BBVA | RESEARCH

Working Paper
Number 13/06

Latin American Commodity Export Concentration: Is There a China Effect?

Economic Analysis
Hong Kong, January 21, 2013

Latin American Commodity Export Concentration: Is There a China Effect?

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January 2013

Abstract

Given that commodity export concentration is likely to be unhelpful for economic development, we then ask the question of whether Latin America has been experiencing a more pronounced concentration of such exports. We then use different indicators to measure such concentration. Our measurements show that there may be an increase of commodity concentration exports in the last few years of this decade. This phenomenon leads us to ask the question: is the rise of China partly responsible for such an increase? We then ran formal regressions trying to explain an index of commodity export concentration across countries and over time. We control for standard explanatory variables including the relative price index of commodities, the endowment of commodities, the income effects and the quality of infrastructure. We test our hypothesis for alternative periods and using different econometric methodologies. Our results seem to indicate that there is some evidence of the China effect, i.e. the growing importance of China is positively and significantly related to increased commodity export concentration.

Keywords: Export concentration, China economic rise, Latin America de-industrialization.

JEL: F14, F43.

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3: Thank you for Carrie Weiwei Liu and Mariana Silva for their research assistance

1. Introduction

In recent years, there has been an increased interest among academics and policymakers concerning the perceived increase in export concentration and the potential benefits of product diversification (Feenstra and Kee 2004, Greenaway and Kneller 2007). Some of the concerns are particularly focused on the danger of "excessive" specialization of commodity exports by developing countries, including commodity, fuel and food exports from Latin America (Jansen 2004, de Ferranti, Perry, Lederman and Maloney 2002). One major worry is the potential adverse impact of commodity export concentration on the economic growth of developing countries.

Why should export diversification of any product group lead to dampened prospects of growth? First, there is the standard "diminishing returns" argument. As a country continues to invest in any particular activity, including the exporting activity in a narrow range of products, the rates of return will generally fall. Second, concentration of exports, whether it is in supposed high-technology items like computer chips or in standardized items such as petroleum, can be subjected to periodic and sometimes unexpected fall in demand and decreased prices and thus export earnings. Such volatility in incomes associated with exports can have negative consequences for the governments in the developing economies if they are trying to plan for expenditures in education, infrastructure, health or any fiscal measures.

If excessive export concentration of any kind can be detrimental to the growth of developing countries, what about the concentration of export of commodities and natural resources? There are additional reasons why this is of concerns. First, there is the well-known hypothesis that natural resources can be subjected to a secular decline in their terms-of-trade. The argument is that as countries become richer, they will spend proportionally more on manufactured products. The change in relative demand will lower the terms-of-trade of commodities.

Second, if concentration of exports has the tendency to lead of volatility of export revenues, such a feature is viewed as even more pronounced for concentration of exports of commodities and fuels. Natural resource goods tend to be homogenous products, with individual exporting economy facing a fairly inelastic demand. Adverse international market conditions often create negative terms-of-trade shocks and reduced export earnings, which can then lead to lower investment as well as consumption in the developing countries.

Third, it is equally well-known that resource-rich economies may face the Dutch disease. A boom in the export sector is usually a beneficial development for a country. But for the case of a resource-exporting economy, it can lead to negative consequences. Booming exports of minerals and fuels are often accompanied by an increase in the real exchange rates of the countries as well as a rise of the economy-wide wage levels. This leads to a loss of competitiveness and tends to shrink the manufacturing sectors, leading to de-industrialization.

Fourth, unlike manufactures, commodities may have properties that make their excessive specialization particularly undesirable. For example, it is often argued that minerals, fuels and food have less scope for productivity improvements. Quality improvements are also more likely if the developing countries export manufactured goods or services. Significantly climbing up the value added ladder seems less possible with mineral or oil exports than exports of manufactured goods. Countries that export goods associated with higher productivity levels are seen to be growing faster than countries that export lower-productivity goods (Hausman, Hwang and Rodrik 2006). In addition, concentration in exporting oils and commodities will not give the domestic entrepreneurs the opportunities to realize the gains from exploring and finding out the right varieties of products to export, making economic growth via "self-discovery" less likely (Hausmann and Rodrik 2003).

Finally some argue that the economic rents generated by the exports and productions of commodities and fuels are often extracted in economies characterized by poor institutions. Consequently, these countries tend to misuse the rents and would not invest significantly to make sure that the economic development of the countries will continue even after the natural resources are depleted.

In addition to theoretical and conceptual arguments, there are also empirical studies that link concentration of exports to smaller productivity gains or slower growth of the countries,

including work by Al-Marhubi (2000), Feenstra and Kee (2004), Herzer and Nowak-Lehnmann (2006), etc.

Thus, our interest in re-examining the export concentration of commodity exports from Latin America is due partly to the growing academic and policy literature on this subject. But on top of that, the research in this paper is also motivated by the observation of the discernible boom in export of natural resources from developing countries, particularly to rapidly growing emerging countries like China. Is this boom in trade in commodities by Latin America and other countries accompanied by a greater concentration of such exports? Furthermore, is the rise of China partly responsible for the increased concentration?

If indeed there is enhanced concentration of natural resource exports by Latin America and other developing countries and indeed if this is due to a growing China, policymakers in Latin America should be made aware so that they can more carefully track the development path of China and examine their trade with China more critically. This may have implications concerning what mitigating strategies Latin America should pursue with respect to the potential negative consequences of the growing Latin American-China resource trade.

