Working Paper, Nº 15/26 Hong Kong, August 2015

Measuring Latin America's export dependency on China

Carlos Casanova Le Xia Romina Ferreira

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Abstract

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Bilateral trade between China and Latin America has grown very quickly in the last decade. As a consequence, economic relationships with Latin America intensified tremendously, as growing demand for resources drove China into relatively unexplored frontiers. In this paper we deploy an export dependency index to identify the sectors and countries in Latin America which are most exposed to fluctuations in Chinese demand. According to our estimates, dependency on China increased overboard across Latin America for all countries and all sectors between 2008 and 2014. Absolute dependency levels were highest in Costa Rica, Colombia, Uruguay, Venezuela, Brazil, Panama, Peru, Chile, Guyana and Argentina. Of these, the largest exporters to China, namely Brazil, Argentina, Chile, Peru, Colombia, and Venezuela, featured high dependencies concentrated around just four commodities: soy in the form of soybeans and soybean oil; crude oil; copper in the form of copper ore, copper cathodes and unrefined copper; and iron ore. These four commodities, accounted for 80% of the regions total exports to China.

Keywords: Trade, trade dependency, natural resources, China, Latin America. JEL: D51, F02, F14.

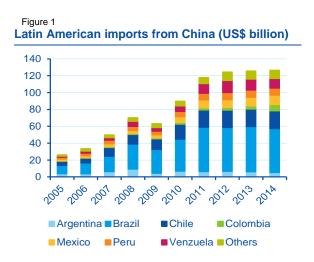
1 An overview of China-Latin America trade relations

1.1 Bilateral trade has grown very quickly but remains unbalanced

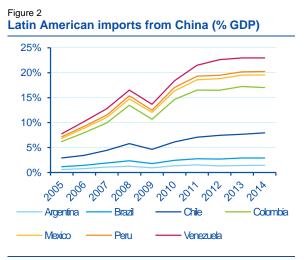
China's economy grew at an average annual rate of 8.8% between 2008 and 2014, fuelled by fast investment growth and high rates of urbanization, which translated as a voracious appetite for raw materials. As a consequence, economic relationships with Latin America intensified tremendously, as growing demand for resources drove China into relatively unexplored frontiers. Bilateral trade increased by an average rate of 23% during the same period and now stands at US\$260 billion, but the nature of these flows remains unbalanced (Figures 1-5). First of all, Latin America has a trade deficit with China, equivalent to US\$8 billion or 1% of Latin America's GDP. In addition to Latin America's trade deficit with China, bilateral trade flows remain unbalanced as the region exports commodities to China and imports manufactured goods (Garcia-Herrero and Casanova, 2014).

This pattern can be explained by the relative comparative advantages of both regions. Latin American countries enjoy rich natural resource endowments, including 45.0% of total copper reserves, 44.3% of total silver reserves, 21.0% of total iron ore reserves, 19.8% of the world's proven reserves of crude oil and 17.8% of total gold reserves. In addition, Latin America possesses 46% of the world's renewable water supply, 25% of the arable land and the biggest forest reserve in the world; which give it a comparative advantage over agricultural exports. Not surprisingly, 56% of the world's soybean production is located in Latin America, as well as 30% of the global production of beef and 36% of the global production of chicken (Manzano, 2015).

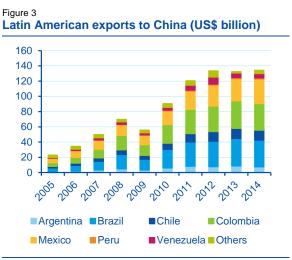
The region beats China on various fronts: it has seven times more m³ of fresh water per capita, more than three times more km² of land per capita and eight times more km² of forests per capita than China (Garcia-Herrero, Fung and Seade, 2015). On the other hand, China enjoys higher relative labor abundance, boosting an active population which is almost four times larger than that of Latin America, as well as lower labor costs. Minimum real wages in Latin America were US\$262.2 per month according to figures by the International labor organization (Marinakis, 2014); more than double those of China, which stood at US\$116.3 per month (Zito, Yao and Chen, 2013).

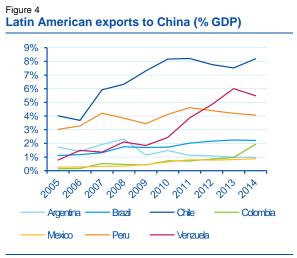


Source: IMF DOT, World Bank and BBVA Research



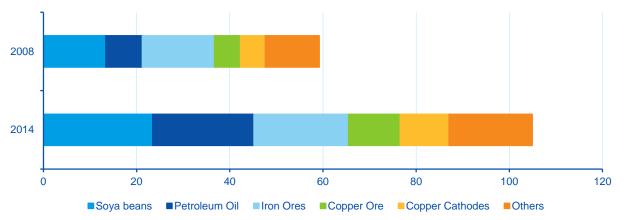
Source: IMF DOT, World Bank and BBVA Research



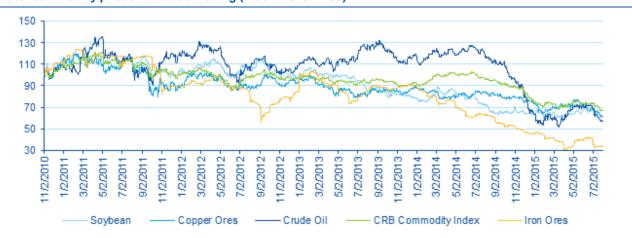


Source: IMF DOT, World Bank and BBVA Research





⁻Source: UNCOMTRADE and BBVA Research





Source: IMF DOT, World Bank and BBVA Research

Source: Bloomberg and BBVA Research

The unbalanced – albeit buoyant – nature of bilateral trade flows may have played a pivotal role in assisting countries in Latin America to wither through the global financial crisis relatively unscathed by boosting exports and improving terms of trade (Garcia-Herrero and Fung, 2012). The winds have most definitely turned against them. China's economy has started to show signs of a slowdown, which has hit hard the sectors traditionally associated with fixed asset investments. As a consequence, China's demand for natural resources has decelerated, putting significant downward pressure on global commodity prices and potentially leaving a number of economies in Latin America quite exposed to exogenous shocks (Gallagher and Porzecanski, 2010; Farooki and Kaplinsky, 2012). In this Working Paper, we will attempt to quantify just how exposed Latin America's main export sectors are to shifts in Chinese demand.

