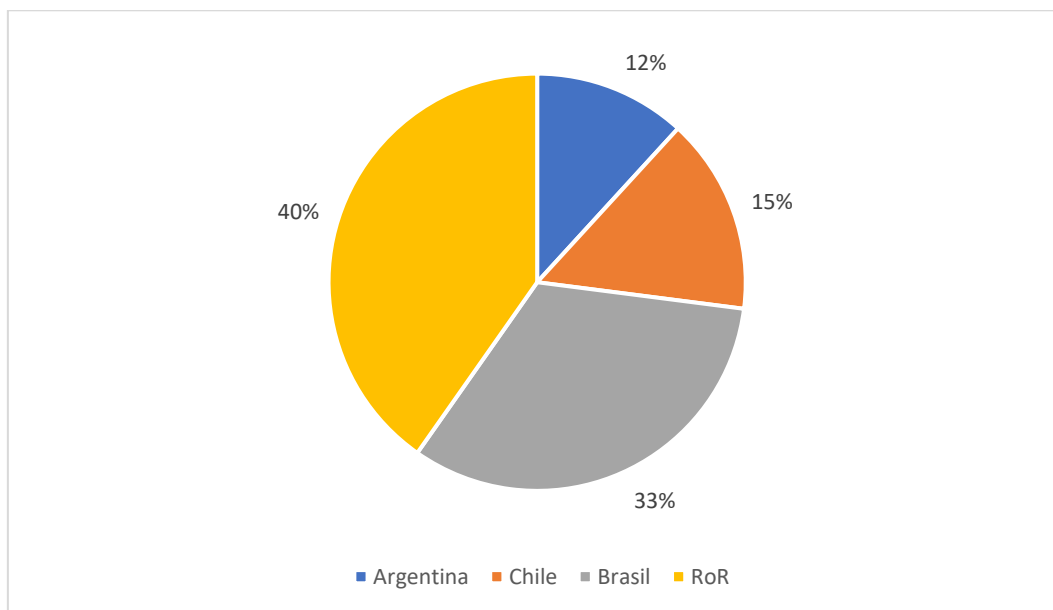
Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

Thus, in similarity with the SA category, LAC global exports accounted for 16% of total trade in 2021. However, regional exchanges represented a mere 2% of the maintenance and repair services exported in that year. Moreover, the SB category has another important LAC economy spearheading its rankings. Brazil was responsible for an estimated 30% of all exports throughout the 2016-2021 period. In 2018, Brazilian exports reached 44% of all SB services exported by the region to the world.

Brazil's prominence in maintenance and repair services exported globally and to LAC might be due to the country having three of LAC's 10 busiest airports (Airports Council International, 2023), eminent shipyards in the Santos and the Rio Grande ports, and repair services executed by Embraer, Brazil's national aerospace conglomerate with official maintenance sites near the São Paulo metropolitan area.

While Brazil leads the region in competitiveness terms, be it in an analysis of intra-LAC trade or in global terms, an important exporter to the region, Argentina, which exported 12% of the 2016-2021 total, does not cut the rank for the 5 most competitive economies. In the global outlook, Suriname and Grenada come up to the leading economies, given the large share of maintenance and repair services n.i.e. in their exports. In both cases, maintenance and repair services n.i.e. represent more than 10% of all exports.

Figure 4: Regional exports of maintenance and repair services n.i.e. in the 2016-2021 period, where RoR equals the sum of the exports of the rest of the region.



Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

Table 2: Top 5 LAC countries in terms of the NRCA index for world trade and LAC-only trade. Average value for the 2016-2021 period. Values relate to maintenance and repair services n.i.e.

NRCAsworld	Value	NRCAlac	Value
Brazil	0.073	Brazil	1.260
El Salvador	0.011	Costa Rica	0.357
Belize	0.007	Chile	0.346
Suriname	0.005	El Salvador	0.324
Grenada	0.002	Grenada	0.103
LAC average	-0.005	LAC average	0.000

Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

Another player that shows up in the competitiveness leaderboards is El Salvador, with the 2nd highest NRCA value in the region when considering global trade, and the 4th highest when we look at intra-LAC trade. This status is a consequence of the country's aircraft repair industry, which serves important airlines in the Americas, like American Airlines, Avianca, and Volaris (KPMG, 2021).

5. Transport (SC)

UNSTATS (2011) considers the transport category as compiling all transactions pertaining to freight and passenger services, including postal and courier services. Transport services may be conducted in 8 different modes, namely: air, electricity transmission, internal waterway, pipeline, rail, road, sea, and space. Moreover,

supporting and auxiliary services to transports, like cargo handling, storage and warehousing, are also contained in this category.

Historically, global trade in transport services has been growing. In 2016, the export of transport services was at USD 918 billion. This value had grown to USD 1.117 trillion by 2019, a 20% increase in a three-year period. In 2020, however, transport services observed a slump due to the Covid-19 pandemic, falling to USD 929 billion. That notwithstanding, the liberation of global value chains in 2021 saw transport exports reaching a historic record at USD 1.261 trillion.

The LAC region, despite housing one of the most important transit ways in the Port of Panama, represents but a small share of global transport exports. In 2021, LAC economies tallied USD 5 billion in exports, about 4% of all transport exports. Only 14% of these exports were destined to countries within the region. That is, the region's transport services, while dismal, are likely integrated to global value chains.

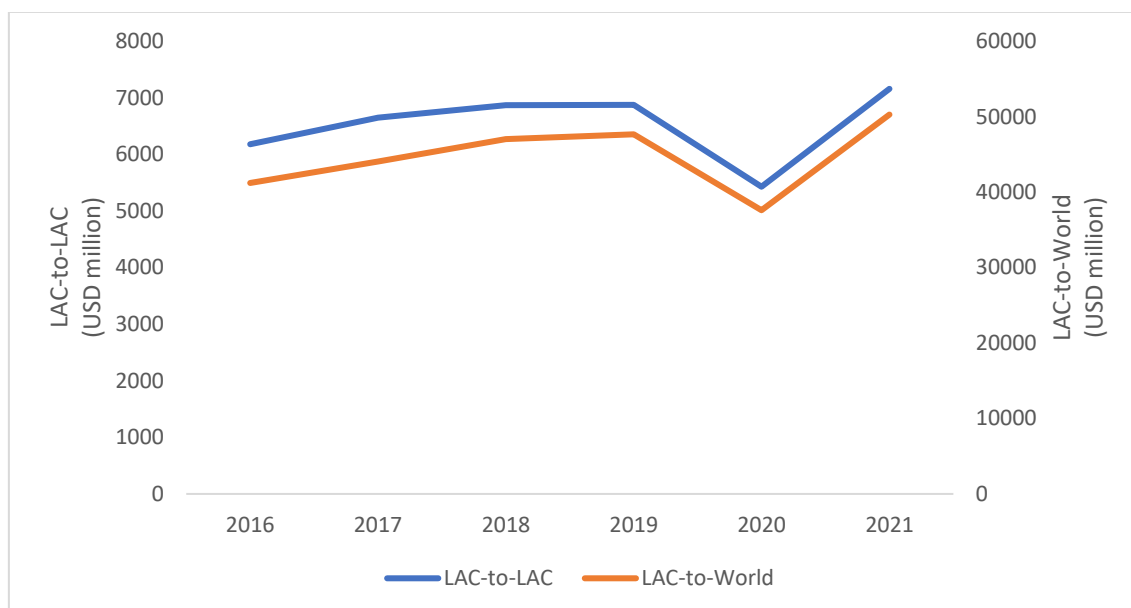
Throughout the 2016-2021 period, Panama took the reins of LAC transport exports. The country led the region exports to the world in every year, surpassing Brazil and Mexico, two of the largest economies in the region. In total, Panama exported USD 57 billion during those years. However, like most LAC states, Panama's exports were mostly destined to players in the global North. Only 15% of the transport services generated in Panama were imported by a LAC partner.

The integration scenario is also grim for other LAC economies. Mexico, for instance, had only 4% of its trade flowing toward LAC countries. Indeed, the 5 greatest exporters of the region – Panama, Brazil, Mexico, Chile, and Colombia – had an average of just 12% of exports traded in the region. The differences registered between regional and global exports render altogether a dynamic environment in terms of NRCA indices.

