



The role of intra-regional trade in the Pacific Alliance's integration into Asia-Pacific

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Abstract

One of the objectives of the Pacific Alliance is trade integration orientated towards Asia-Pacific; However, the integration of the bloc's members into that region's markets is circumscribed by their low levels of intra-regional trade and their limited export diversification. On this basis, this research seeks to explain the extent to which the intra-regional trade of the Pacific Alliance affects its inclusion in the Asia-Pacific markets. The methodology research is explanatory. Indicators of economic interdependence are analyzed to observe the degree of intra-regional trade within the alliance and in other Asia-Pacific regions, as well the technological content of each member's export basket. The results show that while the Pacific Alliance's trade has an extra-regional bias and its exports are tending towards reprimarization, this has not been an impediment to the objective of inclusion in international markets with an orientation towards Asia-Pacific as the bloc's trade bias towards that region has increased.

KEYWORDS: intra-regional trade, Pacific Alliance.



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Resumen

Un de los objetivos de la Alianza del Pacífico es la integración comercial Asia-Pacífico; sin embargo, la integración de los miembros de cada bloque a los mercados regionales está circunscrita por sus bajos niveles de comercio intrarregional y una limitada diversificación de sus exportaciones. Bajo dicho escenario, esta investigación busca explicar en qué medida el comercio intrarregional de la Alianza del Pacífico afecta su inclusión en los mercados de Asia-Pacífico. La metodología de investigación es explicativa. Se analizan indicadores de interdependencia económica para observar el nivel de comercio intrarregional dentro de la Alianza y con otras regiones de Asia-Pacífico, así como el contenido tecnológico en la canasta de exportación de cada miembro. Los resultados muestran que el comercio de la Alianza del Pacífico posee un sesgo extrarregional y que apuntan a la reprimarización de sus exportaciones; sin embargo, esto no ha sido impedimento para su inclusión objetiva a mercados internacionales con una orientación a Asia-Pacífico, dado un incremento del sesgo comercial del bloque hacia esta región.

Introduction

With the Declaration of Lima, in 2011 a new integration mechanism emerged in the Latin American region: the Pacific Alliance. Its members are Chile, Colombia, Mexico, and Peru. The bloc constitutes the world's eighth biggest economy, and its outstanding aim is to "become a platform of policy articulation, economic and commercial integration, and global projection, with emphasis on the Asia-Pacific region" (Abusada-Salah, Acevedo, Aichele, Felbermayr & Roldán-Pérez, 2018).

As part of its integration process into the markets of Asia-Pacific, it is important for the alliance to increase its intra-regional trade levels and diversify its exports, especially among members, to promote potential development and participation in regional value chains.

The main aim of this study is to determine the level of influence that the Pacific Alliance's intraregional trade has on its integration into the Asia-Pacific markets. Based on a review of the literature as well as data processing and analysis, the following hypotheses are proposed:

- The Pacific Alliance's intra-regional trade is low and outward-facing, while its members' exports tend towards reprimarization.
- The low levels of intra-regional trade and export diversification have a negative impact on the formation of and participation in regional value chains.
- The negative impact on the formation of and the participation in regional value chains has repercussions on the Pacific Alliance's integration into Asia-Pacific markets.

The importance of this study lies in the empirical evidence it contributes on the level of intraregional trade between the Pacific Alliance and its integration into Asia-Pacific, which allows for an evaluation of whether the alliance is achieving its aim of projecting itself onto a world increasingly focused on this region.

This study is organized into five sections. The first section presents a literature review. The second section describes the methodology employed. Then, the third section sets out the results. The fourth section continues by explaining these findings. The fifth section outlines the conclusions. Finally, the sixth section addresses the limitations and some guidelines for future research.

Literature review

The Pacific Alliance (PA) arose in a context of global economic transition towards a multipolar world in which East Asia, led by China and Japan, has acquired a larger economic role. The alliance constitutes an area of deep integration in which the members' pre-existing agreements have been harmonized, giving rise to a common platform oriented towards Asia-Pacific (Novak & Namihas, 2015).

In this sense, there is consensus that the increase in intra-regional trade afforded by the trade facilitation measures among members can lead to higher standards of living for the populations concerned (Márquez, 2015, p. 72).

