

Value chains between countries of CAN, implications for the integration with Asia Pacific

The case of Bolivia

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inesad

Why study Global Value Chains?



Globalization was born with the America's discovery, but it has been accelerated with economic development; where innovations on transport and communication as well as trade openness played key roles

⇒ comparative and competitive advantages are no longer simply related to the exchange of goods, but mainly to the exchange of all kinds of inputs and services implicit in the added value chains

⇒ **OPPORTUNITIES for CAN members**

1. On comparative/competitive advantages from a CGV approach (gains in efficiency/productivity and well-being)
2. On complementarity production advantages between CAN countries, with goods and services that are part of the GVCs (economies of scale, market size and bargaining power)
3. Advantages of participating in high-tech GVCs; being part of the technological development dynamics (which, with appropriate public policies, can promote economic /productive development)

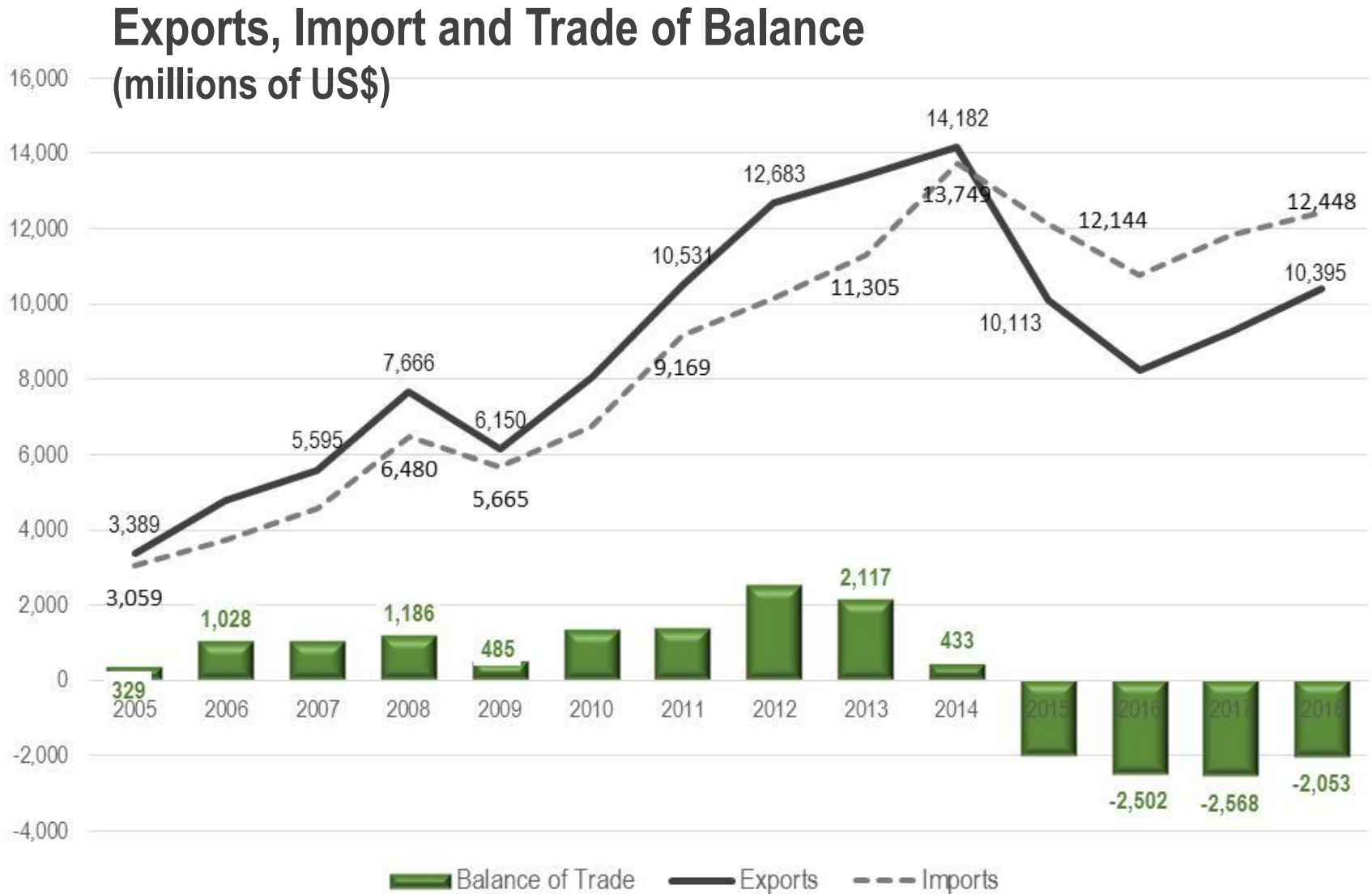
Bolivian International Insertion



- Bolivia - the heart of South America, with approximately 11 million of habitants - has based its economic growth on raw materials exportation: minerals and, since the 70s, hydrocarbons
- Since around the 80s, some agro-industries have also acquired relevance in exports, as a result of the policies on diversification (e.g., soy bean and quinoa). However, the recent commodity prices boom has again concentrated external sales on raw materials

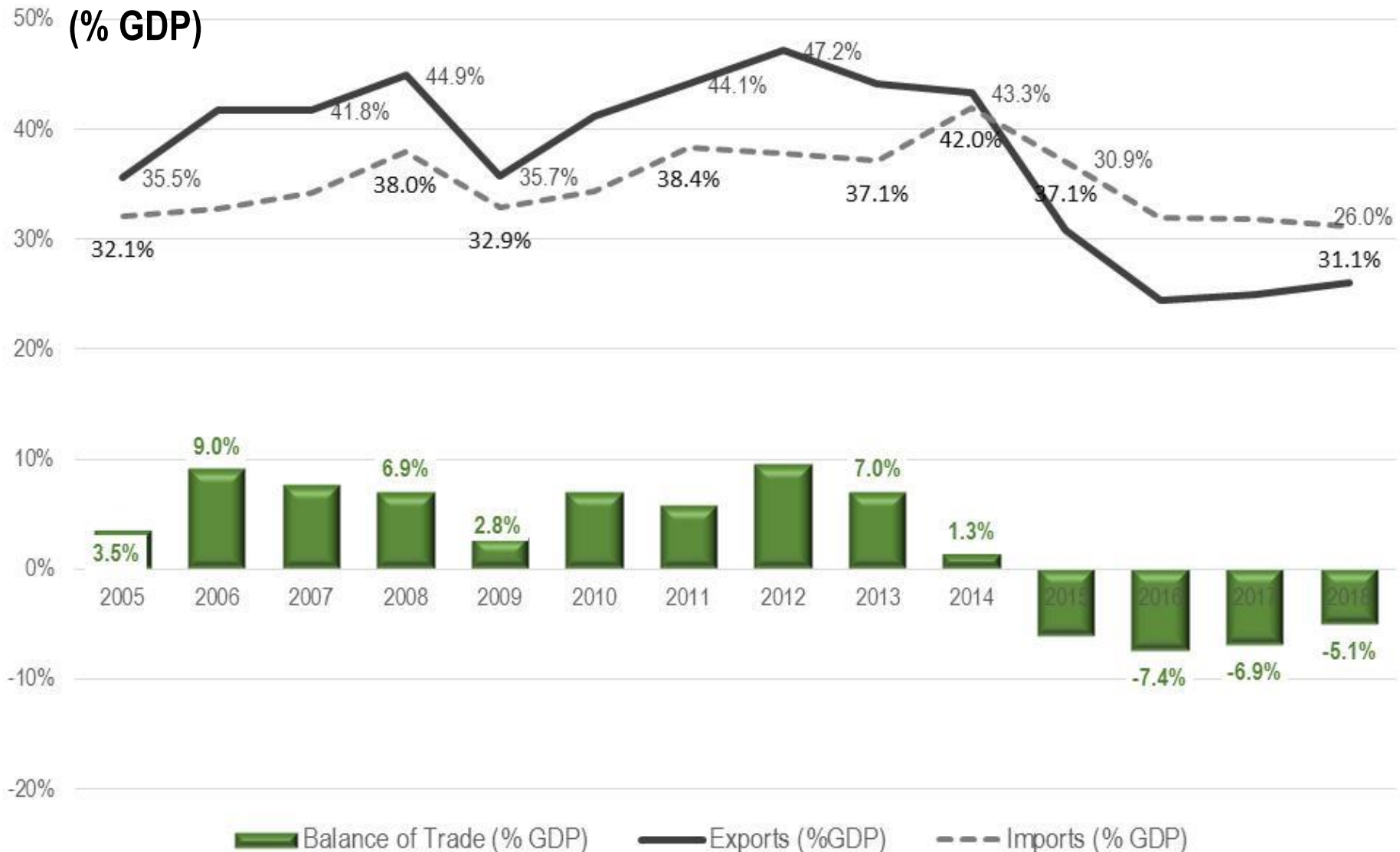
- Trade integration has been promoted through several regional and bilateral agreements; but only since 1985 - with the change from a strategy of import substitution to another of trade openness – the policies were more aggressive
- Currently the most important agreements are: Comunidad Andina de Naciones (CAN), Mercado Común del Sur (MERCOSUR), y Tratado de Comercio de los Pueblos (ALBA-TCP)