1.2 Latin America's exports to China centered on a limited number of products

Before we delve further, it is important to highlight that Latin America's exports to China remain exceptionally concentrated, with four commodities accounting for almost 80% of the region's total exports to China: soya beans, crude oil, iron ore and copper (Figure 5).

China's demand for oilseeds has soared, with soybeans now surpassing crude oil and iron ore as Latin America's largest export to China. Despite export volumes of iron ores and crude oil have continued to grow in the past years, exports by value decreased on the back of falling commodity prices. But the story is also structural. Soybean products in its various forms are an important constituent of the Chinese diet. More importantly, soybeans play a major role in improving productivity in the meat sector (as a feed for livestock). Higher living standards have fuelled a dietary change towards meals rich in animal protein, leading to a fourfold increase in pork consumption in the last 30 years (Myers and Jie, 2015), and it is expected that this will continue to grow at an annual rate of 1.5% until 2020 (United States Department of Agriculture, 2014).

Soybeans are crucial to Latin America, as over 50% of the global soybean production actually originates in MERCOSUR. Furthermore, growth has been promising, with exports rising from US\$75 million in 1995 to US\$38 billion in 2014. They are the first export to China for Brazil, Argentina and Uruguay. Coincidentally, Paraguay – the only South American country that recognizes Taiwan – did not export soybeans to China in 2014 despite being the fourth largest producer worldwide. All in all, demand for soybeans and meat products from Latin America bodes well due to rising per capital incomes in China, particularly in cities, which coupled with fast urbanization rates (53% vs. 80% in Latin America) means that there is plenty of room for growth.

Crude exports to China are more important for Latin America than they are for China. Imports from Latin America were just 9% of China's total crude imports in 2014 (up from 5% in 2008), which grants China a lot of bargaining power over its key crude oil suppliers in the region. The cases of Colombia and Venezuela are good examples, as we shall analyze in more detail in the following section of this paper. Both countries accounted for the overwhelming majority of Latin America's crude oil exports to China (7% of the 9%). In the case of Colombia, crude oil exports to China increased nine times in the past seven years, and China now buys 93% of its total crude oil exports. On the other hand, Argentina and Ecuador saw a fall in the quantity as well as price of crude oil exported to China.

China is a (the) dominant player in the global iron markets. Chinese imports of this commodity grew 60% in the past 6 years, with the country accounting for 77% of the iron ores consumed worldwide. For Latin America, quenching China's thirst for iron meant that its exports grew by 35% between 2008 and 2014. Brazil is the second largest exporter of this commodity to China, behind Australia, accounting for 23% of the total Chinese imports. Other important iron ore exporters in the region include Honduras Chile, Mexico and Peru.

2 Methodology: Measuring export dependency on China

To measure the degree of exposure of Latin American countries to shifts in Chinese demand, we have deployed the use of our export dependency index. (Garcia-Herrero, Nigrinis and Ferchen, 2013). The Index measures the relative exposure of Latin American exporters to shifts in demand from China and is scaled from 0 to 1 (the higher the score, the more exposed an exporter is to disruptions of trade with China).

We undertook the analysis using 6-digit trade figures from the United Nations COMTRADE database (Harmonized System 2007 nomenclature) to ensure granularity and consistency and contrasted our results across two points in time, 2008 and 2014. The analysis was very comprehensive, covering the products that accounted for 80% or more of all exports to China in 2014, for all countries in Latin America and the Caribbean. We define our export dependency index as follows:

$$Index_{x,y} = \sqrt[3]{\frac{EXP_{x,y}}{EXP_y} \times \frac{EXP \ to \ China_{x,y}}{EXP_{x,y}} \times avg\left[\frac{IMP_x \ China}{IMP_x} \times \left(1 - \frac{EXP_{x,y}}{EXP_x}\right)\right]}$$

Whereby:

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$$\frac{EXP_{x,y}}{EXP_{y}}$$

Refers to country y's exports of commodity x as a share of its total exports. This shows how concentrated are a country exports into one commodity (x);

$$\frac{EXP \text{ to } China_{x,y}}{EXP_{x,y}}$$

Refers to country y's exports of commodity x to China divided by its total export of that commodity. This shows how dependent the world is on China to sell a particular commodity relative to other export markets. And;

$$avg\left[\frac{IMP_{x,China}}{IMP_{x}} \times \left(1 - \frac{EXP_{x,y}}{EXP_{x}}\right)\right]$$

Is the average of two components: The first half refers to the share of China's imports of commodity x in the global market, while the second half is 1 minus country y's export market share of commodity x. This provides a measure of China's strength as a buyer or pricing power compared to the exporting country's strength as a seller.

As a final note of caution, it is important to mention that export dependency on China is a relative measure which examines the exposure by Latin American exporters to shifts in Chinese demand. Our index does not include exports to countries other than China, nor will look at the export dependency of countries outside Latin America and the Caribbean. A wider index, however, would probably show that the export dependency of Latin American countries is startling than it seems. For instance, emerging Asian economies rely heavily on external demand. China, Korea and Taiwan are cases in point where exports to GDP share ranges from 30% to 50%.