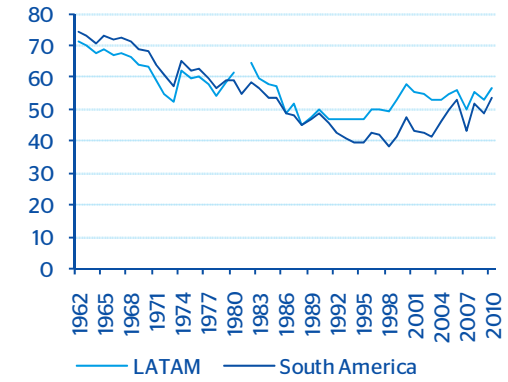
The organization of the paper is as follows. In the next section, we will use descriptive statistics and some standard indicators to examine if indeed there has been a concentration of export of commodities from Latin America. In section 3, we use more formal econometrics to examine if there is a China effect, i.e. if China is in some sense responsible for the growing concentration of export of commodities. In section 4, we conclude.

2. Measuring Commodity Export Concentration of Latin America

In this section, we focus on some measurements of commodity export concentration of Latin America. We focus on seven Latin American economies: Argentina, Brazil, Chile, Columbia, Mexico, Peru and Venezuela. For comparison, we also look at six South American countries, including all the above Latin American economies except Mexico. As we can see in Chart 1 and Chart 2, the cumulative shares of the top 5 goods exported decline until the end of the twentieth century. In the last decade the shares increased slightly. However when considering only South America, there has been a small reversal starting with the beginning of the twenty-first century, which coincides with the emergence of China as a world powerhouse. Within the region there are several differences. Brazil and Argentina seem to have the most diversified exports while Venezuela has the strongest concentration. In the case of Colombia, the diversification process apparently had a significant reversal in the last few years; this may be explained by the dramatic decline of exports to Venezuela, mainly manufactured goods. Such exports reached a peak in 2008 (to almost 6 USD billion) but in 2010 they were reduced to only one quarter of the 2008 value (about 1.5 USD billion). The reasons behind the trade collapse are more related to the bad performance of Venezuelan economy (its imports contracted 32% between 2008 and 2010), rather than stronger competition from China or other economies.

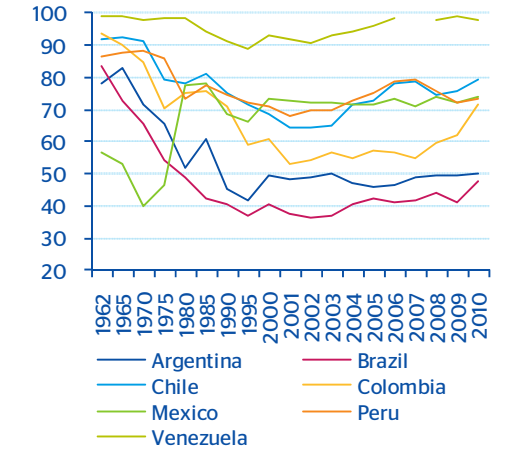
Suppose we use other metrics, like the Gini index (see annex), similar results emerge: a continuous decline of exports concentration until the end of the twentieth century, and a reversal of this trend since after, in particular in South America.

Chart 1
Exports: Top 5 goods cumulative share (% of total exports)



Source: UN Comtrade and BBVA Research

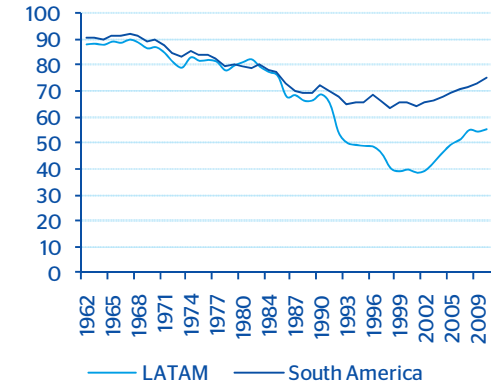
Chart 2
Exports: Top 5 goods cumulative share (% of total exports)



Source: UN Comtrade and BBVA Research

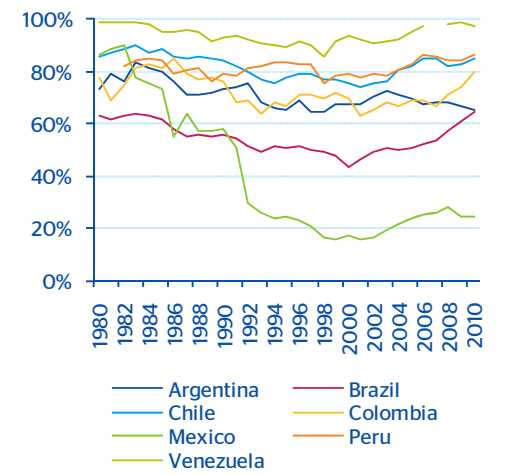
Commodities have always taken an important share of Latin American exports although until the 1980's there was a continued declined in their shares when compared to previous decades (66% in 1989 vs 88% in 1962, see Chart 3 and Chart 4). In the 1990's, the implementation of NAFTA (North American Free Trade Agreement) introduced a structural change of the Mexican economy which became mainly an exporter of manufactured goods (in 2001 only 15% of total Mexican exports were commodities), whereas in South America the lowest share was reached in the late nineties (63%). During the last 10 years the commodity boom increased again and their share of total exports rose.

