REGIONAL INTEGRATION AND THE OPPORTUNITIES OFFERED BY GLOBAL VALUE CHAINS: THE CASE OF THE PACIFIC ALLIANCE

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REGIONAL INTEGRATION AND THE OPPORTUNITIES OFFERED BY GLOBAL VALUE CHAINS: THE CASE OF THE PACIFIC ALLIANCE

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Executive summary

Disruptions in the global value chains (GVCs) caused by the COVID-19 pandemic and other events that had impacted geopolitical dynamics since 2018 fueled expectations worldwide to reorganize the GVCs. Historically, Latin American countries have been characterized by a lower participation in the GVCs compared with European and Southeast Asian countries. In 2014 the four members of the Pacific Alliance (PA), Chile, Colombia, Mexico, and Peru, signed a trade protocol in which origin cumulation was included with the objective of boosting configuration of a regional value chain (RVC) that would take advantage, initially, of the different trade agreements subscribed by each country with Asia Pacific countries. However, the intra PA trade has not increased—it was 2.48% in 2022. This study seeks to determine the PA potential and readiness to take advantage of the recent reorganization of GVCs and presents an exercise that identifies potential export products from the bloc to the U.S. market, using Mexico as an export platform.

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Introduction

The concept of global value chains (GVCs) emerged in the early 2000s to designate a strategy that firms can use to improve their competitiveness through gains in efficiency resulting from the production process fragmentation in the most competitive countries. For Southeast Asian countries, entering GVCs was a route to industrialization and provided the access to international markets; recently some Eastern European countries have also adopted this strategy.

Latin America and the Caribbean (LAC) countries have been characterized by a lower participation in the GVCs compared with European and Southeast Asian countries. Regarding regional value chains RVCs, Latin American countries also have a low participation in the value chains of the region compared with the European Union (EU) and East Asia, except for Brazil in the case of Mercosur and Mexico in the case of the United States-Mexico-Canada-Agreement (USMCA). However, Brazil has a low participation in the GVCs. LAC intraregional exports are about 15%, while for Europe this figure is closer to 60% and for Southeast Asia is more than 40%.

The trade war between the United States and China that emerged in 2018 and, afterwards, the GVC disruptions during the COVID-19 pandemic fueled expectations in countries worldwide, including in Latin America, about a reorganization of the GVCs. These two factors, adding to the previously evident increase of the labor costs in China, put even more pressure on U.S. companies with business models based on the fragmentation of production processes to adopt reshoring and nearshoring strategies. Besides cost and logistical considerations, the geopolitical environment has added to the discussion of the possible emergence of a regionalization process of value chains.

The Pacific Alliance (PA) was formed in 2011 by Chile, Colombia, Mexico, and Peru with the purpose of deepening their trade integration and strengthening the economic and trade ties of the group with the world, with special emphasis on Asia-Pacific countries. In 2014 the four countries signed an additional protocol to the framework agreement known as the trade protocol through which the free trade area was established. Origin cumulation was included in this protocol with the objective of boosting configuration of an RVC that also would take advantage of the different trade agreements subscribed by each country with Asia-Pacific countries. However, the intra PA trade has not been very dynamic despite the expectations the signing of the trade protocol generated in 2014. In 2022 the intra PA trade was 2.48% of total exports.

The overall objective of this study is to evaluate the participation of the PA countries in GVCs in order to determine their potential and readiness to have a more active involvement in the recent reorganization of GVCs, with Mexico becoming an export platform of the bloc to the United States.

This report presents a context on the recent debate about GVCs, followed by a brief description of the PA agreement. It then presents an analysis of the export structure of the PA countries, and the backward and forward linkages in their exports estimated with the Trade in Value Added (TiVA) methodology developed by the Organisation for Economic Co-operation and Development (OECD). Next a set of products with potential for exports from RVCs of the PA countries to the U.S. market produced by the Business Council of the Pacific Alliance is presented. Finally, an analysis of the challenges to deepen PA integration is posed as a conclusion.

The recent debate on value chains as an industrialization strategy

The concept of GVCs emerged in the early 2000s as a development of the analytical framework on trade and industrial organization that Porter proposed in the 1980s related to value added chains and competitiveness (Porter, 1985).

A value chain or a supply chain is defined as a group of economic units that provide a range of tangible and intangible value-adding activities needed to bring a good or service from its conception, through the different production phases, to final delivery to consumers (Blyde 2014). If these economic units are firms located in different countries the concept is called GVC or global supply chain.

For firms, the formation of GVCs was a way to improve their competitiveness through gains in efficiency in the production of goods and services and strengthen their insertion in the international market. Based on the germinal approaches of the international trade theory, the fragmentation of the production process of an industry in the most competitive countries is a strategy aimed to minimize costs. Among the main determinants of this strategy were the countries' capabilities to ensure that the stages of the production process were completed, and the product reached the final consumer under competitive conditions.

Although value chains existed in some industries before the 1980s, the opening of economies and globalization processes that occurred in the 1990s facilitated the rise of large-scale GVCs. The key factors that drove the formation of GVCs were the reduction of trade costs, such as tariff and non-tariff barriers, the reduction in transportation costs, the emergence of logistics companies, and advances in information technologies that facilitate the coordination and monitoring of processes.[1] Those are the main capabilities that a country participating in a value chain must have.

The experience of Asian countries showed that GVCs are a route to industrialization. Furthermore, factory offshoring driven by globalization would allow developing countries that participate in GVCs to build ready-made exporting capabilities (Baldwin, 2013). More recently, some Eastern European countries[2] have also adopted this industrialization strategy, while Latin American countries, except for Mexico, have been characterized by their low participation in GVC.

The trade war between the United States and China that emerged in 2018 and, afterwards, the GVC disruptions during the COVID-19 pandemic fueled expectations in several countries, including Latin American ones, about reshoring and nearshoring of companies with business models based on the fragmentation of production processes. In this context, the possible emergence of a process of regionalization of value chains has also been mentioned in the discussion.

However, caveats have been raised about the convenience of adopting a GVC-led development strategy. Blyde (2014) includes literature that shows evidence that benefits from GVCs may only materialize under specific conditions,[3] and small producers in developing countries eventually do not acquire knowledge and develop capabilities to

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[1] See Blyde, 2014 and Hernandez et. al., 2014.

[2] Central and Eastern Europe (CEE) countries are the Czech Republic, Hungary, Poland, the Slovak Republic and Slovenia. Southeastern European countries are Bulgaria, Croatia, and Romania.

[3] Those conditions are related to the nature of inter-firm relationships, the level of absorptive capacity of the supplier, or the technology used in the supply chain, among others.

stay in the buyer's market on its own if the relationship with the global firm ends. He also argues that participation in GVCs is not only about entering into the network, but also about having the capabilities to remain in it, and that there is always a possibility that offshoring strategies could reverse at any time. Alviarez (2022) analyzes the post-pandemic period and suggests that the complexity of GVCs and their enormous geographical partition makes them vulnerable to negative shocks because a disruption in one location can spread its effects throughout the production chain. Other criticism refers to the impact that the growing automation of the production process has on GVCs. Rodrik (2018) argues that GVCs use skill-biased technologies, reducing the comparative advantage of developing economies and limiting the substitutability between unskilled labor and other production inputs. De Backer et. al. (2018) present evidence that robotization is slowing down the offshoring of production from high-income economies.[4]

All in all, the benefits for the industrialization strategy of less developed countries continue to be highlighted in the literature on trade and industrial organization. Blyde (2014) and CAF (2022) present economic benefits for Latin American countries and Jones et.al. (2019) carry out a literature survey about the positive impact in competitiveness, economic development, labor markets, and trade costs.

However, post pandemic analysis of Foreign Direct Investment (FDI) flows and exports do not provide conclusive evidence about dynamism in the reshoring or nearshoring processes. For example, from January to March 2020 some U.S. firms shifted their imports of goods from China to Vietnam and Bangladesh

in response to the initial stages of the COVID-19 pandemic (Heise, 2020),[5] a relocation more than a nearshoring process. According to Szakonyi (2023) while total U.S. containerized imports ticked up 0.3% in 2022, overall shipments from China fell 3.7%. However, in this rearrangement the most favored countries have been Vietnam, followed by South Korea and India. Vietnam, the second-largest source of U.S. containerized imports, increased its participation as a supplier of electronics, footwear, and apparel. The same thing happened with India because of increases in imports of apparel and iron and steel components.[6]

Fajgelbaum, et. al. (2023) find evidence that the U.S.-China trade war created net trade opportunities on average rather than simply causing reallocations. Estimating the elasticities exports to U.S.-China tariffs of 50 exporting countries, authors identify whether a country's exports complement or substitute the United States or China, and its supply curve's slope. They find that countries that operate along downward-sloping supplies whose exports substitute the United States and China are among the larger beneficiaries of the trade war, while countries whose exports complement the United States and China are among the smaller beneficiaries.

The KPMG et.al (2023) study analyzed a sample of 132 companies in Asia Pacific that were considering changing or have already altered their supply chain destinations

[4] Mentioned in Pellényi (2020). De Backer, K., T. Destefano, C. Menon and J. Ran Suh (2018). Industrial robotics and the global organization of production. OECD Science, Technology and Industry Working Papers 2018/03, Organization of Economic Cooperation and Development. Rodrik, D. (2018). New Technologies, Global Value Chains, and Developing Economies, NBER Working Paper No. 25164, National Bureau of Economic Research.

[5] Mentioned in Alviarez (2022). Heise, S. 2020 "How Did China's Covid-19 Shutdown Affect US Supply Chains?" Liberty Street Economics, May 12, 2020. New York, United States: Federal Reserve Bank of New York. Available at: https://libertystreeteconomics.newyorkfed.org/2020/05/how-did- chinas-covid-19-shutdown-affect-us-supply-chains.html.

[6] Szakonyi, M. (2023).

between 2018 and 2023, covering 232 sourcing market moves.[7] Most of the capacity movements are in Asia, broken down as follows: 16% in North Asia, 55% in Southeast Asia, 12% in Europe, and 17% in the Americas. Southeast Asia[8] continues to dominate rearrangements to replace sourcing from China. In the Americas, Mexico is the biggest beneficiary outside of the United States. The United States also features as a sourcing relocation destination, but less than half of these are reshoring moves. The top three reasons respondents gave for making changes to their supply chain were the increase in tariffs (23% of respondents), the uncertainty created by geopolitical factors (23%), incentives (25%) and more stable supply chain settings of the receiving market (25%).[9]

Although it may be premature to draw definitive conclusions about the opportunities that GVCs offer to new actors, analysis of what has happened so far shows that, in addition to the commonly identified determinants for participating in GVCs (trade and FDI policies, transport costs, connectivity, factor endowments and quality of institutions), there are factors that depend on the idiosyncrasy of the productive sectors and the firms. In this sense, the process of production fragmentation is often driven by multinational corporations. As BID (2018) states, determining whether a regional value chain is viable is ultimately a profitability calculation made by companies in which production costs, as well as the costs of trading and transporting products, are decisive.

In any case, as Mesquita, et.al. (2022) propose, whatever the future scenario, Latin American countries need to continue with the strategy of minimizing trade costs and generating conditions to attract FDI to enter value chains. But they also conclude that both trade and FDI opportunities for the region are more niche opportunities than rearrangements of GVCs that fuel long-term growth. In this sense, the challenge for policy makers is to work together with the private sector to promote the development of those niche opportunities.

The Pacific Alliance

The PA was formed in 2011 by the presidents of Chile, Colombia, Mexico, and Peru to achieve the free circulation of goods, services, capitals, and people. A step beyond the bilateral free trade agreements that everyone had previously signed.

In the Framework Agreement signed in 2012 the PA was defined as a regional integration area that sought to deepen the movement of people and the trade and financial relationships of the member countries. Furthermore, the PA also aimed to become a mechanism of political, economic, trade and cooperative articulation. One of the main objectives of the agreement was to strengthen the economic and trade ties of the group of countries with the world, with special emphasis on the countries of Asia-Pacific countries.

Since 2006, the four countries were part of the Latin American Pacific Basin Initiative, which was a consensus-building body that sought to strengthen the integration between the group of countries from the region with the coasts on the Pacific Ocean, as one of its main objectives. To later build up the trade relationship with Asia-Pacific countries. However, the negotiations between Latin American countries did not reach an agreement

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[7]KPMG, Monash University and PBEC (2023).

[8] Cambodia, India, Indonesia, Malaysia, Myanmar, Philippines, Thailand, Vietnam, Bangladesh

[9] In this last group are: cost of production and logistics (7%), scope to improve supply chain (7%), close to market (6%), reduce dependency on a single source (6%), cheaper land, labor (6%), restrictions on labor mobility/parts (5%), tax incentives (5%), fall in China sales (3%), global footprint (3%), IP protection (2%), other pull factors (3%), and other pull factors (1%).

on the deepening of the tariff reduction among members or on topics like origin cumulation, public purchases, services, and investment.

In that context, Chile, Colombia, Mexico, and Peru opted to create the PA to achieve the objectives that had not been achieved through the Latin American Pacific Basin.[10] The PA countries encompass a population of 233 million people which is 35.3% of the total population of LAC. With a GDP of $2.3 trillion dollars in 2022, which is 34.5% of the GDP of LAC. In 2022 total PA exports of goods and services were $874.3 billion, and the value of imports were $951 billion. This represents approximately 43% of LAC exports and imports. According to figures of the United Nations Conference on Trade and Development (UNCTAD), in the FDI stock inwards for LAC, the PA countries attained a participation of 49.2% in 2022. Mexico is the country that has the biggest participation in the FDI stock inward with a total of 25.2%, followed by Chile with 9.9%, Colombia with 9.1% and Peru with 5.0% (Graph 1).

Graph 1. AP FDI Instock measured as a Share of LAC Instock FDI
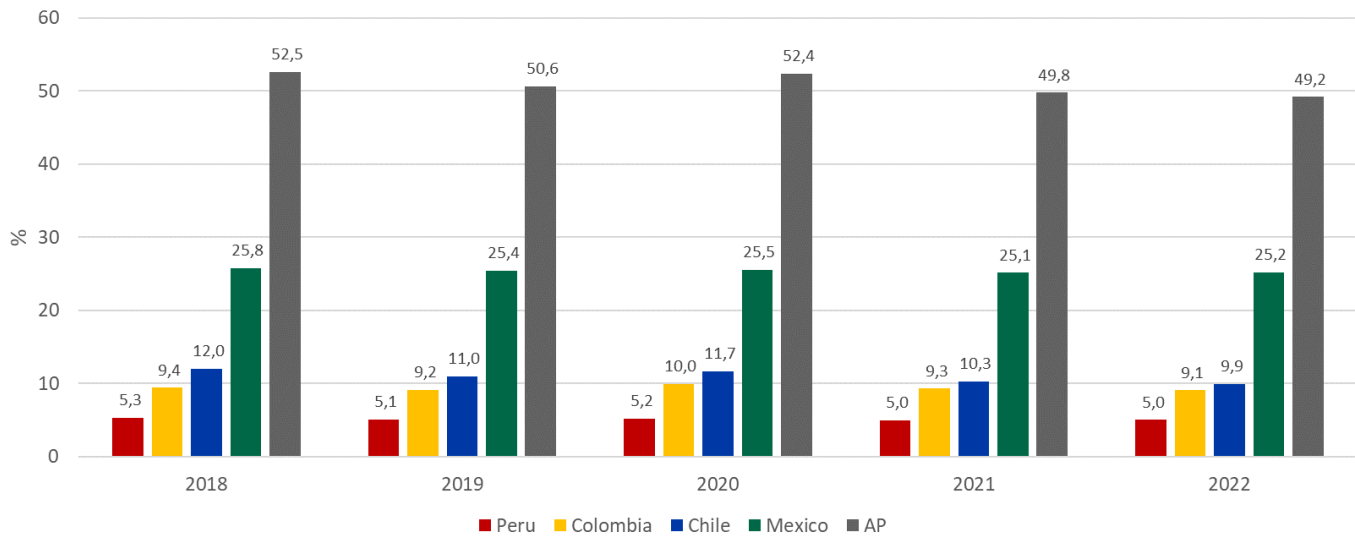
Source: Author's calculation based UNCTAD.

Graph 2. Trade Opening Index PA

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[10] 63 countries participate in the PA as observers. The agreement contemplates the figure of Associated State for countries interested in conducting trade negotiations with the PA. The first candidates for this category were Australia, Canada, New Zealand, and Singapore. In 2021 the negotiation with Singapore was concluded and in June 2022 the PA countries began negotiations with South Korea.
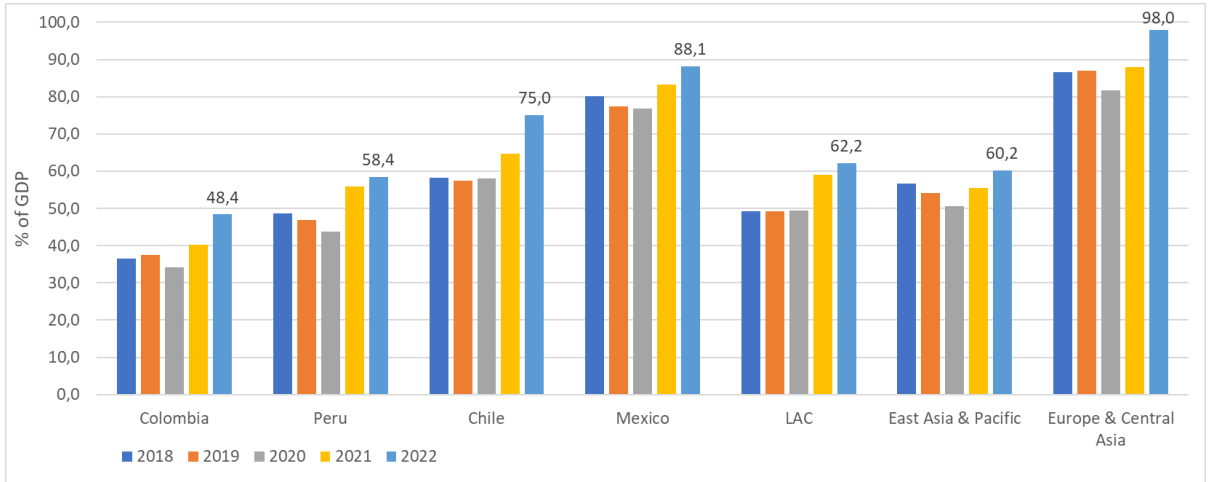
Note: Exports + imports of goods and services measured as a share of GDP.
Source: Authors calculation based WDI, World Bank.

Graph 3. Tariff Structure PA Countries*

a. Tariff rate most favored nation, simple mean
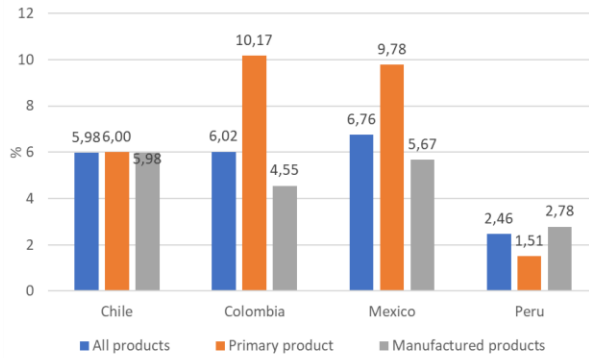
b. Tariff rate applied, simple mean

c. Tariff rate applied, weigthed mean
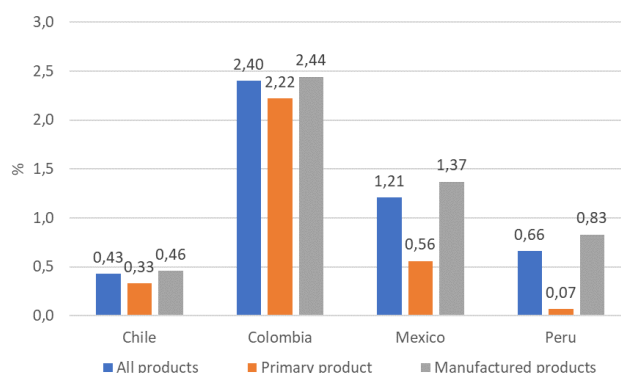
Note: *Data from Chile, Colombia and Peru 2020, Mexico 2018.
Source: Author's calculation based WDI, World Bank.