However, the PA, in its attempts to strengthen ties with Asia-Pacific, has relegated the links between members of its own bloc (Lejárraga, 2019). Indeed, intra-regional trade accounts for just 3.2% of all its members' exports. This has nothing to do with any trade barriers between them; rather, it is because these countries are not natural partners (Durán & Cracau, 2016, p. 11). Therefore, the PA must, at least to some extent, close the current gap and promote deeper economic ties between the two regions to promote the integration of businesses based in member countries into international markets (Cracau & Lima, 2019, p. 57).

As a peculiarity of the PA when it comes to Latin American regionalism, Iapadre (2004) identified the lack of geographical continuity between the founder countries. Marchini (2019) stated that the members share an "outward-facing" growth strategy marked by trade and financial openness with partners increasingly located outside the Americas—not least in Asia-Pacific.

Beteta (2020) remarked that greater intra-regional trade enables export diversification and promotes the creation of plurinational productive linkages. Therefore, it is important to stress that to become a platform of economic integration with Asia-Pacific—one of the PA's key objectives—it must develop a major intra-regional trade structure, primarily for intermediate projects (Lejárraga, 2019, p. 85).

With regard to the role of the PA in intra-regional trade, Echebarría et al. (2014), cited in Marchini (2019), proposed that the alliance must stand out "as a contribution to open and non-exclusive Latin American integration, [...] by conceiving its strategic position as an asset in order to assure all countries in the continent of a solid orientation towards regional dynamism." A key element of these proposals is the creation and strengthening of regional value chains. It is worth noting that intra-regional trade presents competitive advantages over other forms of integration, in that it allows for exchanges that include goods with greater value added and technological content that contribute to diversifying exports beyond raw materials, while also helping MSMEs enter regional, and subsequently global, value chains.

According to Pastrana and Castro, when it comes to the alliance's orientation towards Asia-Pacific, a strategy proposed is the creation of regional value chains that require the coordination of trade and economic policies in order to "strengthen the bloc's institutions and deepen the coordination of the regulations and policies necessary to address the challenges involved in integrating into the international economy" (2019, p. 47).

For many countries, joining a global value chain is a key activity in their development. Thus, these chains are important because they "often provide a step for companies and workers in developing countries to participate in the global economy" (Gereffi & Fernández-Stark cited in Prieto, 2018, p. 257).

Marchena (2019) noted that the limited involvement of PA members in manufacturing networks—with the exception of Mexico—bodes poorly for their economic growth and export diversification expectations.

However, other authors conclude that a high proportion of intra-regional trade had already been liberalized via the FTAs signed by member countries prior to the creation of the PA. Thus, it could be that the liberalization of capital flows (George, 2014, p. 28 and Nolte, 2016, p. 5) and the greater attractiveness for foreign direct investment, especially from Asia (Bello, 2015; Garzón & Nolte, 2018, p. 345; Saltalamacchia & Urzúa, 2016), are among the PA's high-impact contributions.

For Marchini (2019), to boost intra-regional trade in the PA, what is required is not only a daring program of trade liberalization but also the implementation of economic diversification in order to raise the quality of the export basket of each member state. This entails promoting greater export diversity with a higher level of technology and less dependence on natural resource-based products (mining, logging, agriculture) than is currently the case among PA members.

Thus, it is apparent that the PA must form regional value chains to complement efforts related to intra-regional trade facilitation and orientation towards Asia-Pacific.

Table 1 - Variables and theoretical basis for causation

		VARIABLES	DEFINITION	THEORETICAL BASIS
INTRA-REGIONAL TRADE	ebendence	Share of intra-regional trade	Ratio of trade between countries in a region to the total trade of these countries.	Plummer, Cheong, & Hamanaka (2010) Anderson & Norheim (1993)
	Indicators of interdependence	Intra-regional trade intensity index	Equal to the ratio of the intra- regional trade to the region's share of global trade.	Kojima (1964) Plummer et al., (2010)
	Indica	Intra-regional introversion index	Calculates the index of intra- regional trade introversion	Iapadre (2006) Plummer et al., (2010)
TECHNOLOGICAL INTENSITY OF EXPORT BASKET	((a) Primary products	Composed of: Fresh fruit, rice, gas, petroleum	Lall (2000); Torres & Gilles (2013).
		(b) Manufactures based on natural resources	Composed of: Drinks, vegetable oils, cement, glass	Lall (2000); Torres & Gilles (2013).
	roducts	(c) Low-technology exports	Composed of: Textiles, footwear, handicrafts, jewelry, toys, plastic products	Lall (2000); Torres & Gilles (2013).
	Manufactured products	(d) Medium-technology manufactures	Composed of: Vehicle parts, commercial vehicles, synthetic fibers, fertilizers, motors, industrial machinery	Lall (2000); Torres & Gilles (2013).
		(e) High-technology exports	Composed of Telecommunications equipment, televisions, pharmaceutical products	Lall (2000); Torres & Gilles (2013).
	((f) Others	Composed of: Electricity, art, coins	Lall (2000); Torres & Gilles (2013).