Exports have grown substantially due to the price boom



International trade has led production and demand

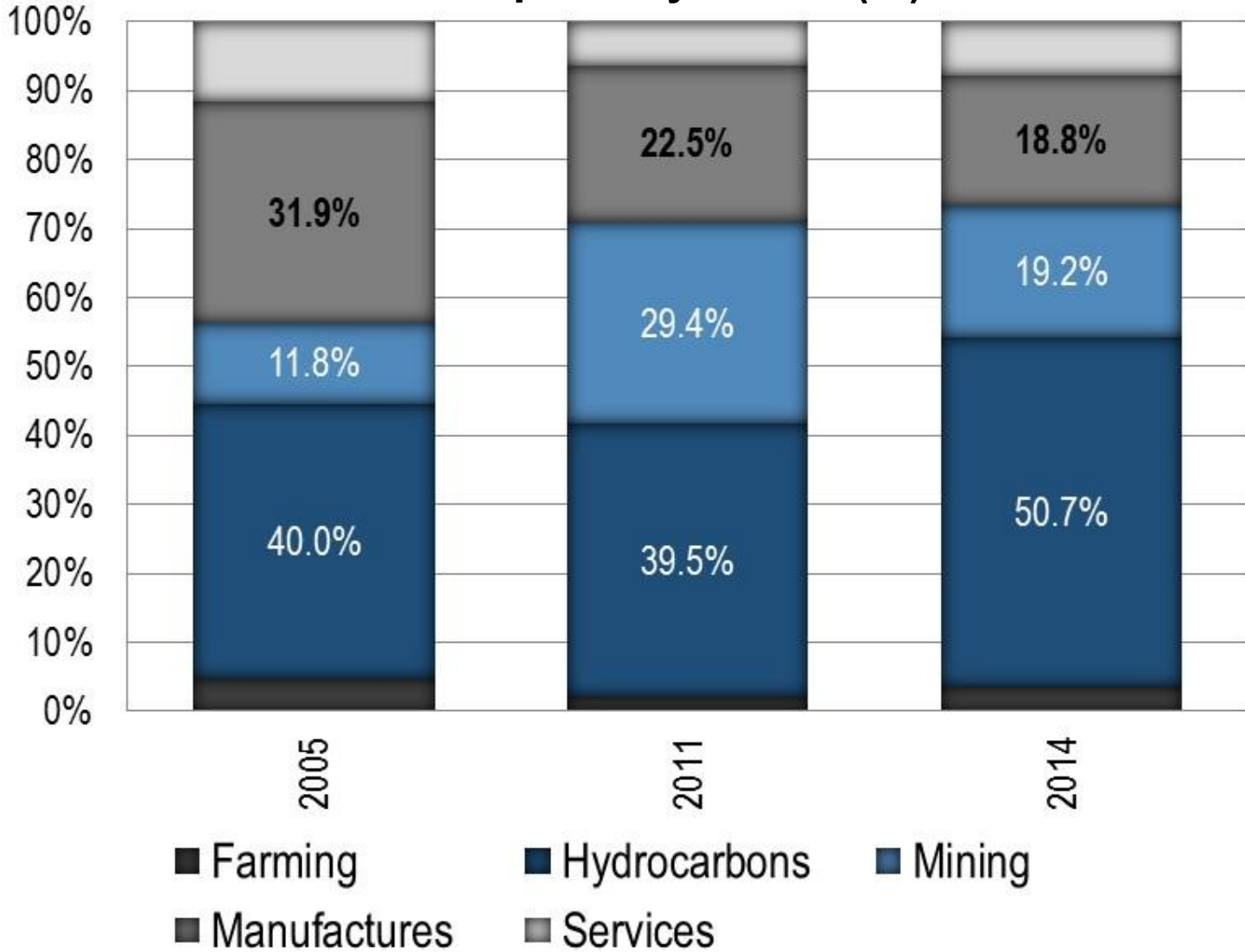
Exports, Import and Trade of Balance



Source: Author's elaboration based on data from INE

The share of raw materials increased, displacing manufactures

Exports by sector (%)



Source: Author's elaboration based on data from INE

Imports were concentrated in certain manufacturing sectors, where capital goods stand out

Imports by main sectors (%)

Sector	2005	2011	2014
Machinery, equipment, metal products	25.6	34.6	33.5
Chemicals and chemical products	18.0	14.5	12.7
Refined petroleum	7.9	11.7	9.1
Basic metals	6.3	7.0	13.0
Transport and storage	7.7	6.6	5.6
Other sectors	34.6	25.5	26.2
Total	100.00	100.00	100.00

Source: Author's elaboration based on data from INE

Exports of Bolivia with CAN, Asia Pacific and ROW



The main uses of exports/production are in mining and quarrying for AP, and food products for CAN...

Production, consumption and exports by main sectors and regions, 2011 (% , vertical sum)

Sectors	BOL	CAN			Asia Pacific	ROW	Total exports	Total production
		IC	FC	T				
Agriculture, hunting, forestry and fishing	11,1	2,7	5,7	3,0	0,9	2,5	2,2	9,2
Mining and quarrying	9,3	20,0	0,0	17,8	85,8	67,8	65,8	21,9
Food products, beverages and tobacco	14,4	59,4	34,3	56,6	1,1	6,3	10,9	13,6