Table 1

3 Results: Latin America's export dependency on China

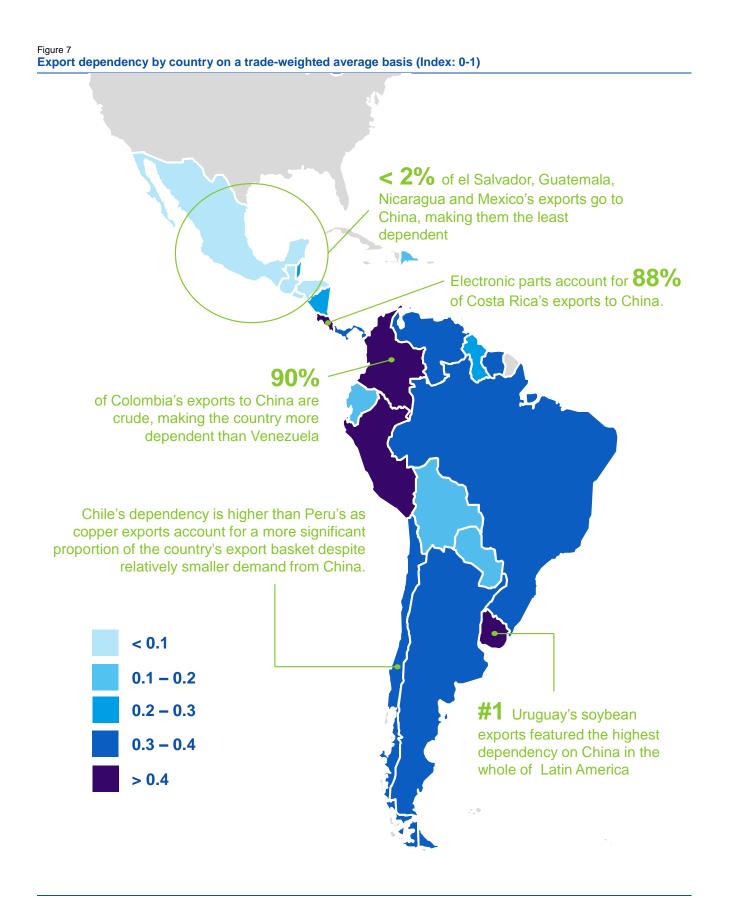
3.1 Export dependency on China increased overboard

Our research reveals that dependency on China has increased overboard across Latin America for all commodity types. We computed export dependencies for the different countries based on weighted averages for all the individual export dependencies (Table 1) and find that, while levels of commodity dependency are highest amongst members of MERCOSUR, Chile, Peru and Colombia (Figure 7) the increases were highest amongst countries in the Pacific Alliance, Panama, Uruguay, Paraguay and Nicaragua (Figure 8). A full list of export dependencies can be found in Appendix 1.

The countries with the highest absolute dependency levels tend to be important commercial partners (i.e. large commodity exporters like Chile) or strategic allies of China in Latin America. More interestingly, despite lower overall levels of export dependency, the steepest increases can be observed amongst countries which have traditionally been considered to be closer commercially and politically to the United States.

Ranking	Country	Dependency 2014	Dependency 2008
1	Costa Rica	0.43	0.45
2	Colombia	0.42	0.22
3	Uruguay	0.41	0.27
4	Venezuela	0.37	0.27
5	Brazil	0.36	0.30
6	Chile	0.35	0.30
7	Peru	0.34	0.26
8	Panama	0.32	0.02
9	Guyana	0.30	0.00
10	Argentina	0.30	0.34
11	Belize	0.25	0.02
12	Honduras	0.24	0.10
13	Suriname	0.24	0.07
14	Ecuador	0.19	0.17
15	Bolivia	0.17	0.13
16	Dominican Republic	0.16	0.04
17	Paraguay	0.11	0.06
18	Mexico	0.10	0.05
19	Nicaragua	0.10	0.02
20	Guatemala	0.08	0.04
21	El Salvador	0.07	0.03

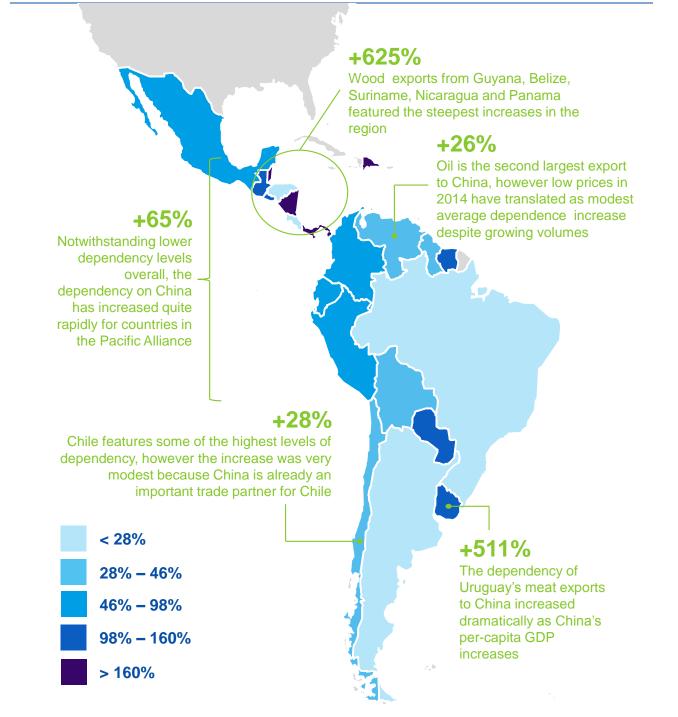
Ranking of Latin American countries according to export dependency (Index: 0-1)



Source: BBVA Research based on UN COMTRADE statistics



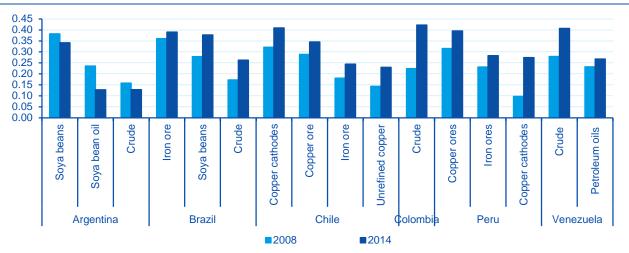
Figure 8 Change in export dependency index between 2008 and 2014 (Δ %)



Source: BBVA Research based on UN COMTRADE statistics

3.2 Dependency for largest exporters centered on four products

Brazil, Argentina, Chile, Peru, Colombia, Mexico and Venezuela were the main exporters to China in 2014. Excluding Mexico, all of them ranked amongst the top-10 most dependent countries on China. Furthermore, their exports to China were all concentrated around four commodities, namely soy in the form of soybeans and soybean oil; crude oil; copper in the form of copper ore, copper cathodes and unrefined copper; and iron ore (Figure 8).





Source: BBVA Research based on UN COMTRADE statistics

Argentina

Argentina's export dependency on China actually fell by 13% between 2008 and 2014, the only country in Latin America (excluding Costa Rica) to experience a decline. Argentina went from being the second country with the highest export dependency on China in 2008, to being the tenth in 2014. This fall comes on the back of falling commodity prices as well as a drop in the country's exports to China. Despite this decline, overall dependency levels remain high compared to the average in Latin America. The message therefore needs to be understood within the context of Argentina's fragile exchange rate regime and worsening terms of trade.