Chart 3
Commodity exports (% of total exports)



Source: UN Comtrade and BBVA Research

Chart 4
Commodity exports (% of total exports)



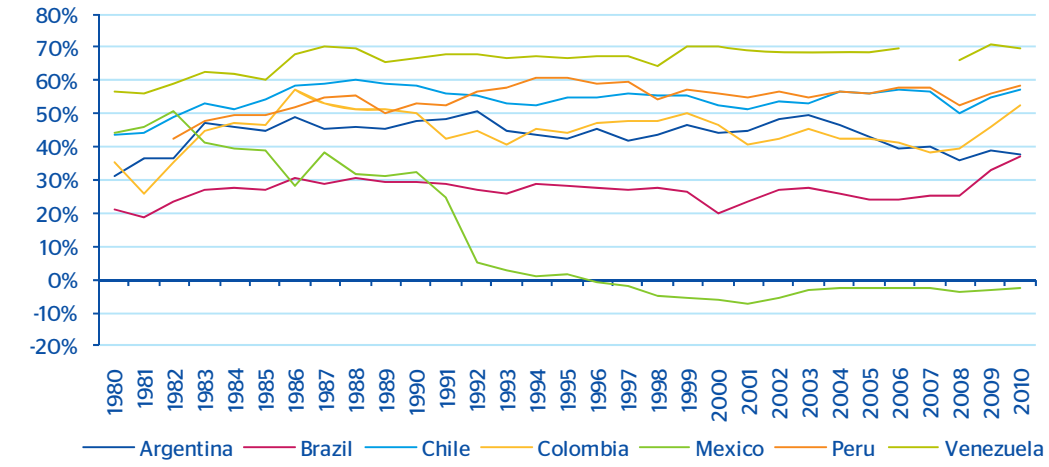
Source: UN Comtrade and BBVA Research

Compared with the rest of the world, South American economies have always been intensive in commodity exports (see Chart 5). Once again it is clear that NAFTA helped change the structure of the Mexican economy. With respect to the South American economies, it is interesting to highlight that it was only since 2008 that their share of commodities exports rose more than the world average. This fact may imply the following:

i. The rise of China and its impact on the commodity markets have a similar effect all over the world until 2007.

ii. The Chinese hunger for commodities may have had an impact on South American exports since 2008. Once again it is important to highlight the fact that the results for Colombia may be biased by the collapse of its trade with Venezuela.

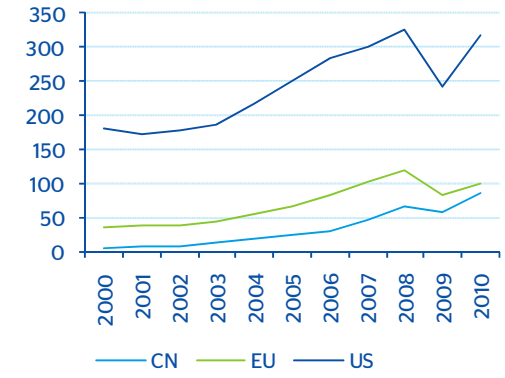
Chart 5
LATAM´s excessive commodity exports (LATAM commodity exports share vs World average)



Source: UN Comtrade and BBVA Research

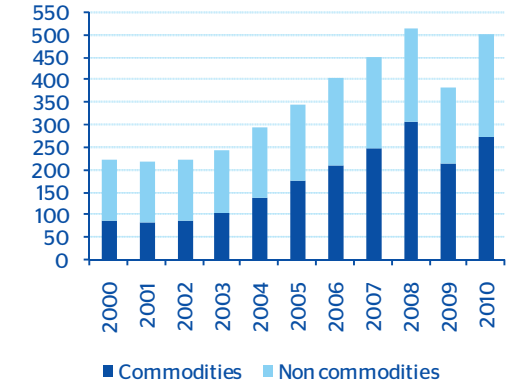
The U.S. is still, by far, the largest export destination for Latin American exports. The rise of China is dramatic and in 2010 it almost caught up with the European Union (Euro Zone + UK) as the region's second export partner. Commodities are about the half of total exports to the US, the European Union and China (see Chart 6 and Chart 7).

Chart 6
Total imports from LATAM 7 (in USD billion)



Source: UN Comtrade and BBVA Research

Chart 7
US, EU and China:
total imports from LATAM 7 (in USD billion)



Source: UN Comtrade and BBVA Research

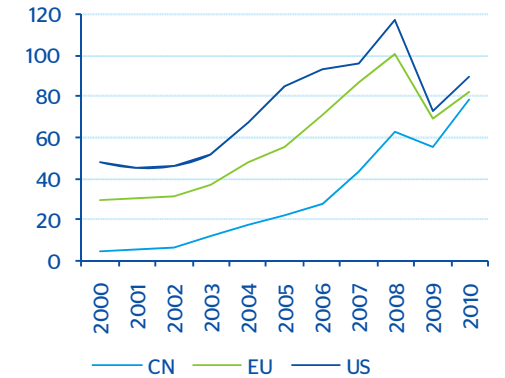
For the case of South America, although the U.S. is also the top export destination, the difference with the EU and China is not as large. The rise of China is remarkable and it may have become the second most important destination in 2011, surpassing the EU, and can become the top destination in the near future. Commodities dominate South American exports flows towards the three economies. The catching up process of China as one of the top export destinations is not only due to its rapid economic growth but also by the sharp decline of exports to the U.S. and the EU with the economic crisis in 2009. Hence Chinese commodity demand can be considered as a buffer which has compensated the negative effects of the world crisis and may explain why South America suffered a lower negative impact and the region also recovered very fast in terms of its GDP (gross domestic product) growth (See Table 1).

