

**Economic and
social effects
of a possible
trade agreement
between
Latin America and
the Asia-Pacific
region**

José Durán Lima
Angel Aguiar
Ira Nadine Ronzheimer



UNITED NATIONS

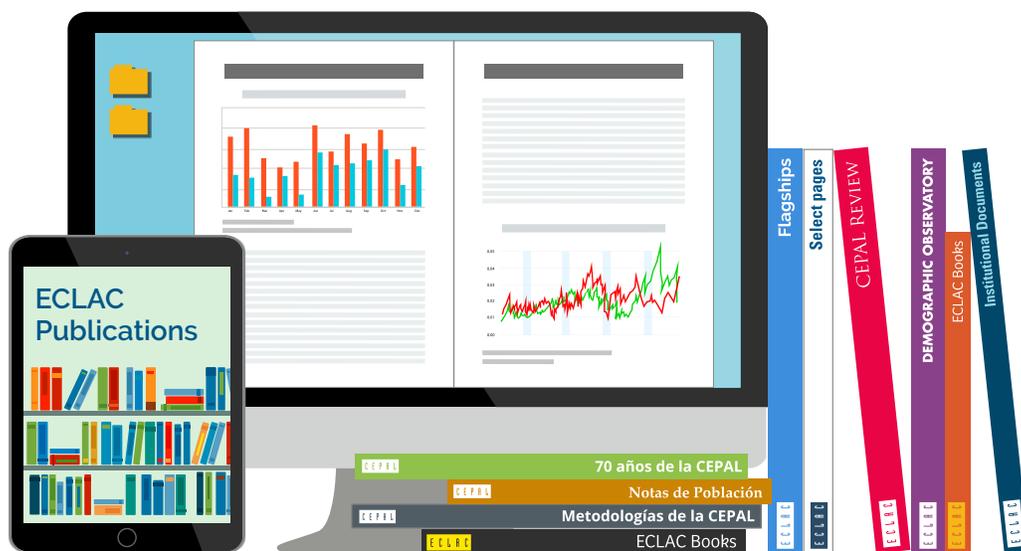
ECLAC



FEALAC

Forum for East Asia-Latin America Cooperation

Thank you for your interest in this ECLAC publication



Please register if you would like to receive information on our editorial products and activities. When you register, you may specify your particular areas of interest and you will gain access to our products in other formats.



www.cepal.org/en/publications



www.cepal.org/apps

SERIES

INTERNATIONAL TRADE

168

Economic and social effects of a possible trade agreement between Latin America and the Asia-Pacific region

José Durán Lima

Angel Aguiar

Ira Nadine Ronzheimer



UNITED NATIONS

ECLAC



FEALAC

Forum for East Asia-Latin America Cooperation

This document was prepared by José Durán Lima, Chief of the Regional Integration Unit, in the International Trade and Integration Division of the Economic Commission for Latin America and the Caribbean (ECLAC) and Ira Ronzheimer, and Angel Aguiar, consultants in the same Division in the framework of the activities of the project ECLAC value chain development for deeper integration of East Asia and Latin America, funded by the Forum for East Asia-Latin America Cooperation.

The views expressed in this document, which has been reproduced without formal editing, are those of the authors and do not necessarily reflect the views of the Organization or the countries it represents.

United Nations publication
ISSN: 1680-872X (electronic version)
ISSN: 1680-869X (print version)
LC/TS.2021/199
Distribution: L
Copyright © United Nations, 2021
All rights reserved
Printed at United Nations, Santiago
S.21-00847

This publication should be cited as: J. Durán Lima, A. Aguiar and I. Ronzheimer, "Economic and social effects of a possible trade agreement between Latin America and the Asia-Pacific region", *International Trade series*, No. 168 (LC/TS.2021/199), Santiago, Economic Commission for Latin America and the Caribbean (ECLAC), 2021.

Applications for authorization to reproduce this work in whole or in part should be sent to the Economic Commission for Latin America and the Caribbean (ECLAC), Documents and Publications Division, publicaciones.cepal@un.org. Member States and their governmental institutions may reproduce this work without prior authorization, but are requested to mention the source and to inform ECLAC of such reproduction.

Contents

Summary.....	5
Introduction	7
I. General Context Regional and Bi-regional Integration.....	9
A. Latin America and the Caribbean	12
B. Asia Pacific.....	13
C. Bi-regional Relations.....	18
II. Literature review and methodology	21
A. Literature review.....	21
B. Methodology used, groupings, baseline and scenarios considered	23
III. Analyses of the results	31
A. Production, welfare and employment	31
B. Foreign trade	37
C. Estimated effects on exporting firms	38
IV. Conclusions.....	41
References	43
Annex.....	45
International Trade Series: issues published.....	49
Tables	
Table 1	Status of interrelations between LAC countries, as of October 2021
Table 2	RCEP, CPTPP, TMEC, EU, MERCOSUR and AP: population, output and trade, 2019 and 2020
	13
	17

Table 3	Status of intra-regional relations between RCEP member countries, as of October 2021	18
Table 4	LAC and Asia: applied tariffs in bilateral trade disaggregated for the 39 economic sectors, 2018 (model baseline)	26
Table 5	Composition of the 10 simulations subject to the analysis.....	27
Table 6	Data Availability and Ranges of Domestic Sales for the Typification of Exporting Companies in LAC	28
Table 7	LAC and Asia Pacific: effects of a bi-regional agreement on welfare and employment.....	32
Table 8	LAC: Effects of a bi-regional agreement on GDP and Welfare	33
Table 9	Asia Pacific: effects of a bi-regional agreement on GDP and Welfare	34
Table 10	LAC and Asia Pacific: average change in foreign trade under various simulations	37
Table 11	Latin America (13): export volumes by sector, type of agents and destination	40
Table A1	65 GTAP sectors and concordances with ECLAC-FEALAC model	46
Table A2	LAC and Asia Pacific: average change by countries in exports under various simulations.....	47
Table A3	LAC and Asia Pacific: average change by countries in imports under various simulations.....	48

Gráficos

Figure 1	Selected regions: distribution of export by main trading partners, 2018.....	9
Figure 2	LAC: intra-regional exports, 1960-2020.....	10
Figure 3	Participation of Latin American large and MSMEs in exports to LAC and Asia Pacific, different years.....	11
Figure 4	LAC: average MFN tariffs and applied tariffs in intra-regional trade, 1990, 2000, 2010 and 2018	12
Figure 5	Asia Pacific, China and ASEAN: evolution of most-favored-nation tariff: 1990, 2000, 2010 and 2019	14
Figure 6	Disciplines covered by the RCEP agreement	15
Figure 7	Evolution of products traded under preferences and tariffs after RCEP coming into force	16
Figure 8	Selected regions and subregions: intra-regional export ratio, 2018	17
Figure 9	LAC: evolution of trade with main partners and regions, 2000-2020.	19
Figure 10	Latin America (7 countries): export composition by type of economic agent, 2015-2019	20
Figure 11	LAC and Asia Pacific: bilateral applied tariffs between the two regions, 2018	25
Figure 12	LAC and Asia Pacific: effects of a bi-regional agreementa expressed in average change in GDP at the sector level	34
Figure 13	LAC and Asia Pacific: effects of a bi-regional agreementa on employment	36
Figure 14	Latin America (13 countries): differential effects on exports by type of economic agents following a bi-regional free trade agreementa	39
Figure 15	Latin America (13 countries): differential effects on intraregional exports by type of economic agents following a bi-regional free trade agreementa	40

Schemes

Scheme 1	Intra-regional trade agreements in Asia Pacific and LAC countries part of the analysis	18
----------	--	----

Summary

The Regional Comprehensive Economic Partnership (RCEP) concluded between Asian Pacific States in 2020 is expected to change regional and global trade patterns. Based on a Computable General Equilibrium model (including 41 countries and 39 sectors), the underlying paper evaluates the impact of firstly, RCEP on trade between Latin American and Caribbean (LAC) and Asian Pacific member countries, and secondly, a hypothetical free trade area in LAC and thirdly, a free trade agreement within and between the two regions. Results are analyzed on the country —and sector— level by type of agent (small and medium-sized, MSMEs, and large companies).

The model outputs imply a boost in trade in the Asian Pacific region caused by the RCEP agreement coming into force, while trade volumes of LAC countries would contract. This likely targets primarily exports of natural resources and low —and medium— technology manufacturers based in LAC. When a hypothetical bi-regional trade agreement is simulated, results indicate a positive impact on output, trade and welfare: It is expected to yield a change in GDP between 0.35% and 0.6% for LAC, and a change between 0.46% and 1% for Asia Pacific. The agreement is also assumed to lead to welfare gains in all countries considered. Regarding employment, LAC and RCEP countries are expected to face an average increase in employment of unskilled workers of 1.7% and 3.0%, respectively, and rise in total employment of 0.9% and 1.8% on average, respectively. The results further reveal that especially Latin American MSMEs would be more positively impacted by such agreement than large companies. In this respect, agro-industrial MSMEs are expected to increase exports. Simulations of productivity improvements associated with the reduction of non-tariff measures generate large positive increases in output, trade and employment, underlining the importance of trade facilitation as a complementary tool to tariff reduction.

Keywords: general equilibrium model; input-output; regional integration; RCEP; NTM; MSMEs

Introduction

The signing of the Regional Comprehensive Economic Partnership (RCEP) in November 2020 will not only impact intra-Asian regional trade but is also likely to influence trade between the two regions Asia Pacific and Latin America and the Caribbean (LAC). Despite existing trade ties between Asian countries, especially China, and LAC countries, only bilateral trade agreements are currently in place. While the underlying study evaluates the impact of the conclusion of the RCEP on LAC, it also assesses possible effects of a bi-regional free trade agreement between the two regions as a response to RCEP. Such a hypothetical bi-regional trade agreement is modeled as the reduction of the effective levels of protection (as of December 2018) between the countries of both regions. Therefore, it fills a research gap by modeling a free trade agreement between the regions using a general equilibrium model including 41 economies and 39 sectors, mainly disaggregating the LAC and Asian Pacific member countries of the Forum for East Asia - Latin America Cooperation (FEALAC).

This study adds novelty to existing literature, not only because it is the first one to assess the impact of RCEP on LAC, but also as it includes micro-level data for LAC countries to be able to assess the effects of a hypothetical agreement not only on the country —and sector— level, but also by type of agent (small and medium-sized, MSMEs, and large businesses). Therefore, this paper aims at providing an empirical base in the light of discussions about intra —and inter— regional trade agreements in the analyzed regions.

Between 2019 and 2020, the Trade and Integration Division of the United Nations Economic Commission for Latin America and the Caribbean (ECLAC), together with the United Nations Economic and Social Commission for East Asia (ESCAP) and the Asian Development Bank (ADP), developed a set of input-output-tables (IOTs) for the FEALAC countries as part of the bi-regional Value Chains Project (Latin America, Asia Pacific). Based on these IOTs, a global input-output matrix was assembled for 2017, allowing the assessment of opportunities for productive integration between regions.

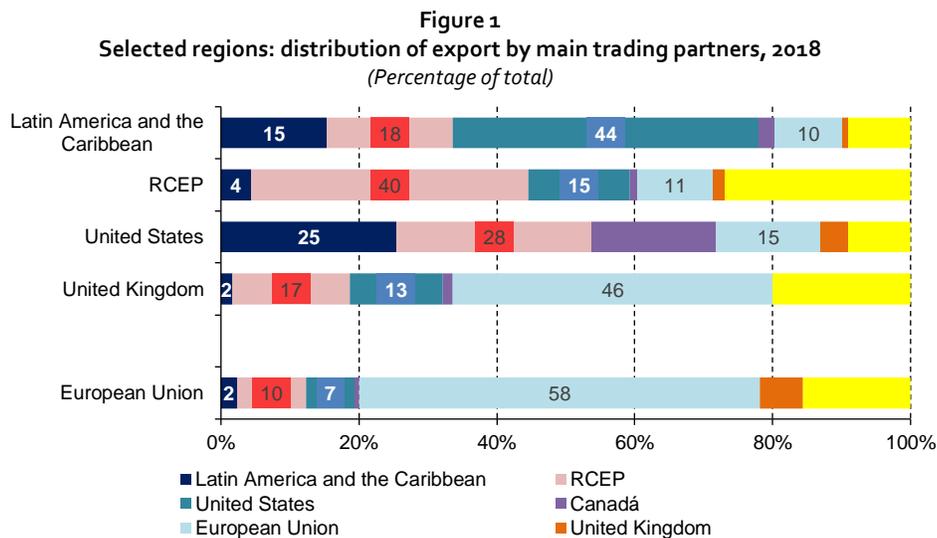
For the underlying study, a structural analysis was conducted, that included further data sources, among these are data from the Global Trade Project of Purdue University, and the database of multi-country IOTs of the Organization for Economic Cooperation and Development (OECD). The overall goal of the

analyses presented in this paper is, besides validating the consistency of the methodology and the calculation of value-added input-output indicators, evaluating possible effects of the deepening of trade relations at the intra—and bi—regional level, considering the recent evolution of trade policy in both regions.

The following section, section I, provides the general context of the intra—and inter—regional relationships in and between LAC and Asia Pacific, considering firstly, the existing trade agreements within each region, and secondly, the levels of bi-regional preferences between both regions. The third section presents a brief review of existing literature on impact assessments in both regions LAC and Asia Pacific. This section also presents the underlying methodology and scenarios used to derive the potential economic effects on the economies of both regions, if a bi-regional free trade agreements are signed. The fourth section presents the model results for a set of different scenarios defined in the methodological section. It highlights the possible effects on output, trade and welfare as well as on employment levels in the two regions and examines the impact by type of economic agent in the LAC region. The fifth section synthesizes the main conclusions drawn from the simulation of a hypothetical bi-regional agreement and critically reflects its implications for inter-regional trade while also pointing out limitations of this study.

I. General Context Regional and Bi-regional Integration

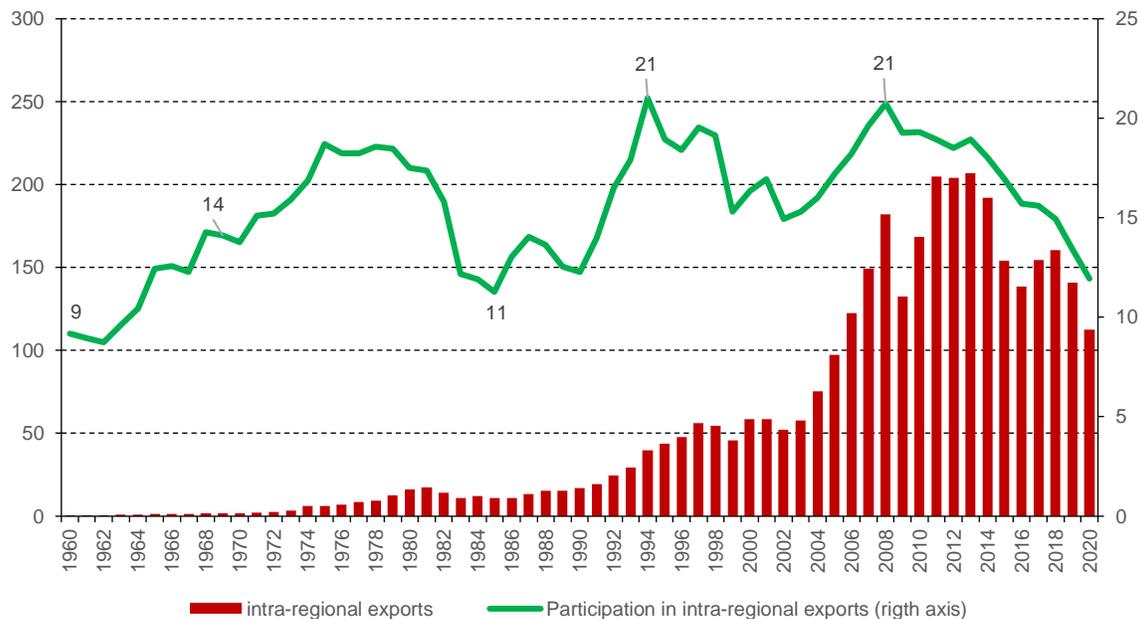
This section presents the intra —and bi— regional trade relations between LAC and Asia, which in the commercial sphere are characterized by increased trade flows towards the interior of each of the sub-regions, with the particularity that intra-regional trade among the RCEP member countries is higher than in LAC (40% and 15%, respectively). This is only surpassed by intra-regional exports of the European Union (excluding the United Kingdom), which reached 58% in 2018. The reciprocal relations of both groups of countries account for about 35% of world exports. RCEP countries represent the second main destination of LAC exports by constituting the destination of 18% of total exports in 2018. This is only surpassed by the United States, the main destination LAC exports. On the other hand, LAC accounts for only 4% of the exports from RCEP countries (see figure 1).



Source: Authors, based on information from the United Nations COMTRADE database.

After the COVID-19 crisis, intra-regional trade measured by exports in Latin America fell to 11%, after having accounted for 21% in the mid-1990s and 2008 (see figure 2). Even if post-COVID-19 recovery measures aim at increasing intra-regional trade, it is uncertain whether intra-regional trade picks up again soon.

Figure 2
LAC: intra-regional exports, 1960-2020
(Billions of dollars and percentages of total exports of goods)



Source: Authors, based on COMTRADE data and information from the series "Panorama de la Inserción Internacional de América Latina y el Caribe", various years.