Methodology

This study aims to determine the influence of the Pacific Alliance's intra-regional trade on its integration into the Asia-Pacific markets. On the one hand, to analyze **intra-regional trade**, three indicators of regional trade interdependence were employed, as detailed by Plummer, Cheong and Hamanaka (2010): (i) the intra-regional trade share, (ii) the intra-regional trade intensity index, and (iii) intra-regional trade introversion index. It should be noted than a trade indicator is an index or ratio used to assess the status of trade and monitor the trade flows of one economy or more, or between economies, over time (Mikic & Gilbert, 2007).

With regard to the (i) intra-regional trade share indicator, this is the ratio of trade between countries in a region to the total trade of these countries:

$$Intraregional\ trade\ share_i = \frac{T_{ii}}{T_i}$$

Where T_{ii} is the region's intra-regional trade i; that is, the sum of the exports from the region i to the region i plus the imports to the region i from the region i; and T_i is the total exports from the region i to the world plus the imports i to the region i from the world.

Although the intra-regional trade share ratio is the most popular indicator, Anderson and Norheim (1993) pointed out that it is not practicable for comparing regions because the ratio can increase based on the number of economies within the region and their dimensions, even if it is assumed that each member economy is geographically neutral – that is, that the weight of the trade of each member economy in a region is equal to its weight in world trade (Hamanaka, 2012; Iapadre, 2006; Plummer et al., 2010).

To address these problems, the (ii) intra-regional trade intensity index, was introduced by Kojima in 1964 (as cited in Iapadre, 2006). To calculate the trade intensity of a given region i:

Intraregional trade intensity_i =
$$\frac{(T_{ii}/T_i)}{(T_i/T_w)}$$

Where, T_w is the total exports from the region i to the world plus the imports i from the world. If a region's intra-regional trade intensity is greater than one, then the region's trade is relatively oriented towards the members of that region; conversely, if the index is less than one, then the region's trade is relatively oriented towards the rest of the world (Plummer et al., 2010).

However, this indicator also presents limitations when it comes to interpretation because the range of maximum values of the regions varies depending on their size. There is also an asymmetry with regard to the threshold value (which is equal to one), as the range below this value is smaller than the range above it (Iapadre, 2006).

Given the aforementioned limitations, this study employs the (iii) intra-regional introversion index proposed by Iapadre (2006), which already has a symmetric range (varying from -1 to 1) and is independent of the size of the region. Thus, to calculate the intra-regional trade introversion index given a region i:

Intraregional trade introversion index_i =
$$\frac{(HI_i - HE_i)}{(HI_i - HE_i)}$$

$$HI_{i} = (^{T_{ii}}/_{T_{i}})/(^{T_{Oi}}/_{T_{O}})$$

$$HE_{i} = [1 - (^{T_{ii}}/_{T_{i}})]/[1 - (^{T_{Oi}}/_{T_{Oi}})]$$

Where, HI_i is the intensity of intra-regional trade; HE_i is the intensity of extra-regional trade; T_{Oi} is the sum of exports from the region i to the rest of the world plus the imports to the region i from the rest of the world; and T_O is the total exports from the rest of the world plus the total imports from the rest of the world. If the index is equal to zero, the region's trade is geographically neutral; if it is greater than zero the region has an intra-regional bias, whereas if it is less than zero it has an extra-regional bias (Plummer et al., 2010).

To calculate the aforementioned indicators, the study used the free-on-board (FOB) value of the exports, and the cost, insurance, and freight (CIF) value of the imports of goods broken down by economies and their main trading partners from 1989 to 2020 from the International Monetary Fund's Direction of Trade Statistics. The regions referred to were: (1) The Pacific Alliance, (2) the Pacific, (3) East and Northeast Asia, (4) ASEAN, (5) ASEAN + 3, and (6) ASEAN + 6 (see Appendix 1 for the list of economies included in each region).