Argentina's soybean exports to China represent this trend quite clearly. Argentina was the third largest producer and exporter of Soybeans in 2014. But despite the country's dominant position in soybean production, exports to China fell by 39% between 2008 and 2014 (vs. 12% worldwide). According to the USDA, Argentina's soybean stocks were 30 million tons in 2014, three times larger than China's. Argentinian producers could have been increasing their soybean stocks with the intention of selling at later date, once the exchange rate is more favorable.

Most crude oil exporters in Latin America saw an increase in their dependency on China. This is no small feat given the steep drop in global crude prices which started during the second half of 2014. Argentina was the only exception. By the same token as soybeans, the export dependency of Argentina's crude exports to China fell by 20% between 2008 and 2014, on the back of a 58% decline in exports by volume to China as well as lower global crude prices.

Brazil

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The largest country in Latin America as well as China's main trade partner in the region saw its export dependency on China increase by 27% between 2008 and 2014, making it one of the countries with the highest dependency in the region, coming in fifth place. Soybeans, iron ore and crude accounted for 80% of the country's total exports to China in 2014, or a modest but sizeable 30% of total exports to the world (Figure 9). However, with China as the main destination for these exports (Figure 10), this leaves Brazil significantly exposed to shifts in Chinese demand.

Brazil is the second producer of soybeans worldwide as well as the largest producer in Latin America. Its soybean exports feature the highest dependency on China, which can be traced back to the importance of this commodity export for the Brazilian economy (10% of total exports) as well as China's dominant market share (80% of total soybean exports). In addition dependency increased relatively rapidly, by 35% between 2008 and 2014, favored by soaring demand from China and decreasing exports from Argentina. This dependency is high even by global standards – The United States is the first exporter of soybean in the world its dependency is half that of Brazil's due to the fact that soybeans represent only 2% of its exports.

Brazil is the largest exporter of iron in Latin America as well as the second largest exporter of iron ore to China globally, behind Australia (23% of China's iron ore imports in 2014 originated from Brazil vs. 54% from Australia). This coupled with China's dominant market position, makes up for the country's high iron export dependency on China, which was higher than the non-weighted average of its Latin American counterparts (0.4 vs. 0.21). Having said this, and in contrast soybeans, Brazil's iron ore exports' feature relatively low levels of dependency compared to other global producers (Australia's was 0.53 in the same year), something which is bound to change in the future. Brazil is the home to the largest iron producer of the world, Vale. The company is planning an investment of US\$16 billion (\$3.6 billion by a Chinese revolving line of credit) in order to increase its output and it is expected that by 2018 it would produce more than its two main competitors BHP Billiton and Rio Tinto combined, increasing the country's dependency on China at a time when iron imports from the country are in decline.

Chile

Chile features high export dependency on China, ranking in sixth place among all countries in Latin America and increasing by 28% between 2008 and 2014. Chile's relatively high dependency stems from the role that mineral exports, in particular copper, play for the Austral economy. Whereas copper cathodes and ores accounted for a disproportionate 70% of Chile's total exports to China in 2014, these constituted 42% of Chile's copper exports in that year, muting the impact of a shift in Chinese demand, which would have otherwise been huge. Export dependency increased modestly between 2008 and 2014, which is explained by the fact that Chile has traditionally had a high export dependency levels overall.

Colombia

Colombia is the second country on our export dependency ranking, after Costa Rica. The fact that crude is such an important export for Colombia, accounting for circa 50% of the country's total exports in 2014, coupled with China's substantial market share (26% of total crude exports go to China) are the main factors behind Colombia's high dependency. Over 80% of Colombia's exports to China are crude, which makes it the second exporter of crude to China in Latin America, behind Venezuela.

In addition, crude exports to China have more than doubled between 2008 and 2014. The United States used to be Colombia's number one crude oil export market, but the country's shift to energy independence has

prompted Colombia to seek opportunities elsewhere. Colombia's crude exports' dependency on China is three times that of other exporters in Latin America – something remarkable in the context of falling global oil prices.

This increase can also be partially explained by the fact that Colombian crude oil, being heavier and harder to refine, has a cost advantage over crude oil from other regional competitors such as Brazil or major suppliers such as and Saudi Arabia. China National Petroleum Corporation (CNPC) recently completed the expansion of its Shijiazhuang plant (expanding the country's refining capacity for this type of heavy oil), which could lead to further increases in Colombia's export dependency looking forward.

Peru

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It is no coincidence that Peru's export dependency on China is higher than the average in Latin America. Mineral exports to China account for 13% of Peru total exports. Peru is the third largest producer of copper in the world and, according to Fraser Institute, it ranks 2nd in its attractiveness for investments in the mining sector in Latin America. In particular, Chinese companies have been flocking to Peru in recent years, promising to increase the copper production by 20% with the mega-investments in Toromocho (2013) and Las Bambas (2014), surpassing Chile as the largest exporter of this mineral in Latin America.

Peru's copper export dependency on China outpaces that of other countries in Latin America. Copper amounts for quite a large proportion of Peru's total exports, around 20%, but more than half of these exports end up being shipped to China, exacerbating the importance of this commodity for the Peruvian economy. Similarly, Iron ore may only account for 3% of Peru's total exports, but an overwhelming 94% of these end up being shipped to China, whom enjoys a very dominant position in the market (China consumes 75% of the world's total iron ore supply).

Venezuela

Venezuela has traditionally been an important ally of China in the region, accounting for most of China's total FDI and lending between 2005 and 2014. Venezuela's heavy export dependency on China is yet another example of the important role that the Asian giant plays in the Bolivarian economy. Crude oil and petroleum oil accounted for 90% of Venezuela's total exports to the world and 97% of exports to China (74% of which were crude oil). But China accounts for only a very small proportion of Venezuela's crude oil exports to the world. Venezuela is the third supplier of refined oil to China, behind South Korea and Singapore and accounting for 13% of China's total imports of this product. Were it not for these refined oil exports, the country's export dependency on China would be significantly higher.