Table 1
South America: GDP Growth rates

	Argentina	Brazil	Chile	Colombia	Mexico	Peru	Venezuela
2006	8%	4%	6%	7%	5%	8%	10%
2007	9%	6%	5%	7%	3%	9%	9%
2008	7%	5%	3%	4%	1%	10%	5%
2009	1%	0%	-1%	2%	-6%	1%	-3%
2010	9%	8%	6%	4%	6%	9%	-2%
2011	9%	3%	6%	6%	4%	7%	4%

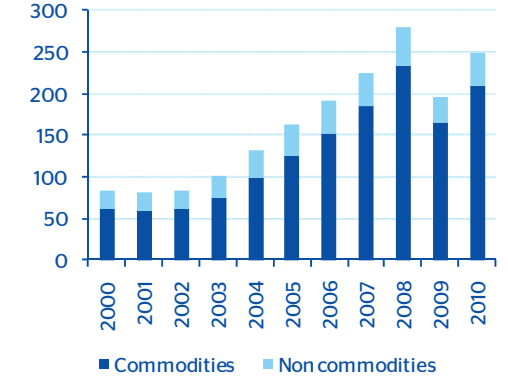
Source: Haver

Chart 8
Total imports from
South America* (in USD billion)



Source: UN Comtrade and BBVA Research

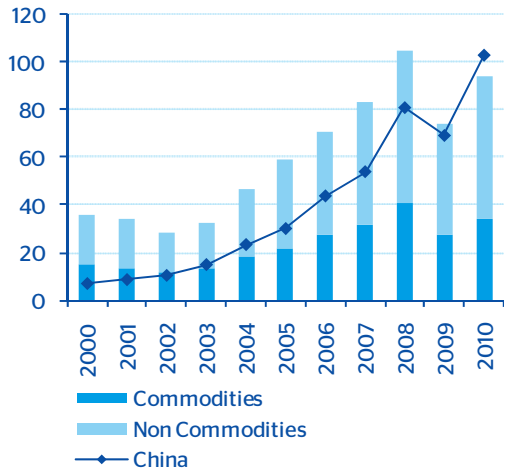
Chart 9
US, EU and China: total imports from
South America* (in USD billion)



Source: UN Comtrade and BBVA Research

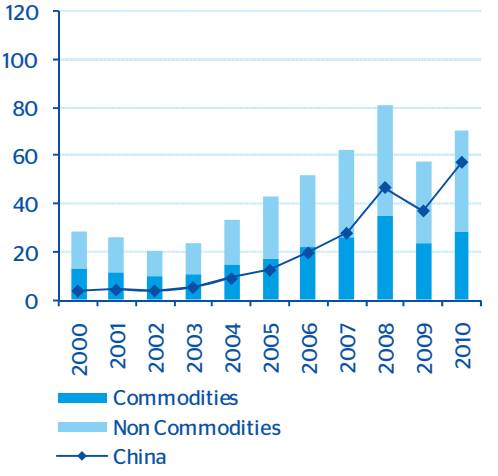
When analyzing intraregional trade (for Latin America and also South America) it is clear that export flows are mainly related to manufactured goods. At the same time there has been an important rise of Chinese imports; however the Chinese imports does not seem to have had a negative impact on intraregional flows.

Chart 10
LATAM 7: intraregional trade and Sino imports (in USD billion)



Source: UN Comtrade and BBVA Research

Chart 11
South America: intraregional trade and Sino imports (in USD billion)



Source: UN Comtrade and BBVA Research

3. Empirical Results

In this section, we present the specification of our regression equation and the empirical results. Here we would like to test if a measure of the export concentration of commodities is related to the growing importance of China, after controlling for other relevant determinants. Our favored measure of export concentration of commodities is the log of a country *i*'s share of commodity exports out of total exports relative to the same share of the world for year *t*. In the tables for regression results below, this is denoted as *Com Exp Concentration*. This proxy will embody the idea of how far above a country's commodity concentration is compared to the commodity concentration in the world.

The independent explanatory variables we have chosen include a relative price term, which is measured by the log of commodity price index relative to the consumer price index in year *t* (we show this as *Price* in the tables of regression results). Another explanatory variable captures the endowment effect of a country in year *t*. The proxy we have used is the log of the ratio of value added in commodities out of GDP relative to a similar ratio in the world in year *t* (denoted as *Endowment*). For the income effect, we use the log of GDP per capita in country *i* relative to the world GDP per capita in year *t* (denoted as *Income*). To capture the difficulty of exporting commodities, we use a dummy variable for infrastructure of country *i* in year *t* (denoted as *infrastructure*).

The explanatory variable of interest is our China effect. We use two proxies in our regressions. The first proxy is the log of the growth rate of exports of commodities to China by country *i* in year *t* (denoted as *g*). The second proxy is the log of the ratio of imports of commodities by China out of Chinese total imports relative to the same ratio by the world (represented by *CN*). The description, data sources, years of coverage and the number of observations are described in the Annex (Table 7).