Of the four countries, Chile and Mexico have the higher indicators of trade openness. In 2022 they had 75% and 88.1% respectively. These indicators are above the figure for LAC which was 62.2%. In contrast, the trade openness index for Peru was 58.4% and for Colombia it was 48.4% in 2022 (Graph 2).
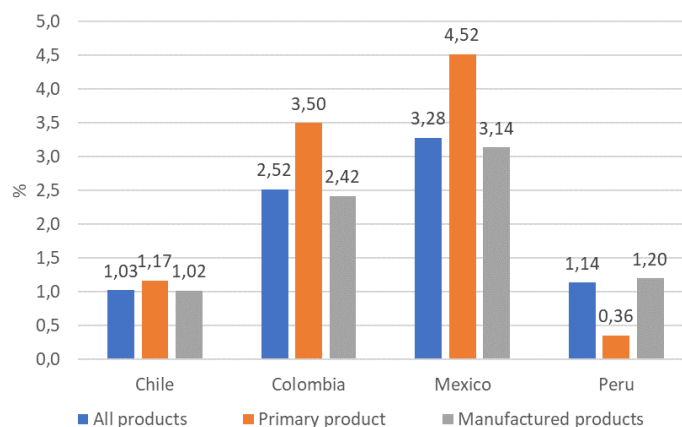
One of the main objectives of the four countries that formed the PA was to take advantage of the different trade agreements subscribed by each country with Asia-Pacific countries to strengthen their trade ties with that region (Table 1). Chile and Peru are the ones that have the most subscribed agreements with the Asia-Pacific countries, followed by Mexico.

The economic opening and the numerous trade agreements of which the countries of the PA are part of, have translated into levels of tariff rates between 0.36% and 4.52% for the simple mean of the tariff applied (Graph 3b). Colombia and Mexico are the countries that have the highest levels of tariff applied, especially because of the tariffs on primary products. However, the levels of weighted mean tariff applied in Colombia and Mexico are higher for manufactured products than for primary products (Graph 3c). As in most

countries, trade liberalization reduced tariff rates significantly, but gradually tariff protection was shifted to Non-Tariff Barriers (NTBs).

In 2014 the four countries signed the additional protocol to the framework agreement, known as the trade protocol, through which the free trade area was established. In this agreement the countries reiterated that the agreements previously subscribed by the member countries would coexist with the additional protocol, which entered into force in 2016. In that moment 92% of the traded products between the member countries became free of tariffs and it was established that the liberalization of tariffs for the remaining products would take place in periods between 3, 10 and 17 years for some products that are very sensitive to import competition. The longer periods of tariff reduction were mainly meant for agricultural and agro- industrial products such as: chicken, beef and pork meat, shrimp, milk and dairy products, vegetables, some cereals, and animal oils, among others. Sugar and other products with sugar were exempted from the tariff reduction program.

Table 1. PTAs Signed by PA Countries

Countries and Trading Blocks		Chile	Colombia	Mexico	Peru
Bilateral Free Trade Agreements	Australia	■			
	Bolivia		ACN		ACN
	Brazil	■	■		
	Canada	■	■	USMCA	
	China	■			
	Colombia	■			ACN
	South Korea	■	■		■
	Costa Rica		■	■	
	Cuba			■	
	Ecuador		ACN		ACN
	Hong Kong SAR	■			
	Israel		■	■	
	Japan	■		■	■
	Malaysia	■			
	Nicaragua			■	
	Panama	■		■	
	Peru	■	ACN		
	United Kingdom	■			
	Singapore				■
	Thailand	■			■
	Turkey	■			
	United Kingdom			USMCA	
	United States	■	■	■	
	Uruguay	■		■	
	Vietnam	■			
Trade Agreements with Blocks	Central America 1/	■		■	
	Comprehensive and Progressive Agreement for Trans-Pacific Partnership CPTPP 2/	■		■	■
	European Free Trade Association EFTA 3/	■	■	■	■
	European Union	■	■	■	■
	Northern Triangle 4/	■	■	■	
	Pacific Alliance 5/	■	■	■	■

Countries and Trading Blocks		Chile	Colombia	Mexico	Peru
Partial Scope Agreements and Economic Complementation Agreements within the frame of the Latin American Integration Association	Argentina	■		■	
	Bolivia	■			
	Brazil			■	
	CARICOM		■		
	Chile		■	■	■
	Colombia	■			
	Costa Rica				
	Cuba	■	■	■	■
	Ecuador	■			
	India	■			
	Indonesia	■			
	Mercosur	■	■	■	■
	Mexico	■	■		■
	Nicaragua		■		
	Panama		■		
	Paraguay			■	
	Peru	■		■	
	Venezuela	■	■		■

ACN Andean Community of Nations USMCA United States-Mexico-Canada Agreement
CARICOM Caribbean Community 1/ Costa Rica, El Salvador, Guatemala and Honduras
2/ Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore and Vietnam
3/ Iceland, Liechtenstein, Norway and Suiza 4/ El Salvador, Guatemala and Honduras
5/ Chile, Colombia, Mexico, Peru; 63 Observer States, Singapore Associated State
6/ Argentina, Brazil, Paraguay and Uruguay Source: Author's own elaboration.

Table 2. Main Export Destination PA Countries, Average Annual Share, 2020 to 2022*

Chile		Colombia		Mexico		Peru	
China	38.91	United States	28.47	United States	78.52	China	30.11
United States	14.31	China	7.16	Canada	2.65	United States	14.46
Japan	8.07	Panama	6.85	China	1.86	Canada	5.19
Korea, Rep.	5.65	Brazil	4.38	Germany	1.5	Korea, Rep.	5.1
Brazil	4.54	Ecuador	4.09	Japan	0.81	Japan	4.75
Top 5	71.48	Top 5	50.96	Top 5	85.34	Top 5	59.61

Note: According to SITC Rev 3. according to the correlative HS02 to SITC3. Source: Author's calculation based on WITS – UN Comtrade

Origin cumulation was included in the additional protocol with the objective of boosting the regional and global value chains. Agreements were reached on topics related to trade facilitation such as the simplification of customs formalities, and an interinstitutional agreement of cooperation between the health authorities. This agreement established a short supply mechanism in the rules of origin for the textile clothing sector that did not exist between Colombia, Peru and Chile, expediting the authorization process to use materials not provided by the member countries.

In 2015 a chapter on regulatory improvement was added in the first amending protocol. This chapter sought to generate a scenario with higher certainty for both governments and the private sector.

The intra PA trade has not been very dynamic despite the expectation the signing of the agreement generated, as is shown by the numerous observer countries and the beginning of the negotiations with Australia, Canada, New Zealand, and Singapore in October of 2017 to adopt the status of associated countries.[11] The intra PA trade between 2011 and 2015 was on average 3.6% of the total exports of the partners, for the period 2016-2022, the subsequent period after the entry into force of the trade protocol, that figure was on average 2.7%. This number was 2.48% in 2022.

The PA is not among the main export markets of the four countries. To begin with, the main export markets for Chile are China and the United States in order of importance. For Colombia the main ones are the United States and China. For Mexico almost 80% of its exports go to the United States. Lastly, China and the United States are the main destination countries for the foreign sales of Peru (Table 2).

The evolution of the intra PA trade dynamics is not surprising. Latin America is characterized by a low level of interregional trade, except for Brazil in the case of Mercosur, and Mexico in the case of USMCA. This result can be explained mainly by the Latin-American industrialization and exporting model that caused the development of industrial sectors in many countries that compete and do not complement each other; high trade costs in the region that do not favor intra-regional or extra-regional trade (transport costs, logistic costs, among others); and in the case of the PA, particularly, the poor economic and political context that accompanied its trade protocol entry into force.

The Latin American industrialization and exporting model has profound differences with the model of Asian countries that at first sought the insertion in the GVCs, prioritizing forward linkages in the value chain. That is, incorporating domestic added value into the exports of its trading partners, through intermediate goods exports. Over time, Asian countries managed to develop export industries with backward linkages, which allowed them to export final goods with greater added value, produced with imported intermediate goods. Participation in GVCs had roots in a regional value content strategy in which there was complementarity between industrial sectors of the region. This strategy has resulted in a higher participation of Asian countries' exports in global trade than participation of Latin American exports. Prieto (2018) and Asian Development Bank (2023) highlight that in the Association of Southeast Asian Nations (ASEAN) the small and medium enterprises (SMEs) export goods with higher levels of forward linkages and also have an important participation in the indirect domestic VA that incorporates itself in the exports. The Asian exporting model has allowed the SMEs to import inputs with high foreign VA to produce intermediate goods with higher domestic VA and to improve their forward linkages with exports that have a higher VA.

Graph 4. PA Export Structure (BEC Rev. 4), Average Annual Share in Exports of Goods 2010 to 2014, 2015 to 2019, 2020 to 2022

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[11] Regulatory improvement refers to countries adopting international good practices in the process of planning, elaboration, publication, implementation, and review of regulatory measures related to the topics covered by the Additional Protocol.
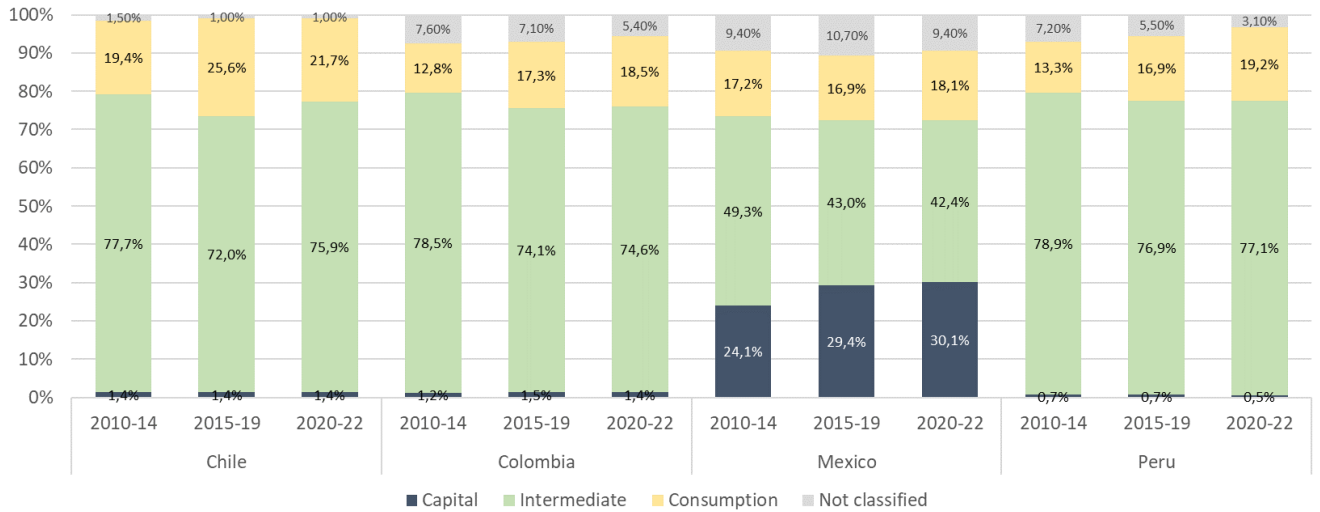
Note: Correlative HS02 to BEC4 and SNA end-use categories. Source: Author's calculation based on WITS – UN Comtrade.

Graph 5. PA Export Structure by Product Groups of SITC Rev. 3, Average Annual Share in Exports of Goods 2010 to 2014, 2015 to 2019, 2020 to 2022*
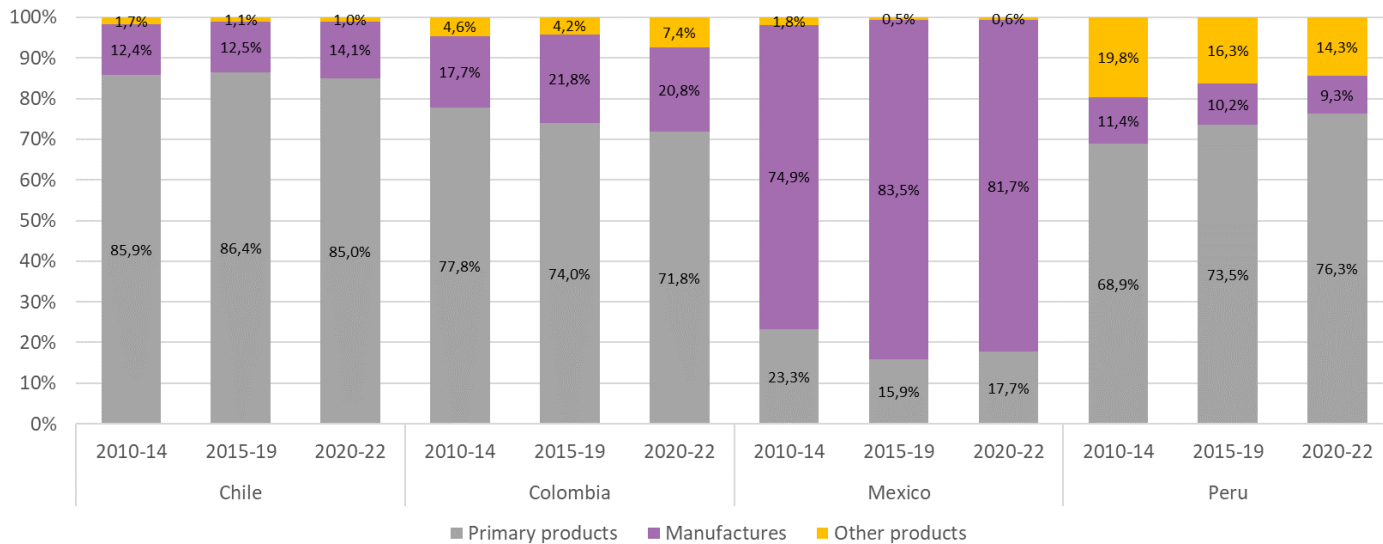
Note: Correlative HS02 to SITC3. Source: Authors calculation based on WITS – UN Comtrade.

In the case of the Andean countries, (Abuelafia, et.al., 2023) their low participation in both GVCs and RVCs is explained by factors such as the institutions that regulate trade, physical and digital infrastructure, and the limited access to financing of SMEs, mainly. Particularly, poor physical infrastructure and logistics, and the low level of intermodal connections cause high transportation costs which affect the competitiveness of Andean countries to their integration into global value chains.

Finally, the economic and political context has not been optimal for the progress of the intra PA integration. The PA trade agreement entered into force when voices against economic opening and globalization, both regionally and globally, began to proliferate. Since 2016, a rethinking of trade integration policy has been the subject of most political campaigns in the Western hemisphere. In some cases, a promise was made to review

the commitments acquired in the trade agreements signed within the framework of the open integration strategy that was promoted in the 1990s, and in others was prioritized a policy of exploitation of existing agreements over the realization of new trade negotiations. This bias is evident in the government plans of the presidents of the four PA countries in office, at the time of this study. The most protectionist visions discourage the attraction of FDI which is a key determinant for the formation of GVCs or RVCs.

Structure of PA countries exports of goods

According to figures from the World Development Indicators (WDI), Mexico is the largest exporter of the PA with a total of $625.1 billion in exports of goods and services in 2022. The second largest is Chile, which exported $107.4 billion, then Peru with $71.1 billion and lastly Colombia with $70.7 billion.

The composition of exports of goods from the countries of the end-use categories shows a participation of more than 70% of intermediate products for Chile, Colombia, and Peru. Mexico has a more diversified structure in which the exports of capital goods represented 30.1% in the 2020 to 2022 period and the foreign sales of intermediate goods were 42.4% (Graph 4).

According to the Standard International Trade Classification (SITC), the composition by types of goods shows that for Chile 85% of the exports in the 2020 to 2022 period corresponded to primary products, a figure that was close to 70% for Colombia and 75% for Peru. In contrast, in Mexico the exports of primary products in that period were 17.7% of the total exports. In the case of Chile, the importance of primary products in exports has remained almost constant since 2010. In Peru it shows a rising tendency and in Colombia a falling tendency. In Mexico the average participation of primary products in exports decreased between 2010 to 2014 and 2015 to2019 and relatively rose in 2020 to 2022, but it did not surpass the level of 2010-2014 (Graph 5).

In this manner, primary products predominate in the export supply of Chile, Colombia, and Peru while Mexico has an export supply that concentrates in manufactures (Graph 6). In the case of Chile, the average of exports of primary products for the 2020-2022 consist of a 27.2% of agricultural products and a 57.7% of fuels and mining products, a change in the export's composition compared to the pre-pandemic period (2015 to 2019). In contrast, Colombian exports for the 2020 to 2022 period consist of a 22.8% of agricultural products and a 49.0% of fuels and mining products, maintaining in the post-pandemic period the increasing trend in the participation of agricultural exports, and the decreasing trend in the participation of fuels and mining exports. In the case of Mexico, exports of primary products in the 2020 to 2022 period correspond to 9.0% of agricultural products and 8.7% of fuels and mining products, a very slight change in the composition of exports compared to the pre-pandemic period. Lastly, for the 2020 to 2022 period, Peru exported 24.4% of agricultural products and 51.9% of fuels and mining products maintaining, like Colombia, the trend of the pre-pandemic period.

As for Mexico, the exports of manufactures in the 2020 to 2022 period were, on average, 81.7% of the total exports, of which 63.2% correspond to machinery and transport equipment. The participation of the manufacture exports of Colombia for the 2020 to 2022 period was 20.8%, with 8.5% of chemical exports,12 3.5% of other semi manufactures, and 3.4% of machinery and transport equipment. In the case of Chile, the exports of manufactures in the 2020 to 2022 period were 14.1% of the total exports, with 7.5% of chemicals, 2.9% of other semi manufactures, and 2.2% of machinery and transport equipment. The percentage of exports of manufactures of Peru in the 2020 to 2022 period was 9.3%, of which 3.1% were chemicals, 2.1% clothing, and 1.4% other semi manufactures (Graph 6).

However, when the main destination countries of the exports from the PA countries are analyzed in the 2020 to 2022 period, it is evidenced that the PA is an important destination for manufactures from Chile (15.7%)—actually more important than Mercosur (14.2%)— from Colombia (21.0%), and from Peru (25.4%). In contrast, almost 90% of the Mexican manufactured exports go to the U.S. market and a minimal proportion to the PA countries (Graph 7).

If the intra-PA trade by partners in 2022 is analyzed, Chile exported mainly to Peru and Mexico, in that order. Colombia exported to Mexico, Chile, and Peru, in that order. Mexico to Colombia is the greatest proportion, followed by Chile and Peru. Furthermore, the main export destination of Peru in the PA is Chile, followed by Colombia (Table 3).

Regarding the products that are traded within the PA, Chile mainly exports agricultural products and chemicals to the rest of the countries, while the exports to the world and the United States are mainly composed of fuels and mining products and agricultural products. Colombia exports to the PA, in order of importance, fuels and mining products, agricultural products, and chemicals. The former products are also the main exports to the United States, while the exports of other semi-manufactures are next in importance. The main exports of Mexico to the PA are machinery and transport equipment followed by chemicals. In exports to the United States, machinery and transport equipment predominate, followed by agricultural products and other manufactured goods. The exports of Peru to the PA are mainly fuels and mining products, agricultural products, and chemicals. Agricultural products are the main products that Peru sells in the U.S. market, followed by fuels and mining products, and lastly clothing (Table 4).

Graph 6. AP exports structure by products SITC Rev3 Average annual share in exports 2010-2014, 2015-2019, 2020-2022

a. Chile

b. Colombia

	2010-2014	2015-2019	2020-2022

Primary products: Agricultural products — 22,8%; Fuels and mining products — 49,0%

Manufactures: Iron and steel — 1,7%; Chemicals — 8,5%; Other semi-manufactures — 3,5%; Machinery and transport equipment — 3,4%; Textiles — 0,7%; Clothing — 1,1%; Other manufactures — 1,8%

Other products — 7,4%

c. Mexico

	2010-2014	2015-2019	2020-2022

Primary products: Agricultural products — 9,0%; Fuels and mining products — 8,7%

Manufactures: Iron and steel — 0,8%; Chemicals — 2,7%; Other semi-manufactures — 4,5%; Machinery and transport equipment — 63,2%; Textiles — 0,6%; Clothing — 1,0%; Other manufactures — 8,9%

Other products — 0,6%

d. Peru

Note: Correlative HS02 to SITC3. Source: Authors calculation based on WITS – UN Comtrade.