In addition, an introversion analysis of the Pacific Alliance vis-a-vis China, Japan, Korea, The Pacific, ASEAN, ASEAN + 3, and ASEAN + 6 was conducted for both 2011 (the year in which the mechanism was established through the Declaration of Lima) and 2020 (the last year for which data was available). The results are expressed in a diagram of trade links, based on the graphic proposed by Hamanaka (2015) that shows the bias of a given region—in this case, the Pacific Alliance—towards other regions. The graphic also includes the intra-regional introversion index below the name of each region.

Next, the **composition of the export basket** was analyzed **in terms of its technological intensity** in line with the methodology proposed by Lall (2000). Lall disaggregated exports into primary products and manufactured products, which he then broke down further into four subcategories: (i) manufactures based on natural resources, (ii) low-technology manufactures, (iii) medium-technology manufactures, and (iv) high-technology manufactures.

Table 2 - Export basket composition based on technological intensity

Classification		Examples	
(a) Primary products		Fresh fruit, rice, gas, petroleum	
Manufactured products	(b) Manufactures based on natural resources	Drinks, vegetable oils, cement, glass	
	(c) Low-technology	Textiles, footwear, handicrafts, jewelry,	
	exports	toys, plastic products	
	(d) Medium-technology manufactures	Vehicle parts, commercial vehicles,	
		synthetic fibers, fertilizers, motors,	
		industrial machinery	
	(e) High-technology	Telecommunications equipment,	
	exports	televisions, pharmaceutical products	
(f) Others		Electricity, art, coins	

Source: Lall (2000); Torres & Gilles (2013). Compiled by authors.

A graphic was compiled to present the distribution of the export basket based on the technological intensity of each of the Pacific Alliance countries from 2000 to 2019, while another illustrates the distribution of the export basket among Pacific Alliance countries in 2019.

The data employed for these graphics were drawn from the Economic Commission for Latin America and the Caribbean's (ECLAC) Graphic System for International Trade Data, taking into account exports under the Standard International Trade Classification (SITC) Revision 2.

Results

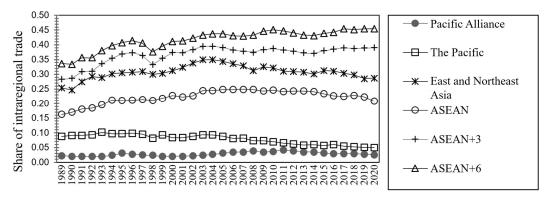
Through the trade interdependence indicators detailed in the previous section, the Pacific Alliance was compared with Pacific, East and Northeast Asia, ASEAN (established in 1992), ASEAN+3, and ASEAN+6 regions.

In 2011, the share of intra-regional trade in the PA stood at 4%, and by 2020this indicator had fallen to 3%. In the case of ASEAN, its share of intra-regional trade in 1992 was 18%, while in 2020 it was 20%.

It is interesting to note that from 2000 to 2012, the PA's intra-regional trade share increased steadily except for 2009, which may have been one of the motivators behind the proposal of the PA mechanism. And given the bloc's creation in 2011, the downward trend in this index from 2012 to date is striking (see Figure 1).

It is clear that all other regions have higher levels of participation, but it would be erroneous to use this indicator alone to compare the share of intra-regional trade of the regions in the study due to its limitations, given that the ratio is higher as there are more economies within the region; this is evident in the share of ASEAN+6 and ASEAN+3 throughout the period.

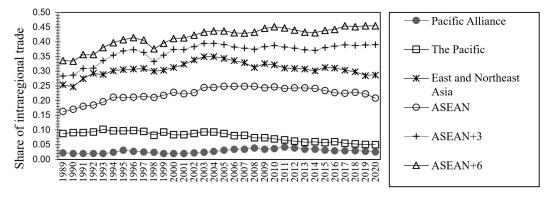
Figure 1 – Share of intra-regional trade by region (1982-2020)



Source: Compiled by authors based on data from DOTS, FMI.