This development is worrisome, because in LAC mainly MSMEs participate in intra-regional trade, whereas almost exclusively large companies export to other regions. Put differently, the number of LAC MSMEs exporting to its own region exceeds by far the number large firms with this destination, while the number of large exporting firms seems to be more evenly distributed across the two regions, LAC and Asia Pacific (see figure 3). When comparing the amounts exported, it becomes visible that the fewer large businesses have higher export volumes than MSMEs. Interestingly, large companies in Peru, Chile and Brazil export higher volumes to Asia Pacific, while in the cases of Mexico, Columbia and Argentina, intra-regional exports by large firms dominate. Overall, the export values of MSMEs to Asia Pacific are relatively small. This underlines the importance of the regional markets, primarily for MSMEs, but also for large firms.

Figure 3
Participation of Latin American large and MSMEs in exports to LAC and Asia Pacific, different years

A. Number of exporting businesses



B. Export volume



Source: Authors, based on the customs microdata from six selected countries.

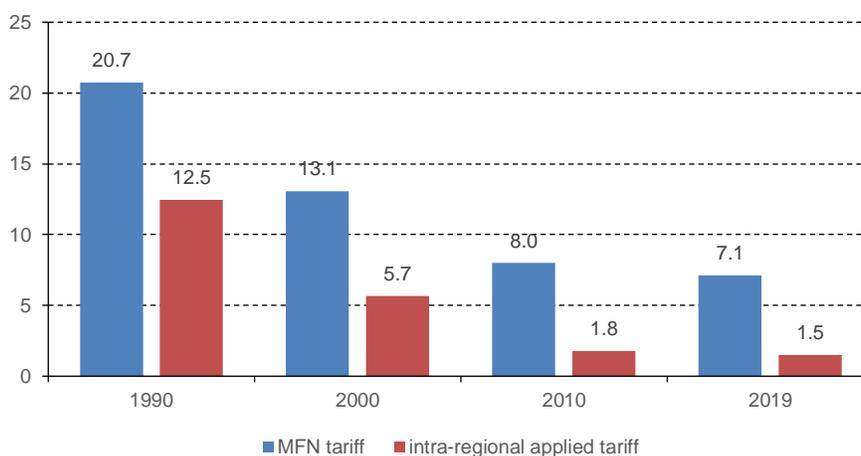
As the analysis of trade relations between LAC and Asia Pacific constitutes the core of this paper, the evolution of trade flows as well as the current state of intra—and extra—regional relations needs to be reviewed. Therefore, the current state of preferential agreements in regional integration agreements and bilateral trade agreements are reviewed in the following subsections. In this regard the levels of tariff protection that persist in intra—and inter—regional relations are examined more closely.

A. Latin America and the Caribbean

Overall, intra-regional tariff relations in Latin America are quite advanced, as at least 70% of trade is carried out under preferential agreements covered by regional integration schemes (Andean Community, MERCOSUR, Central American Common Market, and the Pacific Alliance to mention the most important ones), as well as multiple bilateral free trade agreements such as those signed by Chile and Mexico with the remaining countries in the region, and those existing between the different integration blocs.

The evolution of applied tariffs in intra-regional trade in Latin America shows a significant reduction in applied tariffs in the intra-regional space, characterized by a fall from just over 12% in 1990 to less than 2% in 2018. In the same period, the weighted average MFN tariff rate for the region fell from 20% to 7% (see Figure 4). This evolution shows a clear trend towards greater trade openness in intra-regional trade circuits. However, there remain economic sectors with above average applied tariffs, and additionally, equivalent tariffs higher than the applied tariffs for non-tariff measures (Dolabella and Durán, 2021).

Figure 4
LAC: average MFN tariffs and applied tariffs in intra-regional trade, 1990, 2000, 2010 and 2018
(Ad valorem percentages)



Source: Authors' calculation based on Dolabella and Durán (2021), and data from the World Bank (n.d.).

Regarding the existing trade patterns in LAC, the regional economic landscape is primarily divided between Mexico, Central America and the Caribbean, on the one hand, and South America, on the other. The first group of countries maintains a close link with the US economy, not only through trade but also through flows of foreign direct investment (FDI), migration, tourism and remittances (ECLAC, 2014). In particular, the Mesoamerican sub-region and some Caribbean countries such as the Dominican Republic are an integral part of U.S.-centered manufacturing value chains (the "North American Factory").

South America, on the other hand, is economically less dependent on the United States and keeps on building strong trade ties with China, which since 2015 has been its main trading partner, and Asia overall (Durán and Pellandra, 2017). Another difference between the Mesoamerican sub-region and South America is marked by lower levels of intra-regional trade and productive integration among the economies in South America. This is the result of several factors, such as its export specialization in natural resources (mainly destined for markets outside the region), its large territorial extension, its deficient transport infrastructure and the fragmentation of its economic integration schemes.

Currently, LAC's intra-regional relations in terms of trade negotiations are highly fragmented and characterized by the coexistence of multiple integration groups. A large free trade area had not yet been introduced, as once planned in the 1960s with the objective to set up a large free trade area between South America and Mexico within the framework of the Latin American Free Trade Association (LAFTA). The project did not find sufficient political support due to a large range of differing visions, and, as in practice, each subregional integration mechanism has evolved differently. Mexico deepened its commercial relations with the United States and Central America, in addition to forming the Pacific Alliance with Colombia, Chile, and Peru, without having established a deeper relationship with the rest of the South American countries.

The map of interrelations of agreements signed between the five main integration schemes in the region shows the existence of many gray areas, for which tariff preferences do not apply, and if there are links, they are partial and account only for selected groups of products, or for selected sectors, as for example agreements for the automotive sector between Mexico, Brazil and Argentina. When deeper linkages exist, these are more on the bilateral level, such as the free trade agreement signed between Uruguay and Mexico, for example (see Table 1).

Table 1
Status of interrelations between LAC countries, as of October 2021

Regions/Countries	MERCOSUR (5)	Andean Community (4)	Pacific Alliance (4)	MCCA (6)	CARICOM (15)
MERCOSUR (5)	With Protocol	With Agreement	No Agreement	No Agreement	Partial Agreement
Andean Community (4)	FTA	With Agreement	FTA	No Agreement	Partial Agreement
Pacific Alliance (4)	FTA	FTA	With Protocol	No Agreement	No Agreement
Chile	With Agreement	Various FTA	Full Member	Various FTA	Partial Agreement
México	Partial Agreement	Partial Agreement	Full Member	FTA	Partial Agreement
MCCA (6)	Partial Agreement	Partial Agreement	Partial	With Protocol	FTA
CARICOM (15)	No Agreement	Partial Agreement	No Agreement	FTA	With Protocol
Cuba	Partial Agreement	Partial Agreement	No Agreement	No Agreement	No Agreement
Dominican Republic	Partial Agreement	Partial Agreement	No Agreement	FTA	No Agreement

Source: Authors' own elaboration, based on existing Trade Protocols, Free Trade Agreements and partial trade agreements and those under negotiation.

Regarding inter-regional relations, there are some Latin American countries which exhibit greater intensity and preferential trade with Asian Pacific countries. In this regard, mainly Chile, Colombia, Mexico, Peru and Costa Rica are to be mentioned here as they have signed the largest number of trade agreements with Asian Pacific partners, as further elaborated from sub-section C on.

B. Asia Pacific

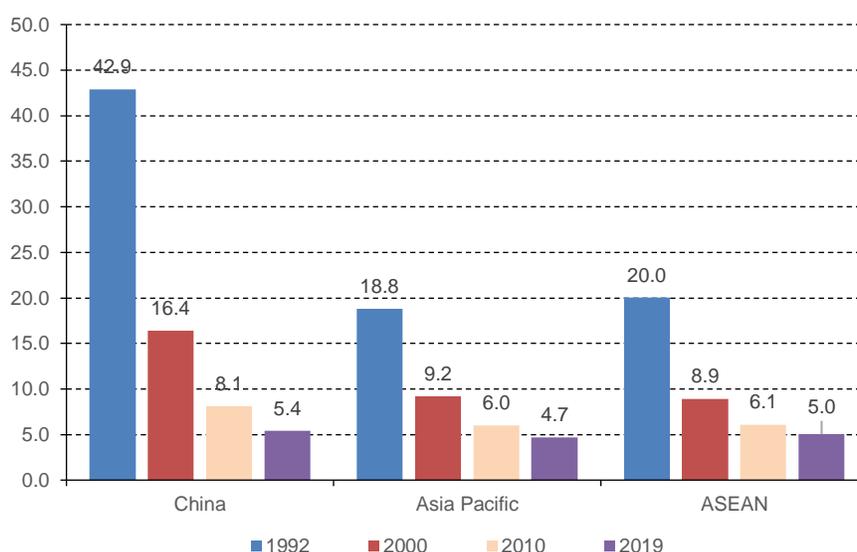
On the Asian Pacific side, intra-Asian trade relations show the existence of a close relationship between the ten economies that make up the Association of Southeast Asian Nations (ASEAN)¹, which since 1992 have maintained a free trade zone. The latter has managed to expand intra-regional trade from less

¹ Brunei, Cambodia, Indonesia, Laos (DPR), Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam.

than 10% in 1990 to 24% in 2018, whereby 90% of the goods are imported with tariffs equal to zero in intra-regional trade. The creation of a free trade zone has led to a significant drop in the subregion's tariff, which is estimated to have fallen on average from more than 20% in 1990 to around 4,7% in 2019.

A similar trend has been followed by the Asian Pacific countries as a whole and China in particular, which reduced its tariffs considerably from levels close to 43% in 1992 to 16.4% in 2020, mainly as part of the negotiations for its full access to the World Trade Organization, which became effective in 2001. From then on, it continued to reduce its tariffs until reaching an MFN of 5% in 2019 (see Figure 5).

Figure 5
Asia Pacific, China and ASEAN: evolution of most-favored-nation tariff: 1990, 2000, 2010 and 2019
(Ad valorem percentages)



Source: Authors' calculation based on Dolabella and Durán (2021), and data from the World Bank (n.d.). In cases where information for 2019 was not available, the average tariff was the closest year available.

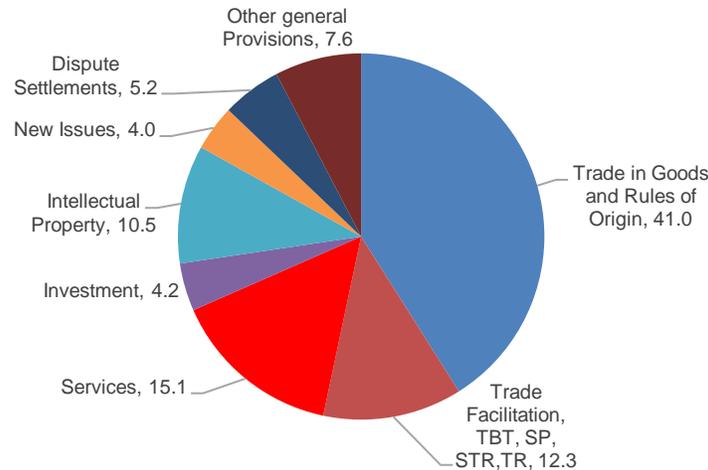
Since 2012, the ASEAN member countries have been negotiating the expansion of their sub-regional integration towards a broad trade and investment agreement with Australia, China, Japan, New Zealand, and the Republic of Korea, which after 8 years of multiple negotiations and meetings concluded with the signing of the RCEP. It represents a major trade and investment agreement that includes 15 countries: the 5 countries mentioned above, and the 10 ASEAN members. It should be noted that, although India participated in the RCEP negotiations, it did not sign the agreement, mainly due to the sensitivity of multiple economic sectors being exposed to competition with Chinese products in its domestic market. Between 2018 and 2020, India was running trade deficits with 11 of the 15 RCEP members (Raghavan, 2020).

It is important to note that the RCEP is an agreement that includes highly developed countries such as Japan and the Republic of Korea, and less developed ones in the Asian region, like Cambodia, Laos and Brunei. The signing of the agreement in November 2020, after eight years of negotiations, ended a period of tensions and enforcement of high tariff protection (Wolfers, Ferretter and Hoang, 2020).

The RCEP agreement is comprehensive in terms of its thematic coverage, including not only provisions on the liberalization of trade in goods, but also on trade in services, foreign investment, intellectual property, e-commerce and MSMEs, among other topics. In total, there are 20 chapters and

510 pages of text, plus thousands of pages of tariff reduction schedules for each country². Figure 6 shows the percentages of pages devoted to each topic and highlights the most important topics: Trade in goods and rules of origin, which account for 41% of the legal instrument. It is followed by services, intellectual property and trade facilitation. But also new topics have been included in the agreement: Competition, cooperation to avoid anti-competitive activities, MSMEs, Economic and Technical Cooperation and Government Procurement.

Figure 6
Disciplines covered by the RCEP agreement
(Share of total pages)



Source: Authors' calculation based on the text of the agreement.

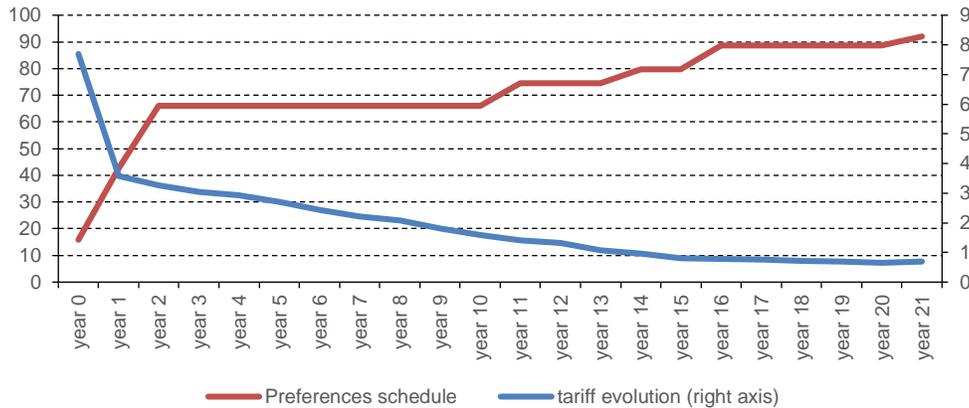
The agreement is intended to serve as an instrument to deepen regional value chains among member countries. Therefore, RCEP's includes a detailed set of rules of origin aiming at providing greater flexibility and integration of value chains across the region through the facilitation of administrative costs. Under the cumulation rule, a product originating from member state A may be used as input in member state B and be considered as originating from member state B, for example (Baker McKenzie, 2020). Before RCEP came into force, only 22% of intra-regional trade subject to free trade agreements in Asia-Pacific was making use of trade preferences. This implies that more than three quarters of the goods were traded under WTO tariffs. While the existing free trade agreements seemingly have not been fully utilized in the past, it is expected that a larger share of intra-regional trade will be making use of the preferences granted by the RCEP agreement. This depends on whether businesses estimate the costs of certification to be lower than the tariffs they would otherwise face (Dieter, 2021).

Furthermore, the agreement includes provisions for special and differential treatment, especially for Cambodia, Lao PDR, Myanmar, and Viet Nam, and additional flexibility for the least developed parties. In addition, the RCEP agreement comprises technical cooperation and capacity building that will be made available, firstly, to support the implementation of the commitments made under the RCEP agreement and secondly, for the parties to maximize the benefits accruing therefrom. As already mentioned, the RCEP agreement also includes provisions that will ensure that economies with different levels of development, businesses of differing sizes, and the broader stakeholders can all benefit from the Agreement.

² See the agreement on <https://www.dfat.gov.au/trade/agreements/not-yet-in-force/rcep/rcep-text-and-associated-documents>.

RCEP aims at reducing or eliminating tariffs imposed by each member state on originating goods by approximately 92% over a period of 20 years, with average tariffs lower than 1% (see Figure 7). In this respect, each member defines specific duty reduction commitments with other exporting member states.

Figure 7
Evolution of products traded under preferences and tariffs after RCEP coming into force
(Averages in percent)



Source: Authors' calculation based on based on reciprocal tariff concessions between the countries that signed the agreement. (China, Republic of Korea, Australia, New Zealand, Japan, and ASEAN countries) The annexes I of the agreement were taken into account (Schedules of Tariff Commitments). the list of reciprocal concessions can be downloaded from the Australian government website. Department of Foreign Affairs and trade. Online at: <https://www.dfat.gov.au/trade/agreements/not-yet-in-force/rcep/rcep-text>.

The agreement requires ratification from at least nine countries (at least six from ASEAN and three non-ASEAN countries) to be able to take effect. Singapore and Thailand have already ratified the agreement, as well as China and Japan. Regarding the three non-members, Australia, New Zealand, or South Korea must ratify the agreement. Among the rest of ASEAN-6 members to ratify, the next one is Indonesia, where the agreement is under consideration by the legislature. Likewise, the Philippines have the advancement of the ratification on its legislative agenda. As four ASEAN members have already ratified the agreement, it is coming increasingly close to entering into force.

RCEP members account for about 32% of the world's population, 27% of world GDP and just over one third of world exports of goods. Once in force, the RCEP will be the world's largest free trade area in terms of population, output and trade, surpassing the European Union with just over one third of world trade (see Table 2). The RCEP will mark the consolidation of the Asian Factory as a highly integrated trade and production region. Compared to the two largest Latin American blocs, MERCOSUR and the Pacific Alliance, this mega-bloc is a highly relevant market for Latin America, with a population of more than 2.2 billion people (World Population Reference, 2021).