Textiles, textile products, leather and footwear	1,2	4,6	4,0	4,6	1,0	0,9	1,3	1,3
Chemicals and chemical products	0,4	0,8	2,1	1,0	0,7	0,9	0,9	0,5
Basic metals	-0,9	1,9	0,0	1,7	4,3	10,1	8,0	1,1
Transport and storage	10,1	0,4	23,0	2,9	2,5	4,2	3,7	8,6
Post and telecommunications	1,4	0,0	5,7	0,6	0,6	1,0	0,9	1,3
Other services	33,5	9,1	21,2	10,4	2,2	2,7	3,4	26,8
Total	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0

Some of the exports at the regional level are also important in the composition of production within the sectors

Production, consumption and exports by main sectors and regions, 2011 (% , horizontal sum)

Sectors	BOL	CAN			Asia Pacific	ROW	Total exports	Total production
		IC	FC	T				
Agriculture, hunting, forestry and fishing	94,5	0,7	0,2	0,8	0,5	4,2	5,5	100,0
Mining and quarrying	33,1	2,0	0,0	2,0	17,5	47,4	66,9	100,0
Food products, beverages and tobacco	82,2	9,6	0,7	10,3	0,4	7,1	17,8	100,0
Textiles, textile products, leather and footwear	76,7	8,1	0,9	8,9	3,6	10,7	23,3	100,0
Chemicals and chemical products	61,0	3,8	1,2	5,0	6,1	27,9	39,0	100,0
Basic metals	-61,2	3,7	0,0	3,7	17,4	140,1	161,2	100,0
Transport and storage	90,4	0,1	0,7	0,8	1,3	7,4	9,6	100,0
Post and telecommunications	83,8	0,0	1,2	1,2	2,2	12,8	16,2	100,0
Other services	97,1	0,7	0,2	1,0	0,4	1,5	2,9	100,0
Total								

Source: Author's elaboration based on data from ICEPAL.

