

INTEGRATION & TRADE

#40
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KEYS TO RENEW THE CONVERGENCE
BETWEEN **LATIN AMERICA** AND **CHINA**



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WELCOME



TOWARDS A MORE
MATURE RELATIONSHIP
Antoni Esteve de Ordal

6



CONVERGENCE OR
DEGLOBALIZATION
Gustavo Beliz

9

STRUCTURAL TRANSFORMATION

“LATIN AMERICA SHOULD
LEARN THE CHINESE
RECIPE TO RAISE ITS
PRODUCTIVITY”

Edmund Phelps

18

LATIN AMERICA IN CHINA'S
NEW REFORM
ERA

Margaret Myers

24

FROM PRODUCTION TO
CONSUMPTION: THE
TRANSFORMATION OF
CHINA BY 2050

Carlos Juan Moneta

38



WHO ATTRACT
INVESTMENTS?
Evan Ellis

58

THE STRUCTURAL
CONSTRAINTS OF INCOME
INEQUALITY IN LATIN
AMERICA



70

Dominik Hartmann
Cristina Jara-Figueroa
Miguel Guevara
Alex Simoes
César Hidalgo

**INTERDISCIPLINARY
STUDIES FOR A
COMMON RESEARCH
AGENDA**

86

REDALC / KNOWLEDGE TRANSFER

CHINA AND THE IDB: PARTNERS
FOR PROSPERITY

89

Bernardo Guillamon

STATE OF THE ART IN
CHINA-LAC SCIENTIFIC
LITERATURE
Rhys Jenkins



90

INTEGRATION & TRADE

#40
June 2016

MAGNETIC TRADE

"TRADE AGREEMENTS
ARE NO LONGER
ABOUT TRADE"

Kevin Gallagher

106

HOW TO NEGOTIATE WITH
CHINA



Marco Vinicio Ruiz
Andrés Rebolledo
Eduardo Ferreyros

114

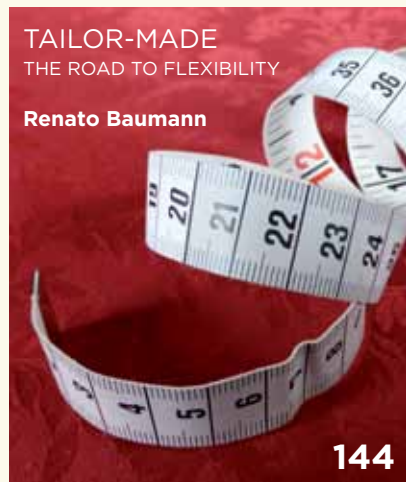
AFTER THE BOOM:
THE COSTS OF LATIN
AMERICA-CHINA
AGRICULTURAL TRADE

Maurício Mesquita Moreira
André Soares

124

TAILOR-MADE
THE ROAD TO FLEXIBILITY

Renato Baumann



144

CHINA IN THE WTO



170

Rosario Campos
Romina Gayá

FOREIGN INVESTMENT
AND EXPORTS:
TWO SIDES OF
THE SAME COIN

Qianru Song
Rodrigo Wagner



190

CHINESE TOURISTS OFFER
A GREAT OPPORTUNITY
FOR THE CARIBBEAN

IADB / TOURISM

202

INTEGRATION & TRADE

#40
June 2016

COMPLEMENTARY ECONOMIES

THE FUTURE
OF FOOD
DEMAND



Martín Piñeiro
Eduardo Bianchi

208

FOOD FOR 50%
OF THE WORLD
POPULATION

BRF / FOOD

226

"WE WANT TO DEEPEN
COOPERATION WITH
MERCOSUR AND THE
PACIFIC ALLIANCE"

Yang Wanming

230

CAN THE SHOW GO ON?
SYNERGIES IN MINING AND ENERGY

Iacob Koch Weser



236

RED GOLD IN
THE HEART OF
LOS ANDES

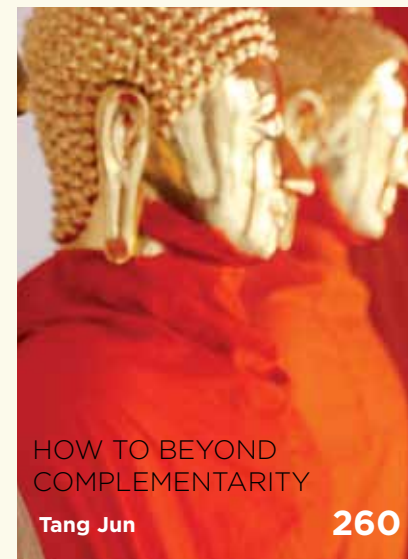
CODELCO / MINING

254

THE VOICE OF LATIN
AMERICANS AND
CARIBBEANS

WHAT WE THINK ABOUT
CHINA

258



HOW TO BEYOND
COMPLEMENTARITY

Tang Jun

260

"WE HAVE MORE
FUNDING AVAILABLE
FOR INFRASTRUCTURE"