The econometric regressions using the generalized least squares are reported below. Most of the explanatory variables are significant and have the expected signs. The relative price effect is positive and significant, indicating that a higher relative price leads to more commodity export concentration. The endowment variable is also significant and has the expected positive sign. The income effect is only significant for the latest decade. The infrastructure dummy has the wrong sign, however.

The China effect, as captured by *CN*, is consistently positive and significant, indicating that China is indeed responsible for the higher concentration of commodity exports. The other proxy, *g*, is also positive and significant, at least for 1980-2010 and for 1990-2010. Overall the results from this set of regressions indicate that there is indeed a China effect, with the proxies showing that after we control for the standard explanatory variables, the growing importance of China in importing commodities lead to more concentration of such exports by other countries.

Table 2
Regression Results

	GLS					
Label	**1980-2010**		**1990-2010**		**2000-2010**	
Price	0.0922264***	0.2692312***	0.099599***	0.2990624***	0.1239038***	0.3633548***
	(0.0084842)	(0.020433)	(0.0081242)	(0.0195782)	(0.0067679)	(0.0162077)
Endowment	0.8570244***	0.8019728***	0.9880214***	0.9924592***	1.367229***	1.356852***
	(0.0469829)	(0.0425693)	(0.0479426)	(0.0448415)	(0.0298013)	(0.0313704)
Income	-0.0039013	-0.00479	0.0049387	0.0033512	0.0434126***	0.0416442***
	(0.0046766)	(0.0044361)	(0.0051616)	(0.0050045)	(0.0050842)	(0.0050641)
infrastructure	-0.0763488***	-0.0781631***	-0.0630236***	-0.0510824**	-0.0788689***	-0.0613297**
	(0.0215151)	(0.021573)	(0.0222208)	(0.0214127)	(0.0247188)	(0.0260994)
g	8.69 e-07**		1.09 e-06**		1.18 e-06	
	(4.45 e-07)		(4.41 e-07)		(1.01 e-06)	
CN		3.711757***		4.069982***		4.906383***
		(0.2617042)		(0.2500846)		(0.2093698)
_cons	0.0209092	-0.2612549***	0.0025052	-0.3372118***	-0.0222914	-0.4350066***
	(0.0230092)	(0.0368113)	(0.0224505)	(0.0348343)	(0.0255795)	(0.0337675)

Source: BBVA Research

For robustness, we ran our regressions using alternative methodologies, including fixed (FE) and random effects (RE). The results are much less satisfactory. Some of the variables have the

wrong sign. For example, for the fixed effect model, a higher commodity relative price is associated with a smaller commodity export concentration. For the China effect as capture by g and CN, they are mostly insignificant. When it is significant, it has a negative sign.

Given that our observation in the last section shows that there seems to be more pronounced concentration for the period 2000-2010, we decided to rerun the fixed effect model just for this period, but we disaggregate the country sample into industrialized economies and emerging economies. The results are somewhat surprising. Instead of showing the rise of China being associated with greater commodity concentration exports from emerging countries (including Latin American countries), it seems to indicate that the China effect is positive and significant for exports from industrialized economies.

Table 3
Regression Results

	FE					
Label	**1980-2010**		**1990-2010**		**2000-2010**	
Price	-0.0158391***	-0.0318078***	-0.0074405	-0.0073458	-0.0245888***	-0.0253686***
	(0.0060941)	(0.0066558)	(0.0066544)	(0.006449)	(0.0066343)	(0.0067118)
Endowment	1.067295***	0.5412975***	0.4019629***	0.3823712***	-0.0047227	0.0195118
	(0.667407)	(0.0612575)	(0.0657458)	(0.0619744)	(0.0935897)	(0.0946744)
Income	-0.023905***	-0.045213***	-0.046999***	-0.041785***	-0.0175196*	-0.0210533**
	(0.0073996)	(0.007595)	(0.0075525)	(0.0071464)	(0.0105598)	(0.0104352)
infrastructure						
g	1.48 e-06		1.19 e-06		1.39 e-06	
	(1.47 e-06)		(1.08 e-06)		(1.14 e-06)	
CN		-0.0787518		-0.3027918***		0.1383087
		(0.0680428)		(0.0792215)		(0.1174935)
_cons	0.0836848***	0.1435754***	0.1347734***	0.1273918***	0.1654861***	0.1624668***
	(0.0089513)	(0.0091757)	(0.0092467)	(0.0088987)	(0.0112563)	(0.0112385)

Source: BBVA Research

Table 4
Regression Results

	FE 2000-2010					
Label	**All Sample Economies**		**Industrialized economies**		**Emerging Economies**	
Price	-0.0245888***	-0.0253686***	-0.024414***	-0.0286666***	-0.0242622**	-0.0232163*
	(0.0066343)	(0.0067118)	(0.0056475)	(0.0058234)	(0.0123054)	(0.0121824)
Endowment	-0.0047227	0.0195118	-0.1811871	-0.0916067	0.007057	0.0251222
	(0.0935897)	(0.0946744)	(0.2246076)	(0.2325599)	(0.1209397)	(0.122506)
Income	-0.0175196*	-0.0210533**	-0.0183657	-0.0138075	-0.01761	-0.0226299
	(0.0105598)	(0.0104352)	(0.0147618)	(0.0149284)	(0.0153615)	(0.0153108)
infrastructure						
g	1.39 e-06		0.0032283***		1.38e-06	
	(1.14 e-06)		(0.0012253)		(1.37e-06)	
CN		0.1383087		0.2038857*		0.0908027
		(0.1174935)		(0.1142871)		(0.1887663)
_cons	0.1654861***	0.1624668***	0.0665835***	0.0691247***	0.2317224***	0.2170199***
	(0.0112563)	(0.0112385)	(0.021184)***	(0.0213565)	(0.0272624)	(0.026968)