3.3 Mexico sets an interesting precedent for the rest of Latin America

Mexico's export dependency on China grew by 95% between 2008 and 2014, slightly above the average for Latin America, which was 88%. The country is now China's second largest commercial partner in the region, behind Brazil, while China is Mexico's second largest partner worldwide, albeit far behind the US, which accounts for 70% of total exports from Mexico. But notwithstanding this steep increase, Mexico's export dependency on China is among the lowest in the region, setting it apart from the bulk of countries in Latin America.

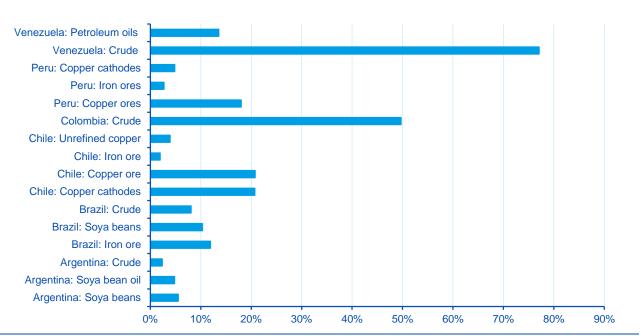
What explains this discrepancy? To begin with, Mexico's exports to China are much more diversified than other Latin American counterparts. A total of 33 different products accounted for 80% of its exports to China (Appendix I), while the average for the rest of Latin America and the Caribbean is less than 4 products. This is related to qualitative aspects of Mexico's export dependency on China: Copper ores, vehicle parts and iron

ores were the three exports with the highest dependency in 2014 – in stark contrast to other countries in the region, trade in manufactured goods and components made a star debut in the case of Mexico. Furthermore, the commodities that Mexico does export to China, namely copper ore and iron ore, feature a much lower dependency compared to the rest Latin America.

Mexico's geographic proximity to the United States means that the country has adapted its production structure to tailor more efficiently to the needs of the North American market, increasing its export dependency on the United States while neutralizing its export dependency on China. Contrary to popular belief, tailoring to the largest consumer market does not need to be a zero-sum game, and this is an area where Mexico's expanding production linkages with the United States and China, particularly in the automotive sector, have proven to be a success story which other countries in Latin America could seek to emulate (Fung, Garcia-Herrero and Siu, 2012).

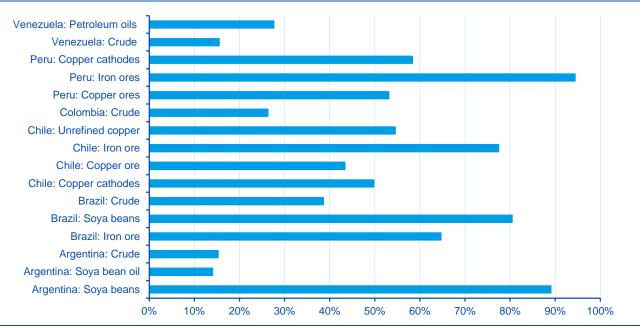
As rosy a picture as this may seem; we cannot forget that Mexico, much like the rest of the continent, still has a significant deficit with China, worth US\$21 billion in 2014. Despite Mexican exports to China grew 203% between 2008 and 2014, they constitute less than 3% of its total exports, while imports from China accounted for 8% of its total imports. In 2013, during President Xi Jinping's visit to Mexico, Chinese representatives confirmed that that they were considering the establishment of a FTA with Mexico. The expectation is that this FTA will lower the costs of trade and will facilitate a further diversification of Mexico's exports to China. President Xi Jinping further attested that one of the main goals was to increase the imports of high value-added products from Mexico. An FTA – in combination with policies that facilitate foreign direct investment and the deepening of interregional links – would definitely help Mexico to further diversify its export base vis-à-vis China.

Figure 9 Country Y's exports of Commodity X as a % of total exports in 2014



Source: BBVA Research based on UN COMTRADE statistics

Figure 10 Country Y's exports of commodity X to China as a percentage of total exports of commodity X in 2014



Source: BBVA Research based on UN COMTRADE statistics

4 Conclusions

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Bilateral trade between China and Latin America has grown very quickly in the last decade, but the nature of these flows remains unbalanced. Latin America has a trade deficit with China, which could be difficult to reverse given that the continent exports primarily commodities to China while importing primarily manufactured goods. Soybeans, crude oil, iron ore and copper accounted for 80% of the total exports in 2014. Furthermore, as China's economy slows, this will have repercussions on Latin American exporters, and countries could see a fall in their exports by volume as well as deterioration in their terms of trade on the back of lower commodity prices.

In this paper, we deployed an export dependency index to identify the sectors and countries in Latin America which are most exposed to fluctuations in Chinese demand. Our research reveals that dependency on China has increased overboard across Latin America for all countries and all products, with some exceptions. Levels of commodity dependency were highest amongst members of MERCOSUR, Chile, Peru and Colombia, as these countries tend to be important commercial partners (i.e. large commodity exporters like Chile) or strategic allies of China in Latin America. On the other hand, the steepest increases were found amongst countries in the Pacific Alliance, Panama, Uruguay, Paraguay and Nicaragua.

In order to rebalance trade relations with China, Latin American countries need to think beyond commodities. Leveraging their strategic geographic position in the Western Hemisphere, close to consumer markets in the United States, could help Latin America to further diversify its export base, potentially offsetting their exposure to China. Mexico's expanding production linkages with the United States and China, particularly in the automotive sector, have proven to be a success story which other countries in Latin America could aspire to emulate, wherever possible.

Furthermore, policies that facilitate trade integration, both with China but also within Latin America and the Caribbean, could also help to foster more inclusive trade links by lowering costs and entry barriers. These include things like more FTAs with China as well as measures that facilitate infrastructure investments that enhance connectivity in Latin America.