As seen in table 3, Panama leads the region's competitiveness be it in an intra-LAC analysis or in a global outlook. Chile and Brazil follow the country, holding the 2nd and 3rd place respectively. Interestingly, though, Venezuela and El Salvador come into the picture on a LAC-only portrait. In the Venezuelan case, its competitiveness index comes from the fact that 40% of all its exports to LAC countries originated in the transport industry (USD 271 million out of USD 632 million). For El Salvador, it is

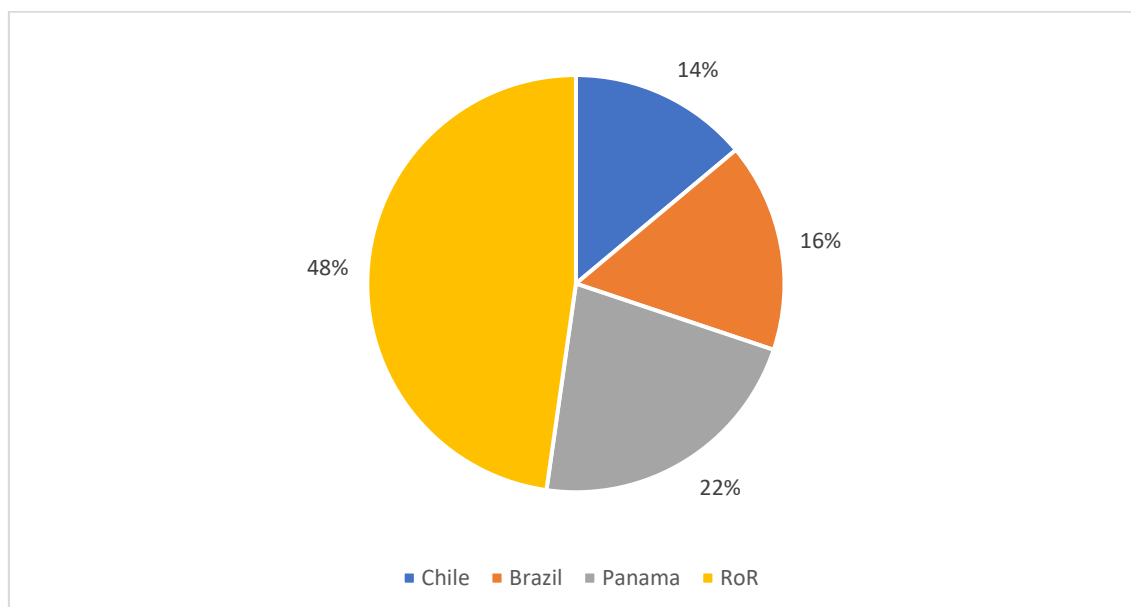
estimated that about 30% of its LAC-destined services trade also came from the transports sector.

Figure 5: Regional and global LAC transport exports from 2016 to 2021.



Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

Figure 6: Regional transport exports in the 2016-2021 period, where RoR equals the sum of the exports of the rest of the region.



Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

Table 3: Top 5 LAC countries in terms of the NRCA index for world trade and LAC-only trade. Average value for the 2016-2021 period. Values relate to transport services.

NRCAworld	Value	NRCAlac	Value
Panama	1.154	Panama	31.636
Chile	0.516	Chile	11.511
Brazil	0.395	Brazil	7.045
Colombia	0.212	Venezuela	0.730
Peru	0.063	El Salvador	0.638
LAC average	0.027	LAC average	0.000

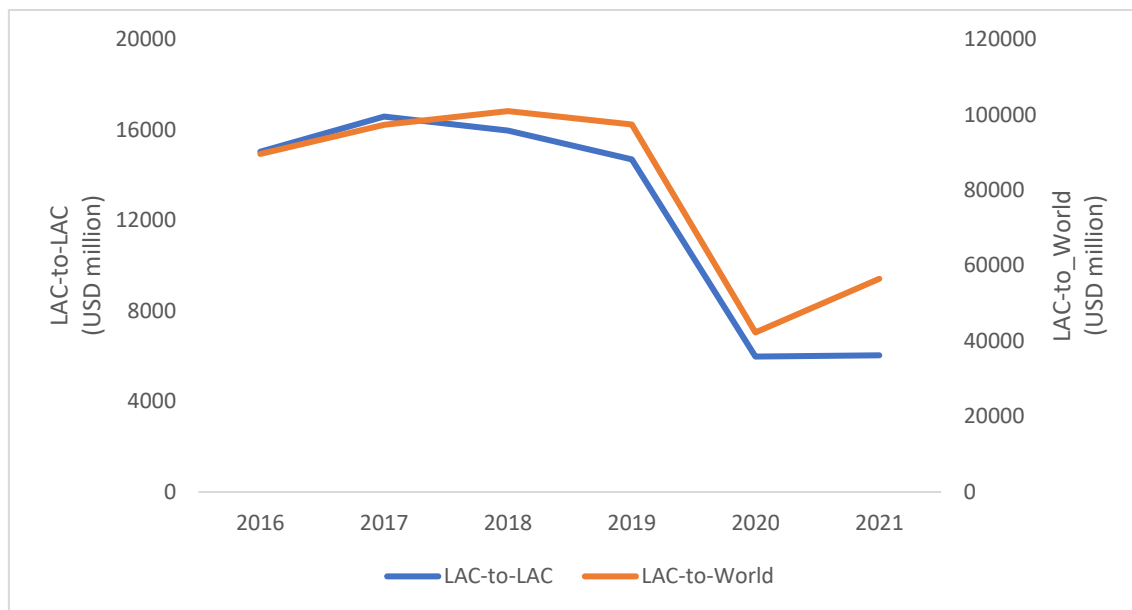
Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

6. Travel (SD)

Although the Latin American and Caribbean region is widely known for its natural exuberance, ranging from the Andes mountains to the deep-blue Caribbean, it still lags behind other economic zones in terms of exports of travel services. For the UNSTATS office, the Travel category accrues transactions related to the acquisition of goods and services during visits to an economy insofar as this visit does not consist in a change of residency. According to these terms, LAC countries corresponded to about 7% of all travel services provided from 2016 to 2021. Globally, an estimated USD 1.4 trillion were traded in travel services before the Covid-19 pandemic.

The blatant impact of the Covid-19 pandemic to trade in travel services is indeed a rather interesting factor in the provision of travel services. In 2020, global exports were only 39% of their value in 2019. For LAC economies, the drop was of around 66%. The relevance of this effect was felt overwhelmingly in small island states in the Caribbean. Some states, like Saint Kitts and Nevis, Antigua and Barbuda, and Grenada, have more than 80% of all their service exports coming from the travel industry. Thus, once their incomes dropped by as much as 50% in 2020, the scenario looked drastic.

Figure 7: Regional and global LAC SD exports from 2016 to 2021.



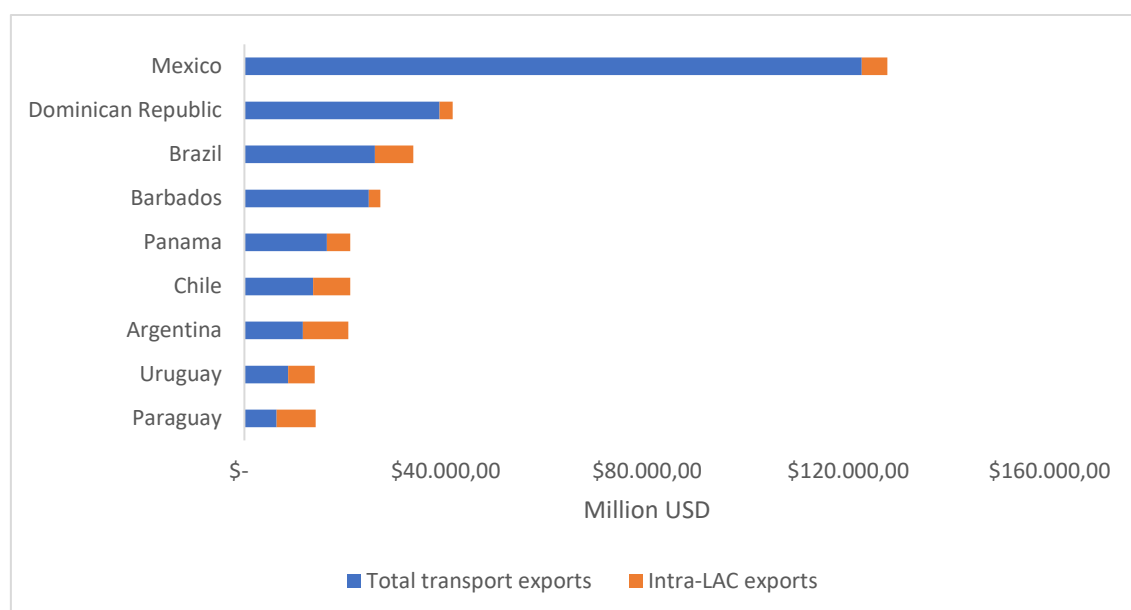
Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

Another relevant aspect regarding the travel industry in LAC is that total exports within the region were already decreasing within the region, despite their total growth regarding external partners. Indeed, in 2021 intra-LAC trade remained stagnant from 2020, while the region's global exports resumed their dynamic trajectory.

Furthermore, it is important to highlight the differences in the leading travel exports when looking at regional and global exports. When the analysis befalls trade with the world, Mexico leads the region by far: the economy that comes in 2nd in exports, the Dominican Republic, traded just 1/3 of the value of Mexico from 2016 to 2021. After that, the Dominican Republic, Brazil, Barbados, and Panama follow.

However, LAC-only trade shows a quite different scenario. Mexico, for instance, drops to the 6th place, since only 4% of its exports were destined to LAC countries. The Dominican Republic stands at the 12th place and Barbados at 14th. The countries that lead the region in internal exports are the MERCOSUR member states, apart from Venezuela, with Chile taking its place.

Figure 8: The 5 largest travel exporters in LAC to the world and within LAC from 2016 to 2021.



Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

On the one hand, this scenario indicates that some countries in the LAC region have important travel hubs; albeit these are likely serving guests and companies from Northern America or Europe, which might cause a dollarization effect that repels Latin partners. On the other hand, the flourishing travel data in MERCOSUR economies points to the relevance of the trade block to its members. Brazil and Argentina, for instance, are each other's most important trading partner in this industry, with Paraguay often coming in a close second.

Table 4: Top 5 LAC countries in terms of the NRCA index for world trade and LAC-only trade. Average value for the 2016-2021 period. Values relate to travel services.