Source: BBVA Research

For the random effects model, again we have some variables that have significant coefficients that have the wrong signs. This is the case with the relative price variable. For the proxies of the China effect, the variables seem to be rather unstable, with g being insignificant and CN significant and positive only for 2000-2010 but negative and significant for 1990-2010.

Table 5
Regression Results

Label	RE					
	1980-2010		1990-2010		2000-2010	
Price	-0.0165178***	-0.032876***	-0.0062071	-0.006034	-0.0175633***	-0.018851***
	(0.0060944)	(0.0066821)	(0.0066506)	(0.0064719)	(0.0066259)	(0.006778)
Endowment	1.08733***	0.6191277***	0.5286441***	0.5044783***	0.3457998***	0.413070***
	(0.0616423)	(0.0574243)	(0.0616843)	(0.0586518)	(0.0849001)	(0.0849369)
Income	-0.0179565**	-0.0376366***	-0.0386657***	-0.0343029***	-0.0045935	-0.0057928
	(0.0070827)	(0.0072727)	(0.0072856)	(0.0069279)	(0.010023)	(0.0099032)
infrastructure	0.0023381	-0.006191	-0.0142693	-0.0121067	-0.1084829**	-0.0839928*
	(0.0481587)	(0.0483001)	(0.0491958)	(0.0479492)	(0.052335)	(0.0493838)
g	1.53 e-06		1.33 e-06		1.28 e-06	
	(1.47 e-06)		(1.09 e-06)		(1.18 e-06)	
CN		-0.0777344		-0.2913823***		0.2120234*
		(0.0683115)		(0.0799614)		(0.122474)
_cons	0.0847255**	0.143698***	0.13871***	0.1289485***	0.2079469***	0.184872***
	(0.04029)	(0.0399991)	(0.041511)	(0.0400562)	(0.0442074)	(0.0414861)

Source: BBVA Research

Overall, our formal econometric estimations suggest some evidence that the rise of China is positively associated with increased commodity export concentration. However, the results are not totally robust, since if we adopt a different methodology, then the estimations tend to show insignificant results.

4. Conclusion

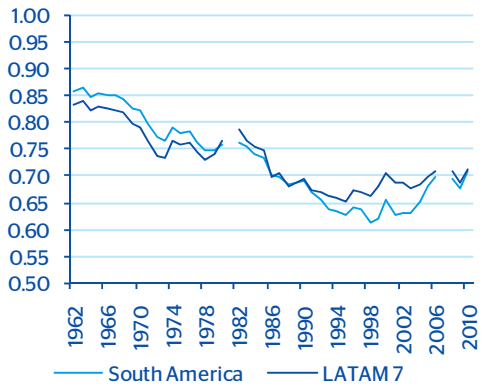
In this paper, we focus on the research question of whether there has been an increase of commodity export concentration by Latin American economies. First we provide a brief survey of the theoretical and empirical literature on the potential benefits of export diversification. There seems to be a growing consensus that excessive concentration of exports are not entirely beneficial for the economies development of developing countries, particularly the exports are commodities and natural resources.

Given that commodity export concentration is likely to be unhelpful for economic development, we then ask the question of whether Latin America has been experiencing a more pronounced concentration of such exports. We then use different indicators to measure such concentration. Our measurements show that there may be an increase of commodity concentration exports in the last few years of this decade. This phenomenon leads us to ask the question: is the rise of China partly responsible for such an increase?

We then ran formal regressions trying to explain an index of commodity export concentration across countries and over time. We control for standard explanatory variables including a relative price index for commodities, the endowment of commodities, the income effects and the quality of infrastructure. We test our hypothesis for alternative periods and using different econometric methodologies. Our results seem to indicate that there is some evidence of the China effect, i.e. the growing importance of China is positively and significantly related to increased commodity export concentration.

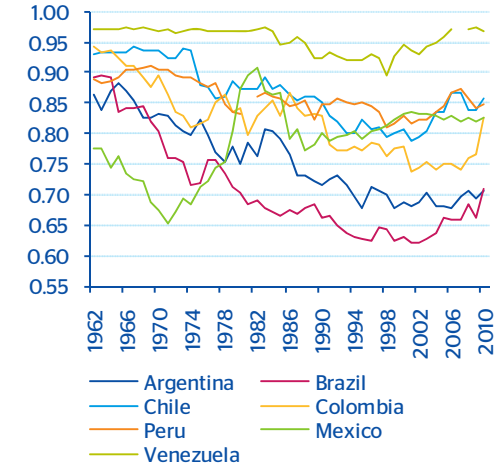
Annex

Chart 12
Gini Index Latam vs South America (by commodity)