Looking at the intra-regional trade intensity indicator (see Figure 2), it can be appreciated that trade in the Pacific region (Australia, New Zealand, and Papua New Guinea) was highly self-focused until 2003, after which point there was a steep decline. This indicates that these economies began to orientate themselves more towards the world, while retaining high levels of trade among themselves. The PA is again below the other regions studied. After 2005 its intensity index has been below 1m which indicates that the region's trade is orientated towards the rest of the world. For its part, ASEAN also displays a downward trend but is still above one as well as all other regions studies, except for the Pacific.

Figure 2 – Intra-regional trade intensity index (1989-2020)



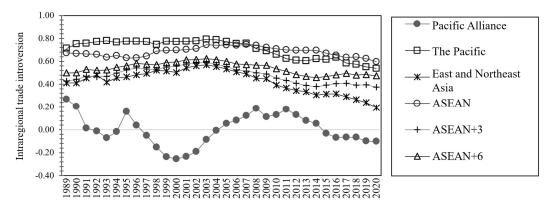
Source: Compiled by authors based on data from DOTS, FMI.

As far as intra-regional trade introversion is concerned, the results for the PA reflect those of the intensity index; since 2015 the region's introversion index has been less than zero, demonstrating that the bloc's economies have an extra-regional bias (see Figure 3). This is in contrast the other regions, for which, despite downward trends in some cases, the indices remain above zero, attesting to their intra-regional bias.

It is interesting to note that the PA has not always been skewed towards the exterior; between 2004 and 2014, the bloc engaged primarily in intra-regional trade.

ASEAN stands out, given that a rise in intra-regional trade was in evidence from its foundation until 2008, and despite a slight downward trend from that point, it remained ahead of the other regions.

Figure 3 – Intra-regional trade introversion index (1989-2020)



Source: Compiled by authors based on data from DOTS, FMI.

Now, the PA's trade introversion index vis-a-vis the other economies will be analyzed. First, the alliance's introversion in the direction of China, Japan, and Korea is notable (see Figure 4). In 1999, China embarked on its course of rapid growth; the PA changed its orientation towards trading with China in 2003, exceeding an introversion index of 0, and went on to reach 0.44 in 2020. Something similar occurred with Korea, for which the introversion index grew steadily to 0.29 in 2020. In the case of Japan, there was a slight decline from 2016, though the index stayed above 0, showing that the PA's trade is oriented towards this country's markets.

ASEAN displays the highest values, as well as growth reaching a value of 0.60 in 2020. In turn, ASEAN+3, which includes Japan, Korea, and China, displayed sustained growth from 2000 to a value of 0.75 in 2020. This shows the PA's trade was considerably biased towards this grouping. Moreover, if Australia, New Zealand, and India are added to form ASEAN+6, the value becomes 0.8, illustrating the bloc's high level of bias towards the Asia-Pacific region.

1.00 China 0.80 Pacific Alliance's trade introversion index towards other economies □ Japan 0.60 0.40 ★─Korea 0.20 The Pacific 0.00 **ASEAN** -0.20 ASEAN+3 -0.40 ASEAN--0.60

Figure 4 – Pacific Alliance's trade introversion index towards other economies (1989-2020)

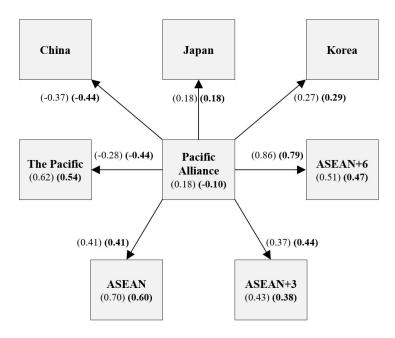
Source: Compiled by authors based on data from DOTS, FMI.

Figure 5 shows the PA's trade introversion index in relation to other economies (China, Japan, Korea, the Pacific, ASEAN, ASEAN+3, and ASEAN+6) in 2011 (data in italics), and in 2020 (data in bold). Also displayed is the intra-regional introversion of each region within the respective squares. It is notable that the PA went from having a slightly intra-regional orientation to an extra-regional orientation (intra-regional introversion index of -0.10 in 2020). Although the other regions displayed a reduction, they still have an intra-regional orientation.

With regard to China, Japan, and Korea, from 2011 to 2020 the PA's orientation towards China increased the most, but also rose slightly towards Korea and remained steady in relation to Japan. At the regional level, one can detect a large increase in the orientation of the PA's trade towards

ASEAN as well as ASEAN+3. In turn, what is notable is the extent to which the orientation towards the Pacific has deepened, having gone from -0.28 in 2011 to -0.44 in 2020. This is also reflected in ASEAN+6, which, as we have seen, includes Australia and New Zealand, with a fall from 0.86 in 2011 to 0.79 in 2020.