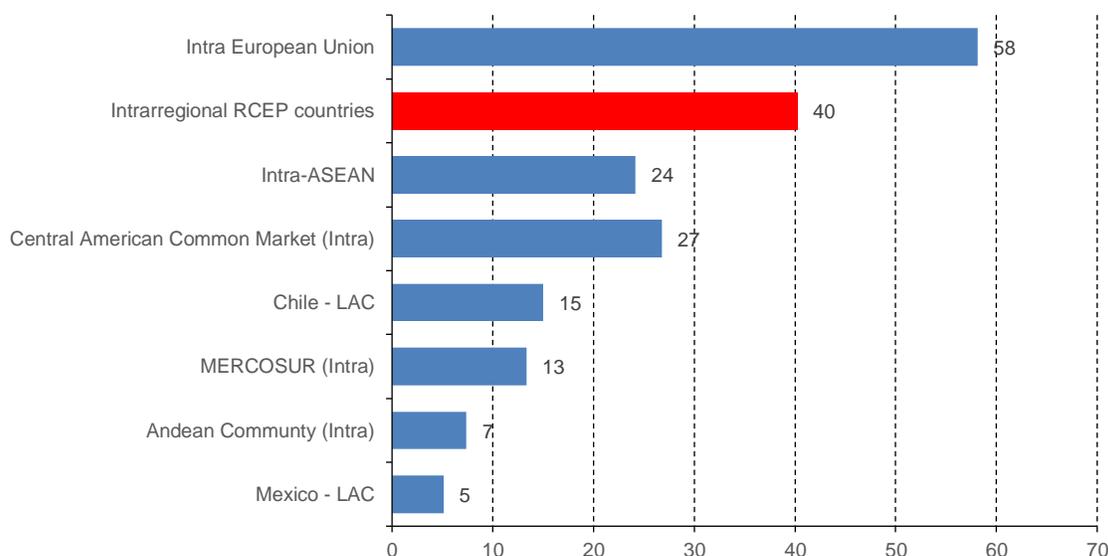
Table 2
RCEP, CPTPP, TMEC, EU, MERCOSUR and AP: population, output and trade, 2019 and 2020
(In millions of people, billions of current dollars and percentage of world total)

Mega-region	Population 2020	Percentage	GDP 2017	Percentage	Exports 2019	Percentage	Imports 2019	Percentage
RCEP (15)	2 248	31.7	21	27	6.0	35	5.5	32
CPTPP (11)	510	7.2	11	14	2.9	17	2.8	16
TMEC (3)	499	7.0	21	26	2.6	15	3.5	20
EU (28)	357	5.0	16	20	5.1	29	4.7	27
MERCOSUR (5)	297	4.2	4	5	0.3	2	0.3	1
AP (4)	230	3.2	2	3	0.6	4	0.6	4

Source: Authors, based on data from GTAP Project, COMTRADE and World Population Reference.

Comparatively, the intra-regional trade intensity of the group of countries that make up the RCEP would be equal to 40%, implying that the group of countries that make up the RCEP would become consolidated as a key region in the current process of regionalization and reconfiguration of global value chains (see Figure 8), highly demanded to cope with the adverse effects of the COVID-19 pandemic. The tariff reductions and trade facilitation mechanisms of the RCEP agreement offer a regulatory frame for more resilient trade and improved conditions to engage in intra-regional trade. The sub-regions of LAC, on the other hand, maintain levels of intra-regional trade well below the level of the RCEP group. Only the Central American Common Market depicts a higher intra-regional export ratio than ASEAN.

Figure 8
Selected regions and subregions: intra-regional export ratio, 2018
(Percentage of total)



Source: Authors, based on data from United Nations, COMTRADE.

The map of trade relations including trade agreements or protocols in force among the 15 Asian countries that are members of the RCEP, shows a broad interrelation and convergence, which is widely manifested in the results of the negotiations of the mega-agreement among the 15 members mentioned above (see Table 3).

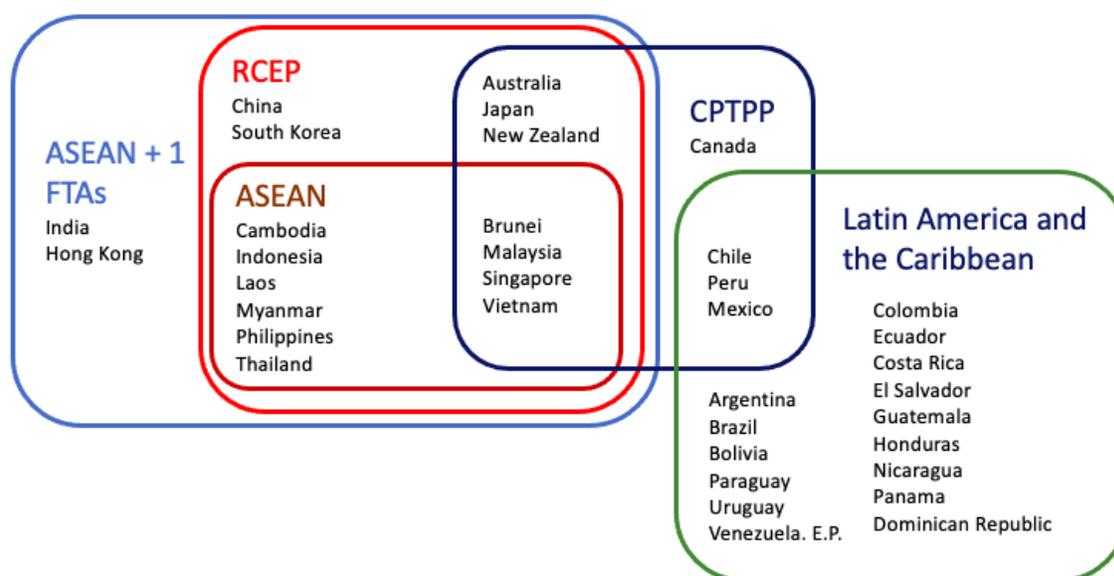
Table 3
Status of intra-regional relations between RCEP member countries, as of October 2021

Regions/Countries	ASEAN	Australia	China	Japan	Republic of Korea	New Zealand
ASEAN	-	FTA	FTA	FTA	FTA	FTA
Australia	FTA	-	FTA	FTA	FTA	FTA
China	FTA	FTA	-		FTA	FTA
Japan	FTA	FTA		-		
Republic of Korea	FTA	FTA	FTA	detained	-	FTA
New Zealand	FTA	FTA	FTA		FTA	-

Source: Authors' own elaboration, based on existing trade agreements and those under negotiation.

A key part of the expected outcome of the agreement is the deepening of bilateral relations between China and Japan on the one hand, and between Japan and the Republic of Korea on the other, whose negotiations had been on hold. Progress in the negotiations between these three countries was only possible after specific concessions were made by other partners in the group. For example, 39% of exports from ASEAN countries will still face high tariffs in the Japanese market (Wolfers et al., 2020), although the terms of the RCEP are better than those of the preceding agreements (see Scheme 1).

Scheme 1
Intra-regional trade agreements in Asia Pacific and LAC countries part of the analysis



Source: Authors, based on Baker McKenzie (2020).

C. Bi-regional Relations

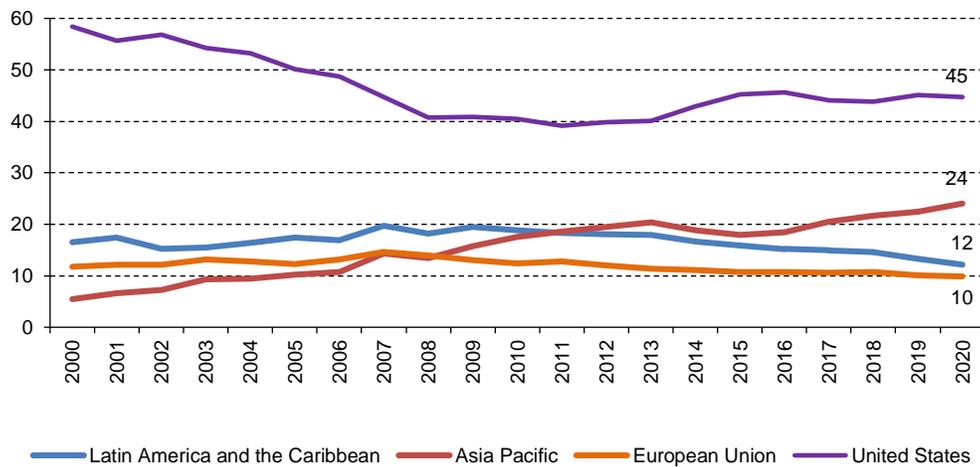
Bilateral relations between LAC and Asia Pacific have been very close to the point that, since the middle of the last decade, the Asian Pacific region has surpassed the European Union and LAC as a proportion of total exports. Asia Pacific is the second largest destination for exported goods after the United States, and the largest source of imported goods, having overtaken the United States as the largest supplier. In 2020, Asia Pacific accounted for a third of the region's imports (see Figure 9). By country, export figures

show that China is one of the main trading partners, importing natural resources from the agriculture and mining sectors, among which are products such as soybeans, soybean oil, and meat as well as iron ore, copper, zinc, bauxite and tin among mining products. In turn, Asia Pacific is the origin of most of the capital and intermediate goods required by Latin American industry, mainly for manufacturing products of iron and steel, minerals and metals, vehicles, as well as other parts and pieces required in industry production.

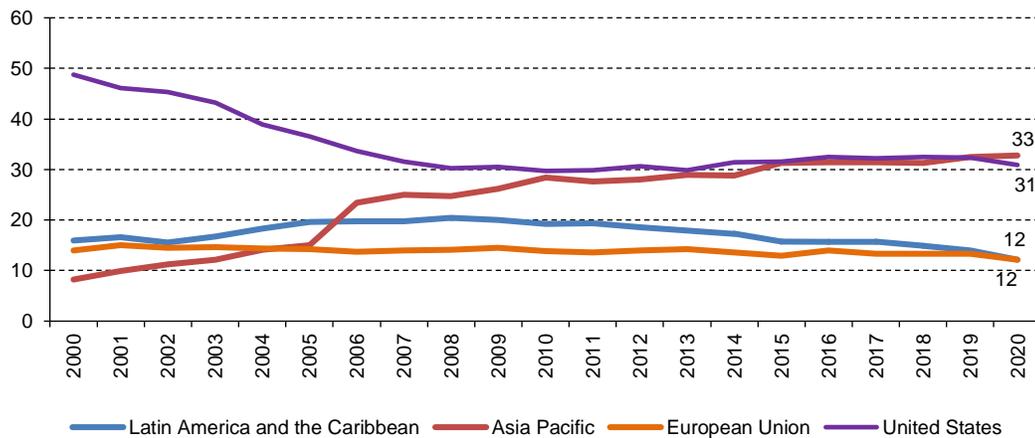
The full implementation of the RCEP agreement can could likely generate trade diversion for Latin American suppliers competing with Asian Pacific suppliers in the larger economies, mainly China, Japan, and the Republic of Korea.

Figure 9
LAC: evolution of trade with main partners and regions, 2000-2020.
(In percentages of the total)

A. Exports



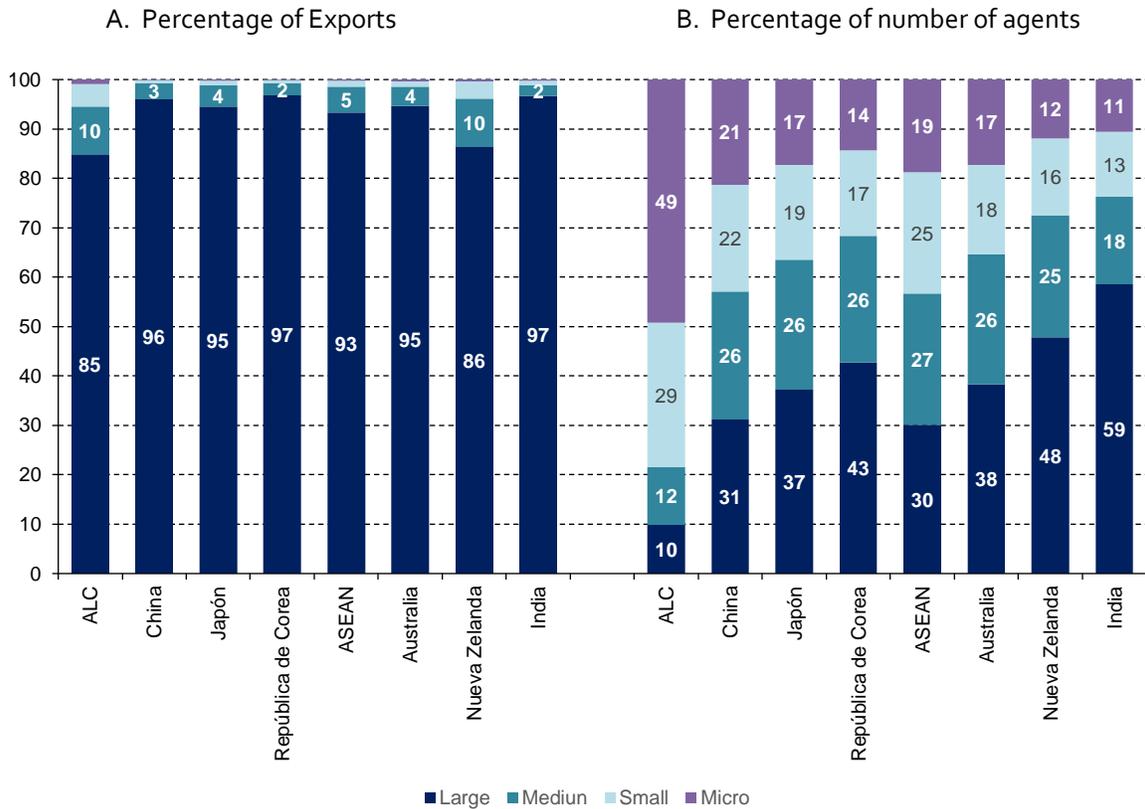
B. Imports



Source: Authors, based on data from the United Nations, COMTRADE and official bilateral trade information obtained from Central Banks, Customs and Statistical Institutes of the countries in the region.

Between 2015 and 2019, LAC counts on average around 70,000 exporting companies, of which 33,500 recorded intra-regional exports, and 11,000 extra-regional exports to Asia Pacific. This implies that 1 out of every 2 exporting companies had operations within Latin America, while 1 out of every 8 companies exported to Asia Pacific. Regarding the type of exporting companies in LAC, MSMEs accounted for 90% of the total number of agents. In case of exports to Asian Pacific countries, the proportion of large companies increases to over 30%, while MSMEs represent a smaller proportion (see Figure 10).

Figure 10
Latin America (7 countries): export composition by type of economic agent, 2015-2019^a
(Averages, in percent of the total)



Source: Authors, based on the customs data.

^a Last year available.

II. Literature review and methodology

After having introduced the status quo and the existing trade agreements, this section describes the model, tariff baseline and simulated scenarios, and reviews relevant literature. The latter particularly includes impact assessment studies with multi-country models in Asia and LAC, mainly on regional integration and/or global impacts of trade policy changes.

A. Literature review

The use of computable general equilibrium (CGE) models for the analysis of trade policy changes is widely recognized in the international trade literature. Since the 1990s, following the strong momentum of international negotiations of free trade agreements around the world, more and more technical teams of negotiators started using this methodology, either through the application of country or multi-country models, either partial or general. The central axis of the general equilibrium approach is rooted in the fact that it allows to fully capture sectoral interrelations, and thereby, direct and indirect effects of exogenous changes in policy, in this case trade policy.

An example of the application of the CGE methodology at the global level can be found in the study conducted by Martin (2001), which evaluates the economic reforms in Asian economies during the 2000s. Further studies were carried out by the United States International Trade Commission (USITC, 1999), and Martin and Ianchovichina (2001), assessing the impacts of China's accession to the World Trade Organization in 2001.

Ando and Urata (2007) also applied the CGE approach to evaluate the ex ante effects of a trade agreement signed between ASEAN and China, as well as Japan and the Republic of Korea (ASEAN+3). More specifically, they simulated eight complementary scenarios, including additional simulations with tariff cuts, and scenarios that allowed for capital accumulation and increased technical efficiency (1% as exogenous change). Thereby, the scenarios considered the possible convergence effect of trade facilitation programs between economies. Their main conclusions are that a broad agreement with fewer trade restrictions is more desirable on the macro level, than agreements with a low coverage of countries. Additionally, Ando y Urata's

analysis points out the relevance of favoring trade facilitation programs aimed at reducing transaction costs. Furthermore, the authors identify sectors that could be affected by increased competition from more competitive countries. In such cases, Ando and Urata (2007) recommend the implementation of financial aid, technical assistance and safety nets to avoid adverse effects after liberalization.