NRCAworld	Value	NRCAlac	Value
Mexico	2.222	Paraguay	13.001
Dominican Rep.	0.875	Mexico	6.746
Cuba	0.375	Dominican Rep.	5.610
Costa Rica	0.318	Bolivia	5.386
Peru	0.272	Uruguay	5.129
LAC average	0.207	LAC average	0.000

Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

In terms of competitiveness indices, intriguing findings can be found when we look at the travel industry in Latin America and the Caribbean. For instance, Cuba comes as the 3rd most competitive country in the region, for its travel exports represent more than 20% of its entire export basket. Brazil, on the other hand, comes down as one of the least competitive economies, since its travel-to-total-service-exports ratio

is rather low. Moreover, contrary to the expected, Mexico is a competitive player both within and outside LAC. That is so because Mexican travel exports consist of around 50% of all its exports to the region.

7. Construction (SE)

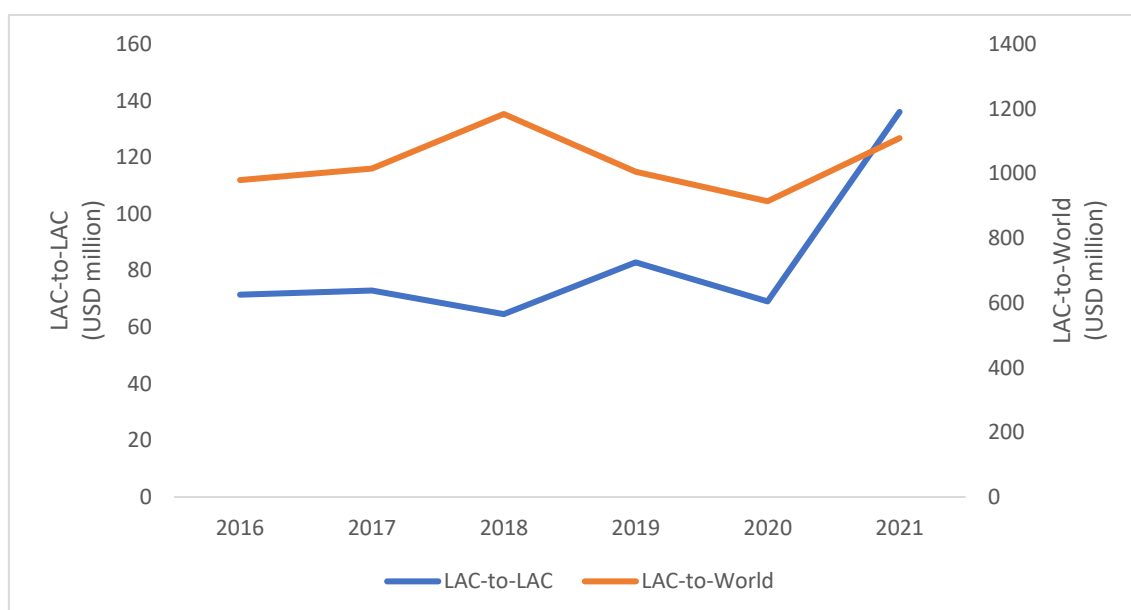
The construction industry covers all creation, extension, management, renovation, repair or extension of fixed assets in an economy, like bridges and dams. Accessory services related to it, such as site preparation, demolition and plumbing are also considered within its account. These services encompassed USD 97 billion in exports in 2021, down from a record of USD 110 billion in 2018.

Unlike most services, trade in construction services within LAC economies has shown a positive trend since the easing of Covid-19 restrictions. 2021 marked the best year for the sector in terms of regional trade, at an estimated USD 136 million. When considering exports to the global economy, this value increases to about USD 1.1 billion; or 1% of all construction exports in that year.

In terms of total exports, Brazil leads the region, having exported some USD 858 million dollars from 2016 to 2021, followed closely by Panama, at USD 817 million, and Mexico, whose exports totaled USD 783 million. Colombia and the Dominican Republic close the list of 5 largest exporters to the world. These countries also top the list of intra-LAC trade, with the exception of Mexico, which is substituted by Belize.

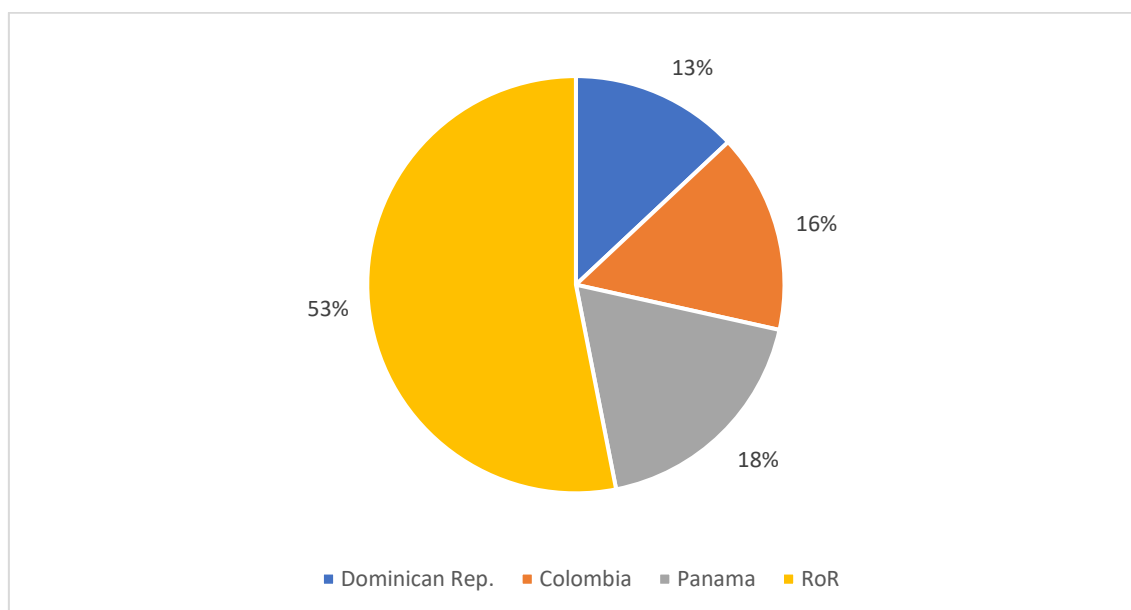
One paramount aspect of the construction industry in LAC is that only two countries present positive NRCA indices in the region when we perform a global trade analysis. These are Belize (NRCA = 0.009) and Nicaragua (NRCA = 0.001). Indeed, the mean NRCA for the region is -0.015. These two countries are the only ones whose construction exports represent more than 1% for the 2016-2021 period. For Nicaragua, construction services represented 2%, while for Belize the value was 8%. For large service exporters, such as Brazil and Mexico, the construction industry represents a dismal part of total exports, thereby making their competitiveness indices small.

Figure 9: Regional and global LAC construction exports from 2016 to 2021.



Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

Figure 10: Regional construction exports in the 2016-2021 period, where RoR equals the sum of the exports of the rest of the region.



Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

Once we restrict the analysis to intra-LAC exchanges, this scenario changes a bit. Colombia becomes the most competitive player, with the Dominican Republic and Panama following. However, the sector continues playing a small role in total exports in the region. Out of the 33 LAC economies, 21 have construction services representing less than 1% of all total service exports.

Table 5: Top 5 LAC countries in terms of the NRCA index for world trade and LAC-only trade. Average value for the 2016-2021 period. Values relate to construction services.

NRCAworld	Value	NRCAlac	Value
Belize	0.009	Colombia	0.409
Nicaragua	0.001	Dominican Rep.	0.361
Dominica	-0.001	Belize	0.284
Grenada	-0.001	Panama	0.167
Suriname	-0.001	El Salvador	0.079
LAC average	-0.015	LAC average	0.000

Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

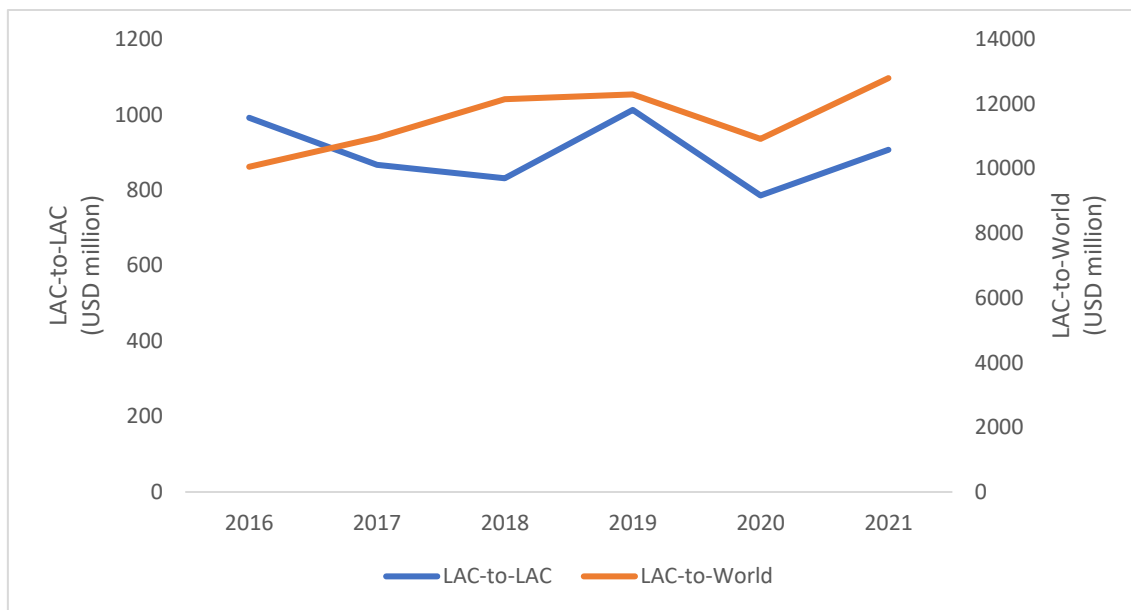
8. Insurance and pension services (SF)

The insurance and pension services industry is one of the most important financial sectors in the world. In 2021, total trade in this sector reached USD 212 billion mark, increasing more than USD 60 billion since 2016. In overall terms, however, the LAC region has not been as dynamic as the rest of the world. Within the region, trade in this sector has been stagnant since 2016, revolving around USD 900 million.