Graph 7. Main Export Destinations by Products SITC Rev3. Average Annual Share in Exports of Goods 2020 to 2022

a. Chile

b. Colombia

■ Total ■ Primary products ■ Manufactures

c. Mexico

■ Total ■ Primary products ■ Manufactures

d. Peru

■ Total ■ Primary products ■ Manufactures

Table 3. Total Exports of Goods Intra-PA and to U.S. Market by Products 2022, US$ Millions

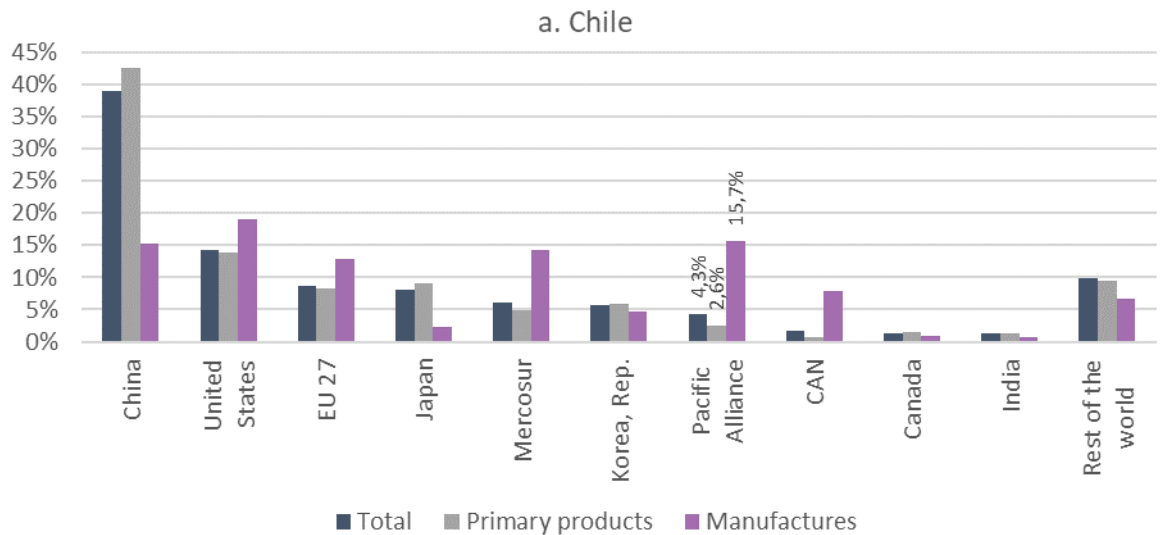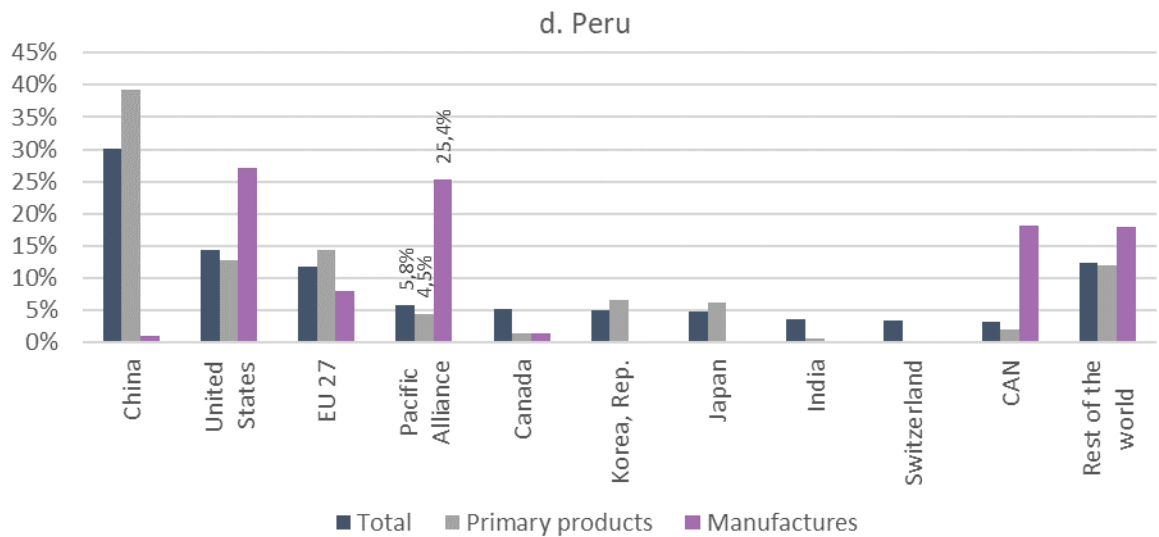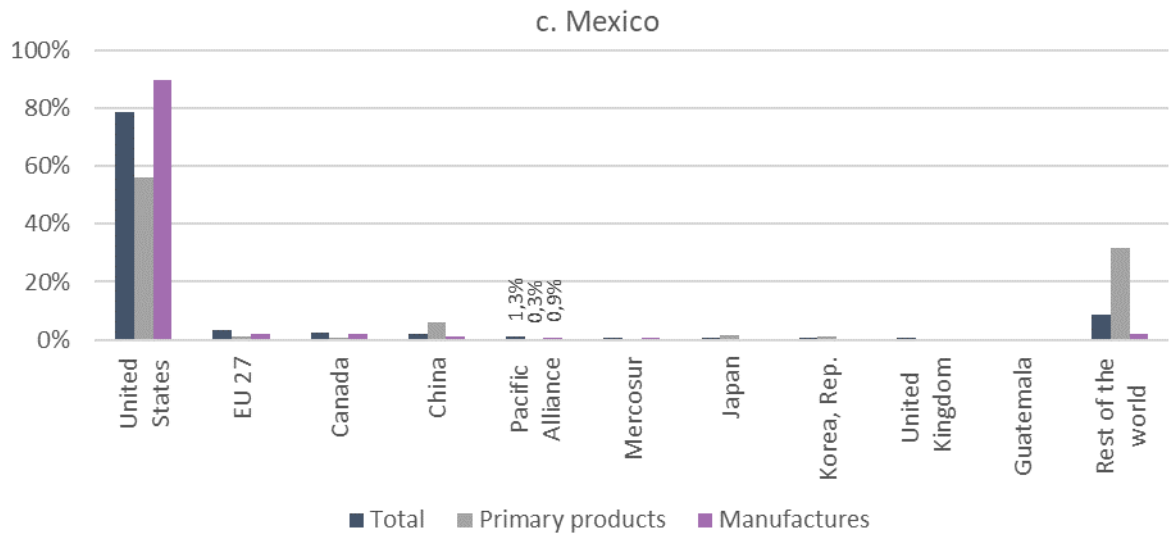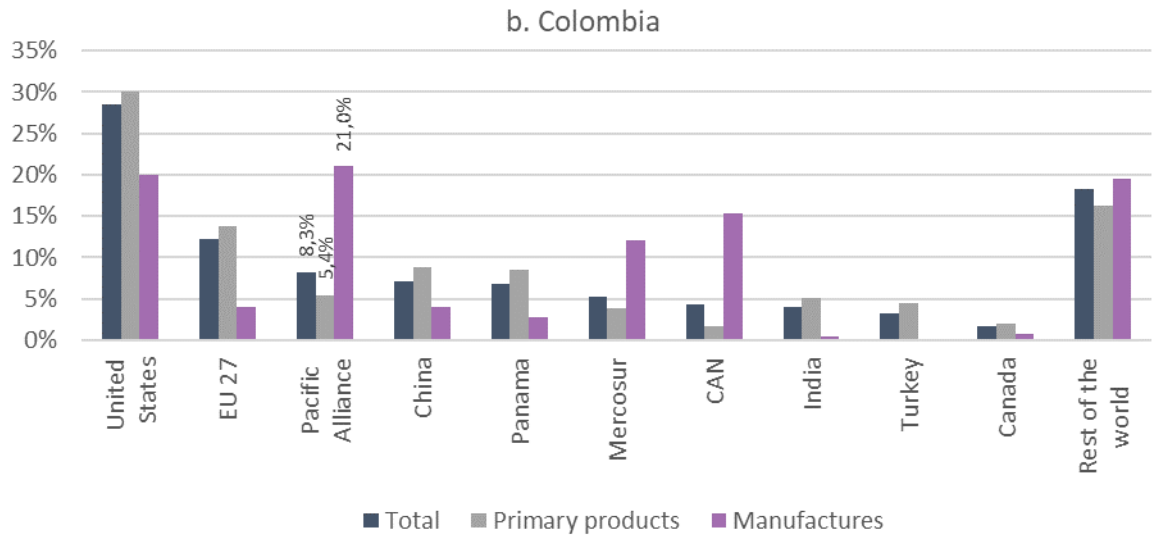| Export Country	Product Group	World	Chile	Colombia	Mexico	Peru	Total	United States
Chile	Primary products	77,165.4		597.5	1,103.6	506.8	2,207.9	10,793.6
	Manufactures	19,445.2		331.5	652.4	1,316.0	2,299.9	2,725.8
	Other products	838.2				0.0	0.0	60.6
	Total	97,490.9		929.1	1,756.3	1,827.3	4,512.7	13,587.6
Colombia	Primary products	43,732.8	1,233.4		933.3	259.7	2,426.4	12,190.1
	Manufactures	10,527.9	342.0		818.0	847.2	2,007.2	2,194.2
	Other products	2,988.2	0.0				0.0	993.6
	Total	57,259.3	1,575.8		1,752.3	1,107.1	4,435.2	15,381.3
Mexico	Primary products	89,898.4	51.5	172.8		53.7	278.0	48,732.9
	Manufactures	383,102.7	743.9	1,649.2		607.3	3,000.4	347,232.0
	Other products	2,753.9						2,273.6
	Total	578,281.6	1,720.7	3,607.1		1,667.8	6,995.6	452,605.2
Peru	Primary products	45,071.7	1,038.4	618.9	550.0		2,207.4	5,992.1
	Manufactures	5,729.6	782.7	425.2	233.3		1,441.2	1,581.4
	Other products	7,370.9	0.1				0.1	857.9
	Total	58,172.4	1,821.2	1,044.2	783.3		3,648.7	8,431.6

Table 4. Total Exports of Goods intra-PA and to U.S. Market by Products 2022, US$ Millions

Export country	Product group		World	Chile	Colombia	Mexico	Peru	Total	United States
						Pacific Alliance			
Chile		Total	97.490,9		929,1	1.756,3	1.827,3	4.512,7	13.587,6
	Primary products	Agricultural products	26.409,2		515,1	962,7	380,6	1.858,3	6.541,6
		Fuels and mining products	50.756,3		82,4	140,9	126,3	349,6	4.252,0
	Manufactures	Iron and steel	629,8		7,6	31,8	260,1	299,5	226,0
		Chemicals	13.089,9		146,3	300,0	351,9	798,2	742,4
		Other semi-manufactures	3.158,7		100,9	253,0	251,2	605,1	1.401,7
		Machinery and transport	1.628,5		48,4	42,2	252,4	343,0	281,2
		Textiles	226,4		9,3	3,2	27,4	39,9	14,0
		Clothing	202,1		0,5	2,0	76,6	79,1	8,0
		Other manufactures	509,8		18,6	20,1	96,4	135,1	52,5
	Other products	Other products	838,2				0,0	0,0	60,6
Colombia		Total	57.259,3	1.575,8		1.752,3	1.107,1	4.435,2	15.381,3
	Primary products	Agricultural products	11.558,7	230,2		230,3	146,3	606,8	4.613,5
		Fuels and mining products	32.174,2	1.003,2		703,0	113,4	1.819,6	7.576,6
	Manufactures	Iron and steel	1.107,6	0,7		3,7	1,9	6,3	116,6
		Chemicals	4.132,9	173,6		383,1	451,0	1.007,7	334,0
		Other semi-manufactures	1.888,2	48,6		119,0	124,2	291,7	838,7
		Machinery and transport	1.644,3	48,9		154,4	116,7	320,1	369,3
		Textiles	332,8	7,3		54,1	19,9	81,3	79,6
		Clothing	558,4	19,2		38,3	47,4	105,0	248,2
		Other manufactures	863,6	43,7		65,4	86,0	195,2	207,7
	Other products	Other products	2.988,2	0,0				0,0	993,6
Mexico		Total	578.281,6	1.720,7	3.607,1		1.667,8	6.995,6	452.605,2
	Primary products	Agricultural products	41.951,9	26,5	139,3		47,5	213,3	38.173,6
		Fuels and mining products	47.946,5	25,0	33,5		6,1	64,7	10.559,3
	Manufactures	Iron and steel	4.737,0	0,1	1,2		0,2	1,5	4.661,5
		Chemicals	12.907,4	186,3	440,3		211,5	838,1	10.085,7
		Other semi-manufactures	21.915,9	45,5	80,1		22,3	147,9	20.518,3
		Machinery and transport	298.152,5	479,5	1.051,3		341,8	1.872,6	268.776,3
		Textiles	2.748,2	0,4	6,1		1,5	8,0	2.560,3
		Clothing	5.267,4	3,1	5,4		0,3	8,8	5.097,9
		Other manufactures	37.374,2	28,9	64,8		29,8	123,5	35.532,0
	Other products	Other products	2.753,9						2.273,6
Peru		Total	58.172,4	1.821,2	1.044,2	783,3		3.648,7	8.431,6
	Primary products	Agricultural products	13.801,6	433,2	304,9	323,2		1.061,4	3.662,7
		Fuels and mining products	31.270,1	605,2	314,0	226,8		1.145,9	2.329,5
	Manufactures	Iron and steel	236,8	12,4	40,3	4,5		57,2	2,8
		Chemicals	1.927,1	322,9	141,6	61,5		526,0	182,5
		Other semi-manufactures	812,0	182,6	67,4	64,4		314,3	136,5
		Machinery and transport	525,1	85,9	32,8	46,9		165,6	127,0
		Textiles	333,4	40,4	63,5	17,4		121,2	61,2
		Clothing	1.375,8	60,0	18,9	19,5		98,3	930,1
		Other manufactures	519,5	78,5	60,8	19,2		158,5	141,4
	Other products	Other products	7.370,9	0,1				0,1	857,9

Note: Correlative HS02 to SITC3. Source: Authors calculation based on WITS – UN Comtrade.

As for Mexico, the exports of manufactures in the 2020 to 2022 period were, on average, 81.7% of the total exports, of which 63.2% correspond to machinery and transport equipment. The participation of the manufacture exports of Colombia for the 2020 to

2022 period was 20.8%, with 8.5% of chemical exports,[12] 3.5% of other semi manufactures, and 3.4% of machinery and transport equipment. In the case of Chile, the exports of manufactures in the 2020 to 2022 period were 14.1% of the total exports, with 7.5% of chemicals, 2.9% of other semi manufactures, and 2.2% of machinery and transport equipment. The percentage of exports of manufactures of Peru in the 2020 to 2022 period was 9.3%, of which 3.1% were chemicals, 2.1% clothing, and 1.4% other semi manufactures (Graph 6).

However, when the main destination countries of the exports from the PA countries are analyzed in the 2020 to 2022 period, it is evidenced that the PA is an important destination for manufactures from Chile (15.7%)—actually more important than Mercosur (14.2%)— from Colombia (21.0%), and from

Peru (25.4%). In contrast, almost 90% of the Mexican manufactured exports go to the U.S. market and a minimal proportion to the PA countries (Graph 7).

If the intra-PA trade by partners in 2022 is analyzed, Chile exported mainly to Peru and Mexico, in that order. Colombia exported to Mexico, Chile, and Peru, in that order. Mexico to Colombia is the greatest proportion, followed by Chile and Peru. Furthermore, the main export destination of Peru in the PA is Chile, followed by Colombia (Table 3).

Regarding the products that are traded within the PA, Chile mainly exports agricultural products and chemicals to the rest of the countries, while the exports to the world and the United States are mainly composed of fuels and mining products and agricultural products. Colombia exports to the PA, in order of importance, fuels and mining products, agricultural products, and chemicals. The former products are also the main exports to the United States, while the exports of other semi-manufactures are next in importance. The main exports of Mexico to the PA are machinery and transport equipment followed by chemicals. In exports to the United States, machinery and transport equipment predominate, followed by agricultural products and other manufactured goods. The exports of Peru to the PA are mainly fuels and mining products, agricultural products, and chemicals. Agricultural products are the main products that Peru sells in the U.S. market, followed by fuels and mining products, and lastly clothing (Table 4).

**Analysis of an eventual structural change in goods exports**

Although intraregional trade in the PA is not important, the previous analysis shows that this market is an important destination for manufacturing exports, especially from Chile, Colombia, and Peru, in comparison with primary products (Graph 7). As discussed, upon the entry into force of the trade protocol, 92% of traded products between the four countries were free of tariffs due to the previous bilateral trade agreements that operated between them. For this reason, an exercise was carried out to identify if there was a structural change in intra-PA exports as a result of the entry into force of the trade protocol whose innovation compared to previous trade agreements was the origin cumulation. This innovation was expected to be an important foundation for the creation of RVCs in the PA.

The exercise starts by analyzing how exports of the PA countries have evolved both collectively and in a disaggregated manner (Graph 8). It is important to emphasize that this initial analysis does not establish causality between the variables but allows us to complement the analysis.

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[12] Chemicals in SITC are organic chemicals derived from hydrocarbons such as ethylene and propylene, alcohols, ethers, and inorganic chemicals.

Graph 8. PA Exports from 2002 to 2022

Exports From PA to PA

Exports From PA to NPA

Exports From PA to World
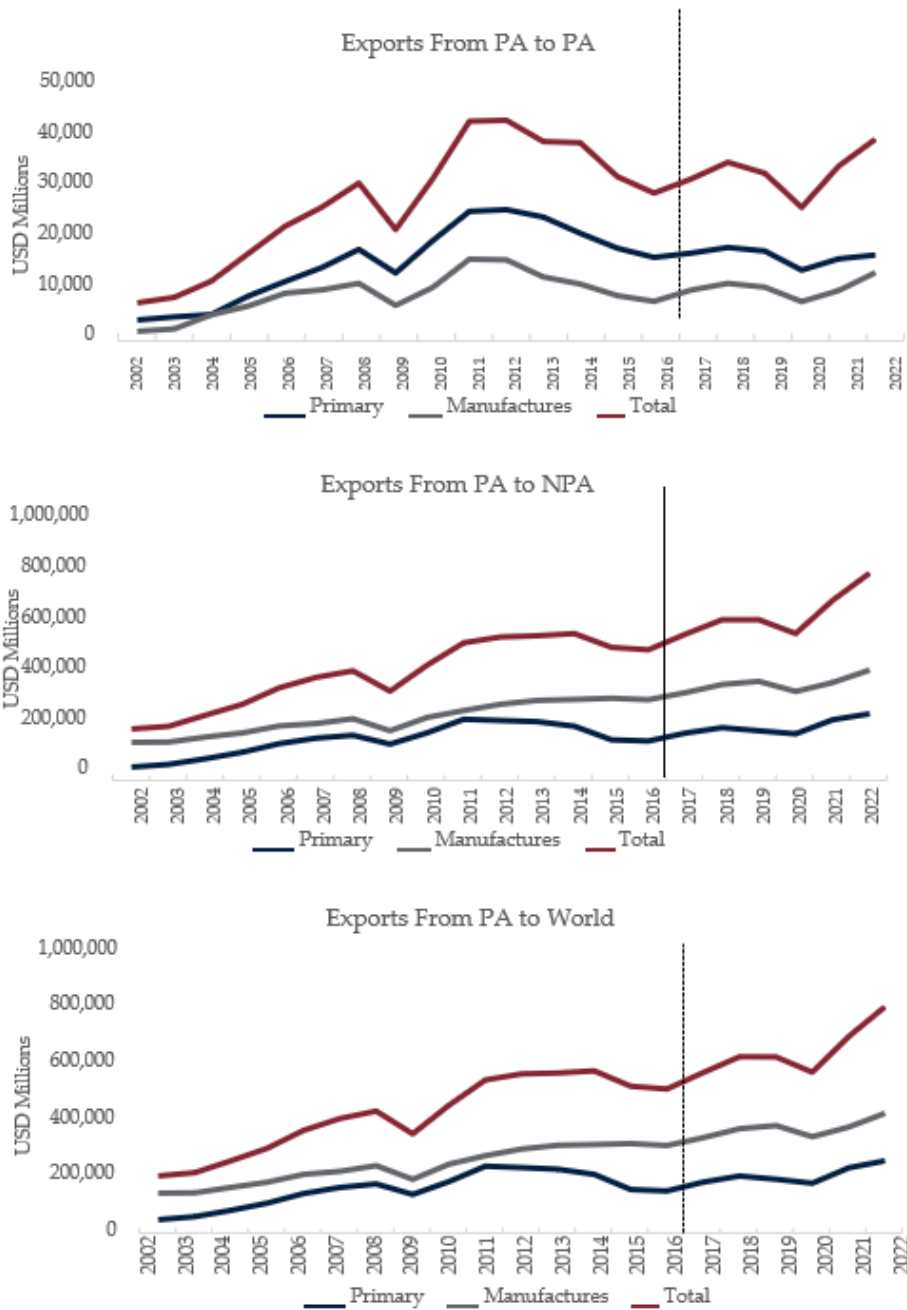
Note: NPA corresponds to countries that are not members of the PA. Correlative HS02 to SITC3.
Source: Authors calculation based on WITS – UN Comtrade.

Table 5. ADF and PP Test for Structural Change in Exports

Country of Origin	Export Group	PA ADF	PP	Non-PA ADF	PP	World ADF	PP
PA	Primary	-2.32	-2.30	-1.69	-1.68	-1.71	-1.71
	Manufactures	-2.01	-2.01	-0.29	0.01	-.42	-0.15
	Total	-1.97	-1.96	-0.39	-0.26	-0.47	-0.25
Chile	Primary	-2.69*	-2.68*	-2.13	-2.17	-2.16	-2.20
	Manufactures	-2.05	-1.96	-0.09	-0.26	-0.35	-0.42
	Total	-2.56	-2.61*	-1.77	-1.77	-1.81	-1.81
Colombia	Primary	-1.79	-1.80	-1.45	-1.54	-1.45	-1.54
	Manufactures	-2.31	-2.45	-2.12	-2.18	-2.27	-2.28
	Total	-1.52	-1.50	-1.52	-1.60	-1.51	-1.59
Mexico	Primary	-1.98	-2.02	-2.00	-2.00	-2.01	-2.01
	Manufactures	-1.67	-1.75	-0.30	-0.01	-0.40	-0.15
	Total	-1.84	-1.83	0.12	0.43	0.04	0.34
Peru	Primary	-2.71*	-2.66*	-0.89	-0.71	-0.99	-0.82
	Manufactures	-0.93	-0.93	-1.90	-1.87	-1.63	-1.58
	Total	-2.18	-2.12	-1.17	-1.10	-1.23	-1.16

Source: WITS – UN Comtrade. Authors estimation - * p < 0.10, ** p < 0.05, *** p < 0.01.