In another study, Wignaraja, Morgan, Plummer and Zhai (2014) model the potential gains from increased trade integration between South Asian and Southeast Asian economies using a CGE model. The authors assume full elimination of bilateral tariffs and a 50% reduction in non-tariff barriers (estimated to be 15%). The results estimated increases in GDP for Southeast Asia of about 2.1%, and in exports of up to 25% for exports by 2030. Unlike the work presented here, this study considers only the deepening integration between ASEAN countries with Bangladesh, India, Nepal, Pakistan, and Sri Lanka, among others, and does not include agreements with China, Japan, Australia, New Zealand and the Republic of Korea, nor with Latin America.

Furthermore, Li, Scollay and Gilbert (2017) developed a CGE model that incorporates heterogeneity in economic agents and includes FDI. Simulations of an agreement between the countries that negotiated the RCEP, allowed them to capture the direct and indirect effects on FDI following the conclusion of the agreement. According to the authors, firms respond by increasing their FDI. Also, the potential for increased trade in intermediate goods boosted vertical integration. Through this very innovative mechanism, Li et al. (2017) estimated potential gains of around 1.1% and 2.2% in China's GDP.

Ferrantino, Maliszewska, and Taran (2019), conduct an assessment of multiple scenarios of agreements negotiated and in the process of implementation: The Comprehensive and Progressive Trans-Pacific Partnership Agreement (CPTPP), also called TPP-11, the original Trans-Pacific Partnership Agreement (TPP-12) which would include the United States; the RCEP agreement, and the Free Trade Area of Asia Pacific (FTAAP), and finally an agreement, which includes the 21 economies of Asia and the Pacific (APEC). The simulated scenarios consider a liberalization path starting in 2017 and concluding in 2027 with successive tariff cuts of 24%, reaching 89% in the last year. The results of all simulations showed positive changes over the modeled baseline (year 2030) both in production, exports and imports. In particular, the effects of the implementation of the CPTPP would result in positive output changes of 0.4%, and if the United States is included, 0.7%. In the case of the mega-agreement that makes up the RCEP, the change in GDP reaches 1.5%, a figure that increases to 1.6% if the 21 APEC economies are considered. The effects on exports and imports resulting from the implementation of the RCEP would reach 4.9%, respectively. All impacts are tripled when factor productivity shocks occur. One difference between the simulations developed by Ferrantino et al. (2019), and those conducted in this study is that they assume that India also subscribes to the RCEP, which did not take place. Because of China's size, and the great importance of its market for India, Japan, and the Republic of Korea, as well as for the ASEAN countries, India decided to refrain from the negotiations. The main sectors that benefited both, on the product and export side, were food, beverages and tobacco, chemicals, metals, and machinery and equipment, among others.

No studies were found that evaluate a possible agreement between LAC countries and Asian ones, that subscribed to the RCEP. However, there exists literature, which simulates the effects derived from the implementation of the CPTPP on Chile, Peru and Mexico. In these cases, the effects are rather modest, since these countries already have extensive links with the Asia Pacific economies³.

In a recent study, Dolabella and Durán (2021) evaluated the effects of the removal of tariffs and non-tariff barriers in Latin America and the Caribbean, simulating three successive scenarios: firstly, tariff elimination; secondly, reduction of bilateral ad valorem equivalents derived from non-tariff measures, mainly trade defense measures (countervailing measures, antidumping and non-automatic licenses, among others); and a thirdly, a combination of the two previous scenarios. Results indicate

³ For further reading see for example Itakura and Lee (2019).

that, at the macroeconomic level, a free trade agreement among all LAC countries could generate an increase of 0.41% of GDP from the baseline, while regulatory convergence plus the elimination of trade defense measures would impulse GDP by 0.31%. If both scenarios happen simultaneously, the change of GDP would rise to 0.73%.

No studies were found that simultaneously evaluated the implementation of a trade agreement between Latin America and Asia Pacific while deepening intra-regional relations in both regions.

B. Methodology used, groupings, baseline and scenarios considered

Applied CGE models are numerical representations based on the neoclassical General Equilibrium Theory. The central idea behind the CGE models is turning the abstract representation of the Walrasian economic theory into a practical tool for policy analysis and applied economic research. Generally, CGE models are multisectoral. The behavior of economic agents is modeled explicitly throughout utility and profit maximizing behavior assumptions that capture the most important interdependences among different sectors of the economy and with other related economies or countries. Economy-wide resources and budget constraints are rigorously enforced and, consequently, alterations in the economic systems will often have impacts beyond the sector in which they occur. This is the key difference between CGE representations and the traditional partial equilibrium models. Thus, simulations of CGE models are effective in capturing the relevant direct and indirect effects of changes in trade policy as well as other type of shocks, because the outcomes of the policy interventions can be quantitatively examined within a consistent framework that considers the overall relevant market interrelationships.

Trade interdependence relationships are well captured by IOTs, which represent the heart of the model, and consider cost structures and tariff protection. The latter constitutes a key variable in the analysis presented in this paper: The simulations carried out are anchored in the modification of bilateral tariffs of both groups of countries, considering baseline tariff cuts, i.e. the reduction of applied tariff protection for imports from partners with which a country in the model agrees to zero in the case of a comprehensive liberalization agreement. Consequently, the results of the simulations will depend crucially on three key elements: Firstly, the production structure of each country; secondly, the pattern of trade; and thirdly, the level of tariff protection existing before the simulations were carried out.

The methodology used to derive the impacts associated with changes in trade policy on the member countries of both regions is the GTAP (Global Trade Project) multi-country general equilibrium model, version 11.0, which considers in its baseline the productive and trade relations of 147 countries/regions and 65 economic sectors. Therefore, the initial equilibrium is given by GTAP version 11 for 2017. Unlike previous versions of the database, this one considers more disaggregated information on the chemical and pharmaceutical sector, which is broken down into basic chemical products, primary chemical products and pharmaceutical products. Equivalently, the electronics sector is broken down into computers and equipment, and other electronic equipment. Furthermore, version 11 includes 6 new countries, compared to GTAP 10A. In addition, ten updates of the input-output matrices are incorporated in version 11, including those for Bolivia and Brazil. Another feature of this version is that it considers IOTs that were supplemented with agricultural production data from FAO (as described by Chepeliev, 2020).

Since the focus of the research conducted is on LAC and Asian Pacific countries, the calibrated model was collapsed for a set of 41 countries and 39 economic sectors. Table A1 in the annex shows the correspondence of the sectors and model partners considered. In order to verify the consistency of the baseline GTAP model obtained, the main variables of the model (GDP, trade, bilateral tariffs, population) were validated. Complementary sources used for this purpose were the IOT of the FEALAC project built with the joint effort of the ADB, the ESCAP and ECLAC, the United Nations commodities database (COMTRADE), the tariff databases of the United Nations Conference for Development (UNCTAD) and the World Bank System (WITS), as well as the population information at the country

level from the World Population Reference database. In order to be able to compare the levels and structures of the GTAP 11.0 database and the set of databases listed, the tariff and trade databases were mapped to the same group of sectors identified in the model to be used in the development of the policy simulations in this paper.

Regarding the simulations, the focus was put on the agricultural and manufacturing sectors as these are the ones that are deeply rooted in available data. Besides that, the model was disaggregated to include 41 countries, including the LAC countries available in GTAP, as well as the East Asian countries, in addition to other countries of interest such as China, the US and the EU countries. The rest of the countries such as Middle East and North Africa (MENA) and Sub-Saharan Africa (SSA) are added to the Rest of the World (ROW). In addition to the definition of sectors and countries, the calibration of the database considers five factors, namely: Skilled and unskilled labor, capital, land, and natural resources.

In order to conduct a first assessment of the state of intra-regional relations in LAC and Asia Pacific, as well as of the bi-regional relationship between both regions, average applied tariffs were calculated for the set of countries in both regions for an aggregation of 39 economic sectors, which are presented in Figure 11. It becomes clear at first glance that the tariffs applied by LAC to its intra-regional imports are on average lower than the tariffs applied to its Asia Pacific partners (2% versus 5%), i.e. extra-regional imports are on average twice as high. For example, imports from Asia Pacific face tariffs that are 5 times higher for products belonging to the agriculture, hunting and fishing sector, where the average intra-regional tariff is 2% for LAC, versus 10% for Asian Pacific imports. Another group of products with 5 times higher protection is chemicals and pharmaceuticals, where regional products pay tariffs equal to 1%, versus 6% for Asian imports. Other products with high protection in LAC are agro-industrial products and textiles, clothing and footwear, as well as vehicles and transportation equipment.

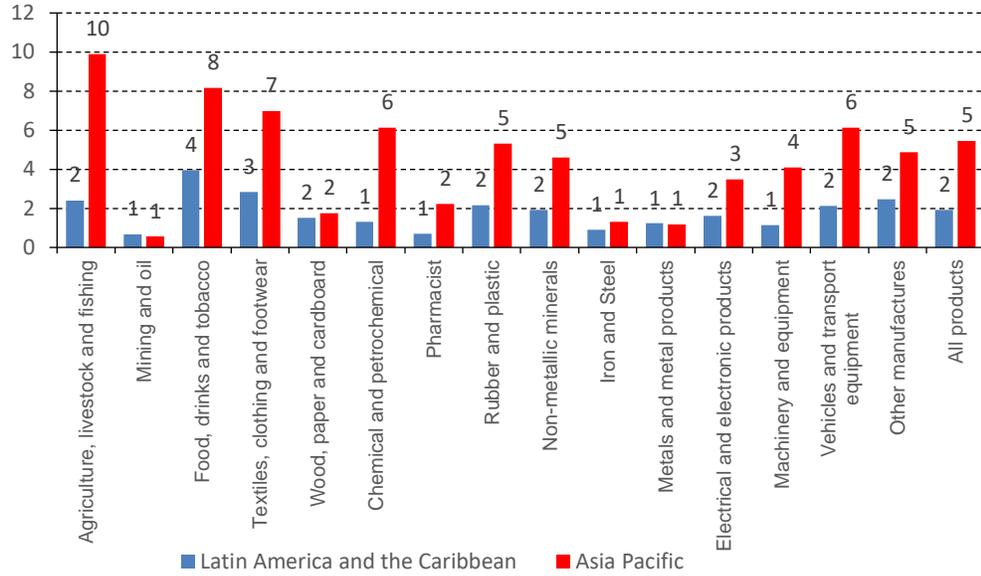
Such high levels of protection are found especially in the MERCOSUR countries, where Argentina and Brazil, in addition to Mexico, produce goods that compete with products of Asian origin. On the other hand, there are no tariffs in place for Asian Pacific countries that have trade agreements with LAC countries, such as Japan and China with Chile and Peru, for example.

Analyzing the levels of protection for Asian Pacific imports, intra-Asian Pacific imports face lower tariffs than imports from LAC (2% versus 5%). The highest tariffs are applied to LAC imports in the following sectors: textiles, clothing and footwear, other manufactures and rubber and plastics, among others. Comparing the levels of intra- and extra-regional tariffs of both regions, an interesting pattern emerges: It could be said that the different tariffs across the sectors take the form of a "mirror protection".

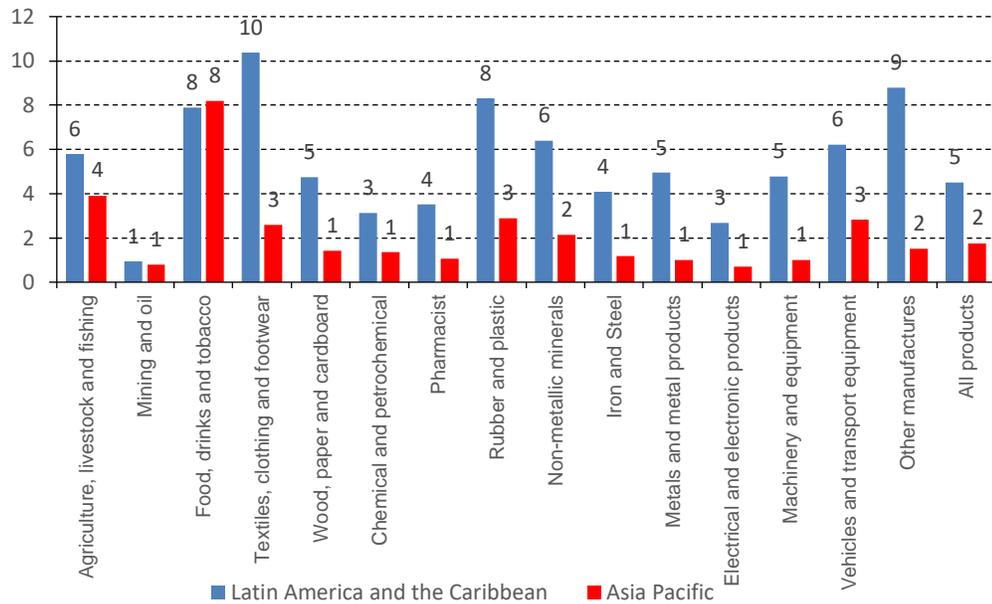
Overall, it can be observed that in both regions, intra-regional tariffs are highest in agriculture and agro-industry, which both represent sectors with sensitive products (rice, wheat, vegetable seeds, sugar, meat, beverages and tobacco, sugar). The only sector that is mainly open is mining and petroleum, which in both regions has ad valorem equivalents of 1% (see Figure 11 and Table 4).

Figure 11
LAC and Asia Pacific: bilateral applied tariffs between the two regions, 2018
(Ad valorem equivalents in percentages)

A. Implemented by Latin America and the Caribbean (18 countries)



B. Implemented by Asia Pacific (15 RCEP member countries)



Source: Authors' own elaboration, based on GTAP 11.0 model protection.

Table 4
LAC and Asia: applied tariffs^a in bilateral trade disaggregated for the 39 economic sectors, 2018 (model baseline)
(ad valorem equivalents in percentages)

	Applied by Latin America		Applied by Asia Pacific		Sensitive products
	Latin America	Asia Pacific	Latin America	Asia Pacific	
Paddy Rice	3,0	0,0	0,6	6,2	X
Wheat	0,3	4,4	1,0	0,9	X
Other cereals	1,5	10,5	0,9	3,1	X
Fruits and vegetables	2,5	7,6	10,6	5,3	X
Oil seeds	0,9	14,2	0,8	16,2	X
Vegetal fibers	1,1	1,2	2,3	0,8	X
Other crops	3,9	5,0	5,4	5,5	X
Cattle raising	0,7	2,7	3,1	1,6	X
Forestry	1,0	2,0	1,2	3,0	X
Fishing	2,1	4,3	4,7	2,3	X
Oil and gas	0,3	0,4	0,1	0,2	
Mining	0,5	0,8	1,7	0,8	
Meat and derivatives	2,6	6,8	3,2	5,0	
Oils and fats	1,7	5,0	5,3	7,2	
Dairy products	3,5	3,5	4,3	5,4	
Sugar	7,7	6,6	7,4	6,2	X
Processed rice	1,9	1,2	2,8	9,0	X
Prepared foods	2,1	6,5	9,5	5,3	
Beverages and tobacco	8,8	13,1	28,7	9,6	X
Textiles	1,9	8,2	10,1	3,3	X
Wearing apparel	3,8	8,3	20,2	3,2	X
Footwear	2,5	4,9	13,9	3,4	X
Wood manufactures	1,7	1,6	6,3	1,5	
Paper and paperboard	1,7	1,8	5,9	1,6	
Petroleum derivatives	1,4	1,0	1,1	1,4	
Chemical	1,1	8,3	3,8	3,6	
Basic pharmaceutical products	0,7	2,2	3,5	1,0	
Rubber and plastic	2,2	5,3	8,3	2,9	
Non-metallic minerals	1,9	4,6	6,4	2,1	
Iron and Steel	0,9	1,3	4,1	1,2	
Metals	0,9	0,9	3,2	0,8	X
Metal products	1,9	5,1	7,2	2,0	
Computer, electronics and products	1,4	3,1	3,5	0,6	X
Electrical equipment	1,8	4,5	7,9	1,3	X
Machinery and equipment	1,2	4,1	4,8	1,0	
Vehicles	2,4	7,3	9,1	3,3	X
Other transport equipment	1,9	4,2	8,0	1,4	X
Other manufactures	2,5	4,9	8,8	1,5	X
All products	1,9	5,5	4,5	1,8	

Source: Authors' own elaboration, based on GTAP 11.0 model protection.

^a Weighted average.

In order to estimate the possible effects derived from a process of intra-regional convergence in Asia Pacific, as implied by the signing of the RCEP, as well as a potential one in LAC, and the implementation of a "hypothetical" bi-regional free trade agreement between both regions, simulations of three consecutive scenarios were applied:

- i) Scenario 1: Free Trade in Asia Pacific (RCEP enters into force). The bilateral tariffs of the 15 members included in the agreement are set to zero;
- ii) Scenario 2: Free trade in LAC. Bilateral tariffs of the countries in the region are set to zero;
- iii) Scenario 3: Inter-regional free trade with zero tariffs.

Based on the three scenarios, 12 simulations were compiled using the GTAP model (see Table 5) under the assumption of perfect competition. In the majority of the simulations, the three scenarios have been combined and varied by including alternative assumptions: Non-tariff measures (NTM), (un-)employment of unskilled labor, capital accumulation and the reduction of tariffs also for sensible

sectors. In this paper, Simulation 4 represents the standard closure and its model output serves as a base for the micro-simulations to determine the impact on the different types of agents.