The LAC region represented a 6% share of global trade, with prominent economic players in the Barbados (USD 49 billion from 2016-2021) and in Bahamas (USD 6 billion)². Indeed, these two countries, especially Barbados, far outpace much larger economies, such as Brazil (USD 4 billion) and Mexico (USD 3.8 billion). Barbados is responsible for more than 70% of all exports in this sector when we look at LAC trade with the globe. The country is also a regional leader once LAC-only exports are considered: more than 60% of all trade goes through firms in Barbados. Moreover, the share of exports of Barbados to countries in the region is also larger than that of other players like the Bahamas and Brazil.

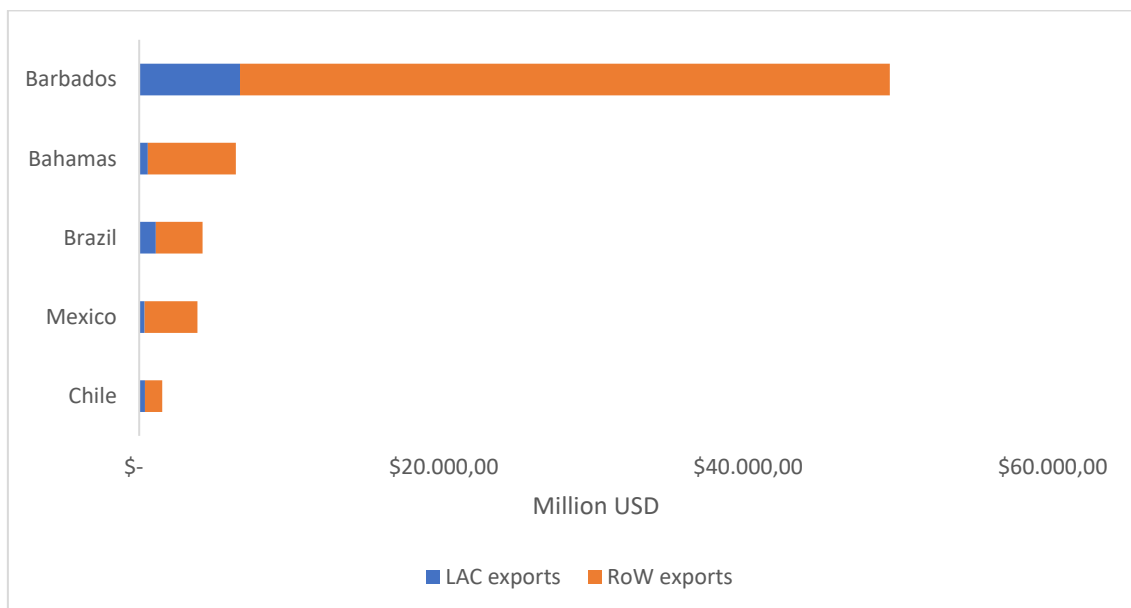
² In this sector, specifically, one important factor that must be brought to the spotlight is that most values are estimates. For instance, the GDP of Barbados in 2021 was USD 4.8 billion, as per World Bank data. However, the OECD-WTO BaTIS data puts the country's estimated export value of insurance and pension services at USD 8 billion; thereby pointing to possible discrepancies between reported and estimated values.

Figure 11: Regional and global LAC exports of insurance and pensions services from 2016 to 2021.



Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

Figure 12: The 5 largest insurance and pension services LAC exporters to the world and within LAC from 2016 to 2021.



Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

Moreover, Barbados, together with the Bahamas, is the one country with a positive NRCA index in this sector once we perform a global analysis. Indeed, the sector also has a handful of players with positive indices on an regional overview: Barbados, the Bahamas, Trinidad and Tobago, Saint Kitts and Nevis, and Dominica. For these select countries, the ratio of insurance services to total exports oftentimes passes the 20% margin.

Table 6: Top 5 LAC countries in terms of the NRCA index for world trade and LAC-only trade. Average value for the 2016-2021 period. Values relate to insurance and pension services.

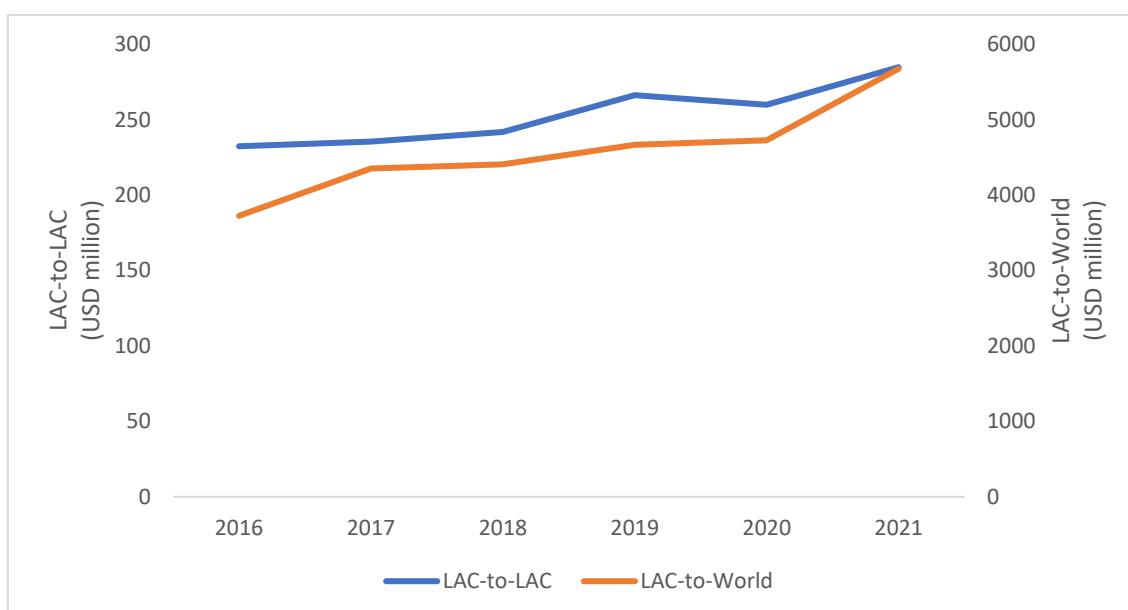
NRCAsworld	Value	NRCAlac	Value
Barbados	1.363	Barbados	20.600
Bahamas	0.160	Bahamas	1.550
Trinidad and Tobago	0.016	Trinidad and Tobago	0.795
St. Kitts and Nevis	0.001	St. Kitts and Nevis	0.062
Dominica	-0.001	Dominica	0.012
LAC average	-0.015	LAC average	0.000

Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

9. Financial services (SG)

Along with the insurance and pension services sector, the financial services industry composes another relevant share of global services exports. In 2021 alone, the provision of services such as deposit taking and lending, credit card services, letters of credit, among others, to foreign countries tallied an impressive USD 538 billion. This represented a USD 169 billion increase from 2016.

Figure 13: Regional and global LAC exports of financial services from 2016 to 2021.



Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

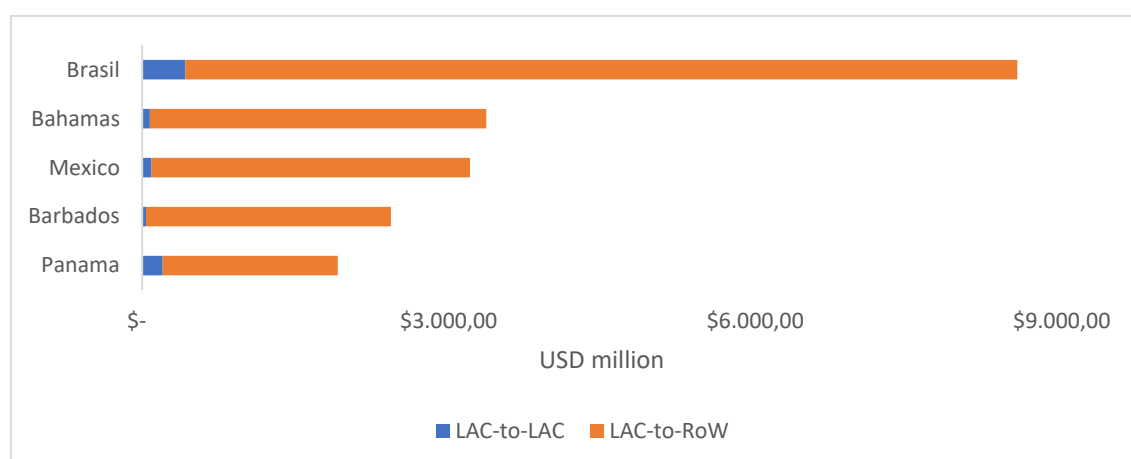
The representativeness of LAC industries in the financial sector is smaller than in the insurance and pension economy, at just 1% of total trade; or USD 5 billion. Moreover, regional trade in financial services is negligible when compared to world trade. An estimated USD 284 million were traded between countries in the region in

2021. In 2016, this value was equal to USD 232 million. That indicates an increase of 22% in the period, vis-à-vis 52% for total financial exports.