Appendix I: Latin American export dependency tables by country

Table 2 Argentina

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Country	Commodity name	HS 2007 Code	2008	2014
Argentina	Soya beans, whether/not broken	120100	0.38	0.34
Argentina	Soya bean oil, crude, whether/not degummed, not chemically modified	150710	0.24	0.13
Argentina	Petroleum oils & oils obt. from bituminous mins., crude	270900	0.16	0.13
Argentina	Tobacco, partly/wholly stemmed/stripped	240120	0.07	0.10

Source: UNCOMTRADE and BBVA Research

Table 3 Brazil

Commodity name	HS 2007 Code	2008	2014
Sova beans whether/not broken	120100	0.28	0.38
	260111	0.36	0.39
	270900	0.17	0.26
Chemical wood pulp, soda/sulphate, other than dissolving grades, semi- bleached/bleached, non-coniferous	470329	0.12	0.19
	Soya beans, whether/not broken Iron ores & concentrates (excl. roasted iron pyrites), non-agglomerated Petroleum oils & oils obt. from bituminous mins., crude Chemical wood pulp, soda/sulphate, other than dissolving grades, semi-	Soya beans, whether/not broken 120100 Iron ores & concentrates (excl. roasted iron pyrites), non-agglomerated 260111 Petroleum oils & oils obt. from bituminous mins., crude 270900 Chemical wood pulp, soda/sulphate, other than dissolving grades, semi- 470329	Soya beans, whether/not broken1201000.28Iron ores & concentrates (excl. roasted iron pyrites), non-agglomerated2601110.36Petroleum oils & oils obt. from bituminous mins., crude2709000.17Chemical wood pulp, soda/sulphate, other than dissolving grades, semi-4703290.12

Source: UNCOMTRADE and BBVA Research

Table 4

Commodity name	HS 2007 Code	2008	2014
Cathodes & sections of cathodes, of refined copper	740311	0.32	0.41
Copper ores & concentrates	260300	0.29	0.35
Unrefined copper; copper anodes for electrolytic refining	740200	0.14	0.23
Iron ores & concentrates (excl. roasted iron pyrites)	260111	0.18	0.24
Chemical wood pulp, soda, other than dissolving grades, semi-bleached/bleached, coniferous	470321	0.16	0.19
	Cathodes & sections of cathodes, of refined copper Copper ores & concentrates Unrefined copper; copper anodes for electrolytic refining Iron ores & concentrates (excl. roasted iron pyrites) Chemical wood pulp, soda, other than dissolving grades, semi-bleached/bleached,	Cathodes & sections of cathodes, of refined copper740311Copper ores & concentrates260300Unrefined copper; copper anodes for electrolytic refining740200Iron ores & concentrates (excl. roasted iron pyrites)260111Chemical wood pulp, soda, other than dissolving grades, semi-bleached/bleached,470321	Cathodes & sections of cathodes, of refined copper7403110.32Copper ores & concentrates2603000.29Unrefined copper; copper anodes for electrolytic refining7402000.14Iron ores & concentrates (excl. roasted iron pyrites)2601110.18Chemical wood pulp, soda, other than dissolving grades, semi-bleached/bleached,4703210.16

Source: UNCOMTRADE and BBVA Research

Table 5 Colombia

Country	Commodity name	HS 2007 Code	2008	2014
Colombia	Petroleum oils & oils obt. from bituminous mins., crude	270900	0.22	0.42

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Table 6 Mexico

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Country	Commodity name	HS 2007 Code	2008	2014
Mexico	Copper ores & concentrates	260300	0.10	0.13
Mexico	Petroleum oils & oils obt. from bituminous mins., crude	270900	0.00	0.09
Mexico	Vehicles (excl. of 87.02 & 8703.10) principally designed for the transport of persons, with spark-ignition internal combustion reciprocating piston engine, of a cylinder capacity >1500cc but not >3000cc	870323	0.05	0.13
Mexico	Electronic integrated circuits, amplifiers	854233	0.07	0.13
Mexico	Iron ores & concentrates (excl. roasted iron pyrites), non-agglomerated	260111	0.08	0.09
Mexico	Gear boxes & parts thereof, of the motor vehicles of headings 87.01 to 87.05.	870840	0.03	0.08
Mexico	Copper waste & scrap	740400	0.04	0.08
Mexico	Processing units other than those of sub-heading 8471.41/8471.49, whether/not containing in the same housing one/two of the following types of unit : storage units, input units, output units	847150	0.04	0.07
Mexico	Other Electronic integrated circuits, other than Amplifiers/Memories/Processors & controllers	854239	0.06	0.08
Mexico	Vehicles (excl. of 87.02 & 8703.10) principally designed for the transport of persons, with spark-ignition internal combustion reciprocating piston engine, of a cylinder capacity >1000cc but not >1500cc	870322	0.01	0.07
Mexico	Silver ores & concentrates	261610	0.02	0.07
Mexico	Electronic integrated circuits, processors & controllers, whether/not combined with memories, converters, logic circuits, amplifiers, clock & timing circuits,/other circuits	854231	0.07	0.07
Mexico	Catheters, cannulae & the like	901839	0.02	0.06
Mexico	Parts of telephone sets, incl. telephones for cellular networks/for other wireless networks; other apparatus for the transmission/reception of voice, images/other data, incl. apparatus for communication in a wired/wireless network (such as a local/wide a	851770	0.07	0.06
Mexico	Lead ores & concentrates	260700	0.05	0.06
Mexico	Electrical apparatus for switching/protecting electrical circuits,/for making connections to/in electrical circuits, n.e.s. in 85.36, for a voltage not >1000V	853690	0.05	0.06
Mexico	Machines for the reception, conversion & transmission/regeneration of voice, images/other data, incl. switching & routing apparatus Instruments & appliances used in medical/surgical/veterinary sciences, incl. other electro-	851762	0.06	0.05
Mexico	medical apparatus & sight-testing instr., n.e.s. in 90.18	901890	0.04	0.05
Mexico	Transistors (excl. photosensitive transistors), other than those with a dissipation rate of $<1W$	854129	0.05	0.06
Mexico	Boards, panels, consoles, desks, cabinets & other bases, equipped with 2/more apparatus of 85.35/85.36, for electric control/distribution of electricity, incld. Those incorporating instruments/apparatus of Ch. 90 & numerical control apparatus, other than	853710	0.03	0.05
Mexico	Waste, parings & scrap, of plastics n.e.s. in 39.15	391590	0.04	0.05
Mexico	Parts suit. for use solely/principally with the apparatus of 85.35/85.36/85.37 (excl. of 8538.10)	853890	0.04	0.05
Mexico	Cathodes & sections of cathodes, of refined copper, unwrought	740311	0.05	0.05
Mexico	Other automatic data processing machines, presented in the form of systems.	847149	0.02	0.03
Mexico	Parts suit. for use solely/principally with spark-ignition internal combustion piston engines	840991	0.04	0.04
Mexico	Fixed electrical capacitors, other than those of 8532.10, ceramic dielectric, multilayer	853224	0.05	0.05
Mexico	Recovered (waste & scrap) unbleached Kraft paper/paperboard/corrugated paper/paperboard	470710	0.04	0.05
Mexico	Parts & accessories of the machines of heading 84.71	847330	0.06	0.04
Mexico	Parts of the electrical capacitors of 85.32	853290	0.03	0.04
Mexico	Orthopedic/fracture appliances	902110	0.02	0.04
Mexico	Other electric conductors, for a voltage not > 1,000 V, fitted with connectors	854442	0.04	0.04
Mexico	Waste, parings & scrap, of polymers of ethylene	391510	0.02	0.05
Mexico	Cotton, not carded/combed	520100	0.05	0.04
Mexico	Flours, meals & pellets of fish/of crustaceans, mollusks/other aquatic invertebrates	230120	0.00	0.04
Mexico	Fixed electrical capacitors, other than those of 8532.10, tantalum	853221	0.05	0.04
Mexico	Pigments & preparations based on titanium dioxide, containing 80%/more by weight of titanium dioxide	320611	0.03	0.04
Mexico	Multiple loudspeakers, mounted in the same enclosure	851822	0.02	0.04