Table 5
Composition of the 10 simulations subject to the analysis

Scenario	Description	Simulation	NTM ^a	Assume unemployment	Allow capital accumulation	Protection of sensitive sectors
1	Free intra-regional trade in Asia Pacific (RCEP)	1	No	No	No	Yes
2	Free intra-regional trade in LAC	2	No	No	No	Yes
1+2+3	Bi-regional agreement (free intra -and inter-regional trade)	3	Yes	No	No	Yes
		4 ^b	Yes	Yes	No	Yes
		5	Yes	Yes	Yes	Yes
		6	No	Yes	No	Open textiles, agro-industrial, and industrial products
		7	No	Yes	No	Open agricultural products
		8	No	Yes	No	Open textiles, agro-industrial, and industrial products
-	Trade facilitation in RCEP	9	Yes	-	-	-
-	Trade facilitation in LAC	10	Yes	-	-	-
-	Trade facilitation among RCEP and LAC	11	Yes	-	-	-
-	Trade facilitation among LAC and RCEP	12	Yes	-	-	-

Source: Authors.

^a In case of the bi-regional agreement, NTM refers to trade facilitation within and between (in both directions) regions.

^b Constitutes the standard closure for the simulation of a bi-regional free trade agreement.

NTMs

The NTMs, which constitute trade facilitation processes, are understood as harmonization of technical standards, standardization of sanitary and phytosanitary requirements, among other mechanisms. These reductions are modeled as the application of trade facilitation programs under an iceberg cost assumption, according to which the cost of exporting to partner countries is reduced through the application of a technology shock, as captured in the GTAP model by the 'ams' variable. This results in a 2% increase during the transit of goods from origin to destination. In Simulations 3-5 NTMs were included, while simulations 9-12 estimate the isolated effects of NTMs without any tariff reductions in intra—and inter—regional trade in both regions.

Employment

Furthermore, simulations were run under two alternative assumptions: One assumes full employment, and the other assumes unemployment. By including the unemployment assumption, the wage of unskilled labor is fixed, thereby leading for worker mobility. Assuming unemployment in a CGE model generally is not relevant in cases where the unemployment rate is relatively low and stable. However, given that in some LAC and Asian Pacific countries unemployment rates have been increasing above values that could be considered equilibrium levels and close to the natural unemployment rate, i.e. values around 4%, it is assumed that the most plausible results are those that include such assumption. It is expected to better capture the actual situation, as in both regions there are people of working age who do not manage to find employment. Therefore, most of the simulations, including the standard closure, are assuming unemployment. Nevertheless, in the results section, we present the outputs considering full employment and unemployment. Thereby, it is possible to obtain a lower bound of the measure of expected change, and an upper bound, which would be the one assumed under the assumption of unemployment.

Capital accumulation

Generally, it is assumed that the capital stock does not change, and the investment level remains at the original level given by the database. In order to be able to derive some effects in the medium-run originating in the change in trade policy following the signing of the bi-regional agreement scenario, an additional simulation was included that allows for capital accumulation. The main purpose of this scenario is to obtain an estimate of the longer-term benefits of trade openness, without having to set up a dynamic model. Some authors such as Francois, McDonald and Nordstrom (1996) or Rutherford and Tarr (2003), among others, have proposed a slight modification of the GTAP model to recreate a comparative steady state, whose objective is to identify the welfare gains due to these effects in a scheme that resembles the Solow-Swan model. Steady state models allow the adjustment of the capital stock by tying the rate of return on capital to the cost of producing it. In other words, the impacts of tariff reductions will translate into changes in the levels of savings or capital that will increase/decrease the initial capital stock from the equilibrium level, thus generating increases in investment. The methodology applied to include a "dynamic effect" results from endogenizing the changes in the initial capital stock of the countries (which in the static simulations of the standard GTAP model remain fixed). For this, the approach proposed by Francois, McDonald and Nordstrom (1996) was followed, whereby the effects of capital accumulation are incorporated through the modification of the closure rules. Basically, the rates of change of the capital stock are allowed to be equal to those of investment, thus allowing for capital accumulation, which is endogenously determined. Only Simulation 5 allows for capital accumulation by selecting additional sets in the GTAP model's 'CMFSTART' file and subtotals for each shock in the relevant variables.

Sensitive sectors

In order to consider sensitivities in each region, the simulations of the agreement excludes certain sectors, to protect them from foreign competition. These are sensitive sectors for which tariffs are relatively high, namely textiles, agro-industrial, some industrial products and agricultural sectors (see figure 7). Therefore, the simulations exclude tariff cuts for these products (see Table 5). Only Simulations 6-8 include the opening of these sectors for certain product groups, assuming a tariff of zero.

Micro-simulations

Apart from the model scenarios and simulations, the analysis is further complemented by microdata provided by various Latin American countries. It contains information about the export behavior of economic agents of selected Latin American countries. In this respect, economic agents are classified by their total annual domestic sales according to pre-defined ranges (see Table 6). If domestic sales were not available, annual export by agent were used as a proxy to classify the economic agents. Agents with annual sales (or exports in case of unavailability of sales) below US\$ 5,000 were excluded from the analysis as these may refer to the export of samples, or occasional exports of minimal value. The exporting companies were then grouped in large companies and MSMEs. The micro data has been cross-checked with data from the United Nation's COMTRADE data base to ensure the quality of the data.

Table 6
Data Availability and Ranges of Domestic Sales for the Typification of Exporting Companies in LAC
(In millions of dollars)

Country	Last year available	Type of economic agent				
		Large	MSMEs		Excluded	
		Large	Medium	Small	Micro	Tiny amount
Argentina	2017	≥33	≥4	≥0,6	≥0,005	<0,005
Bolivia (Plurinational State of)	2019	≥5	≥1	≥0,1	≥0,005	<0,005

Country	Last year available	Type of economic agent				
		Large	MSMEs			Excluded
		Large	Medium	Small	Micro	Tiny amount
Brazil	2009	≥23	≥2	≥0,3	≥0,005	<0,005
Chile	2015	≥5	≥1	≥0,1	≥0,005	<0,005
Colombia	2018	≥5	≥1	≥0,1	≥0,005	<0,005
Ecuador	2018	≥5	≥1	≥0,1	≥0,005	<0,005
Guatemala	2012	≥1,0405	≥0,3642	≥0,104	≥00,05	<0,005
Mexico	2015	≥25	≥4	≥0,6	≥0,005	<0,005
Panama	2010	≥2,5	≥1	≥0,15	≥0,005	<0,005
Paraguay	2009	≥0,4971	≥0,995	≥0,0309	≥0,005	<0,005
Peru	2017	≥5	≥1	≥0,1	≥0,005	<0,005
Uruguay	2012	≥5	≥0,18	≥0,06	≥0,005	<0,005
Venezuela (Bolivarian Republic of)	2010	≥6,4115	≥2,5646	≥0,2308	≥0,005	<0,005

Source: Authors.

The complementary information for 13 Latin American countries was used to obtain a baseline of exports by reporting country, type of agent, selected product groups on a 6-digit Harmonized System aperture, and trading partners. This made it possible to optimally capture the structure of trade by type of economic agent. The resulting database was used to obtain, by means of a microsimulation technique, the differentiated effects of the impacts received on the exports variable after the simulations resulting from the CGE model. The changes observed in the scenario of greatest interest, i.e. the signing of a bi-regional agreement (Simulation 4) were simulated at the level of product groups and trading partners as follows:

$$X(t+1)_{ij}^{k,E} = X(t)_{ij}^{k,E} * (1 + \Delta X_{ij}^k)$$

Where X represents exports; t the base year of reference; t+1 the new period for which the new level of exports is calculated; i, the country of origin of exports; j, the destination region; k, the sector or industry; E, the type of economic agent, the same which by construction can be of 4 types: (large, medium, small and micro); ΔX is the estimated percentage change in the policy simulations yielded by the CGE model. Note that there will be a percentage change for each bilateral relationship of a given country in each of the 39 sectors considered in the CGE model. To be able to apply this effect on the microdata of each country, the exports reported on the product-level were grouped into the same economic sectors considered by the model. Since the microdata contains the exports by type of agent, the sectoral results can be discriminated at that level, which allows to obtain the effects differentiated by type of agent. This property of the base makes it possible to decompose the rates of change of exports after the simulations into an impact on large companies on the one hand, and MSMEs, on the other.

Note that the methodology proposed here can be applied to each of the different scenarios simulated, however this paper analyses only on the impact of a bi-regional agreement on exporting agents in LAC.

III. Analyses of the results

This section presents the results of the simulations based on the scenarios defined in the previous section. In the first instance, the case of the effect on production, welfare and employment will be analyzed. The outputs are presented considering the impacts for the two regions included in the study, as well as for the various integration schemes that comprise them. Furthermore, this section also describes the results of the simulations that allow for capital accumulation, also under the unemployment assumption and the effect of a bi-regional agreement on exporting MSMEs and large companies.

A. Production, welfare and employment

Macroeconomic changes in Gross Domestic Product (GDP) are expressed in real terms (percentage change). In turn, the change in calculated welfare (measured in millions of US dollars) is presented as the equivalent variation (EV), while the level of employment is estimated for the cases in which it is considered.

The macroeconomic results show a rate of change of output in LAC of between 0.35% and 0.61% in the case of the simultaneous implementation of trade deepening in LAC and the implementation of a free trade agreement with Asia Pacific. The impact is greater in the Central American Common Market and the Pacific Alliance with variation rates of 1.18% and 0.65%, respectively, under the simulations with unemployment while a minor impact can be observed in the Caribbean countries. In case of the RCEP member countries, the variation in GDP is 1.00%, with a higher impact in ASEAN, indicated by a variation of 1.38%.

In terms of welfare, captured by the equivalent change, Latin America faces an increase in the overall welfare of its consumers estimated at US\$37.897 billion, or its equivalent of 0.60% of regional output (under the assumption of full employment). Following a regional and bi-regional trade agreement, LAC consumers would be better off than in a status quo situation, where trade policy remains unchanged. In relative terms, the Central American Common Market achieves an aggregate welfare of US\$ 2,048 million, which would be equivalent to 0.96% of the regional product (see Table 7). In case of the effects on welfare in Asia Pacific, the application of the RCEP, together with the signing

of a trade agreement with Latin America, would result in a welfare increase of just over 237 billion dollars, or its equivalent in 1.11% for Asia Pacific, with the Republic of Korea being the economy that would receive the greatest welfare impact, which exceeds 3.00% of the country's product.

Table 7
LAC and Asia Pacific: effects of a bi-regional agreement on welfare and employment
(Changes from baseline in percentages = 2017)

Selected Regions/subregions/ countries	GDP		Welfare (Equivalent variation)			
	Full Employment ^a	With Unemployment ^b	Full Employment ^a		With Unemployment ^b	
	Percentage	Percentage	millions of dollars	share in total (percentage)	millions of dollars	share in total (percentage)
LAC	0.35	0.61	20 840	0.33	37 897	0.60
MERCOSUR	0.31	0.59	10 031	0.28	20 209	0.57
Pacific Alliance	0.43	0.65	9 196	0.00	13 971	0.65
Central American Common Market	0.55	1.18	931	0.44	2 048	0.96
Caribbean countries	0.09	0.17	-18	-0.01	480	0.20
Asia Pacific (RCEP countries)	0.46	1.00	127 216	0.60	237 364	1.11
ASEAN	0.81	1.38	16 023	0.65	31 009	1.26
Australia	0.24	0.56	8 228	0.57	13 556	0.93
China	0.41	0.85	49 008	0.44	94 892	0.85
Japan	0.35	0.78	34 780	0.76	53 016	1.15
New Zealand	0.32	0.57	1 530	0.76	2 058	1.03
Republic of Korea	0.84	2.82	17 648	1.25	42 832	3.03

Source: Authors based on model simulations.

^aRefers to Simulation 3.

^bRefers to Simulation 4.

The magnitude of the impacts of the variation in output based on the simulations of a bi-regional agreement (under the unemployment assumption), is determined by the productive structure of a country. At the country level, in Latin America, the highest percentage variations in output (above 1%), together with a positive impact on welfare, emerge in Paraguay and Uruguay (see Table 8). For Paraguay, the EV represents 3.9% of the country's product. The greatest positive impacts in terms of output among the Central American countries would occur in Nicaragua, Panama and Honduras, with relative increases in welfare above regional average. It should be noted that, in absolute terms, the largest welfare gains occur in Mexico and Brazil, the two largest economies in Latin America and the Caribbean, with 21% and 38% of GDP, respectively. The smallest impacts occur in Venezuela, E.P., Colombia and Peru, which is explained in part by the greater concentration of products in these countries, represented primarily by mining products (oil, coal, copper, zinc, among others), as well as the importance of light industries that would receive negative impacts, mainly in textiles, clothing and footwear. These are important national industries in the cases of Colombia and Peru. Overall, many of the sectors in these three countries are less competitive or represent a lower relative share of the sectors that would receive positive impacts such as agriculture and livestock⁴, with above-average increases in rice, wheat, soybeans and livestock products, agribusiness, with positive variations in meat, fats and oils, sugar, and beverages. In case of these products, the Southern Cone countries, especially Argentina, Uruguay and Paraguay, are estimated to feel positive impacts due to the opportunities arising from a positive increase in terms of trade and better prices in Asian markets. An example is the case of fruits and vegetables,

⁴ An example of this can be found in Colombia. The Colombian livestock sector is not competitive, which is rooted in the low levels of productivity and quality of Colombian livestock products compared to other countries. For further reading see Martinez and Caro (2019).

which faced an average tariff of 10% before the tariff shock. After a bi-regional agreement, the tariff is reduced to zero, and thus exporters face better conditions accessing the Asian market.

When capital accumulation is allowed for in the scenario of a bi-regional free trade agreement (RCEP and deepening of regional integration in LAC and Asia Pacific), the percentage variations in GDP rise in a generalized manner: They increase at least by the factor two. In LAC the variation in GDP reaches 1.66%, with welfare gains equal to 4.4% of GDP in Paraguay (see Table 8).

Table 8
LAC: effects of a bi-regional agreement on GDP and Welfare
(Percentage changes and millions of dollars)

Countries	GDP			Welfare With unemployment		
	Standard closure ^a	Allowing Capital accumulation ^b	Standard closure ^a	Share in GDP	Allowing Capital accumulation ^b	Share in GDP
Argentina	0.35	1.40	1 759	0.3	6 624	1.2
Brazil	0.69	1.57	15 319	0.6	32 189	1.3
Paraguay	1.63	2.73	1 193	3.9	1 474	4.4
Uruguay	1.30	2.35	768	1.3	1 203	2.1
Venezuela (Bolivarian Republic of)	0.21	1.26	1 170	0.2	6 041	1.2
Chile	0.56	1.68	2 108	0.8	4 431	1.7
Bolivia (Plurinational State of)	0.68	1.89	450	1.4	903	2.7
Colombia	0.28	1.46	974	0.3	5 043	1.3
Ecuador	0.70	1.84	739	0.7	1 799	1.8
Peru	0.38	1.22	614	0.3	2 006	1.0
Mexico	0.81	2.17	10 275	0.8	24 596	1.9
Costa Rica	0.81	1.80	434	0.9	828	1.6
El Salvador	0.76	2.03	133	0.5	384	1.5
Guatemala	0.73	1.79	503	0.9	989	1.7
Honduras	1.45	2.43	181	0.9	303	1.6
Nicaragua	2.15	3.08	246	2.1	323	2.7
Panama	1.98	2.92	551	1.1	833	1.7
Dominican Republic	0.70	2.02	325	0.5	958	1.5
LAC	0.61	1.66	37 742	0.3	90 927	1.5

Source: Authors based on model simulations.

^aRefers to Simulation 4; ^bRefers to Simulation 5.

Among the Asian Pacific countries, the largest increases in output are expected to occur in Vietnam and Cambodia, with 4.75% and 3.79%, respectively (see table 9). In Vietnam, the largest increases in output are likely to emerge in the light industry, mainly in the textile, apparel and footwear sectors, with very large increases in apparel (33%) and footwear (26%), as well as in the electrical equipment sector (13%). Production in the beforementioned sector as well as the computer equipment sector is expected to increase by more than 10% in Cambodia. In Laos and the Republic of Korea, metals, electronics and chemicals are driving output growth. It is important to note that in most of the RCEP member countries, despite negative output variations in agro-industrial sectors, the expected increases in heavy manufactures, mainly chemicals, electronics, computer equipment, manufactures and equipment, outweigh these declines, generating positive variations on average. The only cases, where smaller increases of around 0.6% occur, are Australia and New Zealand. For these countries, simulations indicate that the largest negative variations are to be observed in heavy manufactures, while their agricultural and agro-industrial sectors perceive positive variations, given the countries' high productivities. Similarly, in Brunei the positive impacts on output are concentrated in agro-industry, especially in food products (dairy, sugar and processed rice). However, the country will have to make efforts to increase the productivity of the sector, which will face the supply of more competitive products from Australia and New Zealand.