An interesting aspect of trade in the financial sector is that the Bahamas and Barbados come up as two of the most important exporters in the region, just like in the insurance and pension services industry. The relevance of these industries to these countries might indicate an overall specialization level in their economic backbones.

That notwithstanding, the Bahamas and Barbados' financial trade within the LAC region is also relatively small compared to their total exports. Therefore, it could be hypothesized that the characteristics that attract importers of such services from outside the region in these two island states might not be present in other LAC countries. For that very reason, the world-level NRCA indices for the sector in LAC are mostly negative, except for the Bahamas.

Figure 14: The 5 largest financial services LAC exporters to the world and within LAC from 2016 to 2021.



Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

Table 7: Top 5 LAC countries in terms of the NRCA index for world trade and LAC-only trade. Average value for the 2016-2021 period. Values relate to financial services.

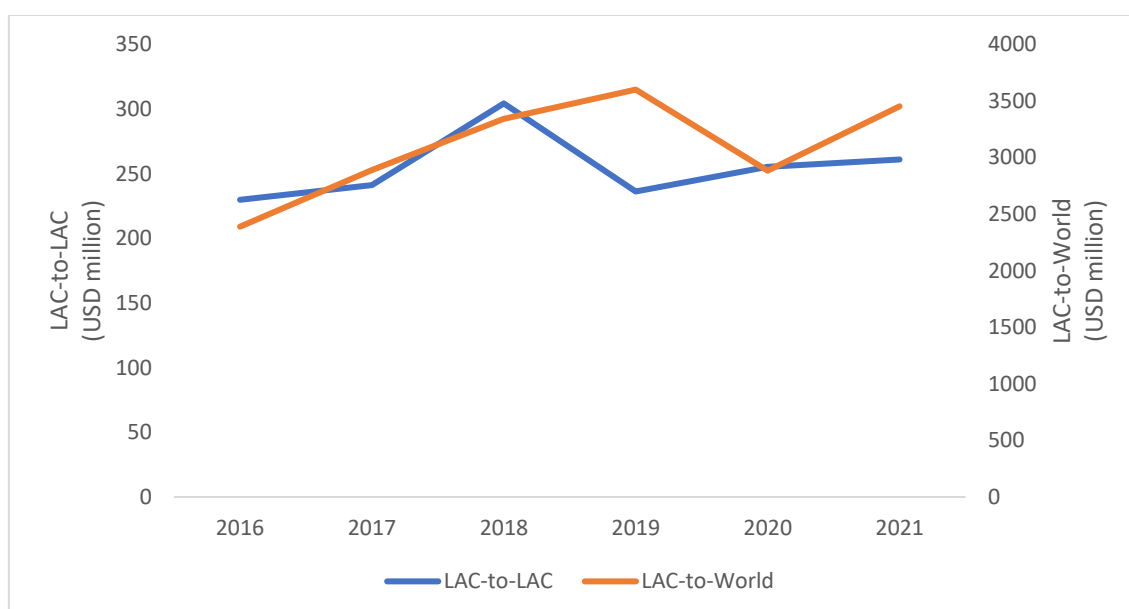
NRCAsworld	Value	NRCAlac	Value
Bahamas	0.031	Brazil	1.457
Grenada	-0.002	Bahamas	0.404
Dominica	-0.002	Uruguay	0.360
Surinama	-0.004	Panama	0.306
St. Kitts and Nevis	-0.005	Guatemala	0.181
LAC average	-0.064	LAC average	0.000

Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

10. Charges for the use of intellectual property n.i.e. (SH)

Charges for the use of intellectual property not included elsewhere (n.i.e.) include trade pertaining to copyrights, industrial processes and designs, patents, trade secrets, trademarks, as well as licenses to reproduce and distribute intellectual property (UNSTATS, 2011). Overall, this is an industry whose estimated trade values were relatively stable in the period under analysis. For global trade, exports averaged at around USD 440 billion, while LAC-to-world exports revolved around USD 3 billion, at less than 1% of total trade. Moreover, intra-LAC trade had a mean trade value of USD 250 million in the period.

Figure 15: Regional and global LAC exports of charges for the use of intellectual property n.i.e. from 2016 to 2021.



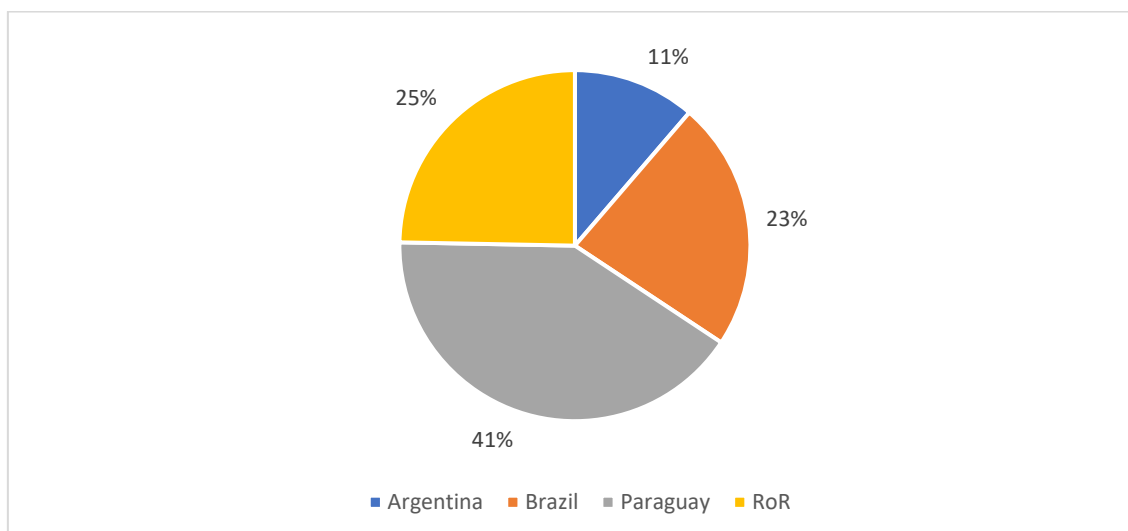
Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

Unlike the financial services sector, the largest exporters of charges on intellectual property to the world are also relevant players within-LAC. The largest exporters in the region – Mexico, Paraguay, Brazil, Barbados and Argentina – also top the list when the analysis is restricted to the continent. The only change is in Barbados, which is substituted by Panama.

As shown in figure 16, Paraguay leads the region in exports for this sector, with a trade value that surpasses the sum of the exports of the second and third largest exporters: Brazil and Argentina. Interestingly, however, Paraguay exports most of its charges exactly to Brazil and to Argentina. This might indicate that such trade is

happening in an intra-firm fashion, likely related to the maquilas model adopted by the country. Indeed, Paraguay is the only country in the region with a mean positive NRCA index throughout the 2016-2021 period.

Figure 16: Regional charges for the use of intellectual property n.i.e exports in the 2016-2021 period, where RoR equals the sum of the exports of the rest of the region.



Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

Table 8: Top 5 LAC countries in terms of the NRCA index for world trade and LAC-only trade. Average value for the 2016-2021 period. Values relate to charges of intellectual services n.i.e.

NRCAsworld	Value	NRCAlac	Value
Paraguay	0.052	Paraguay	3.566
Grenada	-0.002	Brazil	0.957
Dominica	-0.002	Mexico	0.262
Suriname	-0.003	Belize	0.001
St. Kitts and Nevis	-0.005	Suriname	-0.005
LAC average	-0.072	LAC average	0.000

Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

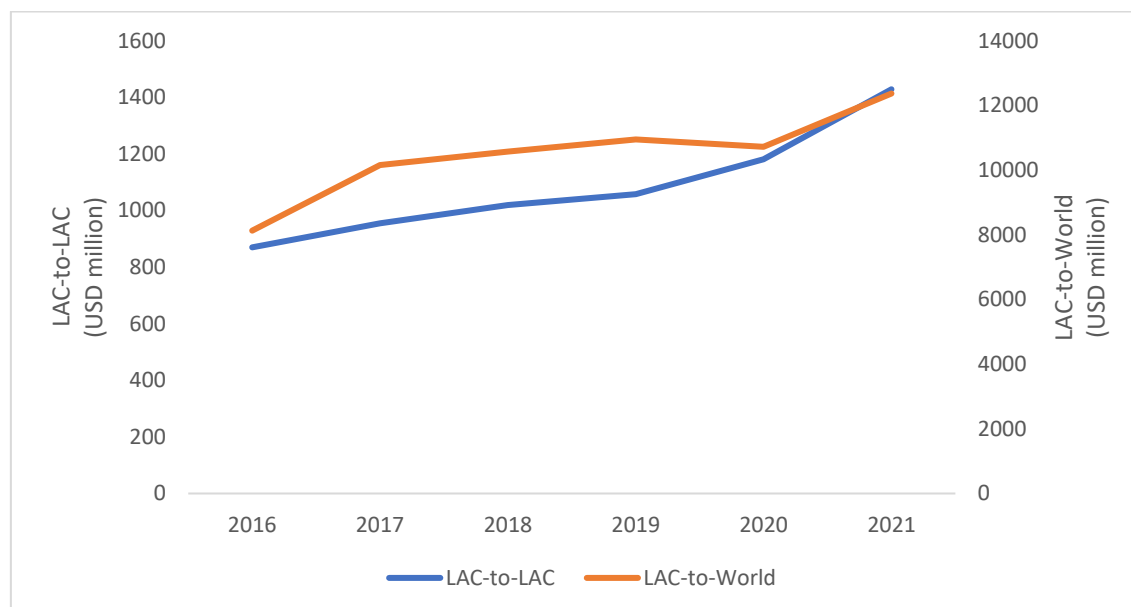
11. Telecommunications, computer and information services (SI)

The information and telecommunications (IT) industry (broadcasts of video, sound, telephone calls, software, mobile exchanges, among others) has been presenting astonishing growth in the past decade – and so has the international trade of such services. In 2016, the estimated export value of IT services was of around USD 400 billion. By 2021, this value had skyrocketed to USD 680 billion: a 70% increase in 5 years.