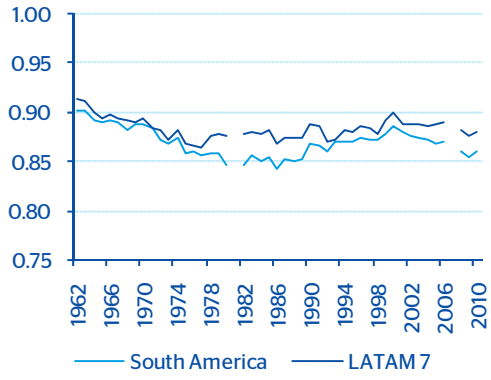
Source: UN Comtrade and BBVA Research

Chart 13
Gini Index (country-specific, by commodity)



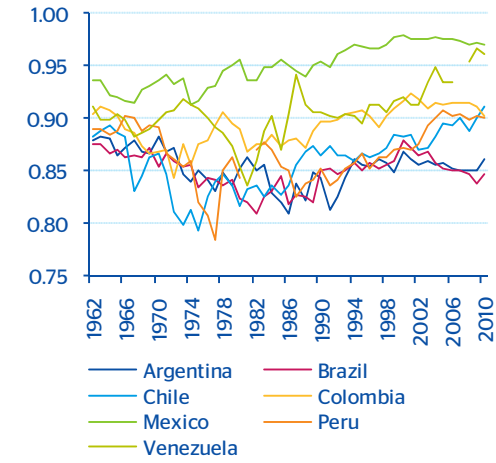
Source: UN Comtrade and BBVA Research

Chart 14
Gini Index Latam vs South America (by partner)



Source: UN Comtrade and BBVA Research

Chart 15
Gini Index (country-specific, by partner)



Source: UN Comtrade and BBVA Research

Table 6
LATAM Top 5 Commodities Exports to the World

	1962-1970	1971-1980	1981-1990	1991-2000	2001-2010	2010
1	Petroleum and products	Petroleum and products	Petroleum and products	Petroleum and products	Petroleum and products	Petroleum and products
2	Coffee, tea, cocoa, spices	Coffee, tea, cocoa, spices	Coffee, tea, cocoa, spices	Electrical machinery	Electrical machinery	Electrical machinery
3	Non ferrous metals	Non ferrous metals	Non ferrous metals	Transport equipment	Transport equipment	Transport equipment
4	Textile fibres, not manufactured	Metalliferous ores and metal scrap	Machinery, other than electric	Machinery, other than electric	Machinery, other than electric	Metalliferous ores and metal scrap
5	Cereals and cereal preparations	Cereals and cereal preparations	Iron and steel	Non ferrous metals	Metalliferous ores and metal scrap	Machinery, other than electric

Argentina

	1962-1970	1971-1980	1981-1990	1991-2000	2001-2010	2010
1	Cereals and cereal preparations	Cereals and cereal preparations	Cereals and cereal preparations	Cereals and cereal preparations	Feed. Stuff for animals	Feed. Stuff for animals
2	Meat and meat preparations	Meat and meat preparations	Feed. Stuff for animals	Petroleum and products	Petroleum and products	Transport equipment
3	Textile fibres, not manufactured	Fruit and vegetables	Fixed vegetable oils and fats	Feed. Stuff for animals	Transport equipment	Cereals and cereal preparations
4	Feed. Stuff for animals	Feed. Stuff for animals	Meat and meat preparations	Fixed vegetable oils and fats	Cereals and cereal preparations	Oil seeds, oil nuts and oil kernels
5	Fixed vegetable oils and fats	Fixed vegetable oils and fats	Oil seeds, oil nuts and oil kernels	Transport equipment	Fixed vegetable oils and fats	Fixed vegetable oils and fats

Brazil

	1962-1970	1971-1980	1981-1990	1991-2000	2001-2010	2010
1	Coffee, tea, cocoa, spices	Coffee, tea, cocoa, spices	Coffee, tea, cocoa, spices	Transport equipment	Transport equipment	Metalliferous ores and metal scrap
2	Textile fibres, not manufactured	Metalliferous ores and metal scrap	Iron and steel	Iron and steel	Metalliferous ores and metal scrap	Petroleum and products
3	Metalliferous ores and metal scrap	Feed. Stuff for animals	Transport equipment	Machinery, other than electric	Petroleum and products	Transport equipment
4	Sugar, sugar preparations	Sugar, sugar preparations	Metalliferous ores and metal scrap	Metalliferous ores and metal scrap	Machinery, other than electric	Meat and meat preparations
5	Wood, lumber and cork	Machinery, other than electric	Machinery, other than electric	Coffee, tea, cocoa, spices	Meat and meat preparations	Sugar, sugar preparations

Chile

	1962-1970	1971-1980	1981-1990	1991-2000	2001-2010	2010
1	Non ferrous metals	Non ferrous metals	Non ferrous metals	Non ferrous metals	Non ferrous metals	Non ferrous metals
2	Metalliferous ores and metal scrap	Metalliferous ores and metal scrap	Metalliferous ores and metal scrap	Metalliferous ores and metal scrap	Metalliferous ores and metal scrap	Metalliferous ores and metal scrap
3	Crude fertilizers and crude minerals	Fruit and vegetables	Fruit and vegetables	Fruit and vegetables	Fruit and vegetables	Fruit and vegetables
4	Fruit and vegetables	Pulp and paper	Feed. Stuff for animals	Fish and fish preparations	Fish and fish preparations	Fish and fish preparations
5	Feed. Stuff for animals	Feed. Stuff for animals	Pulp and paper	Pulp and paper	Pulp and paper	Pulp and paper