Yearly data of exports from 2002 to 2022 were used. The starting year for assessing the effects of the Pacific Alliance will be 2017, since most of the regulations in this regard were implemented the previous year. At first sight, when analyzing the overall exports of PA countries and of each country individually, a similar pattern is revealed. There is no case where a pronounced structural change is observed around the establishment of the alliance. Across all countries, a relatively stable growth trajectory is evident over time with no apparent significant alterations around 2017.

To demonstrate the presence of structural change in the time series the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests were used. However, it should be clarified that the aforementioned tests only allow us to observe a change in the trend of the series. They do not allow us to observe when the change occurs or whether it is positive or negative. Additionally, these tests do not allow us to establish causality of the mentioned change. Therefore, the tests must be complemented with the graphical analysis already performed and with robust information about what happened in the period studied.

Table 5 presents the results of the ADF and PP tests for PA countries' exports to PA, non-PA, and globally, dividing exports into primary products, manufactured products, and total exports. The table presents the statistics for each test and the significance is given by the asterisks (also highlighted in red).

From the Table 5 it is possible to observe that there were no changes in the aggregate trade of the PA. When analyzing each country separately, we find that Chile and Peru did experience trend changes in their exports of primary goods to the member countries of the alliance. In addition, it is found that Chile observed a change in its total exports with the alliance members. In addition, no structural changes are found for any country in trade with non-PA countries or with the world.

Table 6 shows the ADF and PP test for intra-PA exports. There is an evident change in Peru's primary and total exports to Chile that may explain the change in exports to the

PA observed in Table 5. Likewise, some structural changes are noted in some trade relations, such as Chile with Peru, or Mexico with Chile and Peru.

As mentioned, these tests do not allow us to establish the direction of the change, so other tests should be carried out to go deeper into this. The Chow test was used to find out if a regression behaves differently across two or more subsets of data (Wooldridge, 2012). Applied to time series, it allows us to determine if the time evolution of the variable to be studied is different in two different time periods (ibid). This is indicative of the existence of a structural change, since it indicates that the trend of the variable has changed significantly since a certain point in time.

If there is a statistically significant difference between the two groups, it is possible to think that there is a structural change after the selected date. For the present case, 2017 will be taken as the starting date of an eventual change in the PA exports.

However, it is necessary to make some caveats. First, although it is possible to select a specific period as the cut-off date, the result may be the same for all those close to it. In other words, the fact that 2017 was selected as the starting year of the PA does not imply that the structural change occurred in this year, since changes in 2016 or 2018 may give the same result. Second, it should be considered that these time series have little data, so much so that for the period after 2017 there are only 5 observations. This implies that the regression results are not robust and detract from the validity of the analysis.

Table 6. ADF and PP Test for Structural Change in Exports, Disaggregated

Country of Origin	Export Group	Chile ADF	PP	Colombia ADF	PP	Mexico ADF	PP	Peru ADF	PP
PA	Primary	-2.25	-2.27	-1.69	-1.72	-2.39	-2.27	-2.00	-2.02
	Manufactures	-2.01	-1.99	-1.72	-1.79	-0.76	-0.63	-2.23	-2.31
	Total	-2.04	-2.01	-1.83	-1.83	-1.87	-1.70	-1.91	-1.97
Chile	Primary			-1.15	-1.22	-1.93	-2.04	-2.95	-2.02
	Manufactures			-2.10	-2.01	-1.78	-1.42	-2.37	-2.40
	Total			-1.52	-1.52	-2.07	-2.15	-2.40	-2.79*
Colombia	Primary	-1.71	-1.84			-0.92	-0.69	-2.51	-2.51
	Manufactures	-1.77	-1.77			-0.93	-0.94	-2.16	-2.19
	Total	-1.66	-1.76			-0.49	-0.36	-2.14	-2.15
Mexico	Primary	-3.56**	-3.54**	-1.89	-1.93			-2.78*	-2.80*
	Manufactures	-1.88	-1.90	-1.63	-1.73			-1.42	-1.33
	Total	-2.06	-2.10	-1.84	-1.85			-1.42	-1.33
Peru	Primary	-2.68**	-2.67*	-2.22	-2.03	-1.80	-1.68		
	Manufactures	-0.75	-0.61	-1.66	-1.67	0.14	0.15		
	Total	-2.61*	-2.57*	-1.86	-1.78	-1.14	-1.05		

Source: WITS – UN Comtrade. Authors estimation - * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 7. Chow Test for Structural Change in Exports in 2017

Country of Origin	Export Group	PA	Non-PA	World
PA	Primary	-284,162 (1.92)	2,809,870 (1.82)	2,662,829 (1.82)
	Manufactures	-1,631,401*** (8.60)	-1,256,549 (0.08)	-2,070,244 (0.30)
	Total	-1,272,560** (5.21)	11,523,688 (1.24)	10,910,571 (1.30)
Chile	Primary	-3,183 (0.66)	1,343,893 (1.44)	1,340,710 (1.42)
	Manufactures	13,449* (3.40)	1,295,490* (3.43)	1,308,939* (2.92)
	Total	-19,238 (2.56)	2,433,129 (1.79)	2,413,891 (1.82)
Colombia	Primary	-92,024 (0.46)	-554,717** (3.89)	-646,741* (3.59)
	Manufactures	-75,071*** (6.36)	256,764 (1.52)	181,693 (1.75)
	Total	-141,338 (0.92)	-111,816** (3.90)	-253,154** (3.66)
Mexico	Primary	-141,654*** (6.16)	1,707,083 (1.49)	1,565,429 (1.53)
	Manufactures	-769,187*** (9.18)	-2,794,595 (0.23)	-3,563,782 (0.41)
	Total	-559,365*** (9.11)	9,282,188 (0.89)	8,722,824 (0.83)
Peru	Primary	89,819* (2.66)	313,614 (0.08)	403,433 (0.17)
	Manufactures	17,115*** (6.55)	-14,205* (3.44)	2,909** (4.19)
	Total	106,823** (3.89)	-79,803 (0.54)	27,021 (0.73)

Source: WITS – UN Comtrade. Authors estimation - * p < 0.10, ** p < 0.05, *** p < 0.01.

Finally, and related to the above, it is important to remember that in 2020 there was a sharp drop in global trade due to the pandemic caused by COVID-19. This makes the trade data for this year an outsider that may affect the trend estimate, even more so if there is so little data. In addition, it is possible that this situation generated a structural change by itself that does not allow us to observe the true effects of the previous changes.

Table 7 presents the results of the Chow test for exports to countries within the PA, non-PA countries and the rest of the world. The table presents the difference between the slopes of the regressions for periods before and after the cutoff year. In other words, a negative value indicates a drop in the trend with respect to years before and after the cut-off year. Asterisks indicate statistical significance.

From what is presented in Table 7, it is possible to note a downward trend in exports after the cutoff year. The case of aggregate trade between PA countries stands out, where manufactured goods and total exports fall significantly with respect to pre-2017 data. Similarly, there is a fall in all exports from Mexico to the PA, from Colombia in manufactured goods to the PA, and in primary goods to the rest of the world.

The most relevant case, according to the table presented, is that of Peru. According to the tests carried out, since 2017 its exports of primary and manufactured goods to the other PA countries have increased.

Now, to study this in depth it is necessary to complement the analysis with the intra-PA exports, which are presented in Table 8.

Table 8 shows results similar to previous results. In general, there was a downward trend in exports, which affected almost all countries. Once again, the case of Peru stands out, which increased its exports in general terms and is the only country that maintains a positive trend change.

After performing the above econometric exercises, it is not possible to state unequivocally the presence of a structural change in the time series studied. This would seem to imply that the formation of the PA did not substantially change trade among member countries or with the rest of the world. However, there are some analyses that suggest a change in trade trends for some member countries. This is the case of Chile and its trade in manufactured goods, which increased with respect to both PA and non-PA countries.

Similarly, Peru generally increased its trade with PA countries during the period studied. Even though the models do not allow us to establish an unequivocal causality, this is a result to be considered.

In addition, to analyze the rest of trade, it is necessary to take into account that shortly after the establishment of the PA the COVID-19 pandemic occurred. This affected trade during 2020 and the following years as these became years of recovery. In this sense, that contingency made it impossible to state that there could have been a previous structural change.

Although intraregional trade in the PA is not important, previous analysis showed that this market is an important destination for manufacturing exports, especially from Chile, Colombia, and Peru, in comparison with primary products.

As mentioned, the objective of this exercise was to identify if there was a structural change in intra-PA exports, after the trade protocol came into effect, motivated mainly by the increase in importance of that market for Chile, Colombia, and Peru's manufacturing exports. Although the short period of analysis and the contingency of the pandemic limit the robustness of the analysis, an important change was evident in Peru's manufacturing exports to the bloc.

It is important to highlight that when the PA trade protocol came into force, intra-zone trade was practically free of tariffs, so the purpose of this exercise is not to determine the impact of this agreement on the exports of the signatory countries derived from a tariff reduction, but rather on exports of products that eventually became part of an RVC. In this sense, it is a different exercise from those carried out to look at the impact of trade blocs such as Association of Southeast Asian Nations (AFTA), North American Free Trade Agreement (NAFTA) or Mercosur, for example.[13]

This does not imply that the PA initiative does not have the potential it showed when it was created but rather makes evident the absence of an effective strategy to promote CRVs that use member countries with better access conditions to third markets as export platforms. A strategy of this nature began to

be led by the export promoting agencies of the PA countries and by the PA Business Council since the signing of the trade protocol. However, its scope has been limited by

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[13] 13   Okabe and Urata (2013) found positive and significant trade creation effects from the tariff elimination for a wide range of products in the AFTA by applying a gravity model, and also established that the agreement was effective in promoting intra-AFTA trade. Hufbauer et.al. (2005) stated that during the first decade of NAFTA, the three economies grew significantly, intraregional merchandise trade doubled, and U.S. FDI in Canada and Mexico increased faster. In the case of Mercosur, Bellina Yrigoyen (2003) states that despite facing challenges, the agreement was successful in fostering trade integration, attracting foreign investments, and enhancing productivity and exposure to competition.

the change in focus on trade integration in the political agendas of the PA countries and by the COVID-19 contingency. In fact, the results of an exercise carried out in 2021 by the PA Business Council that identified a set of products with potential for exports from an RVC of the PA countries to the U.S. market are presented later. However, a key challenge still remains in implementing this strategy related to the renegotiation of rules of origin so that the RVCs of the PA can benefit from origin cumulation in the U.S. market.

Table 8. Chow Test for Structural Change in Intra-PA Exports in 2017, Disaggregated

Country of Origin	Export Group	Chile	Colombia	Mexico	Peru
PA	Primary	35,636	-109,959***	74,089	-141,846***
		(-1.59)	(-9.76)	(-0.3)	(-6.44)
	Manufactures	-204,945**	-394,412***	-13,829	-202,515***
		(-6.1)	(-8.36)	(-2.03)	(-9.51)
	Total	-111,141*	-301,985***	60,538	-283,692
		(-3.19)	(-8.2)	(-0.12)	(-9.78)***
Chile	Primary		-8,325***	76,855	-71,713***
			(-9.29)	(-0.44)	(-6.95)
	Manufactures		-10,207***	10,334	13,322
			(-8.49)	(-2.17)	(-2.3)
	Total		-19,168***	87,581	-87,652***
			(-10.29)	(-0.62)	(-6.35)
Colombia	Primary	-9,312		-24,999***	-54,800**
		(-1.19)		(-16.83)	(-4.14)
	Manufactures	-17,248**		-30,901*	-28,853***
		(-5.11)		(-2.67)	(-12.2)
	Total	-26,601		-56,122***	-83,757***
		(-1.3)		(-7.37)	(-7.94)
Mexico	Primary	-14,789	-111,532***		-15,333
		(-1.53)	(-6.24)	(0)	(-1.72)
	Manufactures	-211,567***	-370,636***		-186,984***
		(-6.78)	(-7.91)	(0)	(-16.73)
	Total	-167,960***	-279,115		-112,282***
		(-10.53)	(-7.45)	(0)	(-8.39)
Peru	Primary	59,737	9,899**	22,232**	
		(-1.21)	(-5.19)	(-3.8)	
	Manufactures	23,871**	-13,569***	6,738	
		(-4.34)	(-10.93)	(-1.76)	
	Total	83,420	-3,702***	29,080**	
		(-1.82)	(-8.6)	(-3.96)	

Graph 9. TiVA Methodology: Estimation of the Content of Domestic VA and Imported VA in the Gross Exports of a Country
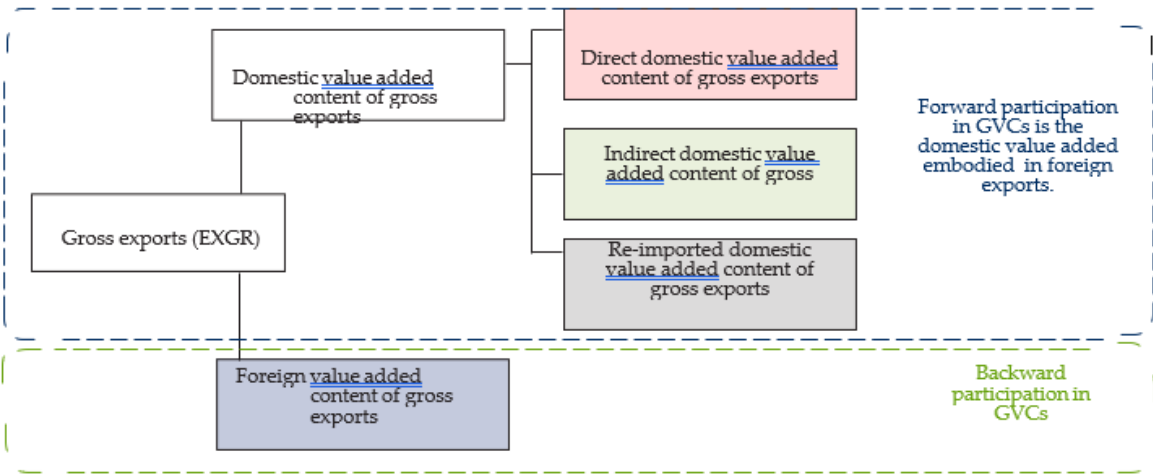
Graph 10. Participation in GVCs 2020 (Backward and Forward Participation)
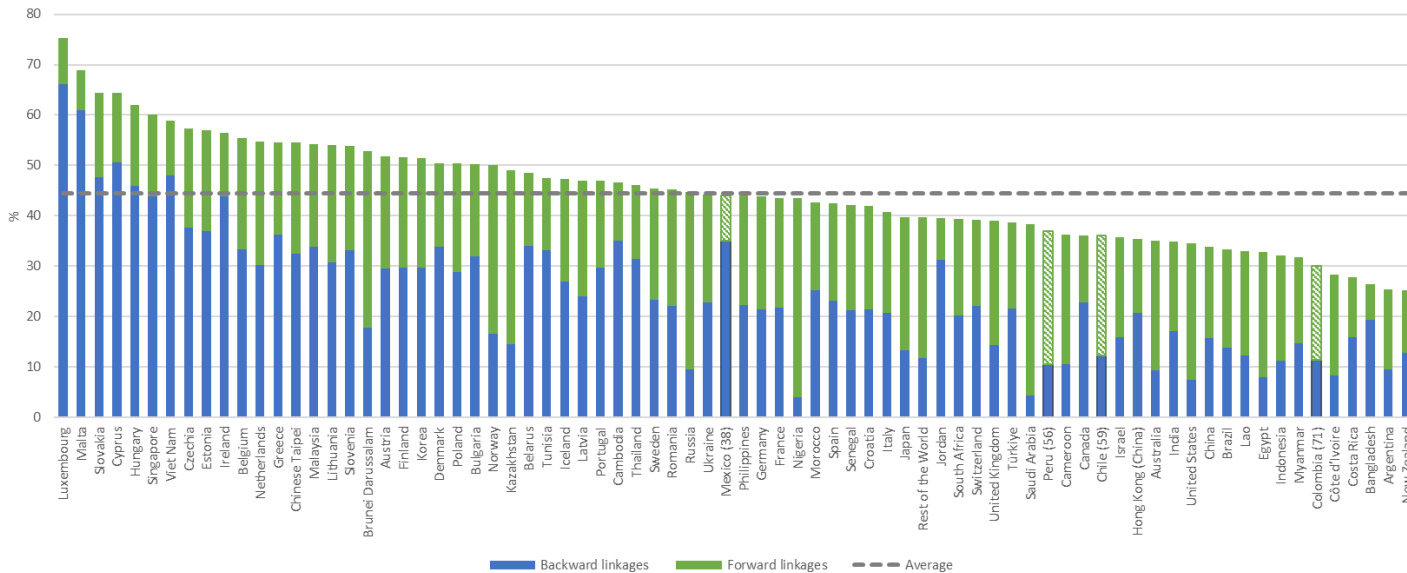
Note: Data for 76 economies plus an aggregate representing the rest of the world.
Source: Author's calculation based on OCDE.Stat - TiVA 2023 edition.

Backward and forward GVC linkages in the exports of PA countries

The methodology Trade in Value Added (TiVA) developed by the OECD creates the possibility to analyze the way in which countries insert themselves in GVCs (OECD, 2021). Through this methodology it is possible to decompose the gross exports of goods and services of the countries, the content of domestic value added, and foreign value added. The domestic value added embodied in the export of goods and services can stem from three sources: i) direct domestic value added; ii) indirect domestic value

added; and iii) re-imported domestic value added. A country denominated A that participates in a GVC can measure the participation forward they have in the chain through their domestic value added embodied in the exports of country B. The measure of participation backward in a GVC for a country results from the aggregate foreign value that incorporates itself into the exports of the country (Graph 9).

The participation of a country in GVCs is defined as the sum of the backward linkages and the forward linkages.[14] The data estimated by the OECD TiVA 2023 edition uses an average indicator of 44.4% for 2020. Within the countries of the PA, Mexico had an indicator of 44.0% (the 38th place in the ranking of 76 countries), Peru had 37.0% (56th place), Chile had 36.1% (59th place), and Colombia had 30.0% (71st place). In 2020, the United States had an indicator of 34.5%, Korea 51.4% and China 33.9% (Graph 10).[15]

In the indicator of Mexico's GVC participation, the proportion of backward linkages is greater than that of forward linkages. In contrast, in Peru forward linkages have a major relative importance compared to backward linkages. The composition of the indicator between forward linkages and backward linkages for Chile and Colombia is similar to the one for Peru. This result is consistent with the export structure of each of the four countries in the following way:

a) Chilean exports are mostly primary goods and the proportion of exports that use intermediate imported goods is lower. The exported goods are mainly intermediate; therefore, they are incorporated into the exports of their trading partners (forward linkages in its exports are more important). Chile, the same as Peru, has an insertion model in GVCs that is substantiated in the exports of goods that are inputs for the trading partners, while the exports of goods that incorporate foreign VA have less relative importance.

b) Colombian exports are mostly primary goods and the proportion of exports that use intermediate goods is lower. Although the participation indicator in GVCs shows a greater relative proportion of intermediate goods that are incorporated into the exports of trading partners, the relative importance is not that substantial in comparison to the importance these goods have in Chile and Peru. Of the countries of the PA, Colombia is the one that has a lower participation indicator in GVCs.

c) Peruvian exports are, for the most part, primary goods, and the proportion of exports that use imported intermediate goods is lower. In this way, the larger part of goods that Peru exports are incorporated in the exports of trading partners.

d) Mexican exports concentrate on manufactured goods that use an important proportion of imported intermediate goods with the corresponding foreign VA. The exported goods are predominantly final and to a lesser extent intermediate goods. The data for 2020 evidences an insertion model in GVCs of Mexico that is focused on the manufacture of goods from imported inputs (more backward linkages in their exports).

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[14] According to the OECD (2021), forward participation in GVCs (%) corresponds to domestic VA embodied in foreign exports, as a share (%) of total gross exports of the value added source country. Backward participation in GVCs (%) corresponds to foreign VA embodied in exports, as a percent of total gross exports of the exporting country.

[15] OCDE.Stat - TiVA 2023 edition covers 76 economies plus an aggregate representing the rest of the world, and data for the years 1995-2020. For the analysis, 2020 is used as the reference year. In a previous version of this study, the GVC participation indicator calculated with data for 2018 showed higher positions in the ranking for the PA countries, but the same order.