Some of these uses are also relevant for Colombia. The exports of mining and quarrying and basic metals from both countries are important for Asia Pacific. Also chemicals and transport and storage have some relevance

Complementary exports of Colombia with Bolivia, 2011(%)

Sectors	Asia Pacific	ROW	Total exports		Asia Pacific	ROW	Total exports	Total production
Agriculture, hunting, forestry and fishing	1.1	7.3	8.4		7.3	4.1	4.4	5.4
Mining and quarrying	5.7	64.6	70.3		58.1	54.6	54.9	8.1
Food products, beverages and tobacco	0.6	10.3	10.9		5.3	8.1	7.9	7.6
Textiles, textile products, leather and footwear	0.4	10.9	11.3		1.2	2.4	2.3	2.2
Chemicals and chemical products	0.9	17.1	17.9		3.1	5.0	4.9	2.8
Basic metals	4.8	29.5	34.3		8.0	4.1	4.4	1.3
Transport and storage	0.5	4.4	4.9		3.2	2.5	2.5	5.4
Post and telecommunications	0.2	1.8	2.0		0.6	0.5	0.5	2.6
Other services	0.0	0.2	0.2		0.8	0.7	0.7	33.3
					100.0	100.0	100.0	100.0

Source: Author's elaboration based on data from ICEPAL.

In the case of Ecuador, mining and quarrying and basic metals are also remarkable. Potentially, other services may become relevant

Complementary exports of Ecuador with Bolivia, 2011(%)

Sectors	Asia Pacific	ROW	Total exports		Asia Pacific	ROW	Total exports	Total production
Agriculture, hunting, forestry and fishing	5,5	24,0	29,6		45,6	11,1	12,9	9,0
Mining and quarrying	1,6	80,3	82,0		16,1	44,4	42,9	10,8
Food products, beverages and tobacco	2,5	23,7	26,2		21,0	11,3	11,8	9,3
Textiles, textile products, leather and footwear	0,4	14,7	15,1		0,6	1,3	1,2	1,7
Chemicals and chemical products	0,2	23,2	23,4		0,3	2,0	1,9	1,7
Basic metals	6,0	28,5	34,6		3,9	1,0	1,2	0,7
Transport and storage	0,3	13,8	14,2		1,8	4,0	3,9	5,7
Post and telecommunications	0,3	7,0	7,4		0,7	0,9	0,9	2,5
Other services	0,2	3,9	4,1		4,0	5,6	5,5	27,9
					100,0	100,0	100,0	100,0

Source: Author's elaboration based on data from CEPAL.

In the case of Peru, mining and quarrying and basic metals stand out again

Complementary exports of Peru with Bolivia, 2011(%)

Sectors	Asia Pacific	ROW	Total exports		Asia Pacific	ROW	Total exports	Total production
Agriculture, hunting, forestry and fishing	0,7	7,5	8,2		0,8	3,6	2,7	5,8
Mining and quarrying	34,8	29,2	64,0		77,5	29,1	44,1	11,8
Food products, beverages and tobacco	8,7	13,8	22,5		13,5	9,6	10,8	8,2
Textiles, textile products, leather and footwear	1,0	30,4	31,3		0,5	6,9	4,9	2,7
Chemicals and chemical products	0,3	7,6	7,9		0,1	1,1	0,8	1,7
Basic metals	4,2	56,1	60,3		2,0	11,7	8,7	2,5
Transport and storage	0,0	8,9	8,9		0,0	5,4	3,7	7,1
Post and telecommunications	0,0	4,8	4,8		0,0	0,8	0,5	1,9
Other services	0,0	3,5	3,5		0,0	8,2	5,7	28,1
					100,0	100,0	100,0	100,0

Source: Author's elaboration based on data from ICEPAL.