Table 9
Asia Pacific: effects of a bi-regional agreement^a on GDP and Welfare
(Percentage changes and millions of dollars)

Countries	Gross Domestic Product (GDP)	Welfare	Share in total GDP (in percentages)
Japan	0.78	53 016	1.15
China	0.85	94 892	0.85
Republic of Korea	2.82	42 832	3.03
Australia	0.56	13 556	0.93
New Zealand	0.57	2 058	1.03
Thailand	1.66	5 715	1.41
Malaysia	1.67	5 789	1.71
Indonesia	0.70	6 708	0.75
Philippines	0.79	1 544	0.54
Singapore	1.05	4 086	1.33
Brunei	0.73	273	1.60
Cambodia	3.79	446	2.66
Laos	2.39	187	1.60
Vietnam	4.75	6 262	3.36
RCEP countries	1.00	237 364	1.11

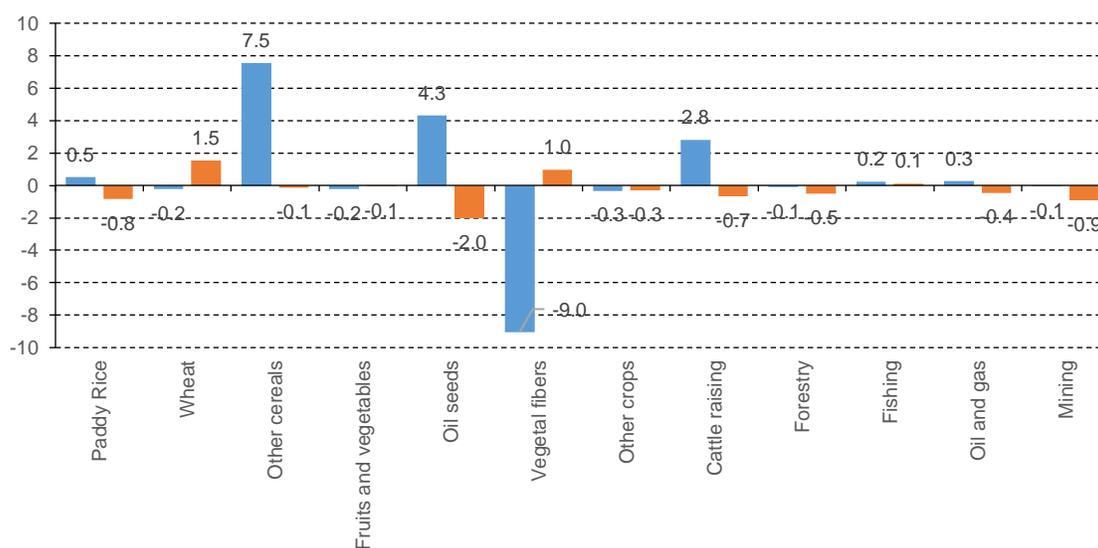
Source: Authors base on model simulations

^a Refers to Simulation 4.

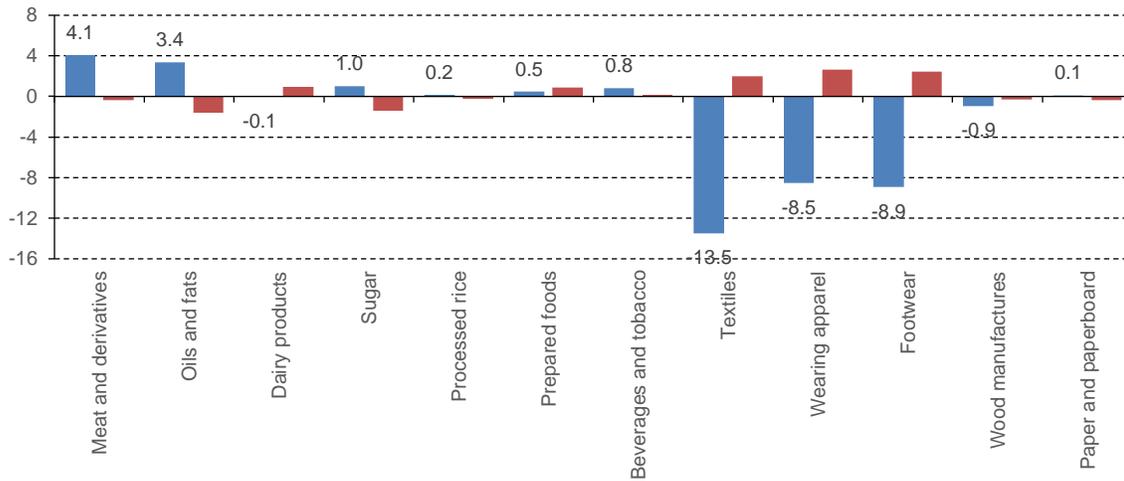
Comparing the GDP variations in the major primary sectors and light and heavy manufacturing shows a sort of offset in the expected effects: There can be observed larger increases in agriculture and the agro-industry in favor of LAC countries, on the one hand, and more pronounced increases in heavy manufacturing among Asia Pacific countries, on the other hand (see Figure 12).

Figure 12
LAC and Asia Pacific: effects of a bi-regional agreement^a expressed in average change in GDP at the sector level
(Changes over the baseline = 2017)

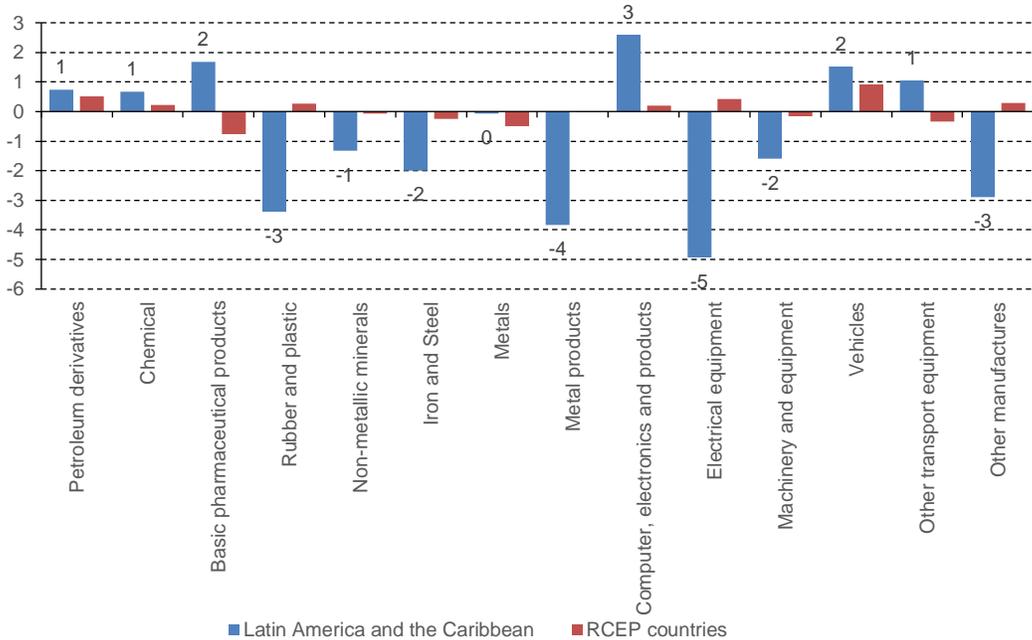
A. Primary products



B. Light manufactures



C. Heavy manufactures



Source: Authors base on model simulations.

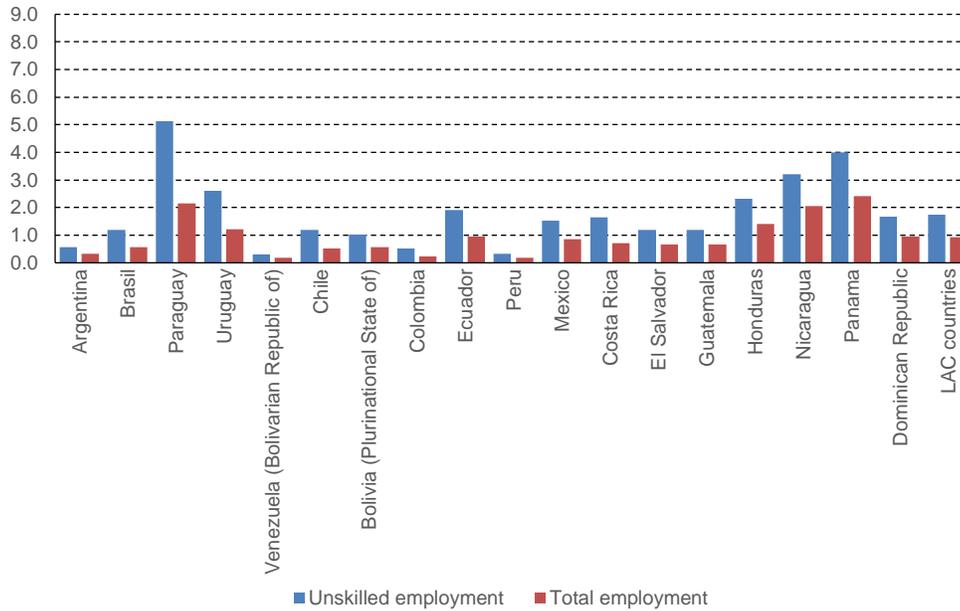
^a Refers to Simulation 4.

Regarding the effects of a bi-regional trade agreement on employment, on average, positive effects on employment of unskilled workers and total employment are expected for both regions (see Figure 13). By assumption, the wage of unskilled workers is fixed, thereby allowing for worker mobility, whereas the wage of skilled workers is variable. Turning to the results, LAC is expected to face a reduction of unemployment of unskilled workers of 1.7% and of 0.9% on average for total employment. Here, especially small countries like Paraguay, Nicaragua and Panama stand out, as the agreement likely increases employment opportunities in these countries with large primary sector activity. In Brazil and Mexico, which are characterized by large manufacturing sectors, the effects on employment are

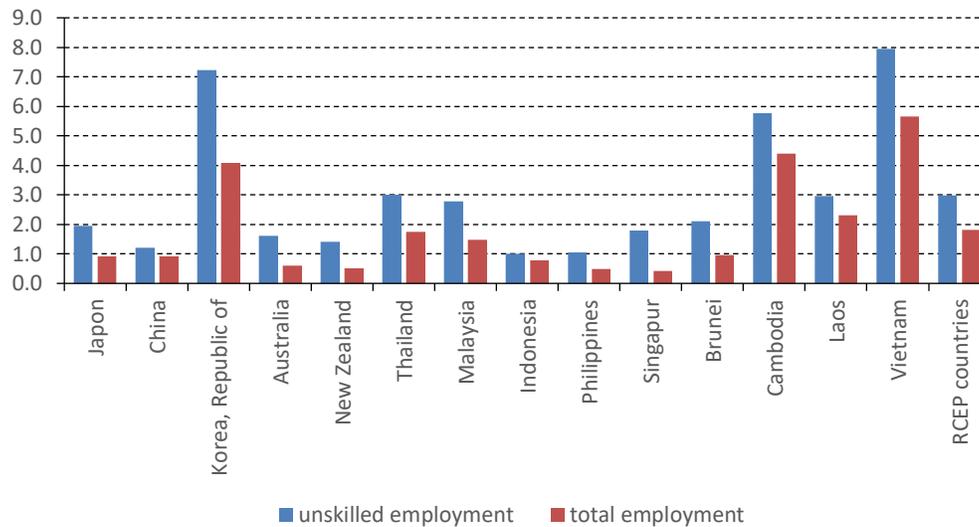
positive, but below the regional average. When looking at the effects in RCEP countries, employment of unskilled workers is estimated to increase by 3.0% and total employment by 1.8% on average, which imply stronger effects as for LAC. In Asia Pacific, especially Korea, Cambodia and Vietnam may experience large increases in employment opportunities compared to the other countries in the region.

Figure 13
LAC and Asia Pacific: effects of a bi-regional agreement^a on employment
(Changes over the baseline = 2017)

A. LAC



B. RCEP countries



Source: Authors base on model simulations.

^a Refers to Simulation 4.

B. Foreign trade

In terms of the effect of the scenarios on the export and import variables (see Table 9), a generally positive effect for LAC and RCEP countries can be expected. However, these gains are realized at the expense of the rest of the world. At the same time, the aggregate balance for both regions is expected to be positive. Clearly, if only the implementation of the RCEP is considered, without LAC being able to negotiate a bi-regional agreement with the region, if the liberalization includes only bilateral tariff reductions in Asia (line 2 of Table 9), or if trade facilitation only includes the partners of the RCEP area (line 3 of Table 9), benefits induced by such an agreement would generate increases in Asian Pacific exports of between 2.77% and 1.39%, respectively, and import rises of 3.17% and 1.47%, respectively. In these cases, the expected effect on LAC is a fall in trade (both, exports and imports). The same effect takes place, but in the opposite direction, when LAC would establish a Free Trade Area in its region, without RCEP taking place (lines 3 and 4 of Table 9 depending on whether liberalization includes tariff reductions or only trade facilitation). Then, foreign trade in Asia Pacific suffers, on average, negative variations.

It can be concluded that a bi-regional agreement between LAC and RCEP is of greater importance for LAC than for RCEP, as can be derived from simulation 6 and the aggregation of simulations, depicted as full impact in Table 9. For LAC exports, tariff reductions in the agricultural sectors in Asian RCEP countries allow for a greater expansion of trade. Imports into LAC are affected by the reduction of agricultural tariffs in Asia Pacific (line 8). A bi-regional agreement (LAC-RCEP) compensates for the possible trade diversion that the RCEP agreement would generate in Asia. The application of trade facilitation processes is much more favorable if it occurs simultaneously in and between both regions, rather than only in one, so that by additivity, the benefits are more substantial than if the facilitation improvements occurred only in one direction. Finally, the aggregate results for exports and imports in both regions are maximized when intra- and inter-regional tariffs are reduced, including the opening of sensitive sectors, and in intra- and inter-regional circuits, accompanied by trade facilitation processes. In this case, the increase in exports and imports for LAC are estimated to reach around 5.01% and 4.35%, and in Asia Pacific between 4.55% and 5.22% for exports and imports, respectively (see Table 10). The impacts on exports and imports by country are available in Annexes A2 and A3.

Table 10
LAC and Asia Pacific: average change in foreign trade under various simulations
(Changes over the baseline = 2017)

	Simulation	LAC		RCEP countries	
		Exports	Imports	Exports	Imports
RCEP tariff reduction	1	-0.10	-0.19	2.77	3.17
Trade facilitation among RCEP countries	9	-0.20	-0.11	1.39	1.47
LAC tariff reduction	2	0.96	1.00	-0.01	-0.02
Trade facilitation among LAC countries	10	0.42	0.45	-0.01	-0.01
LAC-RCEP with sensitive sectors (exclude agriculture products)	6	3.40	2.61	0.34	0.53
Trade facilitation among RCEP and LAC	11	0.13	0.28	0.02	0.00
Trade facilitation among LAC and RCEP	12	0.39	0.17	0.04	0.09
LAC-RCEP tariff reduction in agriculture	7	0.01	0.15	0.01	-0.001
Full impact	1, 9, 2, 10, 6, 11, 12, 7	5.01	4.35	4.55	5.22

Source: Authors based on model simulations.

Among the countries for which low or negative variations in exports are estimated, two groups of countries stand out. Firstly, those with many trade agreements at the intra-regional and extra-regional level, mainly with Asia Pacific partners. This group includes Chile and Peru. In both cases, the expected gains from a large bi-regional agreement are limited, since the gains from the tariff reductions are already perceived based on trade agreements in place. The negative effect is mainly explained by

the erosion of preferences that these countries faced in markets like China, Japan, Korea, the ASEAN countries, and within the Pacific Alliance, and other countries in the region. Secondly, another group of countries are those that export products that face high competition in Asian Pacific target markets. This group includes Paraguay and Uruguay, which are expected to suffer trade detour in exports to LAC partners, having to compete with similar products of Asian origin. This likely includes the cases of agro-industrial products (butter, cheese and milk) from Australia and New Zealand. Furthermore, decreases in exports in the textile, clothing and footwear sectors of Central American countries such as Guatemala and Panama are expected, as they face increased competition in intra-regional exports due to the influx of products from more competitive countries (for example Vietnam).

At the sectoral level, the ones with the largest export boosts were food (cereals, corn, wheat, wheat, meats, among others), pharmaceuticals, electrical and electronic equipment, machinery and equipment, vehicles and other manufactured goods. Among the sectors with an expected negative, or very low impact, are rubber and plastics, mining and petroleum, metals and metal products, as well as wood, paper and cardboard, and textiles, clothing and footwear.