Graph 11. Evolution of the Participation of PA Countries in GVCs (Backward and Forward Participation, Annual Average for the Period)
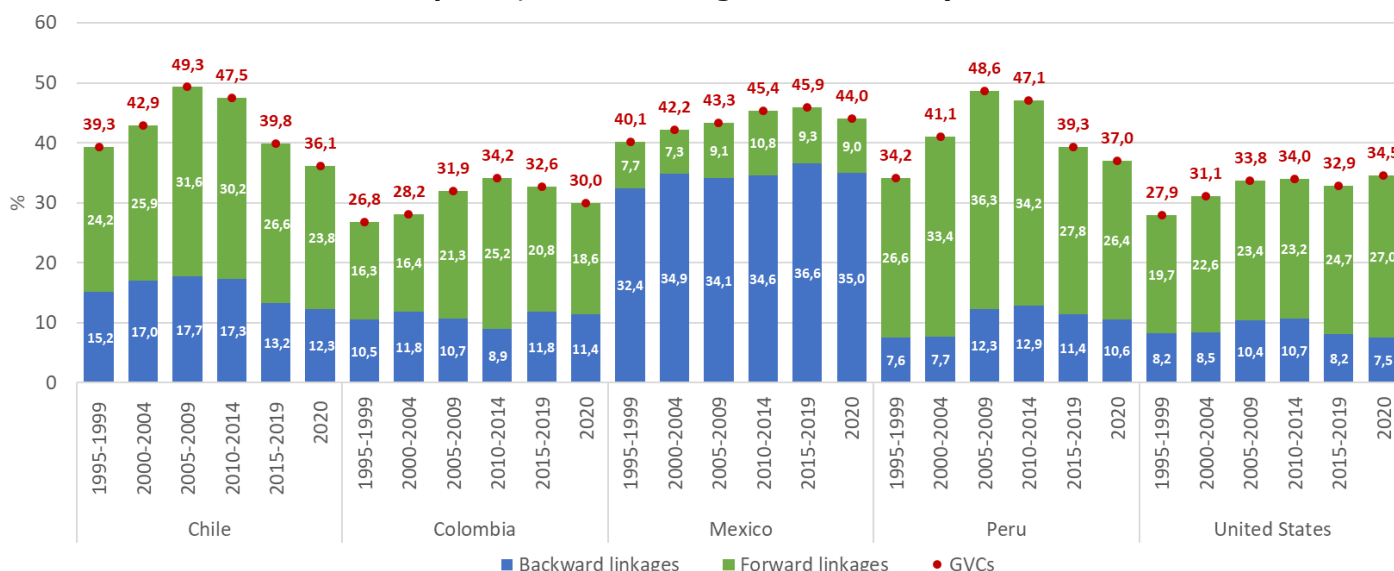
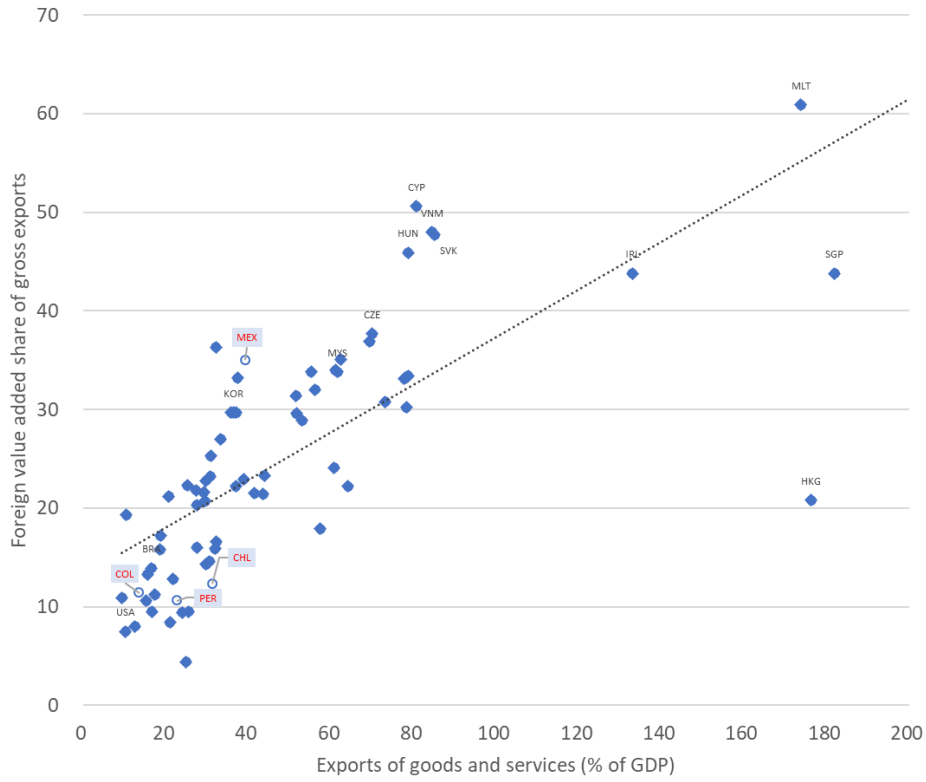Source: Author's calculation based on OECD Stat - TiVA 2023 edition.

The evolution of the PA countries' participation in GVCs during the two decades prior to 2020 shows a growing tendency from1995 to 1999 and 2005 to 2009 for the four countries, followed by a change in trend from the period 2010 to 2014 for Chile, Colombia, and Peru (Graph 11). In contrast, Mexico maintained the growing trend in that indicator, with a slight drop in 2020. Moreover, the composition of the indicator between backward and forward linkages has not shown important changes for any of the four countries. While Mexico is characterized by a predominance of backward linkages in exports throughout the analysis period, in the rest of the PA countries forward linkages predominate.

The level and the insertion model (based on intermediate goods or manufactured goods) that the countries have is related to the importance of their exports as a percentage of GDP. Graph 12 shows that there is a positive relationship between the participation of foreign VA in the gross exports (backward linkages in GVCs) and the importance the exports of goods and services have in the GDP. In a complementary manner, the graph also shows that the participation of the domestic VA in the gross exports (forward linkages) has a negative relationship with the participation of exports of goods and services as a percentage of the GDP.

Data analysis from 1995 to 2020 shows few relative changes in the GVC insertion model (Graph 13). Chile, Colombia, and Peru exports goods in which the domestic VA is more important than the foreign VA, while Mexico exports goods with a higher participation of foreign VA.

Graph 12. Relationship Between Foreign and Domestic VA Embodied in Gross Exports with Exports as a Percent of GDP 2020
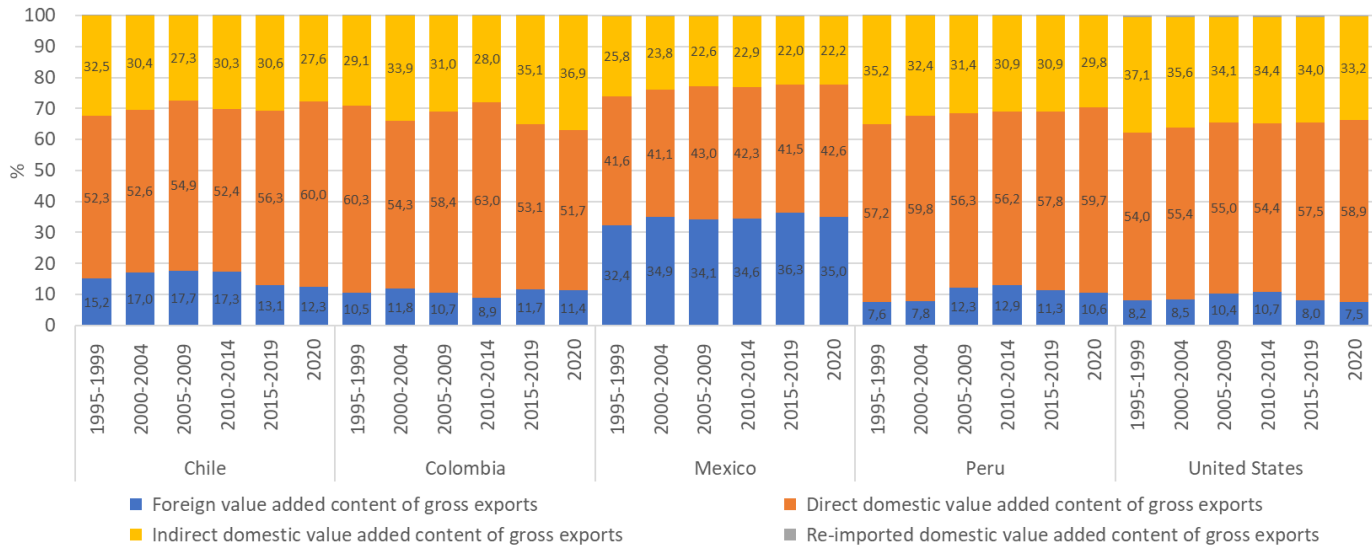
a- Foreign VA

b- Domestic VA
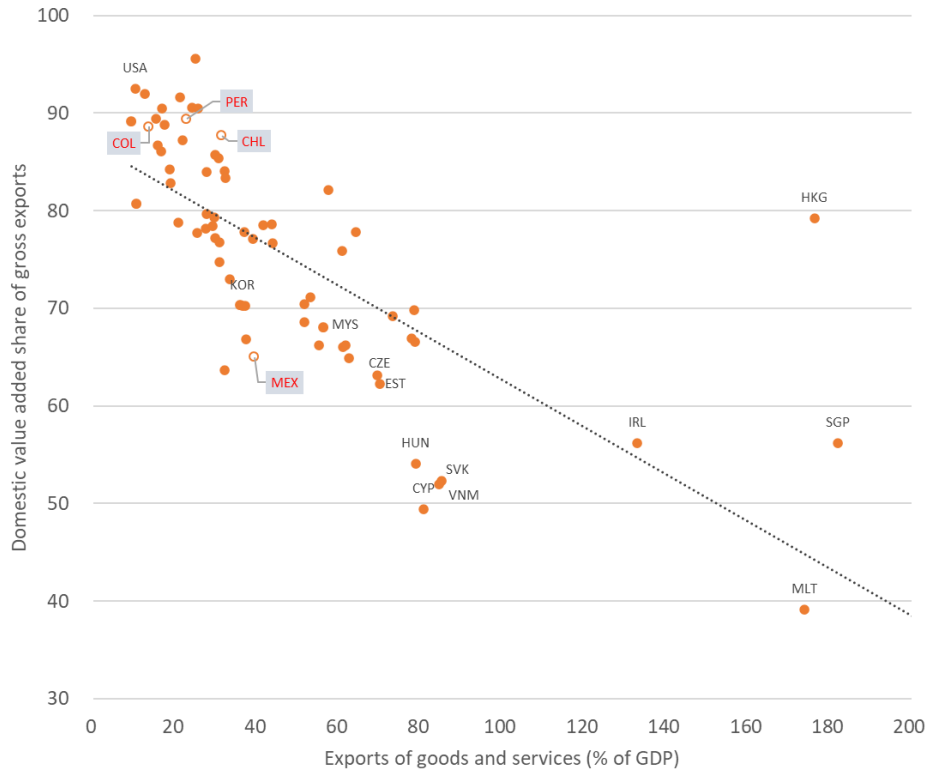
Graph 13. Share of Foreign and Domestic VA Embodied in Gross Exports, Annual Average for the Period

Source: Author's calculation based on OECD Stat - TiVA 2023 edition

Foreign value added embodied in gross exports

If the geographic origin of the foreign VA incorporated in the gross exports for 2020 is analyzed, it is evidenced that the PA has a participation of between 6.8% and 8.1% for Chile, Colombia, and Peru. For Mexico, the participation of the PA was 0.6%. For Chile, the main countries the VA that is incorporated in their exports comes from the United States, the European Union, China, Mercosur, and the PA. For Colombia, Peru, and Mexico, the main origin countries of the VA incorporated in their exports are the United States, China, and the European Union. In the case of Colombia and Peru, the PA is the fourth region of origin of foreign VA incorporated in gross exports, and for Mexico, the PA is the eighteenth (Graph 14).

The analysis of the VA embodied in gross exports by sectors for 2020 shows for Chile that the sectors with a higher indicator of backward linkages are, in order of importance, electricity (electricity, gas, water supply, sewerage, waste, and remediation activities), manufacturing, and agriculture and fishing

(agriculture, hunting, and forestry). For Colombia those sectors, in order of importance, are manufacturing, mining and quarrying, and agriculture and fishing. For Mexico, they are manufacturing, electricity, and agriculture and fishing. For Peru, they are manufacturing and mining and quarrying (Graph 15).

Graphs 16 to 19 show the location of the exporting sectors of each country in a graphic that compares the foreign VA incorporated in the exports and the value of the exports. The sectors to the right of the dotted line, which is the indicator of the backward linkages for total exports, are the ones that incorporate more foreign VA in their exports. This comparison is interesting for this study's analysis because it shows why, in the trade agreements subscribed by Latin American countries with countries inside and outside of the region, the rules of origin for the manufacturing sector are so strict.

Graph 20 shows the foreign VA that is embodied in the exports of each country that proceeds from some country in the PA and the indicators of the backward linkages of the sectors. Thus, several important characteristics of the trade relationship of PA countries can be seen:
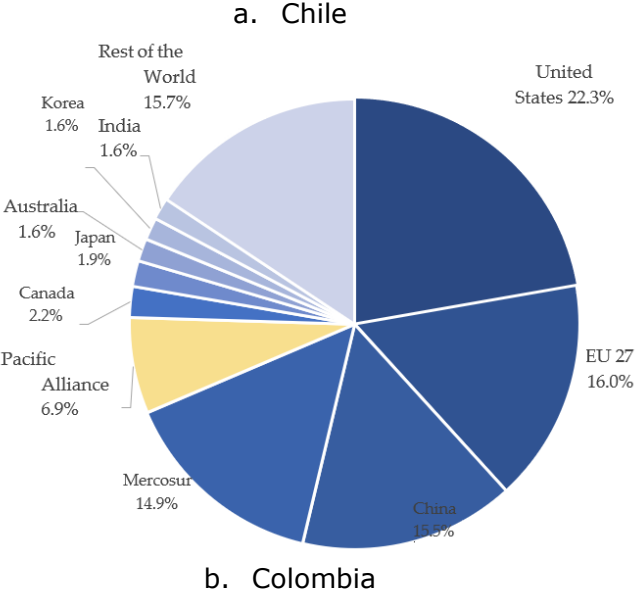
• Colombia VA has an important participation in Chilean and Peruvian exports.

• Mexican VA has a higher relative importance in Colombian exports.

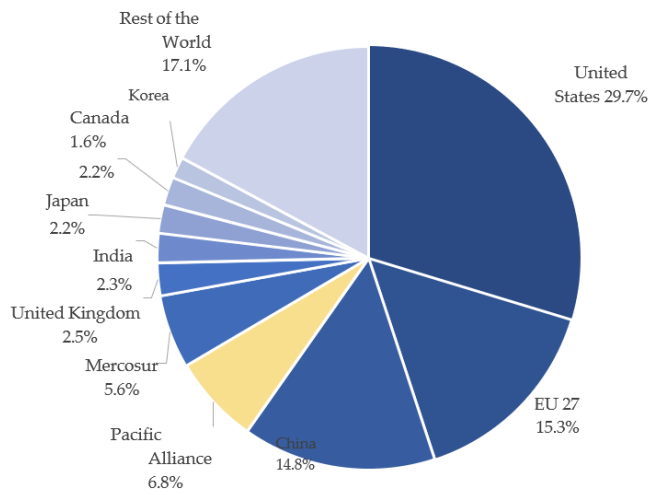• Chilean VA has a higher relative importance in Peruvian exports.

Furthermore, the result for Mexico deserves special attention. Although it is the PA country that incorporates the most foreign added value in its exports (backward linkages in GVCs), it is the one that has the lowest participation of VA coming from the PA economies contained in its exports. For example, 35% of foreign VA is incorporated into total exports and, of the latter, only 0.64% comes from the PA.

The composition by industry of origin of gross exports, domestic VA, and foreign VA shows that, for the foreign VA indicator, the manufacturing sector is the origin sector with major relative importance in all the countries, if the services sector is not considered. For the domestic VA indicator, the manufacturing sector is also the most important origin sector for Mexico. While for Chile, Peru, and Colombia it is the mining and quarrying sector (Graph 21). However, in Colombia, the participation of the manufacturing sector is not much lower in relative terms as it is in Chile and Peru.

In Graph 22, the foreign VA of each country is broken down into the countries of interest for this study and the industry of origin of the VA. The graph shows for Chile that the relative importance of the sectors the foreign VA embodied in its exports comes from is very similar to that of the main export sectors of the countries of origin. In contrast, for Colombia, the foreign VA of the manufacturing sector of Chile and Peru has a bigger relative importance than that of those sectors in Chile's exports. The same happens for the foreign VA that comes from Chile and is embodied into the exports of Mexico and Peru, which is mainly from the manufacturing sector.

Graph 14. Origin of Foreign VA Embodied in Gross Exports, 2020

a. Chile

b. Colombia

Rest of the World 17.1%
Korea 1.6%
Canada 2.2%
Japan 2.2%
India 2.3%
United Kingdom 2.5%
Mercosur 5.6%
Pacific Alliance 6.8%
China 14.8%
EU 27 15.3%
United States 29.7%

c. México

Pacific Alliance (18) 0.6%
India 1.4%
Malaysia 1.6%
Mercosur 1.6%
Canada 2.4%
Chinese Taipei 2.6%
Korea 4.3%
Japan 5.0%
EU 27 11.1%
China 22.7%
Rest of the World 11.0%
United States 36.3%

d. Peru

Rest of the World 16.2%
Russian Federation 1.4%
United Kingdom 1.5%
Canada 2.5%
Japan 2.6%
India 2.6%
Mercosur 6.9%
Pacific Alliance 8.1%
EU 27 11.6%
China 16.9%
United States 29.8%
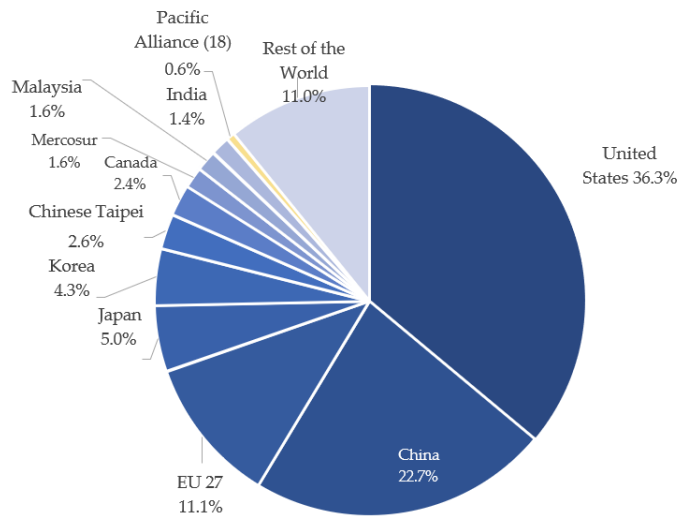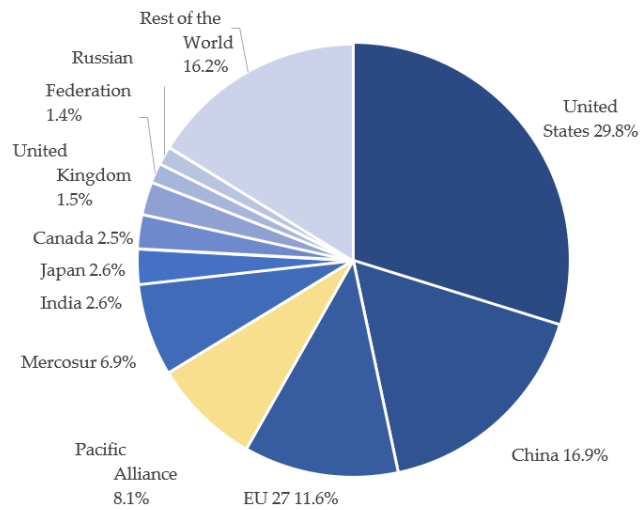
Graph 15. Share of foreign VA embodied in gross exports by exported economic activity, 2020
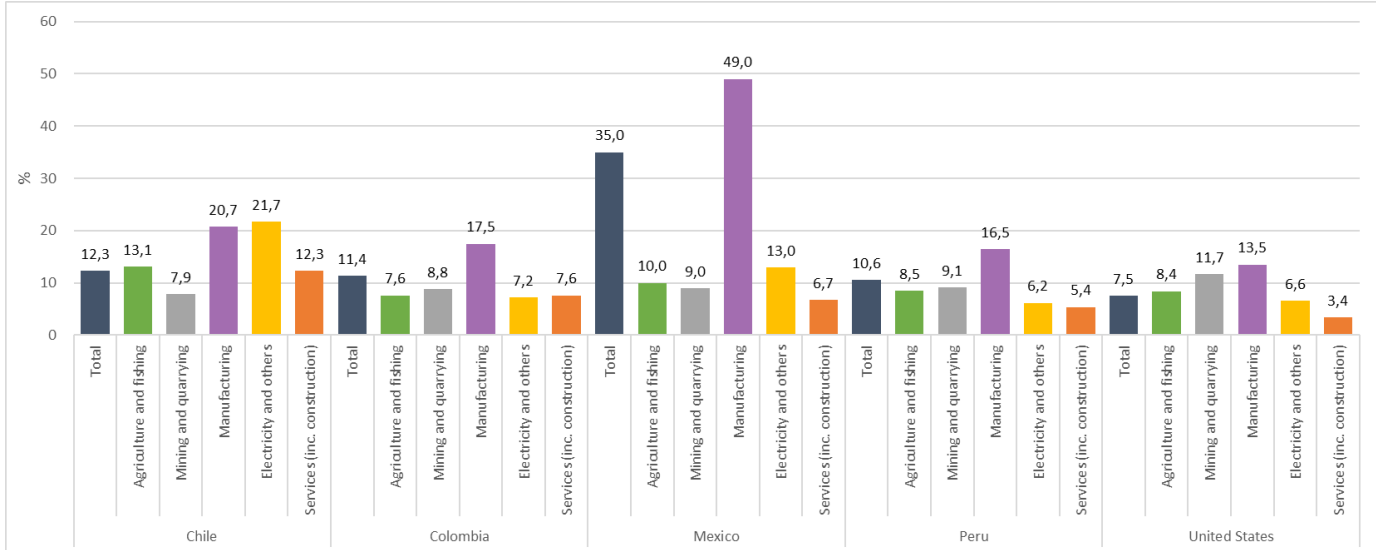
Note: Sectors based on ISIC Rev 4 classification.
Source: Authors calculation based on OECD Stat - TiVA 2023 ed.