Imports in value chains of Bolivia



Vertical Specialization Chain Indicator (*EV*) of Hummels *et al.* (2001)

EV is the sequential articulation of imported inputs to make final or intermediate goods and which, in turn, are used in other countries

The indicator represents a weighted average, according to the relative relevance of each sector's exports over the total, of the content of intermediate consumption of imports in external sales

Hummels et al. (2001) Indicators

Sectors	2002			2011		
	EV_s/X_s	EV_s (millions of US\$)	EV_s (participation)	EV_s/X_s	EV_s (millions of US\$)	EV_s (participation)
Agro-industrial products	0,11	6,27	3,34%	0,12	3,16	0,21%
Crude oil and natural gas	0,12	31,78	16,91%	0,21	600,77	40,47%
Metallic and non-metallic minerals	0,08	14,48	7,70%	0,15	422,01	28,43%
Milling and bakery products	0,17	5,92	3,15%	0,17	30,49	2,05%
Miscellaneous food products	0,21	46,34	24,65%	0,14	95,93	6,46%
Drinks	0,12	0,98	0,52%	0,17	7,00	0,47%
Processed tobacco	0,15	0,16	0,08%	0,13	0,05	0,00%
Textiles, clothing and leather products	0,28	17,43	9,27%	0,30	33,03	2,22%
Wood and wood products	0,09	3,77	2,00%	0,15	11,42	0,77%
Paper and paper products	0,31	0,52	0,28%	0,29	1,04	0,07%
Substances and chemicals	0,32	2,23	1,19%	0,32	23,87	1,61%
Petroleum refined products	0,07	0,79	0,42%	0,13	2,55	0,17%
Metal commodities	0,13	6,68	3,55%	0,19	128,18	8,63%
Metal products, machinery and equipment	0,33	0,21	0,11%	0,36	1,40	0,09%
Miscellaneous manufactured products	0,42	28,88	15,36%	0,41	33,96	2,29%

How are the input requirements of CAN and Asian Pacific?

Bolivian/CAN imports – Asian Pacific, 2011(%)

Sector	BOL-CAN			Asia Pacific - IC	
	IC	FC	TOTAL	BOL	CAN
Food products, beverages and tobacco	3.5	18.4	12.7	0.4	2.6
Textiles, textile products, leather and footwear	7.9	4.9	6.1	8.5	9.5
Pulp, paper, paper products, printing and publishing	7.2	3.4	4.8	1.0	1.5
Coke, refined petroleum products and nuclear fuel	7.6	0.6	3.3	0.2	0.5
Chemicals and chemical products	20.9	8.7	13.4	13.6	18.6
Rubber and plastics products	15.1	1.6	6.8	5.5	6.0
Other non-metallic mineral products	4.7	0.2	2.0	2.6	2.9
Basic metals	8.6	0.0	3.3	11.6	15.7
Fabricated metal products	3.5	0.4	1.6	0.6	5.5
Machinery and equipment, nec	2.4	1.2	1.7	5.3	4.2
Computer, Electronic and optical equipment	0.4	0.8	0.6	4.3	6.2
Electrical machinery and apparatus, nec	1.4	3.2	2.5	1.2	3.7
Motor vehicles, trailers and semi-trailers	0.3	0.5	0.4	5.3	4.4
Other transport equipment	0.0	0.2	0.1	0.7	2.3
Manufacturing nec; recycling	2.2	54.6	34.4	4.1	1.6
Transport and storage	8.7	0.5	3.6	10.7	2.3
Financial intermediation	0.0	0.0	0.0	4.2	3.9
Business services of all type	0.3	0.1	0.2	17.0	3.8
Other services	3.2	0.5	1.5	0.1	0.2
Total	100.0	100.0	100.0	100.0	100.0
(% GDP basic prices)			4.3	4.3	2.5

Final thoughts



- ❑ International trade has been the engine of Bolivian growth, with the boom in raw material prices and its corresponding exports
- ❑ In this sense, minerals have boosted the productive chain with Asian Pacific countries, which are complemented by CAN exports to this region. However, basic metals are also important in terms of complementarity, and some other sectors (such as chemicals and certain services) can be driven under this motivation

- ❑ Imports have also concentrated but in manufacturing, allowing to take advantage of the GVCs for exports. However, the Bolivian manufacturing sectors have been less important in these dynamic, and have even lost their relevance over time
- ❑ However, *EV* indicators show a low insertion of Bolivia in the GVCs, but they increased over time (from 12% in 2002 to 15% in 2011).
- ❑ In this scenario there are opportunities to promote both inter-industry and intra-industry trade (e.g. basic metals)

Thank you....
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