Table 7 Peru

BBVA

Country	Commodity name	HS 2007 Code	2008	2014
Peru	Copper ores & concentrates	260300	0.32	0.40
Peru	Cathodes & sections of cathodes, of refined copper, unwrought	740311	0.10	0.27
Peru	Iron ores & concentrates (excl. roasted iron pyrites), non-agglomerated	260111	0.23	0.28
Peru	Flours, meals & pellets of fish/of crustaceans, mollusks/other aquatic invertebrates	230120	0.24	0.22

Source: UNCOMTRADE and BBVA Research

Table 8 Venezuela

Country	Commodity name	HS 2007 Code	2008	2014
Venezuela	Petroleum oils & oils obt. from bituminous mins., crude	270900	0.28	0.41
Venezuela	Petroleum oils & oils obtained from bituminous minerals (other than crude)	271019	0.23	0.27

Table 9 Rest of South America

BBVA

Country	Commodity name	HS 2007 Code	2008	2014	Δ %
Bolivia	Petroleum oils & oils obt. from bituminous mins., crude	270900	0.15	0.21	40%
Bolivia	Tin, not alloyed, unwrought	800110	0.15	0.14	-3%
Bolivia	Silver ores & concentrates	261610	0.09	0.13	48%
Bolivia	Lead ores & concentrates	260700	0.07	0.12	66%
Bolivia	Zinc ores & concentrates	260800	0.05	0.11	110%
Ecuador	Petroleum oils & oils obt. from bituminous mins., crude	270900	0.29	0.23	-22%
Ecuador	Bananas, incl. plantains, fresh/dried	80300	0.03	0.15	399%
Ecuador	Shrimps & prawns, whether/not in shell, frozen	30613	0.00	0.13	13%
Ecuador	Precious metal ores & concentrates (excl. silver ores & concentrates)	261690	0.00	0.13	13%
Paraguay	Copper waste & scrap	740400	0.07	0.12	71%
Paraguay	Tanned/crust hides & skins of bovine (incl. buffalo)/equine animals, without hair on, in the wet state (incl. wet-blue), full grains, unsplit; grain splits but not further prepared	410411	0.03	0.10	189%
Paraguay	Sesame seeds, whether/not broken	120740	0.05	0.06	29%
Suriname	Wood, in the rough (excl. of 4403.10-4403.92), whether/not stripped of bark/sapwood/roughly squared	440399	0.10	0.26	171%
Suriname	Aluminum oxide (excl. artificial corundum)	281820	0.00	0.16	16%
Uruguay	Soya beans, whether/not broken	120100	0.33	0.50	50%
Uruguay	Meat of bovine animals, frozen, boneless	20230	0.06	0.23	274%
Uruguay	Meat of bovine animals, frozen (excl. of 0202.10), bone-in	20220	0.03	0.18	511%
Uruguay	Whole bovine (incl. buffalo)/equine hides & skins, weight >16kg(fresh/salted/dried/limed/pickled/other. preserved but not tanned/parchment- dressed/further prepared), whether/not dehaired/split	410150	0.04	0.19	361%
Uruguay	Chemical wood pulp, soda/sulphate, other than dissolving grades, semi-bleached/bleached, non- coniferous	470329	0.25	0.30	19%