Andrew Sheng

270

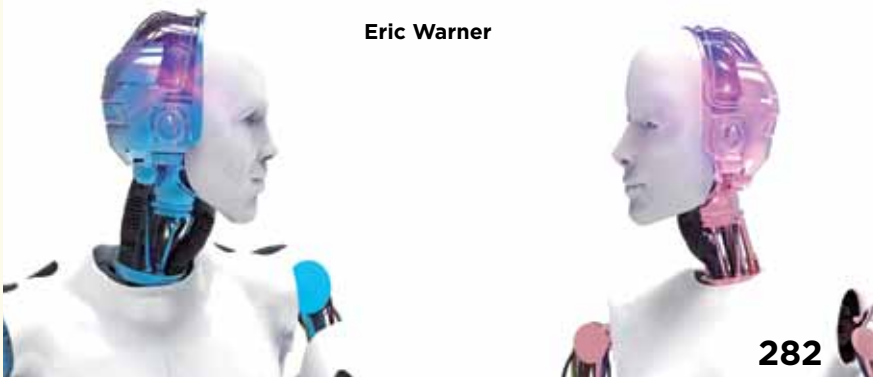
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INTANGIBLE INNOVATION

CHINESE INNOVATION, ITS DRIVERS AND LESSONS

Eric Warner



“CHINA’S GREATEST LEGACY
WAS TO CREATE A MODEL
OF INCLUSIVE
DEVELOPMENT”

Gary Gereffi

298

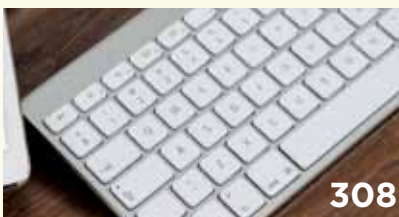
304

LEADING-EDGE FOOD SECURITY TECHNOLOGY

BIOGÉNESIS BAGÓ / BIOTECHNOLOGY

THE TRANSITION TO THE KNOWLEDGE SOCIETY

Pamela Aróstica



324

CELLULAR TELEPHONY ACCESSIBLE TO ALL

HUAWEI / COMMUNICATIONS



THINK TANKS &
UNMISSABLE
READS

328

I&T N°40, Year 20, June 2016

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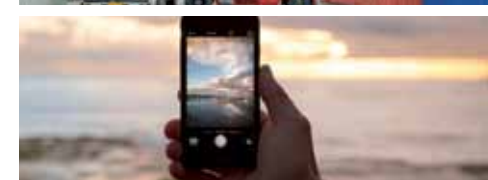
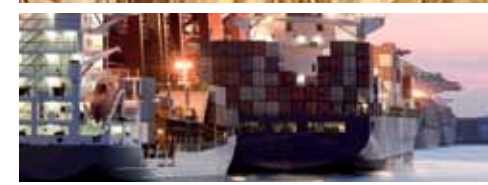
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TOWARDS A MORE MATURE RELATIONSHIP



ANTONI ESTEVADEORDAL

MANAGER OF THE IDB'S INTEGRATION AND TRADE SECTOR

After over a decade of dizzying growth in bilateral trade and investment, Latin America and the Caribbean (LAC) is entering a more mature phase in its relations with China, one marked by significant slowdown in China's growth and a sharp drop in commodity prices. Bilateral trade, which had grown 30% per year on average during 2000–2011, has slowed dramatically since 2012, and fell 1.4% in 2014 and 5.6% in 2015.

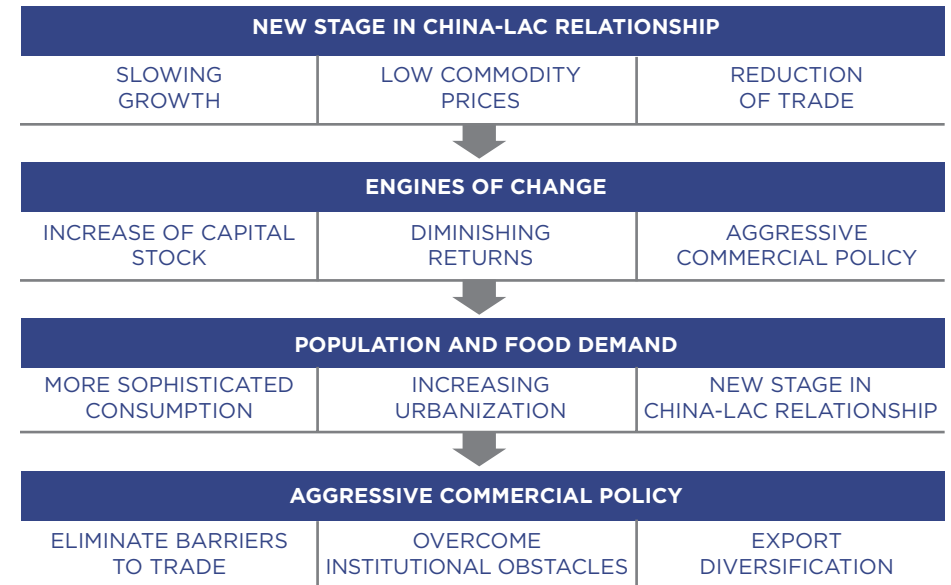
Is this downturn evidence of a new bilateral trade pattern or is it just a serious cyclical adjustment, brought on by an unusually long commodity cycle? The cyclical adjustment hypothesis would seem to explain much of this story. There is nothing to suggest that trade between LAC and China is going to wane or that its composition is going to change significantly. China's growth means it will continue to require large quantities of natural resources due to the size of its population, changes in their eating patterns (increased consumption of protein), and growing urbanization (which limits the land available for agriculture and generates greater demand for minerals.)