C. Estimated effects on exporting firms

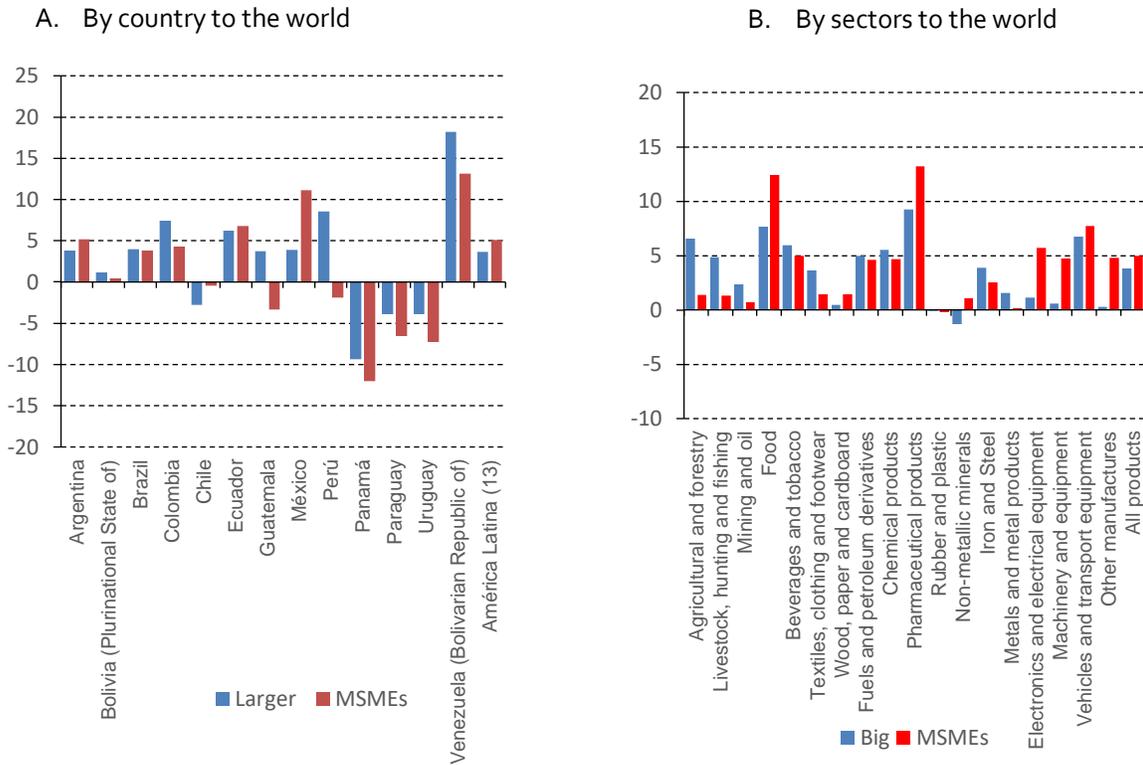
Global exports

The results of the micro simulations for 13 LAC countries, that are based on the model outputs of a scenario of a bi-regional free trade agreement⁵ combined with customs data by type of agent and trading partners, show a positive trend for exports of LAC MSMEs. On average, they are estimated to boost their export volume by 5%, whereas that of LAC large companies is expected to increase by only 4% (see Figure 14 A). At the country level, MSMEs in Argentina, Bolivia, Brazil, Colombia, Mexico, and Panama are expected to increase their exports in case of a bi-regional agreement. In Ecuador and Venezuela, the expected positive impact on exports of MSMEs was lower than that of large companies, but on average these countries are estimated to experience significantly larger increases (6% and 14%, respectively). In the cases of Paraguay, Uruguay and Chile, MSMEs likely face decreases in export volumes, while in Peru and Guatemala, the variation for MSME exports was 0%.

Looking at the effects of a bi-regional agreement, aggregated across the 13 countries, on the sectoral level, the magnitude of the mainly positive effects varies across the sectors and by type of agent (see Figure 14 B). The more pronounced expansion in the manufacturing sectors can be explained by the increased export volume expected for agricultural and agro-industrial products from South American countries, on the one hand, and by the space that opens for large companies in the largest Latin American countries (Brazil and Mexico) in sectors such as non-metallic minerals, iron and steel, pharmaceuticals, vehicles and their parts, electronics and machinery and equipment. These represent sectors that would benefit from lower tariffs both, in LAC and Asia Pacific. At the sectoral level, however, it should be noted that the bulk of exports in some of these sectors, mainly in the case of electronic products, are realized by large companies (about 98% are exports of large companies). The sectors with a large participation of MSMEs are textiles, clothing and footwear, and non-metallic minerals.

⁵ Includes free trade between and within both regions, assuming unemployment and trade facilitation within and between regions.

Figure 14
Latin America (13 countries): differential effects on exports by type of economic agents following a bi-regional free trade agreement^a
(Percentage change over baseline)

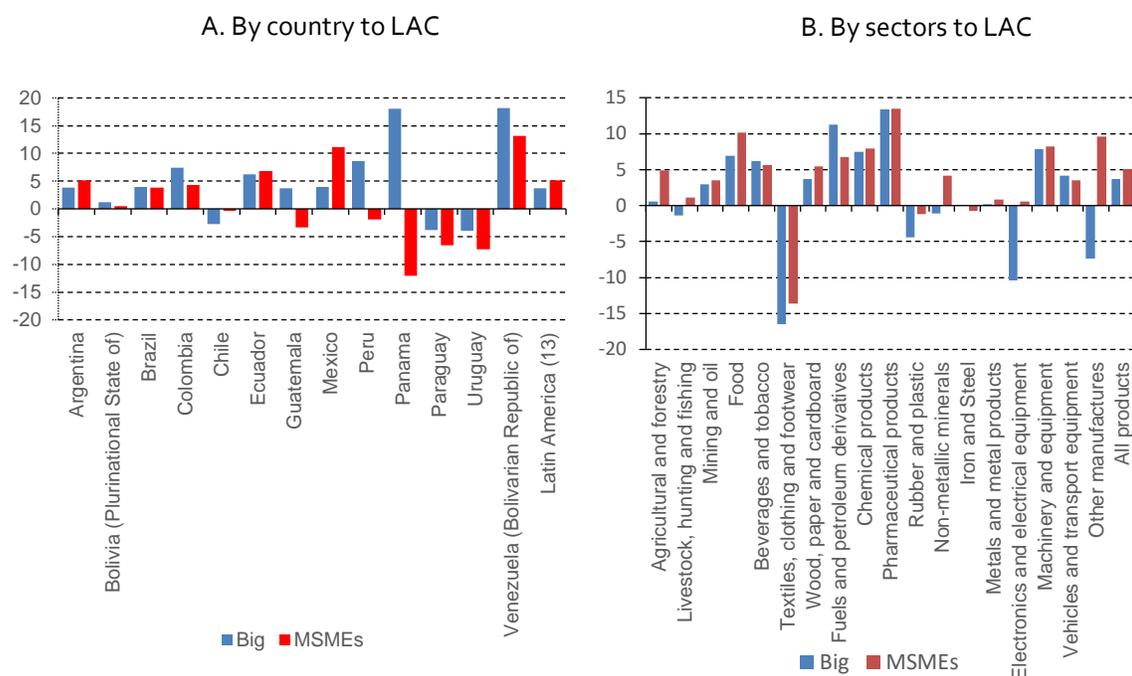


Source: Authors, based on simulations carried out based on customs microdata from 13 selected countries.
^a Refers to Simulation 4.

Intra-regional exports

As already mentioned, the most pronounced effects on intra-regional trade will be felt in those countries that still maintain a significant proportion of their trade without preferences, i.e. under the general Most Favored Nation regime. This group includes Argentina, Brazil and Mexico, among others. The three countries can expect positive variations in their intra-regional exports following the simulation of a bi-regional agreement with Asia (see Figure 15 A). In the cases of Argentina and Mexico, the effect on MSMEs is expected to be greater than on large companies (see Table 11). The reason for this is that in several sectors, mainly textiles, clothing and footwear, paper and cardboard, non-metallic minerals, food, beverages and tobacco, in addition to agricultural and livestock products, and even some heavy manufactures, the participation of MSMEs is higher. On the other hand, negative variations in intra-regional exports likely occur in the textiles and clothing, rubber and plastics, and non-metallic minerals sectors. In this regard, the most affected countries are Chile, Peru, as well as Guatemala, Panama, Paraguay and Uruguay, which will face competition from similar products exported by Asia Pacific countries such as China, Vietnam, Thailand, among others.

Figure 15
Latin America (13 countries): differential effects on intraregional exports by type of economic agents following a bi-regional free trade agreement^a
(Percentage change over baseline)



Source: Authors, based on simulations carried out based on customs microdata from 13 selected countries.

^a Refers to Simulation 4.

Table 11
Latin America (13): export volumes by sector, type of agents and destination
(Share of total exports by associated regions)

Sectors / Destination / Type of firm	Latin America		Asia Pacific		World	
	Large	MSMEs	Large	MSMEs	Large	MSMEs
Agricultural and forestry	77%	23%	92%	8%	81%	19%
Livestock, hunting and fishing	75%	25%	82%	18%	76%	24%
Mining and oil	99%	1%	99%	1%	99%	1%
Food	84%	16%	92%	8%	88%	12%
Beverages and tobacco	81%	19%	87%	13%	84%	16%
Textiles, clothing, and footwear	54%	46%	73%	27%	64%	36%
Wood, paper and cardboard	72%	28%	93%	7%	82%	18%
Fuels and petroleum derivatives	96%	4%	100%	0%	98%	2%
Chemical products	75%	25%	85%	15%	79%	21%
Pharmaceutical products	68%	32%	62%	38%	74%	26%
Rubber and plastic	87%	13%	89%	11%	84%	16%
Non-metallic minerals	69%	31%	66%	34%	67%	33%
Iron and Steel	90%	10%	90%	10%	89%	11%
Metals and metal products	82%	18%	98%	2%	93%	7%
Electronics and electrical equipment	93%	7%	93%	7%	98%	2%
Machinery and equipment	65%	35%	80%	20%	87%	13%
Vehicles and transport equipment	96%	4%	96%	4%	96%	4%
Other manufactures	66%	34%	65%	35%	70%	30%
All sectors	84%	16%	95%	5%	90%	10%

Source: Authors, based on the customs microdata from 13 selected countries.

IV. Conclusions

The signing of the RCEP agreement will have impacts on interregional trade relations between Asia Pacific and other regions, like LAC. This opened the discussion on intra- and inter-regional trade liberalization in order to avoid falling behind. In order to estimate the possible effects derived from a process of intra-regional convergence in LAC, as well as in Asia Pacific, and the implementation of a "hypothetical" trade agreement between both regions, simulations of three consecutive scenarios were realized using the GTAP database: Firstly, free trade in Asia (entering into force of the RCEP); secondly, free trade in LAC; and thirdly, a bi-regional free trade agreement with zero inter- and intra-regional tariffs. Additionally, NTM reductions were simulated in each of the three cases.

From the model simulations can be derived, that the signing of the RCEP entails LAC to face drops in exports and imports, while RCEP member countries increase their trade volumes. Following the RCEP model and creating a free trade zone in LAC would benefit the region and boost trade. The results of the standard closure (simulation 4) clearly indicate the benefits of hypothetical trade liberalization within and between the two regions, LAC and Asia Pacific: The macroeconomic results show an increase in output in LAC of between 0.35% and 0.61%. In case of the RCEP member countries, the variation in GDP is 1.00%. Regarding employment, LAC and RCEP countries are expected to face an average increase in employment of unskilled workers of 1.7% and 3.0%, respectively, and rise in total employment of 0.9% and 1.8% on average, respectively, entailed by the bi-regional agreement. The simulations have also shown the importance of trade facilitation besides tariff reductions and underline, that it is crucial that NTMs are established within and between both regions simultaneously.

Generally, the winning sectors in export are expected to be meats, dairy products, and beverage and tobacco (primarily affecting LAC countries, Australia and New Zealand). The winning countries are those with agricultural and agro-industrial exports: Argentina, Brazil, Ecuador, Colombia, and Panama.

Losing sectors are represented by the textile, clothing and footwear, rubber and plastic, and iron and steel (affects mostly LAC, due to its low ability to compete. Uruguay and Paraguay are expected to face increased competition from Australia and New Zealand with respect to agro-industrial products in the region. Finally, countries with already established inter-regional trade agreements increase their

exports only slightly after simulations (Chile and Peru). A greater dependence and productive links with the "Asian Factory" require coordinated efforts towards increasing the number of LAC companies and value exported to China, the Republic of Korea, and other ASEAN economies.

It could be concluded that a bi-regional free trade agreement likely leads to a sectoral rearrangement, in which productive specialization and the export pattern are enhanced in favor of the comparative advantages of each region. It is important to note that the bi-regional agreement would be more important for LAC than for RCEP countries, because tariff reductions would transform Asia Pacific into a more attractive export market. This affects especially Argentina, Brazil and Mexico. A bi-regional agreement is expected to exert a stronger positive impact on exports from LAC MSMEs compared to large companies. This accounts especially in the foods sector (meats, dairy, processes rice, vegetable oils), as well as in electronic, pharmaceutical products and machinery.

Furthermore, simulations have been conducted that included tariff reductions for sensitive sectors in case of a bi-regional agreement, indicating that trade liberalization for textiles, agro-industrial and industrial products, has a positive impact on trade in both regions. The microsimulations have shown that these sectors are important for MSMEs and excluding them from an agreement would restrict export opportunities for these companies. These conclusions may shed light on defensive positions in the event of future negotiations. The estimations on the possible effects on MSMEs may increase the willingness to negotiate a bi-regional agreement.

Limitations

It is important to keep in mind that this paper builds on hypothetical scenarios. While the scenario assessing the effect of the signing of the RCEP on intra- and inter-regional trade in the two regions LAC and Asia Pacific will be measurable in the near future, LAC becoming a free trade zone in the foreseeable future seems unlikely. Still, this paper modeled such scenarios, thereby assessing their opportunity and risks on the regional, country, sectoral and even firm-level.

An important limitation of this paper roots in the lack of data availability for some countries. While the objective was to consult micro-level data around the year 2018, for some countries, recent data was not available (e.g. for Brazil the year 2009). Additionally, due to unavailability of company sales in case of some countries, the types of agents could not be classified based to companies' sales (generated domestically and abroad), but instead these companies had to be classified using exports as a proxy. This may distort the real size of the businesses. However, it needs to be considered that it is very difficult to obtain such highly confidential micro-level data.

Furthermore, we are aware of the simplification regarding lineal estimation of the effects estimated by the GTAP model on firms. A further step might therefore be to replace the lineal by a parametric equation to estimate the impact on firms more precisely.

References

- Ando, Mitsuyo, & Shujiro Urata (2007), "The Impacts of East Asia FTA: A CGE Model Simulation Study." *East Asian Economic Review* 11, no. 2: 3-73.
- Baker McKenzie (2020, December 2), Understanding the Regional Comprehensive Economic Partnership Agreement (RCEP). Retrieved from: <https://www.bakermckenzie.com/en/insight/publications/2020/12/understanding-the-rcep>.
- Chepeliev, Maksym (2020), "The GTAP Version 10A Data Base with Agricultural Production Targeting Based on the Food and Agricultural Organization." (*FAO Data*, no. 6180. Center for Global Trade Analysis, Department of Agricultural Economics, Purdue University. Retrieved from: <https://www.gtap.agecon.purdue.edu/resources/download/10267.pdf>.
- Dieter, Heribert (2021), RCEP-Countries create Asia-Pacific free trade zone: trade facilitation but no integrated bloc. *SWP Comment*, 3. Retrieved from: <https://www.ssoar.info/ssoar/handle/document/71976>.
- Dolabella, Marcelo, & José Durán Lima (2021), "Integrating Latin America and the Caribbean: Potential effects of removing tariffs and streamlining non-tariff measures." *Project Documents, studies and research papers*. ECLAC. Retrieved from: <https://www.cepal.org/en/publications/46649-integrating-latin-america-and-caribbean-potential-effects-removing-tariffs-and>.
- Durán Lima, José, & Andrea Pellandra (2017), "La irrupción de China y su impacto sobre la estructura productiva y comercial en América Latina y el Caribe." *Serie Comercio Internacional*, no. 131, ECLAC. Retrieved from: <https://repositorio.cepal.org/handle/11362/41021>.
- ECLAC (2014), "Regional integration: towards an inclusive value chain strategy." Santiago. Retrieved from: <https://www.cepal.org/en/publications/36734-regional-integration-towards-inclusive-value-chain-strategy>.
- François, Joseph, Brad McDonald, & Håkan Nordström (1996), A User's Guide to Uruguay Round Assessments. No. 1410. CEPR Discussion Papers.
- Ferrantino Michael J., Maryla Maliszewska, & Svitlana Taran (2019), "Actual and Potential Trade Agreements in the Asia-Pacific: Estimated Effects." Worldbank. Retrieved from: <https://openknowledge.worldbank.org/bitstream/handle/10986/34940/Actual-and-Potential-Trade-Agreements-in-the-Asia-Pacific-Estimated-Effects.pdf?sequence=1>.