Graph 16. Chile: Relationship Between Foreign VA Embodied in Gross Exports
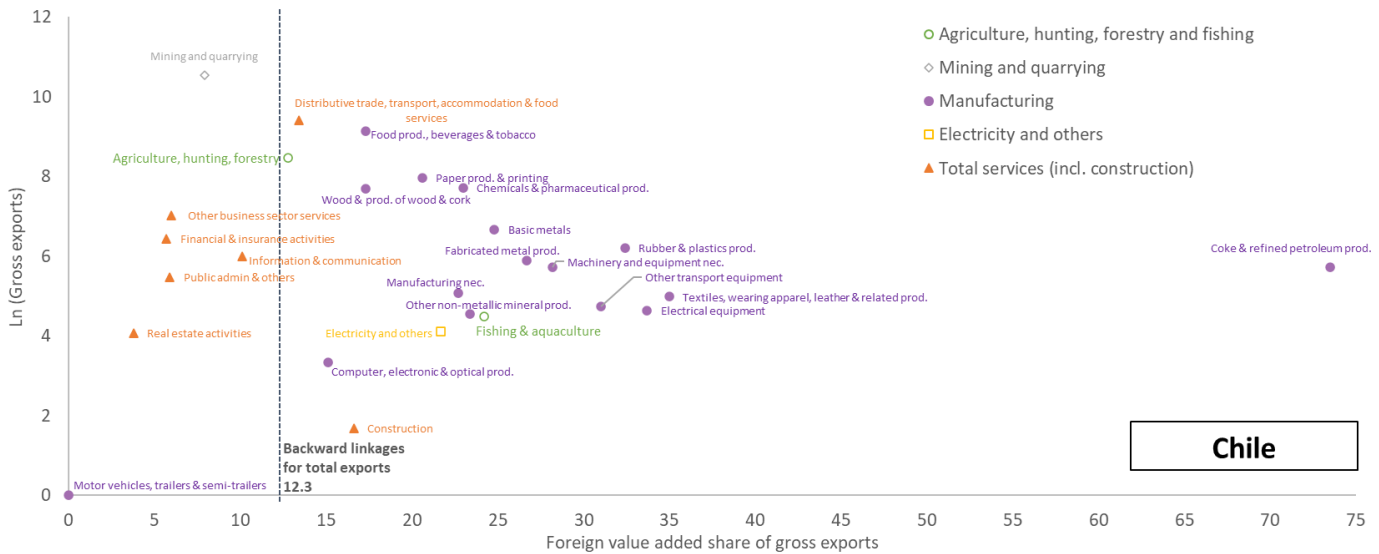
Note: Sectors based on ISIC Rev 4 classification.
Source: Author's calculation based on OECD Stat - TiVA 2023 edition.

Graph 17. Colombia: Relationship Between Foreign VA Embodied in Gross Exports

Note: Sectors based on ISIC Rev 4 classification.
Source: Author's calculation based on OECD Stat - TiVA 2023 edition.

Graph 18. Mexico: Relationship Between Foreign VA Embodied in Gross Exports with Exports, 2020
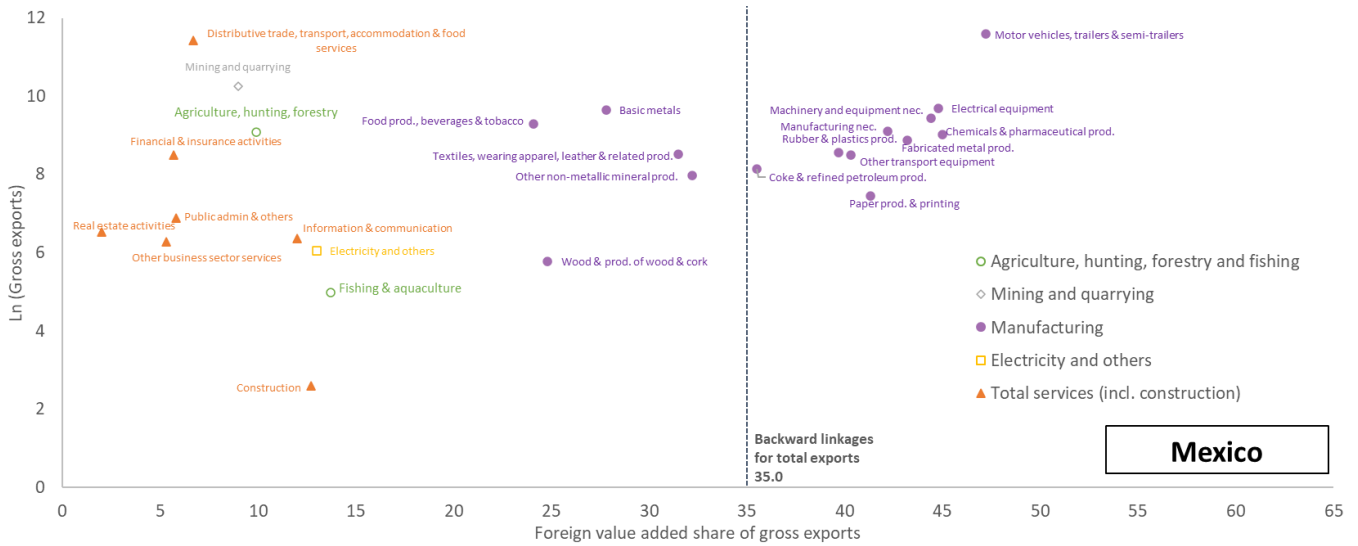
Note: Sectors based on ISIC Rev 4 classification.
Source: Author's calculation based on OECD Stat - TiVA 2023 edition.

Graph 19. Peru: Relationship Between Foreign VA Embodied in Gross Exports with Exports, 2020
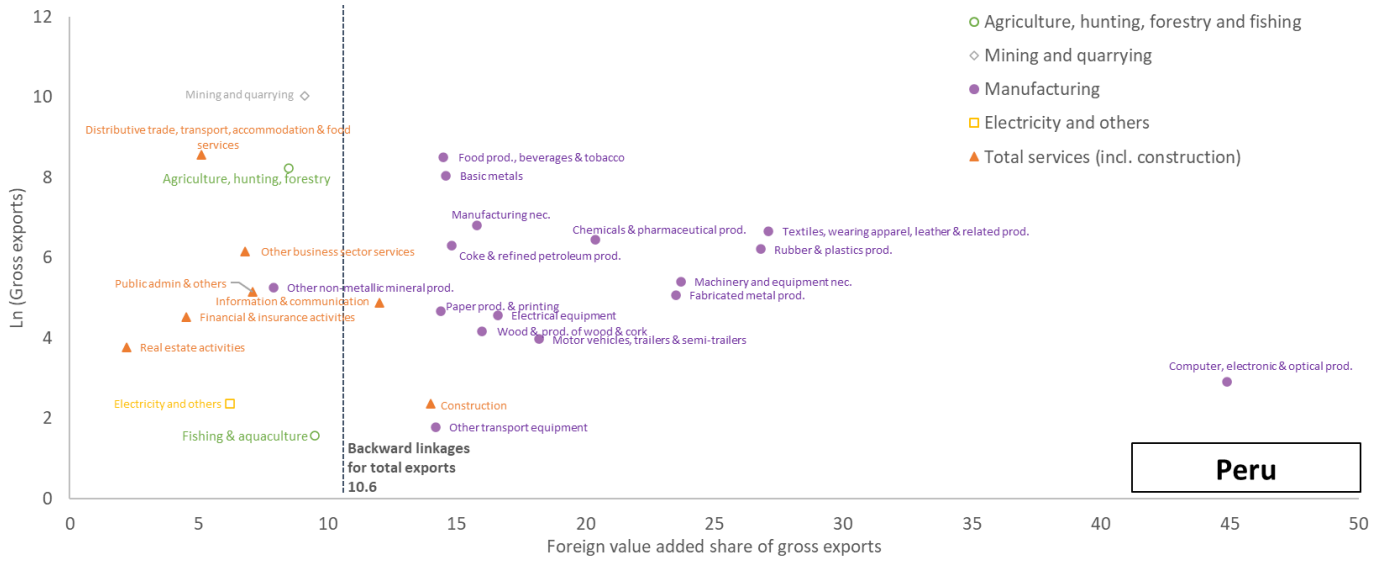
Note: Sectors based on ISIC Rev 4 classification.
Source: Author's calculation based on OECD Stat - TiVA 2023 edition

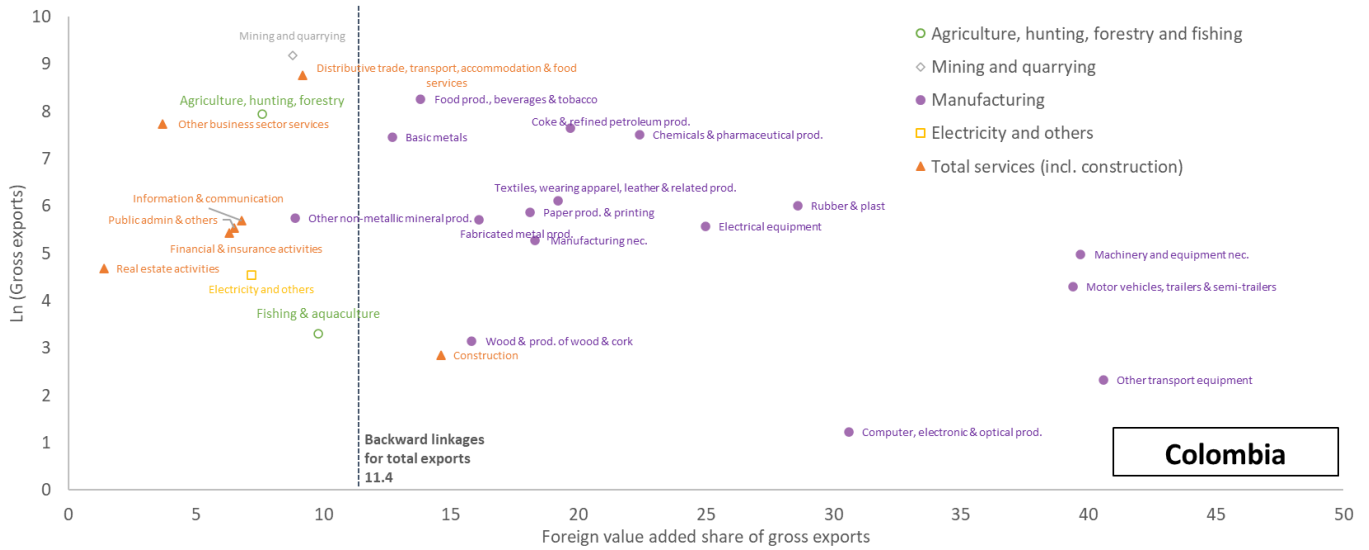**Graph 20. Foreign VA of PA Countries Embodied in the Exports of Each Country, 2020**

Graph 21. Composition of Gross Exports, Domestic and Foreign VA, According to the Industry of Origin of the VA, 2020

Graph (Industry origin of VA — Gross export, Domestic VA, Foreign VA, 2020)

Legend: Agriculture and fishing · Mining and quarrying · Manufacturing · Electricity and others · Services (inc. construction)

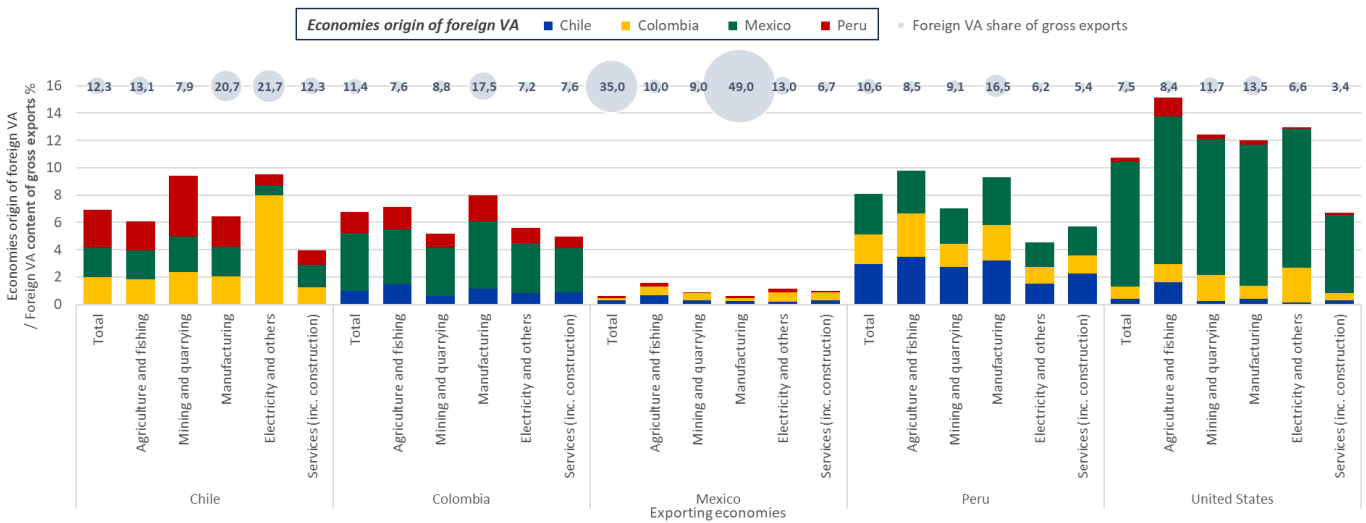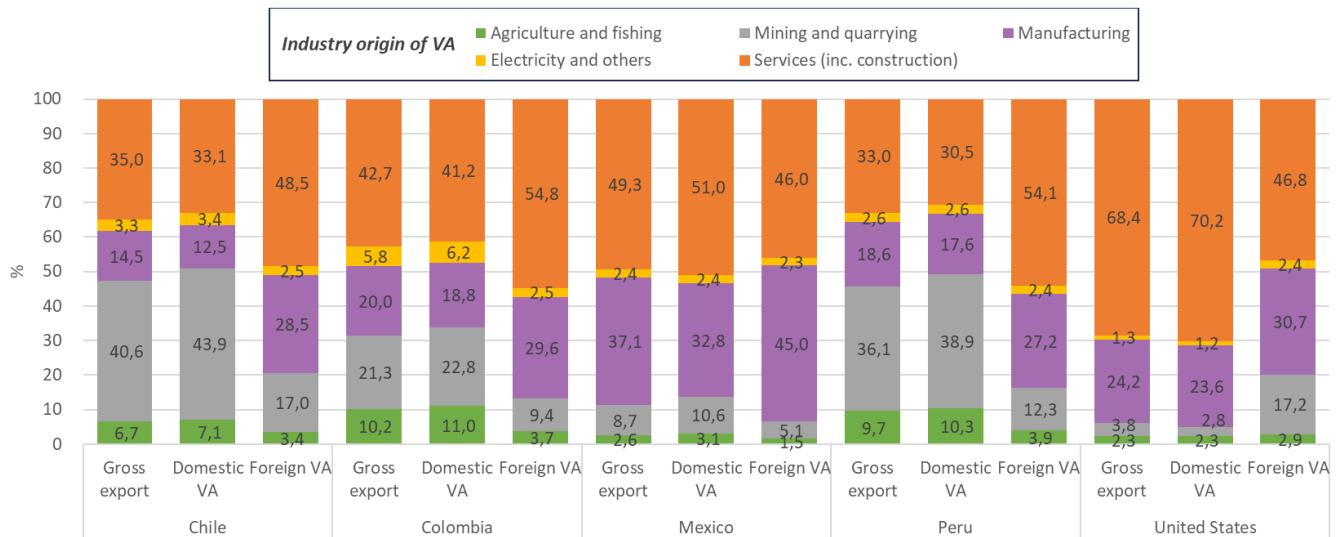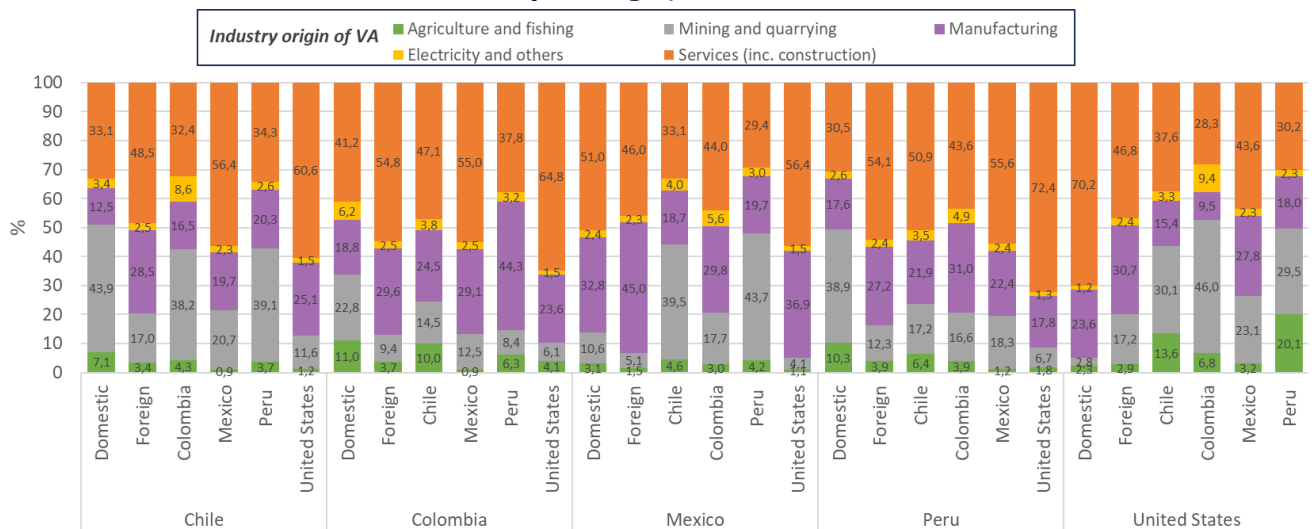| Industry origin of VA	Chile			Colombia			Mexico			Peru			United States		
	Gross export	Domestic VA	Foreign VA	Gross export	Domestic VA	Foreign VA	Gross export	Domestic VA	Foreign VA	Gross export	Domestic VA	Foreign VA	Gross export	Domestic VA	Foreign VA
Services (inc. construction)	35,0	33,1	48,5	42,7	41,2	54,8	49,3	51,0	46,0	33,0	30,5	54,1	68,4	70,2	46,8
Electricity and others	3,3	3,4	2,5	5,8	6,2	2,5	2,4	2,4	2,3	2,6	2,6	2,4	1,3	1,2	2,4
Manufacturing	14,5	12,5	28,5	20,0	18,8	29,6	37,1	32,8	45,0	18,6	17,6	27,2	24,2	23,6	30,7
Mining and quarrying	40,6	43,9	17,0	21,3	22,8	9,4	8,7	10,6	5,1	36,1	38,9	12,3	3,8	2,8	17,2
Agriculture and fishing	6,7	7,1	3,4	10,2	11,0	3,7	2,6	3,1	1,5	9,7	10,3	3,9	2,3	2,3	2,9

Note: Sectors based on ISIC Rev 4 classification.
Source: Author's calculation based on OECD Stat – TiVA 2023 edition

Graph 22. Composition of Foreign VA Coming from PA Countries, According to the Industry of Origin, 2020