Table 10 Rest of Central America

BBVA

Country	Commodity name	HS 2007 Code	2008	2014	Δ %
Belize	Wood, in the rough (excl. of 4403.10-4403.92), whether/not stripped of	440399	0.02	0.25	996%
	bark/sapwood/roughly squared Electronic integrated circuits, processors & controllers, whether/not combined				
Costa Rica	with memories, converters, logic circuits, amplifiers, clock & timing circuits,/other circuits	854231	0.45	0.43	-3%
El Salvador	Recovered (waste & scrap) unbleached kraft paper/paperboard/corrugated paper/paperboard	470710	0.02	0.08	371%
El Salvador	Fixed electrical capacitors, other than those of 8532.10, tantalum	853221	0.04	0.07	76%
El Salvador	Fixed electrical capacitors, other than those of 8532.10, ceramic dielectric, multilayer	853224	0.04	0.06	52%
El Salvador	Wood, in the rough (excl. of 4403.10-4403.92), whether/not stripped of bark/sapwood/roughly squared	440399	0.00	0.06	6%
El Salvador	Aluminium waste & scrap	760200	0.07	0.04	-43%
Guatemala	Cane sugar, raw, in solid form, not containing added flavoring/coloring matter	170111	0.04	0.10	145%
Guatemala	Copper waste & scrap	740400	0.05	0.08	53%
Guatemala	Recovered (waste & scrap) unbleached kraft paper/paperboard/corrugated paper/paperboard	470710	0.02	0.07	213%
Guatemala	Coffee, not roasted, not decaffeinated	90111	0.02	0.05	247%
Guatemala	Waste, parings & scrap, of polymers of ethylene	391510	0.04	0.06	67%
Guatemala	Waste, parings & scrap, of plastics n.e.s. in 39.15	391590	0.07	0.05	-29%
Guatemala	Wood, in the rough (excl. of 4403.10-4403.92), whether/not stripped of bark/sapwood/roughly squared	440399	0.02	0.05	183%
Guatemala	T-shirts, singlets & other vests, knitted/crocheted, of cotton	610910	0.01	0.04	433%
Guyana	Wood, in the rough (excl. of 4403.10-4403.92), whether/not stripped of bark/sapwood/roughly squared	440399	0.22	0.30	36%
Honduras	Iron ores & concentrates (excl. roasted iron pyrites), non-agglomerated	260111	0.00	0.24	24%
Nicaragua	Wood, in the rough (excl. of 4403.10-4403.92), whether/not stripped of bark/sapwood/roughly squared	440399	0.02	0.13	595%
Nicaragua	Wood(excl. of 4407.10-4407.95), sawn/chipped lengthwise, sliced/peeled, whether/not planed, sanded/end-jointed, of a thickness >6mm	440799	0.02	0.10	354%
Nicaragua	Tanned/crust hides & skins of bovine (incl. buffalo)/equine animals, without hair on, in the wet state (incl. wet-blue), full grains, unsplit; grain splits but not further prepared	410411	0.04	0.09	143%
Nicaragua	Boards, panels, consoles, desks, cabinets & other bases, equipped with 2/more apparatus of 85.35/85.36, for electric control/distribution of electricity	853710	0.00	0.08	8%
Nicaragua	Copper waste & scrap	740400	0.03	0.08	182%
Nicaragua	Ground-nut oil, crude	150810	0.00	0.06	6%
Nicaragua	T-shirts, singlets & other vests, knitted/crocheted, of cotton	610910	0.04	0.06	47%
Panama	Wood, in the rough (excl. of 4403.10-4403.92), whether/not stripped of bark/sapwood/roughly squared	440399	0.01	0.38	2840%
Panama	Propane, liquefied	271112	0.00	0.25	25%
Panama	Wood(excl. of 4407.10-4407.95), sawn/chipped lengthwise, sliced/peeled, whether/not planed, sanded/end-jointed, of a thickness >6mm	440799	0.02	0.26	1221%
Panama	Flours, meals & pellets of fish/of crustaceans, mollusks/other aquatic invertebrates	230120	0.07	0.22	229%
Dominican Rep.	Aluminium ores & concentrates	260600	0.04	0.19	344%
Dominican Rep.	Copper ores & concentrates	260300	0.00	0.17	17%
Dominican Rep.	Copper waste & scrap	740400	0.09	0.14	57%
Dominican Rep.	Catheters, cannulae & the like	901839	0.05	0.09	85%
Dominican Rep.	Sterile surgical catgut, similar sterile suture materials (including sterile absorbable surgical/dental yarns)&sterile tissue adhesives for surgical wound closure; sterile laminaria&sterile laminaria tents; sterile absorbable surgical/dental/veterinary p	300610	0.02	0.08	231%

Source: UNCOMTRADE and BBVA Research

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References

BBVA

Agosin (2009), Crecimiento y diversificación de exportaciones en economías emergentes. CEPAL Magazine

Armony (2012), Setting the Agenda: Asia and Latin America in the 21st Century, University of Miami, Center for Latin American Studies Publications.

Bárcena (2015), China and Latin America: Diversification is the key word, ECLAC articles, May 2015

Canuto (2014), The Commodity Super Cycle: Is This Time Different? World Bank Economic Premise 150

Dussel, Gallagher (2013), NAFTA's uninvited guest: China and the disintegration of North American trade.

Espinosa, Marchan, Sucre (2015), The new Silk Road, Emerging patterns in Asian-Latin American Energy trade, Inter-American Bank of Development

Farooki and Kaplinsky (2012). The impact of China on global commodity prices. Routledge.

Fung, Garcia-Herrero and Siu (2012). Production sharing in Latin America and East Asia. In: Fung and Garcia-Herrero (2012). Sino-Latin American economic relations. Routledge Contemporary Series. pp. 88-157

Gallagher and Porzecanski (2010). The Dragon in the Room: China and the Future of Latin American Industrialization. Stanford University Press

Garcia-Herrero, Ferchen and Nigrinis (2013). Evaluating Latin America's commodity dependence on China. BBVA Working Paper 13/05

Garcia-Herrero and Casanova (2014). China's trade relations with the south: What can Africa learn from Latin America? BBVA Research.

Garcia-Herrero, Fung and Seade (2015), Beyond Minerals: China-Latin American Trans-Pacific Supply Chain BBVA Working Paper 15/18

Hernandez, Magnani, Posadas, Redondo, Robles, Ruiz and Dos Santos (2015), ¿Cuáles son los sectores con mayor potencial para aprovechar la Alianza del Pacífico? BBVA Working Paper 15/21

Inter-American Dialogue (2011), Latin America's Agricultural Exports to China, Jul 29 2011

Jackson, Green (2015). Fraser Institute Annual Survey of Mining Companies, 2014. Fraser Institute

Jenkings, Dussel, Mezquita (2008), the Impact of China on Latin America and the Caribbean.

Manzano (2015), El rol de los recursos naturales en el comercio internacional y el desarrollo, Inter-American Bank of Development.

Myers, Jie (2015), China's agricultural investment in Latin America: A Critical Assessment.

Sanborn, Chonn (2015), Chinese Investment in Peru's Mining Industry: Blessing or Curse? Global Economic Governance Initiative, Boston University Pardee School.

United States Department of Agriculture (2014), China in the Next Decade: Rising Meat Demand and Growing Imports of Feed, United States Department of Agriculture Economic Research Service April 07, 2014.

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Contact Details: BBVA Research Azul Street, 4 La Vela Building - 4 and 5 floor 28050 Madrid (Spain) Tel.: +34 91 374 60 00 and +34 91 537 70 00 Fax: +34 91 374 30 25 bbvaresearch@bbva.com www.bbvaresearch.com