While the exports of Latin America and the Caribbean have also grown in the period, they have done so at a much slower speed. Total exports to the world grew by 52%

in the period, and intra-LAC trade expanded by 64%. However, the region as a whole is a small player in this sector. LAC economies exported only USD 1.4 billion in 2021, a meager 2% of world trade. One pertinent aspect, though, is that trade internal to the region has been growing at a higher rate than exports to other regions.

Figure 17: Regional and global LAC exports of IT services from 2016 to 2021.

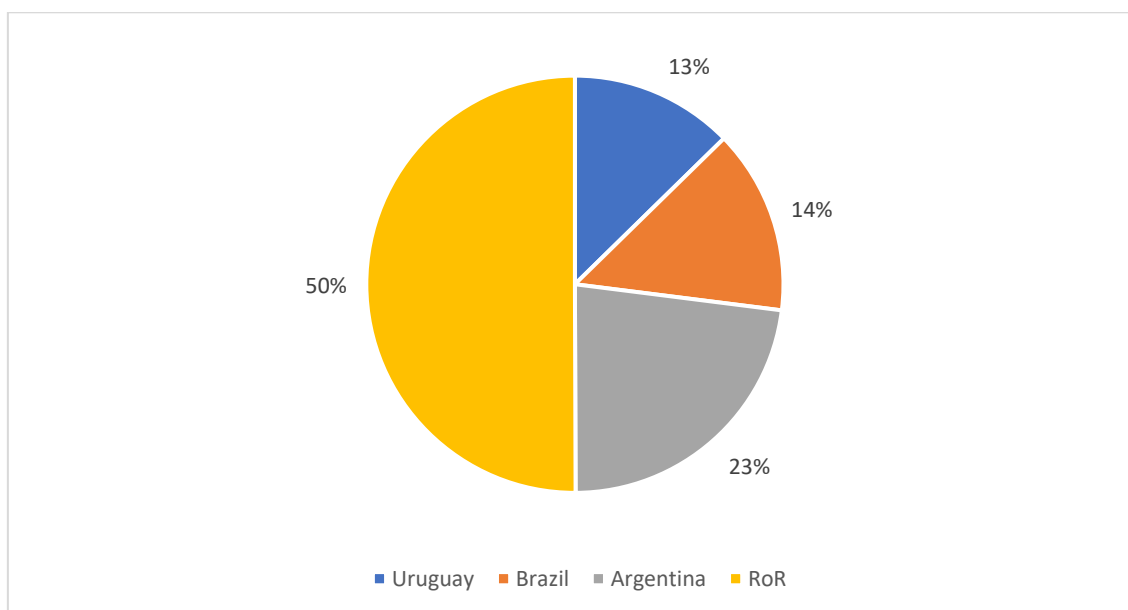


Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

Overall, the region's greatest exporter in the period was Brazil, followed by Mexico, Argentina, Barbados, and Cuba. Restricting the analysis only to trade in LAC, Uruguay and Chile substitute Barbados and Cuba, and Argentina becomes the largest exporter. It is estimated that Brazil and Argentina's representativeness in IT trade is due its large telecommunication conglomerates: Globo and Clarín, respectively.

Despite the prominence of Brazilian exports in the sector, the country does not display a high NRCA index in the IT sector. Rather, Guatemala is the region's most competitive country in this industry, in terms of the NRCA index, with the IT sector representing over 20% of all its exports.

Figure 18: Regional IT exports in the 2016-2021 period, where RoR equals the sum of the exports of the rest of the region.



Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

Table 9: Top 5 LAC countries in terms of the NRCA index for world trade and LAC-only trade. Average value for the 2016-2021 period. Value relate to IT services.

NRCAsworld	Value	NRCAlac	Value
Guatemala	0.066	Argentina	4.818
Cuba	0.045	Uruguay	3.083
Uruguay	0.012	Guatemala	1.521
Nicaragua	0.005	Cuba	0.850
Honduras	0.005	Colombia	0.588
LAC average	-0.048	LAC average	0.000

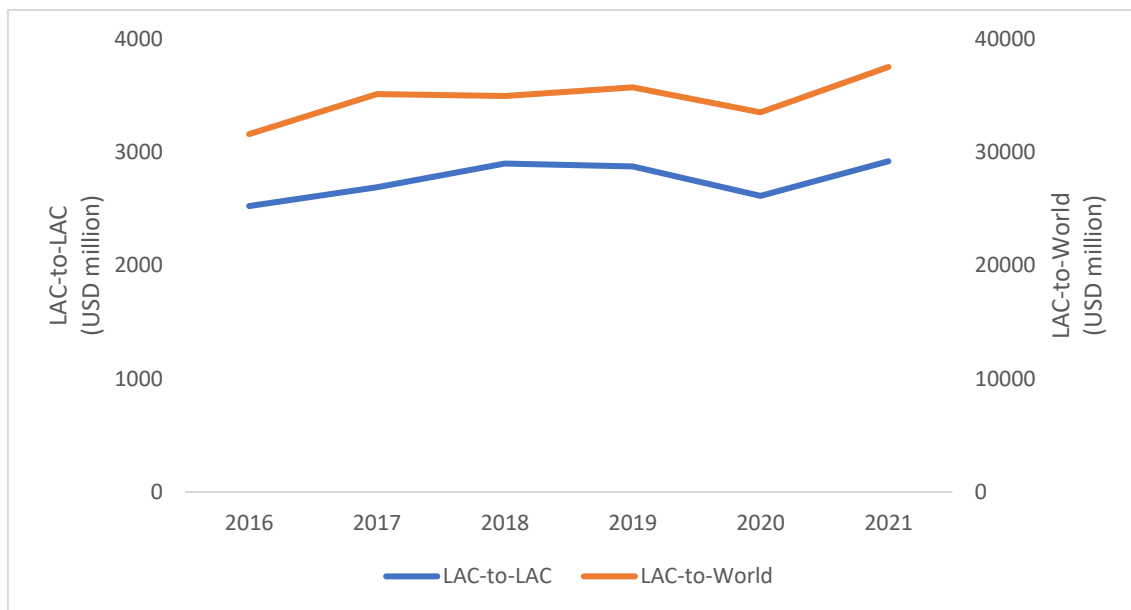
Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

12. Other business services (SJ)

The other business services category (SJ) is an amalgamation of several different sectors such as research and development services, consultancies, architectural and engineering services, among many others. Since the category considers different business fields, its total trade value is quite impressive. In 2021, exports of other business services reached the value of USD 1.6 trillion, growing around USD 500 billion since 2016.

LAC exports to the world represented only 2% of this total, at an estimated USD 37 billion. Following the pattern of other sectors, just 8% of LAC exports was internal to the region throughout the 2016-2021 period.

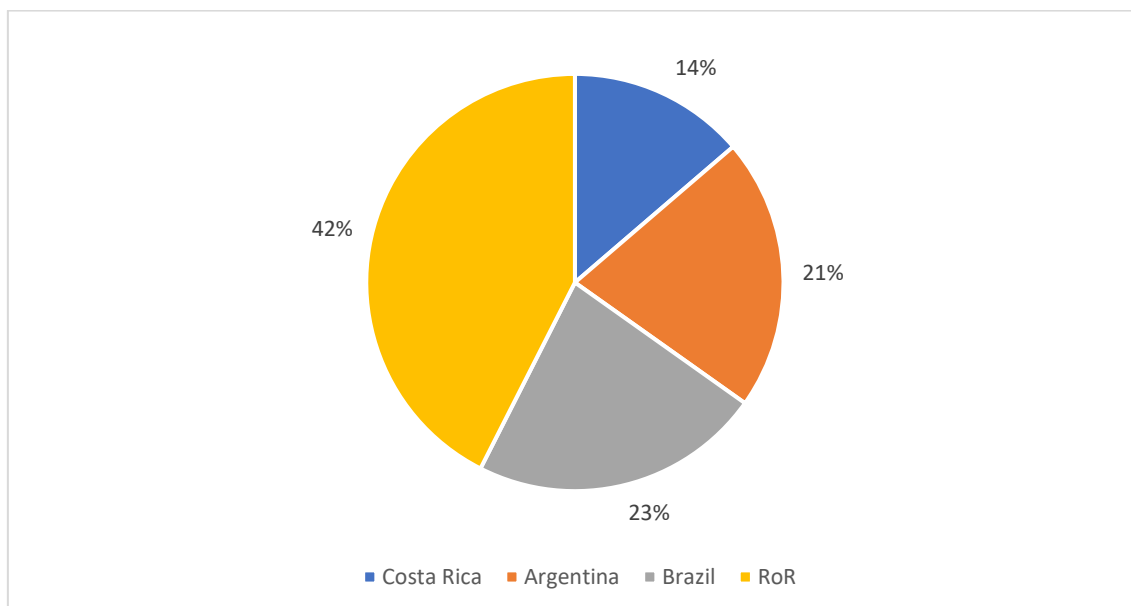
Figure 19: Intra-LAC and global LAC exports of other business services from 2016 to 2021.



Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

In terms of total exports, the region is led by Brazil and Mexico, which are its two largest economies. Following that, Argentina, Costa Rica, and Barbados enter the top 5. However, once the analysis focuses on LAC-to-LAC trade, both Mexico and Barbados drop out of the list of largest exporters, with Chile and Uruguay coming in their place.

Figure 20: Regional exports of other business services in the 2016-2021 period, where RoR equals the sum of the exports of the rest of the region.



Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

Brazil's share of intra-LAC exports, though, is much lower than other countries. While only 5% of Brazil's trade is with regional partners, Argentina trades 18%, Chile 12%, Costa Rica 15%, and Uruguay 18%. For that very reason, Brazil has the highest NRCA index when looking at total exports of other business services from the region to the world. However, it loses its lead to Costa Rica when only trade internal to the LAC region is considered.

Table 10: Top 5 LAC countries in terms of the NRCA index for world trade and LAC-only trade. Average value for the 2016-2021 period. Values relate to other business services.

NRCAsworld	Value	NRCAlac	Value
Brazil	0.734	Costa Rica	10.291
Costa Rica	0.107	Brazil	9.715
Argentina	0.058	Argentina	9.295
Belize	0.002	Colombia	0.970
Dominica	-0.004	Belize	0.130
LAC average	-0.091	LAC average	0.000

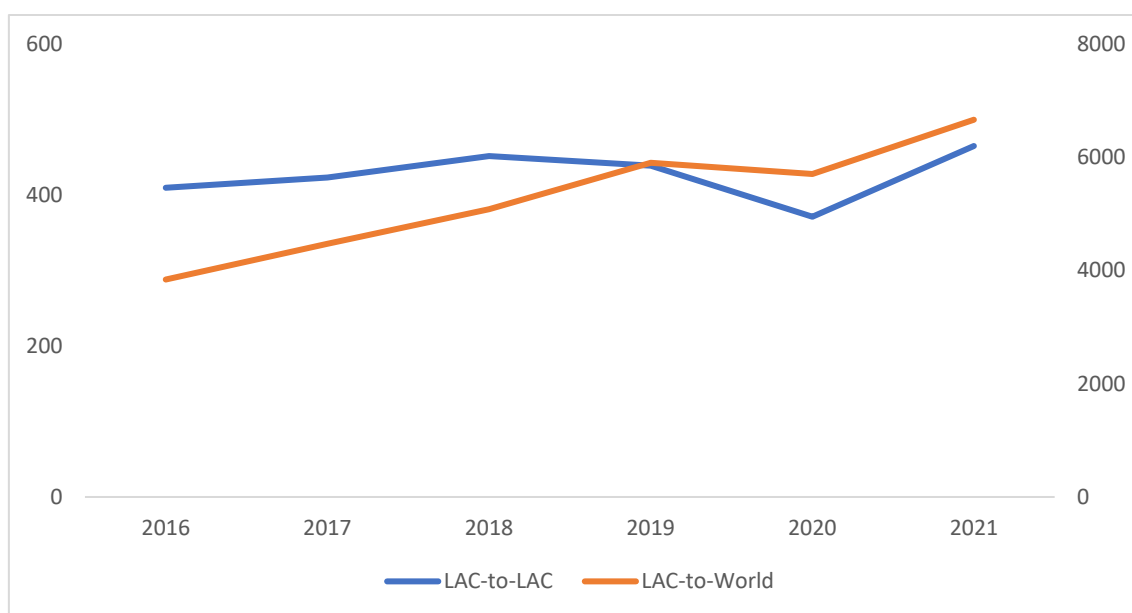
Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

13. Personal, cultural, and recreational services (SK)

According to UNSTATS, personal, cultural, and recreational services is a composition of audio-visual services (movie production, live TV, plays, etc.), health services, education services, and, among other forms of leisure, sports and gambling. Global trade in this category increased steadily since 2016. In that year, export values totaled USD 73 billion. In 2021, they reached USD 114 billion.

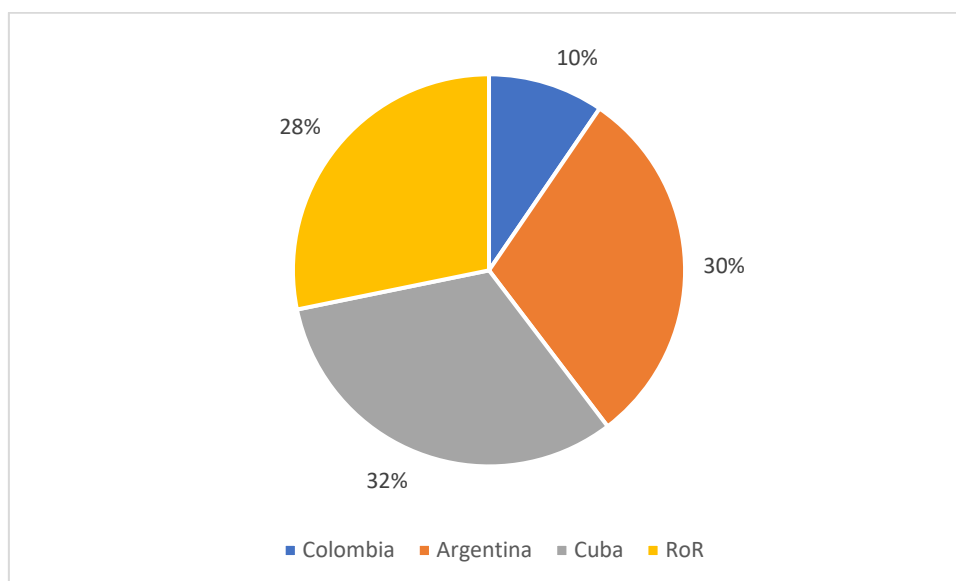
LAC's share of this trade was of 6% in 2021, a proportion that has remained relatively similar throughout the years. Intra-LAC trade remained at the 8% level of all SK services exported by the region. In the region, five countries top the export rankings in terms of both global and regional trade: Argentina, Cuba, Mexico, Colombia, and Brazil. While Argentina is the largest provider to the world, Cuba leads regional trade.

Figure 21: Regional and global LAC exports of personal, cultural, and recreational services from 2016 to 2021.



Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

Figure 22: Regional exports of personal, cultural, and recreational services in the 2016-2021 period, where RoR equals the sum of the exports of the rest of the region.



Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

An interesting aspect of trade within this category is that both Argentina and Cuba export more than the sum of all other LAC countries once Colombia's exports are deducted. This points to the poignancy of such sectors in these economies, such as the healthcare sector in Cuba. Therefore, Argentina and Cuba come out on top of the competitiveness indices in the LAC region for this sector.

Table 11: Top 5 LAC countries in terms of the NRCA index for world trade and LAC-only trade. Average value for the 2016-2021 period. Values relate to personal, cultural and recreational services.

NRCAworld	Value	NRCAlac	Value
Argentina	0.202	Cuba	5.076
Cuba	0.196	Argentina	3.019
Colombia	0.075	Colombia	0.826
Chile	0.027	Dominica	0.033
Peru	0.016	St. Kitts and Nevis	0.000
LAC average	0.010	LAC average	0.000

Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

14. Government goods and services (SL)

This category consists of all goods and services supplied by and to enclaves such as embassies and military bases, as well as services supplied by governments which are not included elsewhere (i.e.: technical assistance provided on public administration) (UNSTATS, 2011). This is the only set of export values that does not consist of a commercial service in the BaTIS database. While it might be of interest to understand overall flows of service trade, it has little relation with the competitiveness of LAC economies. For such reason, this category is not analyzed in this study.

15. Commercial services (SOX)

The sections before assessed – from a broader outlook – the competitiveness of LAC economies in specific service sectors. However, they do not respond to one paramount question: what countries spearhead the LAC region in terms of competitiveness in service exports? To evaluate this, one can observe all exports sectors combined in one single category: commercial services (SOX).

Global trade in commercial services was of USD 5.9 trillion in 2021, down from a historical peak of USD 6.1 trillion in 2019, which indicates the effect of the Covid-19 pandemic on foreign exchanges, especially in the travel and transport sectors. LAC economies combined for a total of USD 221 billion in 2021, a 4% slice of world exports. This value is also down from the USD 240 billion mark registered in 2019.

The region's largest exporters of services are Brazil and Mexico, which are also its largest economies. Mexico takes the lead, with an estimated USD 274 billion exported from 2016 to 2021. Brazil's exports totaled USD 195 billion in the same period. Following these countries, comes Barbados, with global exports reaching USD 97 billion, USD 1 billion more than Panama. Chile comes as the fifth largest exporter, at an estimated USD 70 billion.

The scenario does change when we restrict the analysis to regional exports. Mexico and Barbados drop out of the list of largest exporters, being substituted by Argentina and Paraguay. Indeed, Argentina is the second largest exporter to the region, only after Brazil. Moreover, one must highlight that Uruguay is the region's sixth most important exporter in regional trade.

Therefore, it follows that exports from Mexico and Barbados are flowing mostly to non-LAC partner, such as the United States and Canada. Only USD 8 billion of the USD 274 billion exported by Mexico in the period were destined to LAC economies: 3% of its exports. This is the lowest ratio in the entire region. Barbados, on its turn, exported only 6% of its services to LAC. The regional average is 13%, and Paraguay presents the largest ratio at 43%, 15% more than second-place Uruguay. The Southern Cone of South America displays high shares of trade in services within the region, which could indicate a higher level of integration among these countries.