Legend: Agriculture and fishing · Mining and quarrying · Manufacturing · Electricity and others · Services (inc. construction)

Chile

Industry origin of VA	Domestic	Foreign	Colombia	Mexico	Peru	United States
Services	33,1	48,5	32,4	56,4	34,3	60,6
Electricity	3,4	2,5	8,6	2,3	2,6	1,5
Manufacturing	12,5	28,5	38,2	19,7	20,3	25,1
Mining	43,9	17,0	16,5	20,7	39,1	11,6
Agriculture	7,1	3,4	4,3	0,9	3,7	1,2

Colombia

Industry origin of VA	Domestic	Foreign	Chile	Mexico	Peru	United States
Services	41,2	54,8	47,1	55,0	37,8	64,8
Electricity	6,2	2,5	3,8	2,5	3,2	1,5
Manufacturing	18,8	29,6	14,5	29,1	44,3	6,1
Mining	22,8	9,4	24,5	12,5	8,4	23,6
Agriculture	11,0	3,7	10,0	0,9	6,3	4,1

Mexico

Industry origin of VA	Domestic	Foreign	Chile	Colombia	Peru	United States
Services	51,0	46,0	33,1	44,0	29,4	56,4
Electricity	2,4	2,3	4,0	5,6	3,0	1,5
Manufacturing	32,8	45,0	18,7	29,8	43,7	36,9
Mining	10,6	5,1	39,5	17,7	19,7	4,1
Agriculture	3,1	1,5	4,6	3,0	4,2	1,1

Peru

Industry origin of VA	Domestic	Foreign	Chile	Colombia	Mexico	United States
Services	30,5	54,1	50,9	43,6	55,6	72,4
Electricity	2,6	2,4	3,5	4,9	2,4	1,3
Manufacturing	17,6	27,2	17,2	16,6	18,3	17,8
Mining	38,9	12,3	21,9	31,0	22,4	6,7
Agriculture	10,3	3,9	6,4	3,9	1,2	1,8

United States

Industry origin of VA	Domestic	Foreign	Chile	Colombia	Mexico	Peru
Services	70,2	46,8	37,6	43,6	28,3	30,2
Electricity	1,2	2,4	3,3	9,4	2,3	2,3
Manufacturing	23,6	30,7	15,4	9,5	27,8	18,0
Mining	2,8	17,2	30,1	46,0	23,1	29,5
Agriculture	2,3	2,9	13,6	6,8	3,2	20,1

Note: Sectors based on ISIC Rev 4 classification.
Source: Author's calculation based on OECD Stat – TiVA 2023 edition

Domestic value added embodied in foreign exports

The geographical destination of the domestic VA of the PA countries embodied in foreign exports for 2020 shows that, for Chile, the countries that most incorporated its VA were, in order of importance: China, the European Union, Japan, and South Korea. For Colombia, that group of countries is composed, in order of importance, by: the European Union, the United States, the PA, and China. For Mexico, the main countries that incorporate their VA in the exports they carry out are: the United States, the European Union, Canada, and China. As for Peru, that group of countries is composed of: China, the European Union, South Korea, and Japan. Regarding the participation of domestic VA in the exports of the PA countries, Colombia has the largest participation with 9.1%, followed by Peru with 4.5%, Chile with 3.4%, and Mexico with 1.1%, evidence of the

little importance of the PA in the insertion of its member countries in the RVCs (Graph 23).

The analysis of the domestic VA embodied in foreign exports by sector of origin shows that, in the four countries analyzed, the domestic VA mainly proceeds from the manufacturing sector. Of the PA countries, Mexico has a lower indicator in comparison to the other three countries (Graph 24). This result is consistent with the fact that Mexico exports a larger proportion of final goods while Chile, Colombia, and Peru export intermediate goods that are incorporated in the exports of their partner countries. But the interesting fact is that for these later countries, the manufacturing sector to a large extent makes it possible to export VA, when their exports are mainly of intermediate goods.

Products with potential for exports from an RVC of the PA countries to the U.S. market

Products with potential to form PA RVCS focused on exporting to the U.s. market

The study analyzed trade flows between the countries of the PA and the United States, identified sectors with the highest potential of relocation by U.S. companies, estimated indicators of trade complementarity, and analyzed secondary information about exporting potential. Additionally, manufacturing guilds were interviewed about the strategic potential of the identified products. To define the universe of analysis, four criteria were used: i) total exports of each PA superior to US$3 million; ii) the subheadings that were not exported from 2017 to 2019 were excluded (the years prior to the study); iii) the subheadings in which the U.S. imports from the world were inferior to US$5 million were excluded; and iv) the subheadings of PA countries in which the exports of each country have a participation in North American imports superior to 10% were excluded because they were considered products already consolidated in that market. From this exercise 369 subheadings for Chile, 428 for Colombia, 993 for Mexico, and 343 for Peru resulted.

Finally, from that set of products with potential, those with potential for diagonal origin cumulation were identified. Table 9 presents a summary by sections of the Harmonized System (HS) of the sectors to which the products identified at the subheading level belong. Eighty-one subheadings were identified. A higher number of products for the chains between Colombia, Mexico, and Peru and between Chile, Colombia, and Peru were identified. By sectors, the highest number of products with potential belongs to the sectors of: chemical products,[16] plastics and rubbers, and machinery and mechanical appliances. A challenge that this basket of products presents is the importance of products derived from hydrocarbons, which is why a more in-depth analysis on the challenges resulting from their carbon footprint is required.

However, as it was established in the interviews conducted for this study, the paralysis generated by the COVID-19 pandemic and the government changes in PA countries have affected the presentation and diffusion of this study. Naturally, this initiative also faces the slow progress of the objective of deepening trade ties between PA countries.

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[16] Chemical products include medicaments containing penicillin, corticosteroid hormones, fertilizers, dyes and pigments, soaps, cosmetic and personal care products, fungicides and herbicides, among others.
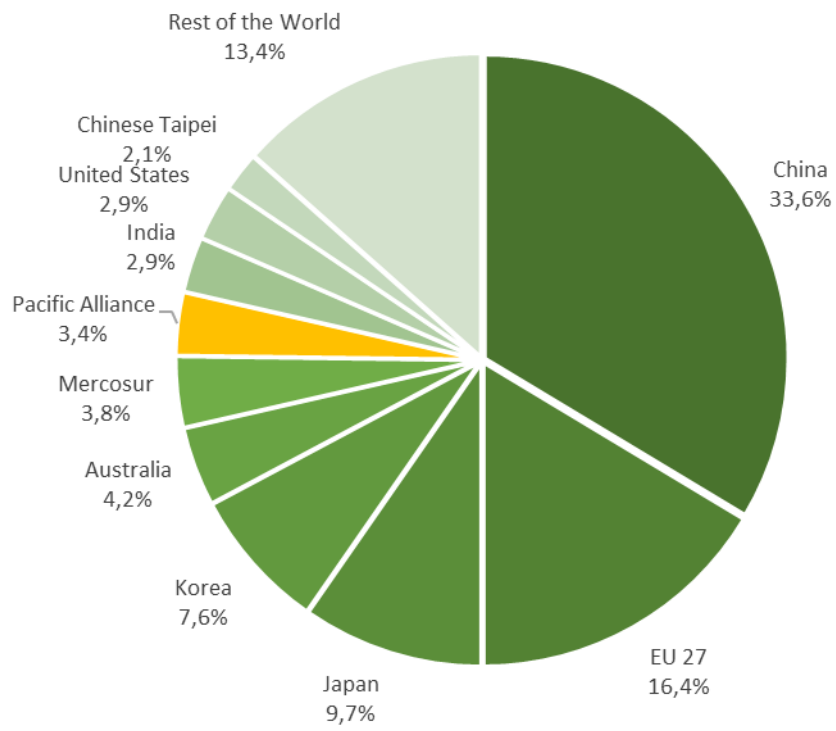
The impact of U.S. blocking of cotton imports from China on the PA

The U.S. government's announcement at the end of 2020 that it would block imports of cotton from China's western Xinjiang region generated great expectations in the international textile and clothing market about the change of U.S. imports sourcing. The trade policy measure responded to allegations of forced labor in that region from which most of the cotton grown by China originates. A year later the Uyghur Forced Labor Prevention Act (UFLPA) was passed, and goods made by firms outside the region, whose links with Xinjiang companies or the Xinjiang government make them complicit in forced labor practices, were also blocked.

This measure joined other initiatives proposed by the United States and by countries of the European Union to promote equitable international trade with sustainable GVCs that comply with human rights standards. In mid-2021, it was proposed in the U.S. Congress to establish a tariff based on countries' gas emissions, which could not only have an impact on China but also on emerging and less developed economies. At the same time, the European Union Commission approved a carbon adjustment tariff mechanism that will come into operation in 2026, which applies to all partner countries of the bloc and is in line with the bloc's growth strategy named the European Green Deal. In this sense, environmental factors such as the carbon footprint of productive sectors and others such as working conditions of workers were added to the determinants of competitiveness for international trade and, particularly, for value chains. All in all, the UFLPA opened a window of opportunity for new suppliers in the U.S. cotton textile and clothing chain, and the disruptions that the pandemic generated in the supply chains made that window more real. In this context, speculation about the possibility of a U.S. nearshoring process gained momentum.

Graph 23. Destination of Domestic VA Embodied in Foreign Exports, 2020 (Forward Participation in GVCs)

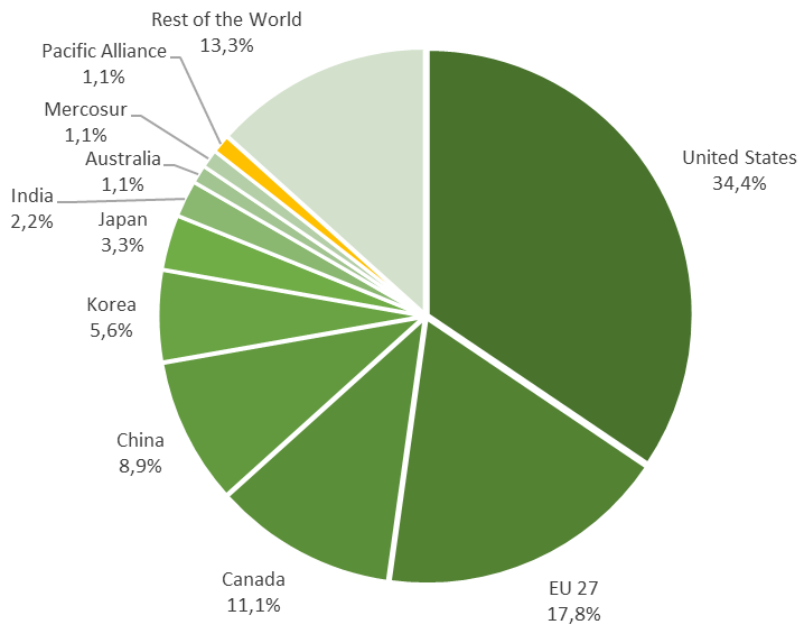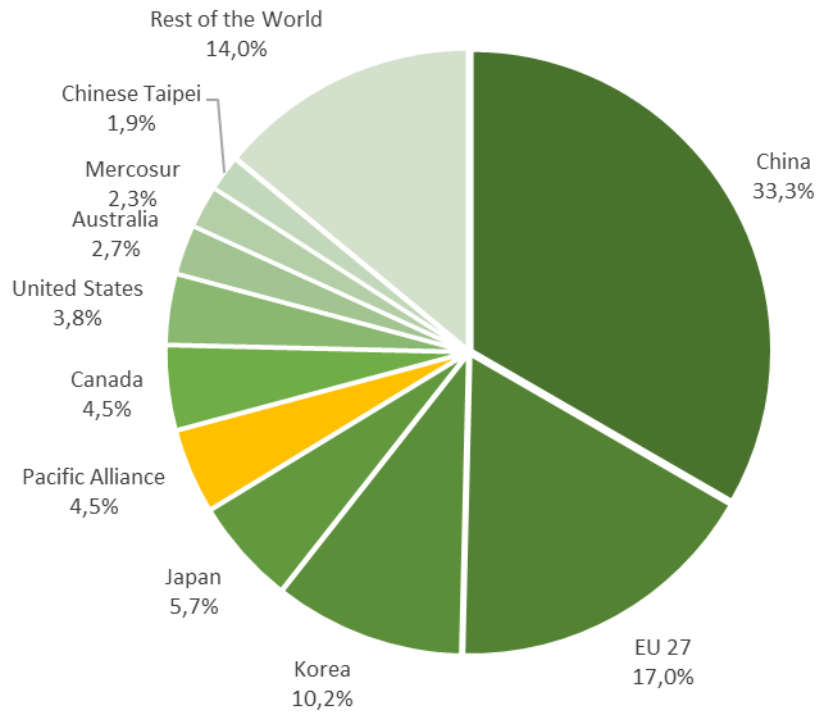## a. Chile

Rest of the World
13,4%

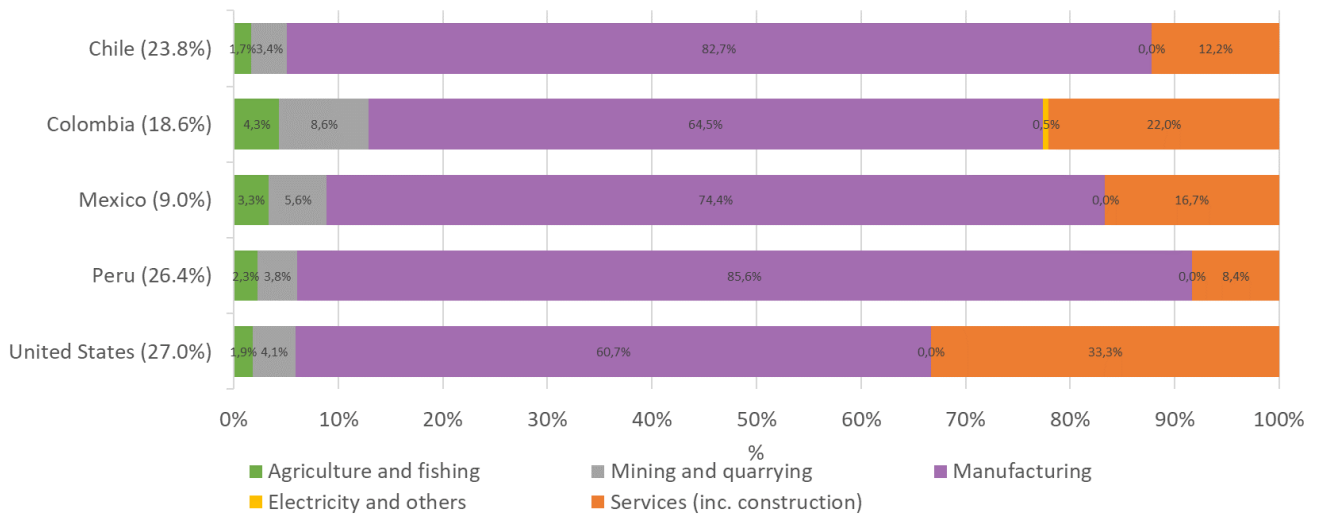Chinese Taipei
2,1%

United States
2,9%

India
2,9%

Pacific Alliance
3,4%

Mercosur
3,8%

Australia
4,2%

Korea
7,6%

Japan
9,7%

China
33,6%

EU 27
16,4%

b. Colombia

Rest of the World
19,9%

EU 27
25,3%

Chinese Taipei
1,6%

Singapore
2,2%

India
2,7%

Canada
3,2%

Korea
3,2%

Mercosur
5,4%

United States
19,9%

China
7,5%

Pacific Alliance
9,1%

c. Mexico

Rest of the World
13,3%

Pacific Alliance
1,1%

Mercosur
1,1%

Australia
1,1%

India
2,2%

Japan
3,3%

Korea
5,6%

United States
34,4%

China
8,9%

Canada
11,1%

EU 27
17,8%

d. Peru

Region	Percentage
China	33,3%
EU 27	17,0%
Rest of the World	14,0%
Korea	10,2%
Japan	5,7%
Pacific Alliance	4,5%
Canada	4,5%
United States	3,8%
Australia	2,7%
Mercosur	2,3%
Chinese Taipei	1,9%

Source: Author's calculation based on OECD Stat – TiVA 2023 edition

Graph 24. Composition of Domestic VA in Foreign Exports by Exported Economic Activity, 2020

Country	Agriculture and fishing	Mining and quarrying	Manufacturing	Electricity and others	Services (inc. construction)
Chile (23.8%)	1,7%	3,4%	82,7%	0,0%	12,2%
Colombia (18.6%)	4,3%	8,6%	64,5%	0,5%	22,0%
Mexico (9.0%)	3,3%	5,6%	74,4%	0,0%	16,7%
Peru (26.4%)	2,3%	3,8%	85,6%	0,0%	8,4%
United States (27.0%)	1,9%	4,1%	60,7%	0,0%	33,3%

Note: In parentheses forward linkages. Sectors based on ISIC Rev 4 classification.
Source: Author's calculation based on OECD Stat - TiVA 2023 edition

Within the PA, for Colombia, Mexico, and Peru, the U.S. market has been an important export destination for textile and clothing products. The TiVA analysis shows that Colombia and Peru are among the group of countries with the highest participation of domestic VA in exports of textiles, wearing apparel, leather and related products (D13T15), with levels higher than the world average (Graph 25). However, China and the United States are also included in that group, which explains why these industrial sectors are among those with the longest tariff reduction periods and strict rules of origin in most countries.

Graph 26 gives clues about different insertion models of these countries in the international market. For the 76 countries considered, the relationship between exports of textiles, wearing apparel, leather and related products, and the foreign added value incorporated in exports is negative.

However, countries like Chile, the United States, and China are at opposite extremes. The first has a lower level of exports than other PA countries with a higher foreign VA participation embodied in its exports. For their part, China and the United States have a low participation of foreign VA in its exports and the highest level of exports. Peru and Colombia are in the middle, in terms of exports, but have lower foreign VA levels in exports than Chile and Mexico. The latter has a higher level of foreign VA in its exports than China and a higher level of exports than the rest of PA countries.

The analysis of the countries of origin of foreign VA incorporated in the exports of textiles, wearing apparel, leather, and related products of PA countries shows that China, the United States, and the EU are the main suppliers of products, with the exception of Peru whose second supplier by foreign VA is India (Graph 27).

If the participation of the VA coming from PA countries incorporated into the exports of textiles, wearing apparel, and leather of each of the countries is analyzed, it is evident that: i) only Mexico has a significant presence in the United States; ii) in Chile, PA countries have a similar relative importance although that of Peru is more important; iii) in Colombia, Mexico is the one that generates the most VA of PA countries to exports; iv) in Peru, the VA from Chile has greater relative importance, followed by Mexico and Colombia; and v) finally, in the case of Mexico none of the PA countries has a significant participation in the foreign VA incorporated in exports and is one of the countries with the highest participation of foreign added value in its total exports of textiles, wearing apparel, and leather (31.5%), on par with Chile (35.0%) (Graph 28).

To have a vision of the opportunities to participate in a possible nearshoring process, some exporting business people in the textile and clothing sector were interviewed in Colombia. This conversation allowed us to identify some key insights for the analysis.

- The production capacity in Latin America only allows in the short term to transfer a low percentage of sourcing from Asia (approximately 20%, according to some estimates).
- As for many sectors in the region, in the textile and clothing sector there are no consolidated RVCs, except for the production chains that the United States has developed within the framework of CAFTA based on U.S. cotton. Over 70% of U.S. cotton product exports—mainly yarn and fabric—go to Honduras, the Dominican Republic, and Mexico for further processing before many of the finished products return to the United States.[17]
- Origin cumulation would be the fastest way to form an RVC and supply the United States market, but the adoption of this mechanism depends on a

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[17] USDA (2021)

negotiation with that country, because it is not considered in any of the bilateral trade agreements signed with countries in the region. Furthermore, there is a new challenge for this negotiation if Mexico is included, due to the triangulation risks that may arise from Chinese investment in that country.

- Creating an RVC for the textile and clothing sector with a U.S. cotton supply would allow all links in the chain to guarantee cotton supply and traceability to respond to trade measures related to sustainability and human rights. However, another strategy could be to promote cotton production in countries such as Colombia and Peru, which would make them competitive as suppliers, due to reducing the impact of the carbon footprint by eliminating the transportation of raw materials. Transportation and energy account for 75%of greenhouse-gas emissions related to international trade, and long-distance imports can generate ten times the emissions of products manufactured in North America.[18] But if cumulation of origin is not adopted, this strategy would end up promoting bilateral trade with the United States and not intraregional trade. Furthermore, the clothing and textile sectors of Colombia and Peru would only be competitive in the production niche of high-priced, high-value-added clothing, due to high labor and freight costs.