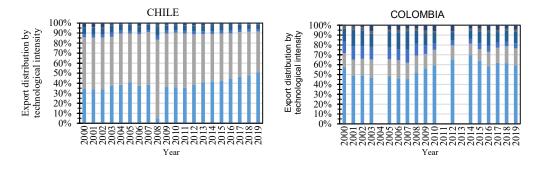
Figure 5 – Diagram of commercial ties based on the Pacific Alliance`s trade introversion index in relation to other economies, in 2011 and 2020

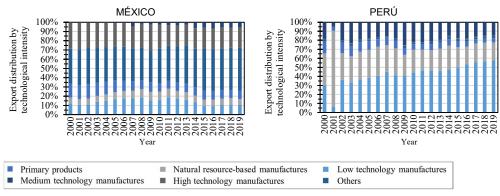


Source: Compiled by authors based on data from DOTS, FMI.

Meanwhile, with regard to the distribution of exports based on the technological intensity of PA economies, since 2008 there has been a visible trend towards the reprimarization of exports in Chile, Colombia, and Peru. Within the alliance, Mexico is the only country that has tended towards industrialization.

Figure 6 – Distribution of exports by technological intensity of the Pacific Alliance economies (2000-2019)





Source: Compiled by authors based on data from SIGCI, CEPAL.

It is of interest to observe the distribution of exports classified by technological intensity across the PA economies. In the Peruvian case, exports to Chile and Colombia are largely manufactures based on natural resources (at 43% and 53% respectively), while those to Mexico are primary products for the most part (48%).

In the case of Chilean exports, those sent to Mexico and Colombia are chiefly manufactures based on natural resources, at 43% and 44%, respectively, while 25% of its exports to Peru are primary products, manufactures based on natural resources, and those with a low technological component. For Colombia, its exports to Chile are 51% primary products, while 36% and 32% of the exports it sends to Peru and Mexico are medium-technology manufactures, respectively.

Finally, the bulk of Mexico's exports are medium-technology products, accounting for 41%, 42% and 29% of those to Chile, Colombia, and Peru, respectively.

CHI > PER (3%) MEX > PER (28%) CHI > PER (22%) MEX > PER (39%) CHI > PER (25%) MEX > PER (8%) PER CHI > PER (25%) Perú MEX > PER (11%) CHL > PER (25%) MEX > PER (2%) PER > MEX (10% PER > MEX (12% PER > MEX (48% PER > MEX (28% PER > CHI (43%) CHI (13%) CHI (32%) PER > CHI (2%) PER > CHI (9%) PER > MEX (2% COL > PER (8%) COL > PER (36% COL > PER (18% COL > PER (16% > PER (21% PER > CHI > MEX (1%) MEX > CHI (21%) CHI > MEX (15%) MEX > CHI (41%) CHI MEX > CHI (7%) CHI > MEX (5% MEX CHI > MEX (43%) Chile MEX > CHI (13%) México CHL > MEX (36%) MEX > CHI (1%) (53%) PER > COL (13%) PER > COL (18%) COL (12%) PER > COL (1%) COL > MEX (32%) COL > CHI (51%) COL > MEX (3%) COL > CHI (4%) COL > CHI (8%) COL > CHI (18%) COL > CHI (19%) OL > MEX (26% COL > MEX (28%) COL > MEX (11%) PER > COL CHI > COL (29%) MEX > COL (1%) CHI > COL (44%) COL MEX > COL (12%) Colombia MEX > COL (11%) CHI > COL (17%) MEX > COL (42%) CHI > COL (4%) MEX > COL (22%)

Figure 7 – Distribution of exports between Pacific Alliance economies by technological intensity (2019)

Primary products	 Natural resource-based manufactures 	 Low technology manufactures
 Medium technology manufactures 	 High technology manufactures 	Others

Source: compiled by authors based on data from SIGCI, CEPAL.

Note: the "others" category was excluded from the figure.