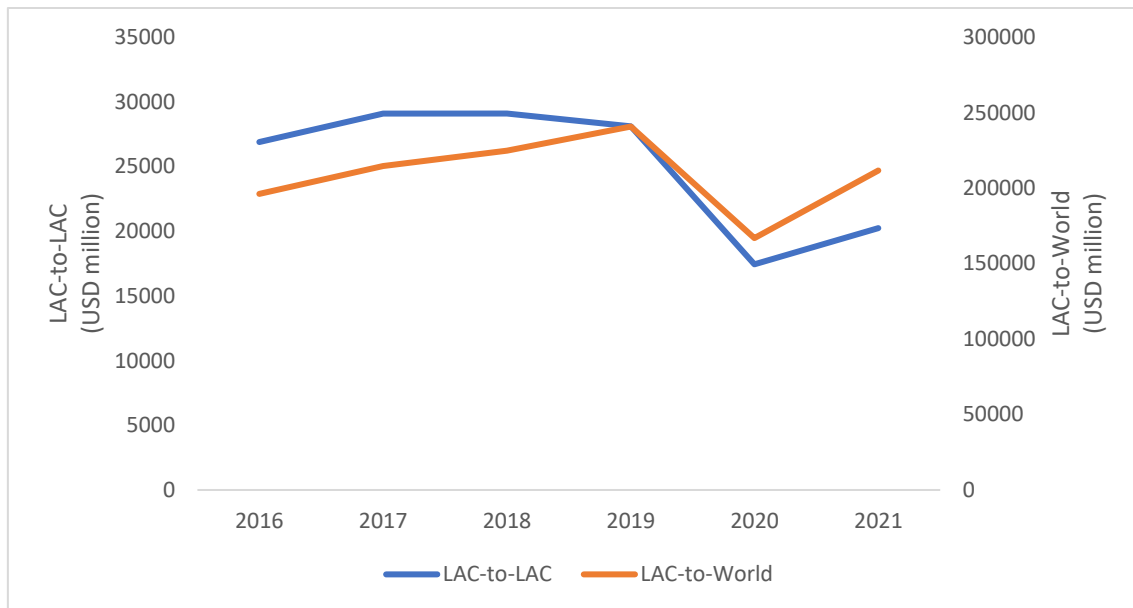
Table 12: 10 economies with the largest and lowest ratio of regional exports³.

Country	Ratio (%)	Country	Ratio (%)
Paraguay	43.170	Barbados	6.483
Uruguay	28.417	St. Kitts and Nevis	6.186
Bolivia	28.213	Antigua & Barbuda	5.893
Argentina	28.075	Guyana	5.646
St. Lucia	24.430	Haiti	5.624
Chile	21.542	Suriname	5.522
Panama	15.709	Belize	5.337
Costa Rica	15.466	Jamaica	5.267
El Salvador	14.904	Bahamas	4.402
Ecuador	14.317	Mexico	3.212

Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

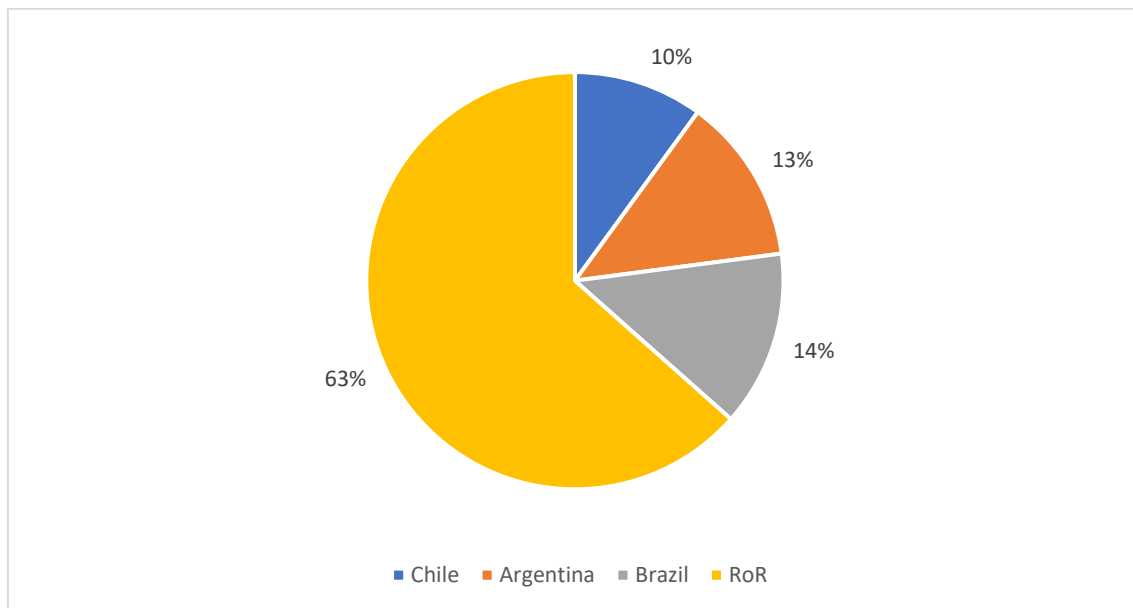
³ Peru = 0.143; Guatemala = 0.138; Colombia = 0.136; Trinidad and Tobago = 0.122; Honduras = 0.111; Nicaragua = 0.110; Cuba = 0.107; Brazil = 0.105; Grenada = 0.105; Dominica = 0.098; Venezuela = 0.082; St. Vincent and the Grenadines = 0.071; Dominican Republic = 0.066.

Figure 23: Regional and global LAC exports of commercial services from 2016 to 2021.



Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

Figure 24: Regional exports of commercial services in the 2016-2021 period, where RoR equals the sum of the exports of the rest of the region.



Source: author's elaboration, based on OECD-WTO 2023 BaTIS data.

Therefore, it follows that exports from Mexico and Barbados are flowing mostly to non-LAC partner, such as the United States and Canada. Only USD 8 billion of the USD 274 billion exported by Mexico in the period were destined to LAC economies: 3% of its exports. This is the lowest ratio in the entire region. Barbados, on its turn, exported only 6% of its services to LAC. The regional average is 13%, and Paraguay presents the largest ratio at 43%, 15% more than second-place Uruguay. The

Southern Cone of South America displays high shares of trade in services within the region, which could indicate a higher level of integration among these countries.

Despite these findings, once the NRCA index is applied to observe competitiveness in the region, interesting conclusions come to place. First and foremost, we see that – following traditional international economics theory – being a large exporter does not necessarily translate into being the most competitive economy. Brazil’s NRCA index, for instance, is not included in the best ones neither for global nor for regional trade. On the other hand, Venezuela, one of the smallest exporters, holds the fourth best NRCAworld index.

Table 13: Top 10 LAC countries in terms of the NRCA index for world trade and LAC-only trade. Average value for the 2016-2021 period. Values are an average of all commercial services’ NRCA indices.

NRCAworld	Value	NRCAlac	Value
Mexico	0.009	Panama	0.027
Panama	0.009	Paraguay	0.022
Barbados	0.002	Chile	0.017
Venezuela	0.001	Argentina	0.017
Chile	0.001	Costa Rica	0.012
Costa Rica	0.001	Uruguay	0.010
Bahamas	0.001	Bolivia	0.009
Dominican Rep.	0.001	Mexico	0.008
Paraguay	0.001	Jamaica	0.006
Jamaica	0.001	Bahamas	0.004
LAC Average	0.000	LAC Average	0.000

Source: author’s elaboration, based on OECD-WTO 2023 BaTIS data.

16. Discussion and conclusion

This study brings a first holistic analysis of the competitiveness of LAC economies in terms of service exports. It applies a robust methodology to establish indices that might guide readers through the profusion of data related to service exports, especially on the OECD-WTO BaTIS database. There are a few findings in the research that put forward novel questions that might be studied in detail in further studies.

First and foremost, the study shows that the estimated export value of commercial services within Latin America and the Caribbean represents only 12% of the region’s total exports. Thus, integration within the region is still relatively low; especially so

in countries such as Mexico and the Bahamas, whose estimated regional trade is less than 5% of all services commercialized abroad.

Moreover, the study finds that countries in South America's Southern Cone (Argentina, Brazil, Uruguay, Paraguay, and Chile) present high ratios of regional trade, and even more so among themselves. For instance, the ratio of exports to Southern Cone partners in Argentina is 61%. For Uruguay, this value equals 76%. In Paraguay, it is 90%. Chile has a ratio of 69% and, Brazil, 53%. These elevated ratios might point to integration effects from MERCOSUR, which encompasses all of these economies but Chile.

In addition to that, the OECD-WTO BaTIS data shows that regional trade had begun declining prior to the Covid-19 pandemic. Exports in 2018 were USD 992 million bigger than in 2019. Furthermore, the recovery rate from Covid-19 has been slower for regional exports than it has for global trade, which indicates possible hurdles for the reintegration of lost links.

Another interesting finding is connected to the region's NRCA indices. Table 12 presents the average NRCA values for the 2016-2021 for each LAC country and its exports to the world and to the region. As seen, the region's mean NRCA_{world} equals 0.000, meaning it is neither a competitive player nor an uncompetitive one on the global stage.

However, one relevant aspect is that the region's share of global exports is higher for goods-related services (manufacturing services on physical inputs owned by others and maintenance and repair n.i.e.) than for other commercial services. In some specific fields, such as IT and banking services, the region hardly represents more than 2% of global trade. This difference poses a problematic for the region because it shows that it might be more competitive on service industries with lower wages and/or where advanced technical skills are less requested.

Thus, the research was able to briefly summarize some of the most important aspects for competitiveness in LAC. From its findings, new studies might stem in order to assess why and how some countries have been more successful in integrating with the region and with external players.

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