- Itakura, Ken, & Hiro Lee. (2019), "Estimating the Effects of the CPTPP and RCEP in a General Equilibrium Framework with Global Value Chains." Retrieved from: https://www.gtap.agecon.purdue.edu/resources/res_display.asp?RecordID=5712.
- Martin, Will (2001), "Trade policy reform in the East Asian transition economies." *World Bank Policy Research Working Paper*, no. 2535. World Bank.
- Martin Will, & Ianchovichina Elena (2001), "Trade Liberalization in China's Accession to WTO." *Journal of Economic Integration* 164, no. 4: 421 – 445.
- Martínez, Aylin Patricia Pertuz, & Jorge Enrique Elías Caro (2019), "Competitividad en el sector ganadero en Colombia: Enfoque desde la historiografía económica, social y empresarial." *Panorama Económico* 27, no. 2: 453-480.
- Li, Qiaomin, Robert Scollay, & John Gilbert (2017), "Analyzing the effects of the Regional Comprehensive Economic Partnership on FDI in a CGE framework with firm heterogeneity." *Economic Modelling* 67: 409-420.
- Raghavan, Prabha (2020), "Explained: The economic implications of India opting out of RCEP." *The Indian Express*. Retrieved from: <https://indianexpress.com/article/explained/india-out-of-rcep-china-economy-trade-angle-7053877/>.
- Rutherford, Thomas F., & David G. Tarr (2003), Regional trading arrangements for Chile: do the results differ with a dynamic model? *Économie internationale*, (2), 261-281.
- Rodríguez y Rodríguez, María Teresa (2003), "Ingreso de China a la Organización Mundial de Comercio. Su primer impacto sobre el comercio mundial." *Problemas del Desarrollo. Revista Latinoamericana de Economía* 34, no. 134: 49-73. Universidad Nacional Autónoma de México. Distrito Federal, México.
- USITC (1999), "Assessment of the Economic Effects on the United States of China's Accession to the WTO." *Publication* 3229, US International Trade Commission, Washington DC.
- Wignaraja, Gansehan, Peter J. Morgan, Michael G. Plummer, & Fan Zhai (2014), "Economic Implications of Deeper South Asian–Southeast Asian Integration: A CGE Approach." *ADB Working Paper* 494. Tokyo: Asian Development Bank Institute. Retrieved from: <http://www.adbi.org/workingpaper/2014/08/08/6373.economic.implications.asian.integration/>.
- Wolfers Lachlan, Leonie Ferretter, & Duong Thuy Hoang (2020), "Signing of Regional Comprehensive Economic Partnership. Impacts for the Asia Pacific region." KPMG. Retrieved from: <https://assets.kpmg/content/dam/kpmg/xx/pdf/2020/11/rcep-signing-asia-pacific-impacts-november-2020.pdf>.
- World Bank (n.d.), Tariff rate, applied, simple mean, all products (%). Retrieved September 29, 2021, from <https://data.worldbank.org/indicator/TM.TAX.MRCH.SM.AR.ZS>
- World Population Reference (n.d.), Population mid-2020. Retrieved November 30, 2020, from: <https://www.prb.org/international/indicator/population/table>

Annex

Table A1
65 GTAP sectors and concordances with ECLAC-FEALAC model

Number	GTAP code	GTAP Description	FEALAC model sectors
1	Pdr	Paddy rice	agric
2	wht	Wheat	agric
3	gro	Cereal grains nec	agric
4	v_f	Vegetables, fruit, nuts	agric
5	osd	Oil seeds	agric
6	c_b	Sugar cane, sugar beet	agric
7	pfb	Plant-based fibers	agric
8	ocr	Crops nec	agric
9	ctl	Bovine cattle, sheep and goats, horses	agric
10	oap	Animal products nec	agric
11	rmk	Raw milk	agric
12	wol	Wool, silk-worm cocoons	agric
13	frs	Forestry	agric
14	fsh	Fishing	fish
15	coa	Coal	mine
16	oil	Oil	mine
17	gas	Gas	mine
18	oxt	Other Extraction (formerly omn Minerals nec)	oxt
19	cmt	Bovine meat products	meats
20	omt	Meat products nec	meats
21	vol	Vegetable oils and fats	ofd
22	mil	Dairy products	meats
23	pcr	Processed rice	ofd
24	sgr	Sugar	sgr
25	ofd	Food products nec	ofd
26	b_t	Beverages and tobacco products	b_t
27	tex	Textiles	tex
28	wap	Wearing apparel	wap
29	lea	Leather products	lea
30	lum	Wood products	lum
31	ppp	Paper products, publishing	ppp
32	p_c	Petroleum, coal products	p_c
33	chm	Chemical products	chm
34	bph	Basic pharmaceutical products	bph
35	rpp	Rubber and plastic products	rpp
36	nmm	Mineral products nec	nmm
37	i_s	Ferrous metals	i_s
38	nfm	Metals nec	nfm
39	fmp	Metal products	fmp
40	ele	Computer, electronic and optical products	ele
41	eeq	Electrical equipment	eeq
42	ome	Machinery and equipment nec	ome
43	mvh	Motor vehicles and parts	mvh
44	otn	Transport equipment nec	otn
45	omf	Manufactures nec	omf
46	ely	Electricity	ely_gdt
47	gdt	Gas manufacture, distribution	ely_gdt
48	wtr	Water	ely_gdt
49	cns	Construction	cns
50	trd	Trade	p_Serv
51	afs	Accommodation, Food and service activities	p_Serv
52	otp	Transport nec	otp
53	wtp	Water transport	otp
54	atp	Air transport	otp
55	whs	Warehousing and support activities	otp
56	cmn	Communication	cmn
57	ofi	Financial services nec	ofi_ins
58	ins	Insurance (formerly isr)	ofi_ins
59	rsa	Real estate activities	p_Serv
60	obs	Business services nec	p_Serv
61	ros	Recreational and other services	p_Serv
62	osg	Public Administration and defense	g_serv
63	edu	Education	g_serv
64	hht	Human health and social work activities	g_serv
65	dwe	Dwellings	p_Serv

Source: Authors.

Table A2
LAC and Asia Pacific: average change by countries in exports under various simulations
(Changes over the baseline = 2017)

Countries	Full impact	RCEP tariff reduction	Trade facilitation among RCEP countries	LAC tariff reduction	Trade facilitation among LAC countries	LAC-RCEP with sensitive sectors	Trade facilitation among RCEP and RCEP	Trade facilitation among LAC and RCEP	LAC-RCEP tariff reduction in agriculture
Argentina	5,55	-0,06	-0,15	0,33	0,92	4,45	0,08	0,16	-0,19
Brazil	9,67	-0,26	-0,32	0,74	0,62	8,01	0,31	0,44	0,13
Paraguay	-2,74	0,67	-0,11	0,09	-0,12	-2,16	-0,01	-0,26	-0,84
Uruguay	3,85	-0,07	-0,12	0,22	0,62	3,21	0,03	-0,03	-0,02
Venezuela (Bolivarian Republic of)	4,03	-0,05	-0,18	0,94	0,45	2,64	0,06	0,19	-0,02
Chile	0,28	-0,07	-0,12	0,11	0,17	0,13	0,11	-0,01	-0,03
Bolivia (Plurinational State of)	1,38	-0,04	-0,02	0,27	0,22	0,94	0,01	0,01	0,01
Colombia	3,33	-0,12	-0,14	0,88	0,69	1,88	0,01	0,11	0,02
Ecuador	3,15	-0,04	-0,06	0,50	0,23	2,55	0,01	-0,08	0,05
Peru	2,58	-0,17	-0,19	0,28	1,07	1,01	0,16	0,44	-0,02
Mexico	4,15	-0,04	-0,21	1,51	0,16	1,93	0,09	0,69	0,01
Costa Rica	1,45	-0,03	-0,19	0,82	0,31	0,45	0,14	-0,07	0,01
The Salvador	4,03	-0,13	-0,10	0,64	0,91	2,46	0,04	0,20	0,00
Guatemala	5,51	-0,04	-0,11	0,73	0,67	4,10	0,04	0,13	-0,01
Honduras	4,26	-0,35	-0,03	2,40	0,58	1,46	0,04	0,17	0,00
Nicaragua	1,94	-0,11	-0,08	0,04	0,11	1,88	0,01	0,09	-0,01
Panama	6,17	-0,10	-0,34	2,26	0,27	3,77	0,07	0,21	0,03
Dominican Republic	5,06	-0,15	-0,17	1,89	0,07	3,16	0,06	0,15	0,05
Jamaica	-0,36	-0,06	-0,24	-0,01	-0,02	-0,03	0,03	-0,02	0,00
Trinidad and Tobago	-0,23	-0,03	0,02	-0,03	-0,04	-0,10	-0,01	-0,05	0,00
Rest of the Caribbean	-0,40	-0,02	-0,14	-0,07	-0,09	0,01	-0,07	-0,01	0,00
Canada	-0,21	-0,04	-0,10	-0,02	0,00	-0,03	-0,01	-0,02	0,01
United States	-1,45	-0,34	-0,41	-0,06	-0,06	-0,41	-0,03	-0,15	0,00
European Union	-0,39	-0,13	-0,17	-0,01	-0,01	-0,05	-0,01	-0,02	0,00
United Kingdom	-0,37	-0,14	-0,16	0,00	0,00	-0,05	-0,01	-0,01	0,00
Japan	4,89	3,29	1,34	0,00	-0,01	0,22	0,00	0,02	0,02
China	4,84	2,79	1,51	-0,01	-0,02	0,47	0,05	0,05	0,01
Korea	6,72	4,95	1,62	0,00	-0,01	0,26	0,00	0,04	-0,14
Australia	2,79	2,43	0,49	0,00	0,00	-0,11	0,00	0,00	-0,01
New Zealand	1,45	0,67	0,77	0,00	0,00	0,01	-0,01	0,01	0,00
Thailand	3,69	1,28	1,39	-0,01	-0,02	0,78	0,01	0,05	0,22
Malaysia	1,63	0,22	1,23	-0,01	-0,01	0,14	0,01	0,01	0,02
Indonesia	3,13	1,64	1,23	-0,01	-0,01	0,21	0,04	0,01	0,03
Philippines	4,17	2,34	1,43	-0,02	-0,01	0,36	0,02	0,01	0,04
Singapore	0,93	-0,35	1,20	-0,01	-0,01	0,07	0,01	0,02	0,00
Brunei	-0,16	-0,02	-0,15	0,00	0,00	0,01	0,00	0,00	0,00
Cambodia	4,12	3,46	0,49	0,00	-0,01	0,16	0,00	0,00	0,02
Laos	5,89	5,19	0,45	0,00	0,00	0,17	-0,03	-0,01	0,14
Vietnam	8,37	6,71	1,32	0,00	0,00	0,28	0,01	-0,01	0,07
Other Asia	-1,01	-0,27	-0,43	-0,01	-0,01	-0,22	-0,03	-0,05	0,01
Rest of the world	-0,36	-0,13	-0,16	-0,01	0,00	-0,04	-0,01	-0,01	-0,01

Source: Authors based on model simulations.

Table A3
LAC and Asia Pacific: average change by countries in imports under various simulations
(Changes over the baseline = 2017)

Countries	Full impact	RCEP tariff reduction	Trade facilitation among RCEP countries	LAC tariff reduction	Trade facilitation among LAC countries	LAC-RCEP with sensitive sectors	Trade facilitation among RCEP and RCEP	Trade facilitation among LAC and RCEP	LAC-RCEP tariff reduction in agriculture
Argentina	5,26	-0,16	-0,01	0,56	1,05	3,46	0,22	-0,04	0,18
Brazil	7,40	-0,40	-0,13	1,21	0,59	5,03	0,44	0,11	0,53
Paraguay	3,45	-0,44	0,01	0,20	0,23	3,16	0,07	-0,18	0,40
Uruguay	3,32	-0,14	-0,03	0,24	0,76	2,24	0,20	-0,14	0,18
Venezuela (Bolivarian Republic of)	4,10	0,14	-0,01	0,90	0,35	2,48	0,26	0,10	-0,12
Chile	0,84	-0,28	-0,22	0,15	0,22	0,52	0,61	-0,10	-0,05
Bolivia (Plurinational State of)	2,08	0,01	-0,05	0,24	0,89	1,14	0,04	-0,17	-0,02
Colombia	2,47	-0,06	-0,04	0,85	0,64	0,99	0,18	-0,10	0,01
Ecuador	3,04	-0,08	-0,04	0,51	0,32	2,37	0,09	-0,23	0,10
Peru	2,01	-0,14	-0,08	0,29	0,94	0,60	0,28	0,15	-0,03
Mexico	3,77	-0,10	-0,15	1,28	0,21	1,87	0,17	0,47	0,01
Costa Rica	1,54	-0,09	-0,19	0,99	0,40	0,29	0,31	-0,18	0,01
The Salvador	2,33	-0,32	-0,01	0,42	0,86	1,31	0,06	0,00	0,02
Guatemala	4,63	-0,36	-0,04	0,58	0,77	3,54	0,10	0,00	0,04
Honduras	2,80	-0,50	0,05	1,76	0,66	0,71	0,07	0,06	0,00
Nicaragua	1,78	-0,23	-0,02	0,36	0,29	1,47	0,01	-0,08	-0,01
Panama	2,62	0,02	0,04	1,07	0,17	1,32	0,16	-0,17	0,00
Dominican Republic	3,40	-0,15	-0,02	1,38	0,11	1,90	0,11	0,06	0,02
Jamaica	0,01	0,00	0,01	0,01	0,01	0,00	-0,02	0,01	0,01
Trinidad and Tobago	-0,70	-0,03	-0,09	-0,05	-0,25	-0,19	0,01	-0,10	0,01
Rest of the Caribbean	-0,42	-0,11	-0,04	-0,06	-0,08	-0,01	-0,10	0,00	-0,02
Canada	-0,17	-0,02	-0,06	-0,02	0,00	-0,05	0,00	-0,01	0,00
USA	-1,38	-0,34	-0,27	-0,08	-0,06	-0,42	-0,03	-0,15	-0,03
European Union	-0,42	-0,17	-0,15	-0,01	-0,01	-0,06	-0,01	-0,02	0,00
United Kingdom	-0,37	-0,15	-0,14	0,00	0,00	-0,06	-0,01	-0,01	0,00
Japan	6,73	4,79	1,52	-0,01	-0,01	0,34	-0,01	0,07	0,04
China	5,47	3,05	1,53	-0,03	-0,02	0,81	0,02	0,13	-0,02
Korea	8,01	5,85	1,73	-0,01	-0,02	0,47	-0,01	0,09	-0,10
Australia	4,31	3,59	1,03	0,00	0,00	-0,22	-0,08	0,03	-0,05
New Zealand	2,89	1,64	1,15	-0,03	0,00	0,14	-0,02	0,06	-0,04
Thailand	3,28	0,91	1,35	-0,02	-0,02	0,81	0,00	0,08	0,18
Malaysia	1,53	0,08	1,21	-0,01	-0,01	0,20	0,00	0,03	0,03
Indonesia	3,10	1,28	1,42	-0,01	-0,01	0,35	0,02	0,05	0,01
Philippines	2,56	0,84	1,40	-0,02	-0,01	0,28	0,01	0,02	0,02
Singapore	0,92	-0,40	1,19	-0,02	-0,01	0,13	-0,01	0,04	0,00
Brunei	0,07	0,01	0,11	0,00	-0,01	-0,02	-0,02	0,00	0,00
Cambodia	2,86	2,26	0,23	-0,01	0,00	0,30	0,01	0,00	0,08
Laos	2,70	1,54	1,16	0,01	0,01	0,04	-0,05	-0,01	0,00
Vietnam	6,37	4,56	1,41	-0,01	0,00	0,37	0,01	0,00	0,04
Other Asia	-0,71	-0,30	-0,19	-0,01	-0,01	-0,15	-0,01	-0,03	-0,01
Rest of the world	-0,41	-0,11	-0,19	-0,01	-0,01	-0,03	-0,02	0,00	-0,02

Source: Authors based on model simulations.



UNITED NATIONS

Series

ECLAC

International Trade

Issues published

A complete list as well as pdf files are available at
www.eclac.org/publicaciones

168. Economic and social effects of a possible trade agreement between Latin America and the Asian-Pacific region, José Durán Lima, Angel Aguiar and Ira Ronzheimer, (LC/TS.2021/199), 2021.
167. Marco para una clasificación de vías navegables interiores en América del Sur. P. Rigo, R. Sánchez, F. Weikert, (editores) (LC/TS.2021/187), 2021.
166. Políticas anticíclicas y propuesta para el cálculo del recupero fiscal de la inversión en infraestructura, A. Coremberg, J. Lardé, R. Sánchez, J. Sanguinetti, (LC/TS.2021/168), 2021.
165. Impactos Sociales de los caminos rurales en Mesoamérica, Gabriel Pérez, (LC/TS.2021/171), 2021.
164. La Zona de Libre Comercio Continental Africana: ¿un modelo para América Latina y el Caribe?, Sebastián Herreros, (LC/TS.2021/97), 2021.
163. Análisis comparativo de los regímenes de origen de la Alianza del Pacífico y el Tratado Integral y Progresista de Asociación Transpacífico, Rodrigo Contreras, (LC/TS.2021/53), 2021.
162. Logística internacional pospandemia: análisis de las industrias aérea y de transporte marítimo de contenedores, Ricardo J. Sánchez y Fabio Weikert, (LC/TS.2020/190), 2020.
161. Multiplicadores de los servicios de transporte y almacenamiento en América Latina: un análisis comparativo, Jeannette Lardé, (LC/TS.2020/189), 2020.
160. Infraestructura Resiliente: un imperativo para el desarrollo sostenible en América Latina y el Caribe, Fabio Weikert (LC/TS.2020/177), 2020.
159. El comercio internacional y la economía circular en América Latina y el Caribe, N. Mulder y M. Albaladejo (coords.) (LC/TS.2020/174), 2020.

INTERNATIONAL TRADE

Issues published:

- 168 Economic and social effects of a possible trade agreement between Latin America and the Asia-Pacific region
José Durán Lima, Angel Aguiar and Ira Nadine Ronzheimer
- 167 Marco para una clasificación de vías navegables interiores en América del Sur
Philippe Rigo, Ricardo J. Sánchez y Fabio Weikert (editores)
- 166 Políticas anticíclicas y propuesta para el cálculo de la recuperación fiscal de la inversión en infraestructura
Ariel Coremberg, Jeannette Lardé, Ricardo J. Sánchez y Juan Sanguinetti