Discussion

Rodríguez (2015) has argued that increasing intra-bloc trade is not a key aim for the PA, and that it requires the free circulation of various factors of production to become more competitive in extra-regional trade. This entails the competitive internationalization of its economies in what is termed "outward" strategic regionalism. The findings of this study show that the PA has been successful in its application of an outward regionalism strategy, given that, since its foundation in 2011, the bloc's trade bias has been focused beyond its borders; this is demonstrated by the PA's indices of intra-regional trade intensity and introversion (see Figures 2 and 3). Rodríguez's position is also supported by the increase in the PA's trade introversion index towards Asia-Pacific, and especially China, Korea, ASEAN, and ASEAN+3 (Figure 5).

This is in contrast to Lejárraga (2019), who argued that one of the distinctive characteristics of the PA is that it was conceived as an instrument for integration into global value chains, especially those in Asia. However, Lejárraga also argued that value chains depend on a major intra-regional trade structure, especially for the export of intermediate products.

Cracau and Durán (2019) agreed with Lejárraga, pointing out that the low level of intra-regional trade is because the PA's member economies are not natural partners—as demonstrated here through the indices of intra-regional introversion and intensity (see Figures 2 and 3)—and also because the composition of the export basket is limiting. On this latter point, it is worrying to observe the tendency towards the reprimarization of the PA's member economies (Peru, Colombia, and Chile), with the exception of Mexico, which limits the prospects of developing regional value chains (see Figure 6). In addition, the exports of Peru, Colombia, and Chile towards other PA countries are largely primary products or manufactures based on natural resources.

If the objective is integration into Asia-Pacific, greater intra-regional integration is highly necessary, as Lejárraga pointed out, while Cracau and Durán proposed that regional value chains ought to be developed; in this regard, the PA is not fulfilling its purpose.

Conclusions

The main aim of this study has been to determine the ways in which the Pacific Alliance's intraregional trade affects its integration into Asia-Pacific markets.

The results, obtained through analysis of the trade interdependence indicators, trends in the export diversification of PA member states, and a review of the specialist literature, show that the bloc's intra-regional trade is low and that, rather, trade is oriented outwards. They also attest to a trend towards reprimarization in Chile, Colombia, and Peru.

With regard to the distribution of exports by technological intensity among members of the PA, trade between these countries is found to be concentrated largely on primary products and manufactures based on natural resources. The exception is Mexico, which mainly export medium-

technology manufactured products to other members of the bloc. However, it should be noted that though the results point towards a low level of intra-regional trade, the PA, since its establishment in 2011, has expanded its presence in the markets of Asia-Pacific, as can be seen in the increase in its trade introversion index towards this region. Thus, the low level of intra-regional trade has not been a limitation on the bloc pursuing its aim of integration into a global economy focused on Asia-Pacific.

Limitations and future lines of research

The first limitation is related to the various restrictions presented by the trade interdependence indicators, which make it difficult to compare the results. The second limitation lies in the absence of data on export diversification for some years, which posed a problem when calculating the figures. However, given the clear overall trend, there was no issue with interpretation.

With regard to future lines of research, trade interdependence indicators could be analyzed on a larger scale that takes into account more regions in order to understand how the PA's trade flows have performed in relation to other integration mechanisms around the world.

Another possible area of analysis is the economic, social, and political factors that have had an impact on the decrease in intra-regional trade within the Pacific Alliance since 2014.

Moreover, this could be approached from the perspective of trade in services, which were not explored in this research.

A final interesting line of research to consider is to identify whether or not intra-regional trade is necessary for mechanisms under open regionalism.

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Appendices

Appendix 1 – Economies considered per region

ASEAN	ASEAN+3	ASEAN+6	ENEA	PACIFIC	PA
Association of Southeast Asian Nations			East and Northeast Asia	The Pacific	Pacific Alliance
Brunei	Brunei	Brunei			
Darussalam	Darussalam	Darussalam	China	Australia	Peru
Cambodia	Cambodia	Cambodia	South Korea	New Zealand Papua New	Colombia
Indonesia	Indonesia	Indonesia	Hong Kong	Guinea	Mexico
Laos	Laos	Laos	Japan		Peru
Malaysia	Malaysia	Malaysia	Macao		
Myanmar	Myanmar	Myanmar	Mongolia		
Philippines	Philippines	Philippines			
Singapore	Singapore	Singapore			
Thailand	Thailand	Thailand			
Vietnam	Vietnam	Vietnam			
	China	China			
	Japan	Japan			
	South Korea	South Korea			
		Australia			
		New Zealand			
		India			

Source: compiled by authors