In this post-pandemic scenario, the textile and clothing sector is one of the cases in which it would be important to implement a public policy that complements the work that firms are doing to face stricter environmental, social, and governance (ESG) **standards and to develop new competitiveness factors.**[19]

Table 9. Products with Potential for Diagonal Origin Cumulation (Number of Subheadings HS-6)

	Sections HS	Chile-Colombia-Mexico	Chile-Colombia-Peru	Chile-Mexico-Peru	Colombia-Mexico-Peru
I	Live Animals & Animal Products				
II	Vegetable Products				
III	Animal or Vegetable Fats				
IV	Prepared Foodstuffs	1	4	1	1
V	Mineral Products	1			1
VI	Chemical Products	6	2	1	4
VII	Plastics & Ruber	2	4	2	6
VIII	Hides & Skins				
IX	Wood & Wood Products	1			
X	Wood Pulp Products		5		1
XI	Textiles & Textile Articles		2		5
XII	Footwear, Headgear				1
XIII	Articles of Stone, Plaster, Cement, Asbestos,				
XIV	Pearls, Precious or Semi-Precious Stones, Metals				1
XV	Base Metals & Articles of Base Metal	1	3	2	1
XVI	Machinery & Mechanical Appliances	1	5	6	1
XVII	Vehicles & Transport Equipment	1			1
XVIII	Instruments - Measuring, Musical				
XIX	Arms & Ammunition				
XX	Miscellaneous	2	1		4
XXI	Works Of Art				

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[18] McKinsey & Company (2022)

[19] On the subject see Fernández-Stark et.al. (2022)

Graph 25. Domestic and Foreign VA Embodied in Exports of Textiles, Wearing Apparel, Leather and Related Products, 2020
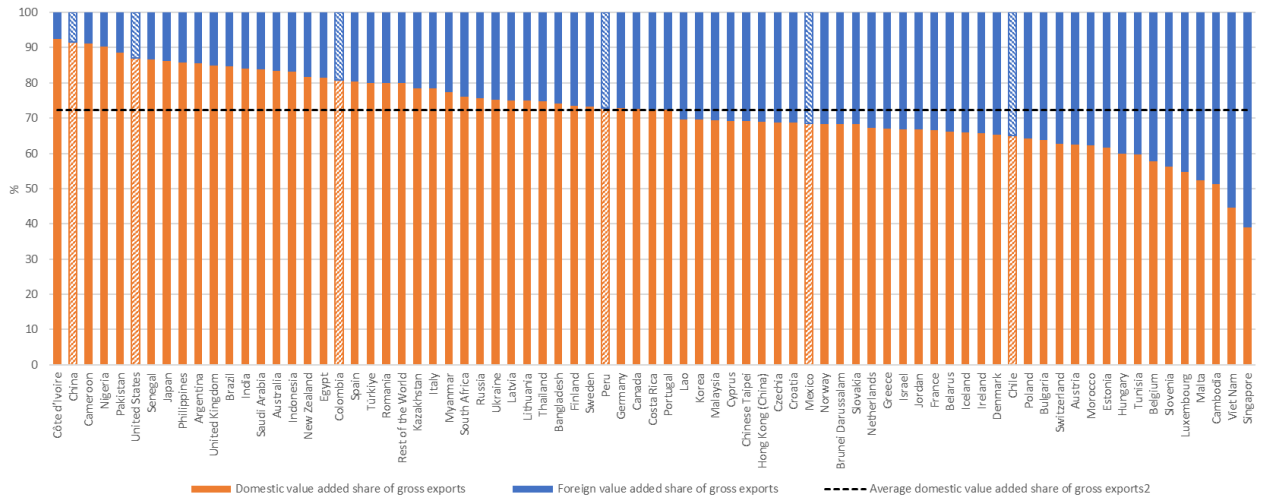
Note: Data for 76 economies plus an aggregate representing "Rest of the world". Source: Authors' calculation based on OECD. Stat - TiVA 2023 edition

Graph 26. Relationship Between Foreign VA Embodied in Exports of Textiles, Wearing Apparel, Leather and Related Products Exports as Percent of GDP, 2020
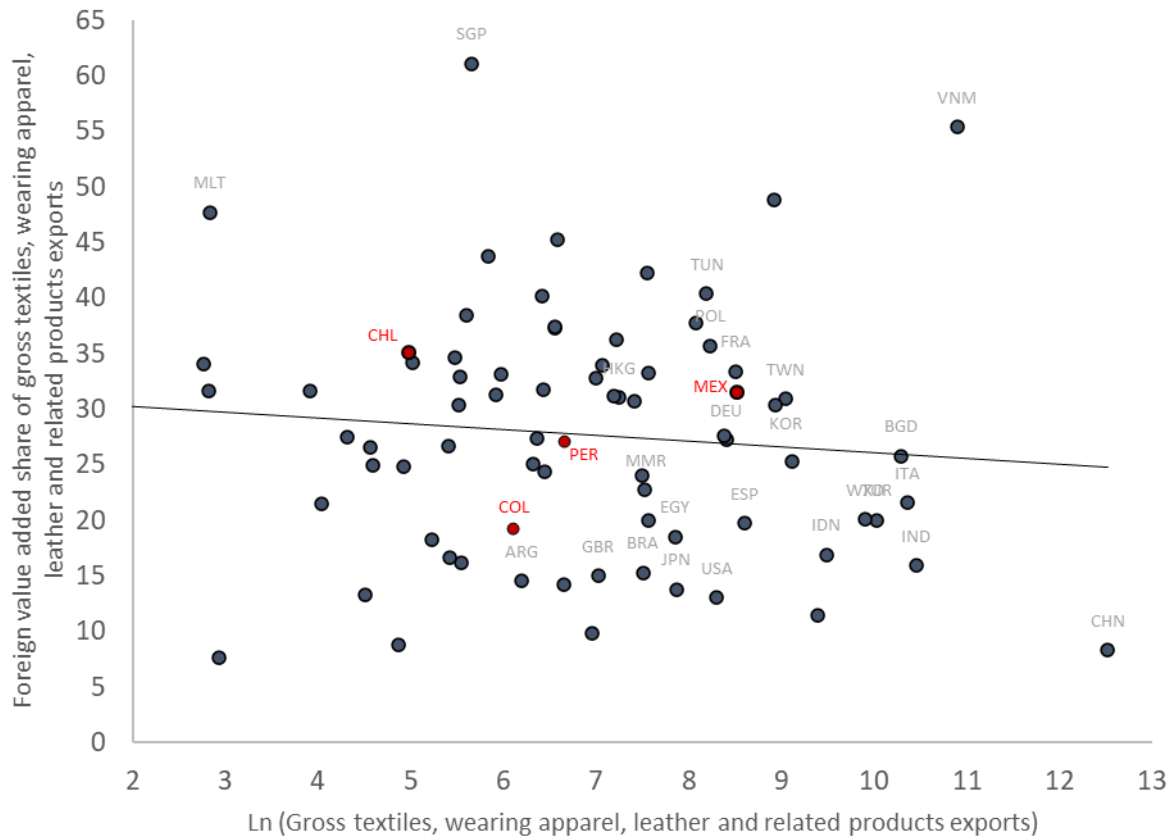
Note: Data for 76 economies plus an aggregate representing "Rest of the world". Source: Authors' calculation based on OECD. Stat - TiVA 2023 edition

Challenges to deepen PA integration

This section is based on the analysis of the trade structure and of the insertion model in GVCs that were presented earlier, the revision of secondary sources on the subject, and on the interviews that have been conducted for this study with guild representatives, business people, and government officials. It should be noted that the interviews could only be done for Chile and Colombia.

The main challenges identified to promote the development of RVCs among PA countries are presented below.

Historically, the Latin American industrialization and exporting models were not oriented towards the development of regional production chains.

The Latin American industrialization and exporting models have profound differences with the model of Asian countries that adopted an approach for insertion in GVCs that in its beginnings prioritized the development of sectors in which backward linkages were imp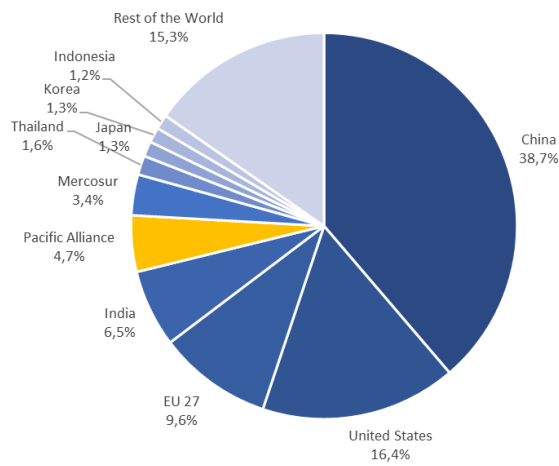ortant. In such a manner, those countriesGraph 27. Origin of Foreign VA Embodied in Gross Exports of Textiles, Wearing Apparel, Leather, and Related Products 2020
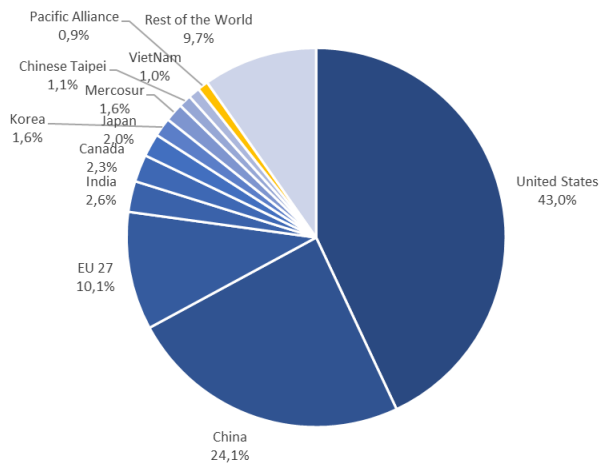
Graph 27. Origin of foreign VA embodied in gross exports of textiles, wearing apparel, leather and related products 2020
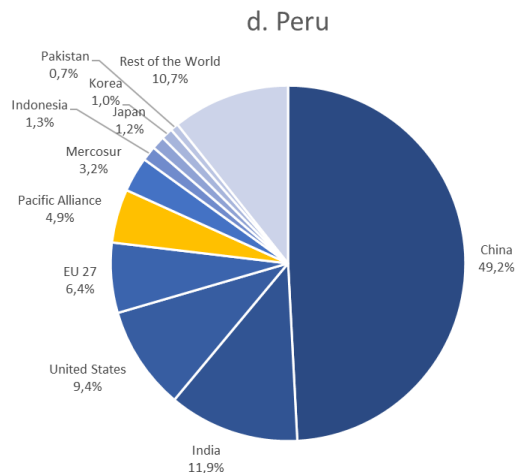
a. Chile

China 46,3%
Rest of the World 12,1%
VietNam 1,2%
Pakistan 1,2%
Japan 1,2%
Korea 1,3%
Pacific Alliance 3,5%
India 6,4%
Mercosur 6,8%
United States 9,9%
EU 27 10,1%

b. Colombia

Rest of the World 15,3%
Indonesia 1,2%
Korea 1,3%
Thailand 1,6%
Japan 1,3%
Mercosur 3,4%
Pacific Alliance 4,7%
India 6,5%
EU 27 9,6%
United States 16,4%
China 38,7%

c. Mexico

Pacific Alliance 0,9%
Rest of the World 9,7%
Chinese Taipei 1,1%
VietNam 1,0%
Mercosur 1,6%
Korea 1,6%
Japan 2,0%
Canada 2,3%
India 2,6%
EU 27 10,1%
United States 43,0%
China 24,1%

d. Peru

Note. PA includes: Chile, Colombia, México and Perú. Mercosur includes: Argentina and Brazil. Data for 76 economies (Paraguay and Uruguay not included).
Source: Authors' calculation based on OECD. Stat - TiVA 2023 edition.

Graph 28. Participation of PA Countries in Foreign VA Embodied in Gross Exports of Textiles, Wearing Apparel, Leather and Related Products of PA Countries, 2020
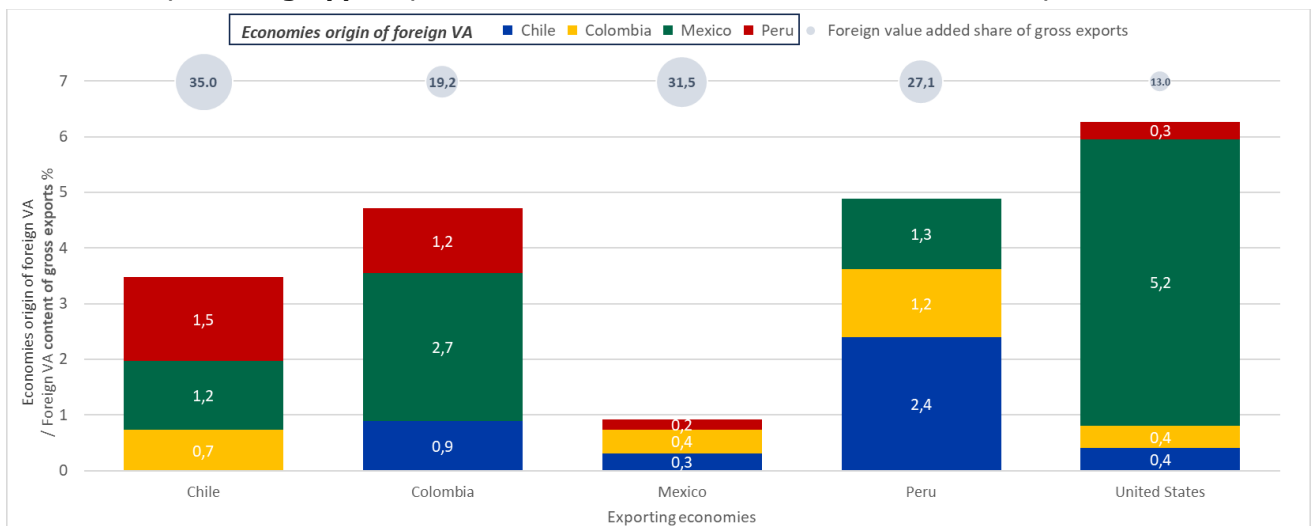
Source: Authors' calculation based on OECD Stat - TiVA 2023 edition.

were able to take advantage of the competitive advantages that the low cost of labor gave them to boost their exports to the world and to boost RVCs. In contrast, Latin American countries developed their exports around primary products. Only since the 1990s, with economic opening and the trade integration strategy, some have managed to diversify their exports and join GVCs. The development of RVCs has been limited to the cases of Mercosur and the USMCA in which Brazil and Mexico have been the protagonists, respectively. The rest of Latin America exports have a low level of interregional trade.

Moreover, the region is virtually apart from any factory associated with a GVC, unlike Europe led by Germany, the USMCA led by the United States, and Asia led by China.[20]

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[20] Technical group on global value chains and productive chains of the APP (2019).

As might be expected, this model has gone against the diversification of exports. **The development of industries in Asian countries was turning towards strengthening forward linkages in their exports with products with greater added value.** To illustrate, China, which initially focused on a development strategy based on export industries intensive in natural resources and cheap labor was able to become an upper- middle-income country and adopt a strategy focused on industries and services with greater added value, with an emphasis on technology. Prieto (2018) and Asian Development Bank (2023) highlight that in ASEAN, small and medium size enterprises (SME) export goods have high levels of forward linkages and have an important participation in the indirect domestic VA that incorporates itself in the exports.

The Asian exporting model has allowed SMEs to import inputs with high foreign VA to produce intermediate goods with higher domestic VA and to improve their forward linkages with exports that have a higher VA.

All of the above has determined the way trade integration is viewed by both policy makers and the private sector; therefore, a paradigm shift is required.

The rules of origin of trade agreements (extra and intraregional) negotiated by Latin American countries do not have an approach that seeks to promote productive chains.

In fact, Cadestin et. al. (2016) estimates that the rules of origin in the Latin American trade agreements undo more than 15% of the positive trade effects of these agreements, particularly for intermediate products (30%).[21]However, it is important to note that this approach was not proposed by trading partners outside the region, such as the United States, the European Union, and Asian countries, in the trade integration initiatives that were implemented starting in the 1990s. This topic constitutes a key aspect in any new trade conversation in which the potential of productive value chains is considered.

Latin American countries need to continue strengthening their competitiveness agenda to be able to take advantage of the recent processes of industrial relocation and incorporate into that agenda new trade issues such as the energy transition, the reduction of greenhouse gas emissions in production processes, and human rights.

Still, after more than three decades of economic openness and the search for better insertion of the countries of the region in the international market, costs associated to trade (tariffs, trade facilitation mechanisms, and logistic and transportation costs) do not favor intraregional nor extraregional trade.[22] Besides, policies and initiatives to improve productivity, conditions for attracting FDI, physical and digital infrastructure, and access to credit especially for SMEs are complements of any strategy to strengthen productive value chains.

As pointed out by Pérez et.al. (2021), the acceleration of the energy transition will allow the countries of the region to support actions that reduce the amount of greenhouse gas emissions because these countries have important comparative advantages due to the availability of natural resources for biomass, wind, and solar energy production. This strategy will not only improve its competitive profile but can create conditions in the region to develop a productive chain for the provision of renewable energy technology and equipment (Ibid).

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[21] Cadestin et. al. (2016)

[22] See CAF (2022), Hallak and López (2022) and Fernández-Stark et.al. (2022)

Finally, regarding the possibility of promoting the development of an RVC between PA countries so that Mexico becomes a platform of the countries to export to the U.S. market, the following challenges are identified.

The political and economic context has not been adequate for the progress of the intra PA integration. Therefore, it is necessary to have conditions to move in that direction.

The PA trade agreement entered into force when voices against economic opening and globalization, both regionally and globally, began to strengthen. Since 2016, a rethinking of trade integration policy has been the subject of most political campaigns in the Western Hemisphere. In some cases, the promise to review the commitments acquired in the trade agreements signed within the framework of the open integration strategy that was raised in the 1990s, and in others a policy of exploitation of existing agreements over the realization of new trade negotiations was prioritized. This tendency is evident in government plans of the presidents of the four countries of the PA at the time of preparation of this study. The most protectionist visions discouraged the FDI attraction, which is one of the main determinants of the emergence of GVCs or RVCs.

The possibility that, in the PA, Mexico will become a platform for bloc exports to the U.S. market requires a significant public-private coordination effort to identify key policy initiatives for the process.

These initiatives include: i) the formulation of a foreign policy with clear objectives towards the Western Hemisphere, which at this time is not evident in any of the PA countries, both towards the countries

of Latin America and the United States, and towards China;[23] ii) the strengthening of the agenda to improve competitiveness conditions that facilitate insertion into GVCs or RVCs (to improve productivity, conditions for attracting FDI, physical and digital infrastructure, and reduce costs associated to trade); iii) the design of an agenda to work on new trade topics (carbon footprint reduction) and the exploitation of competitiveness factors such as cleaner energy matrices. In the PA, Chile and Colombia have advantages in this regard; and iv) the control of corruption that generates costs and large losses in efficiency.

But these policy interventions must consider the lessons learned from previous policies to support internationalization that have not had the expected impacts due to failures in design and implementation or due to poor risk assessment, such as capture by private or political actors.[24]

In the interviews carried out for this study, no concrete initiatives for the formation of productive chains between PA countries are being implemented or could be identified. Although, some guilds and business people have carried out prospective studies and analysis with that objective. As previously mentioned,

in 2021 the CEAP promoted the realization of a study with the objective of identifying products with potential of production through RVCs in response to the conversation about the rearrangements of GVCs. In the same line, the textile and clothing chain in

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[23] Latin America is the geographical area where there are the most countries in which "one China" is not recognized, and Taiwan is recognized as a sovereign state. However, China has framed its relationship with Latin America within a pragmatic approach that contemplates three categories in order of importance: strategic partner, cooperative partner, and friendly cooperative relations. The category of strategic partner is held by countries interested in deepening their relationship with China on economic, trade, cultural, and coordination issues on climate change and food security, among others. Chile, Mexico and Peru have comprehensive strategic partnerships with China.

[24] See Hallak and Lòpez (2022)

Colombia are seeking to create conditions for the relocation of the cotton value chain that the United States had in Asia. However, this initiative does not prioritize an RVC approach.

All in all, it is important to note that in the interviews some private actors expressed doubts about what Mexico's incentive could be to promote an RVC with its partners in the PA, given the position it has consolidated as a supplier to the United States and the recent growing influx of investments from China in its territory to use it as an export platform to the hemisphere.

Lastly, the importance that the acceleration of digital and energy transformations has acquired, especially in the post-pandemic period, poses for both policymakers and the private sector of PA countries the challenge of promoting opportunities for the development of value chains related to issues of provision of digital services (including financial services) and products and services related to the sustainable use of biodiversity and renewable energies.[25]

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[25] For Colombia see BID, Biointropic y Corporación Biocomercio Sostenible (2022) Plan Nacional de Negocios Verdes 2022-2030. Ministerio de Ambiente y Desarrollo Sostenible, Colombia.

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About the project

The Georgetown Americas Institute's Latin America in the Global Economy (LAGE) program is a multiyear initiative to advance research and promote dialogue within the academy and with governments, the private sector, and civil society around the most critical economic challenges facing the region. A critical focus will be the emerging position of Latin America and the Caribbean (LAC) in a new global economic trade architecture characterized by deep structural changes.

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