Colombia

	1962-1970	1971-1980	1981-1990	1991-2000	2001-2010	2010
1	Coffee, tea, cocoa, spices	Coffee, tea, cocoa, spices	Coffee, tea, cocoa, spices	Petroleum and products	Petroleum and products	Petroleum and products
2	Petroleum and products	Petroleum and products	Petroleum and products	Coffee, tea, cocoa, spices	Coal, coke and briquettes	Coal, coke and briquettes
3	Textile fibres, not manufactured	Textile yarn, fabrics	Fruit and vegetables	Coal, coke and briquettes	Coffee, tea, cocoa, spices	Coffee, tea, cocoa, spices
4	Fruit and vegetables	Textile fibres, not manufactured	Coal, coke and briquettes	Fruit and vegetables	Iron and steel	Crude animal and vegetable materials
5	Sugar, sugar preparations	Non metallic mineral manufactures	Clothing	Clothing	Crude animal and vegetable materials	Iron and steel

Mexico

	1962-1970	1971-1980	1981-1990	1991-2000	2001-2010	2010
1	Textile fibres, not manufactured	Petroleum and products	Petroleum and products	Electrical machinery	Electrical machinery	Electrical machinery
2	Non ferrous metals	Fruit and vegetables	Machinery, other than electric	Transport equipment	Transport equipment	Transport equipment
3	Sugar, sugar preparations	Coffee, tea, cocoa, spices	Transport equipment	Machinery, other than electric	Petroleum and products	Petroleum and products
4	Fruit and vegetables	Non ferrous metals	Electrical machinery	Petroleum and products	Machinery, other than electric	Machinery, other than electric
5	Coffee, tea, cocoa, spices	Fish and fish preparations	Fruit and vegetables	Clothing	Scientif & control instrum	Scientif & control instrum

Continued on next page

Table 6
LATAM Top 5 Commodities Exports to the World (Cont.)

	Peru					
	1962-1970	**1971-1980**	**1981-1990**	**1991-2000**	**2001-2010**	**2010**
1	Non ferrous metals	Non ferrous metals	Metalliferous ores and metal scrap	Non ferrous metals	Metalliferous ores and metal scrap	Metalliferous ores and metal scrap
2	Feed. Stuff for animals	Metalliferous ores and metal scrap	Non ferrous metals	Metalliferous ores and metal scrap	Non ferrous metals	Non ferrous metals
3	Metalliferous ores and metal scrap	Feed. Stuff for animals	Petroleum and products	Feed. Stuff for animals	Petroleum and products	Petroleum and products
4	Textile fibres, not manufactured	Petroleum and products	Feed. Stuff for animals	Petroleum and products	Feed. Stuff for animals	Feed. Stuff for animals
5	Sugar, sugar preparations	Coffee, tea, cocoa, spices	Coffee, tea, cocoa, spices	Clothing	Clothing	Fruit and vegetables
	Venezuela					
	1962-1970	**1971-1980**	**1981-1990**	**1991-2000**	**2001-2010**	**2010**
1	Petroleum and products	Petroleum and products	Petroleum and products	Petroleum and products	Petroleum and products	Petroleum and products
2	Metalliferous ores and metal scrap	Metalliferous ores and metal scrap	Non ferrous metals	Non ferrous metals	Iron and steel	Iron and steel
3	Iron and steel	Gas, natural and manufactured	Iron and steel	Iron and steel	Non ferrous metals	Metalliferous ores and metal scrap
4	Coffee, tea, cocoa, spices	Non ferrous metals	Metalliferous ores and metal scrap	Chemical elements and compounds	Chemical elements and compounds	Non ferrous metals
5	Gas, natural and manufactured	Coffee, tea, cocoa, spices	Chemical elements and compounds	Transport equipment	Transport equipment	Chemical elements and compounds

Source: UN Comtrade and BBVA Research

Table 7
Description of Variables and Sources of Data

	Variables	Label	Source	Period	Observ.
Dependent	$\left(\frac{Com\ Exports}{Total\ Exports} - \frac{World\ Com\ Exports}{World\ Total\ Exports}\right)_{it}$	Com Exp Concentration	Comtrade	1980-2010	1925
Independent	$\left(\frac{Com\ price\ index}{CPI}\right)_{t}$	Price	Haver & Comtrade	1980-2010	31
	$\left(\frac{Value\ added\ in\ Com}{Value\ added\ in\ GDP} - \frac{World\ value\ added\ in\ Com}{World\ value\ added\ in\ GDP}\right)_{it}$	Endowment	UN Data	1980-2010	2177
	$\left(\ln\left(\frac{GDPpc}{World\ GDPpc}\right)\right)_{it}$	Income	IMF	1980-2010	2171
	$\left(\text{Dummy of Quality of Infrastruc ture Index 2010}\right)_{i}$ (=1 if equal to or above average; =0 if below average)	Infrastructure	Global Competiti-veness Report	2010	73
	$\left(Growth\ Rate\ of\ Com\ Export\ To\ China\right)_{it}$	g	Comtrade	1980-2010	1657
	$\left(\frac{CN\ com\ imports}{CN\ total\ imports} - \frac{World\ com\ imports}{World\ total\ imports}\right)_{t}$	CN	Comtrade	1980-2010	31

Source: BBVA Research

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