Despite this, there is also a significant structural component to this story that suggests that it is highly unlikely

that we will again see the two-digit growth rates in commodity exports that were observed during the 2000s. In other words, China seems to be experiencing the inevitable decreasing returns associated with economic growth: when capital stock increases and more people are employed in more productive sectors, returns on investment and growth rates tend to fall. In turn, a lower GDP growth rate tends to generate less dynamic demand for commodities.

This context highlights the urgent need to diversify exports from LAC to China, which at present remain highly concentrated (soy, copper, iron ore, and crude oil account for nearly 50%

50%
OF LAC'S EXPORT
TO CHINA ARE
CONCENTRATED
ON 4 PRODUCTS



of exports to China). It is true that commodities will probably continue being LAC's biggest area of business with China, but the latter's growth dynamic suggests that to keep up its export growth rate, LAC will need to shift to a more diversified portfolio of goods. Given this, it is vital for the region to adopt a more aggressive trade policy that emphasizes the elimination of tariff and non-tariff barriers, which continue to constitute a notable obstacle to more diversified trade.

Likewise, there needs to be a significant increase in LAC firms' investments in China, as greater proximity to consumers will help overcome the cultural and institutional obstacles that make it so hard to break into the Chinese market. The years of exporting to China without any great effort on the part of governments or the private sec-

tor have definitely come to an end. For the region to consolidate the benefits of these bilateral relations and continue building on them, it is fundamental that it implement a more aggressive trade and investment policy. There's no time to waste. ■

30%
WAS THE TRADE
GROWTH ON
AVERAGE BETWEEN
2000 AND 2011

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NEW CONVERGENCES**
A FORESIGHT INTO
LATIN AMERICAN INTEGRATION

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CONVERGENCE OR DEGLOBALIZATION



GUSTAVO BELIZ

DIRECTOR, INSTITUTE FOR THE INTEGRATION OF
LATIN AMERICA AND THE CARIBBEAN (INTAL)
INTER-AMERICAN DEVELOPMENT BANK

He who is indifferent to the future is condemned to worry about the present, warned Confucius wisely. And few issues are as relevant for the future of Latin America and the Caribbean (LAC) as their strategy of integration with China and the impact of the new geopolitical playing field for the region's economies.

In just a few years, the Asian giant has gone from being a minor market to one of the main trading partners, has displaced traditional export destinations, and begun to supply vital financing flows for projects ranging from hydroelectric dams, sports stadiums, and highways, to foreign currency swaps.

A number of factors have made China's exponential growth possible in recent decades: betting on innovation, increased productivity, and a long-term outlook are just some of them. In 2010, China overtook Japan to become the world's second largest economy, with a share of approximately 15% of global GDP. In 2015, it completed the 12th Five-Year Plan, whose objective was to consolidate to China as a major power, and, in 2016, it launched the 13th Five-Year Plan, with a focus on strengthening internal consumption and private investment, and positioning capital in strategic sectors.¹

The majority of LAC countries took

more or less direct advantage of the growing needs for raw materials and food, and, with no more effort than taking advantage of natural conditions, rode the wave emerging in the Far East.

Convergence was almost automatic. Bilateral trade rose from US\$18,000 million in 2004 to US\$260,000 million in 2014. Currently, 36% of mining exports from the region, 12% of food, and 10% of energy are destined for the Chinese market.

After the 2008-2009 crisis, the emerging countries began to behave as an auxiliary engine of the world economy, a dynamic and vital engine popularized by the acronym BRICS (Brazil, Russia, India, China, and South Africa). Demand for commodities, particularly from China, held steady and prices re-

AFTER THE 2008-2009
CRISIS, THE EMERGING
COUNTRIES BEGAN TO
BEHAVE AS AN
AUXILIARY DRIVER OF
THE WORLD ECONOMY

mained high offsetting other deflationary forces during the crisis.

Eight years later, the situation has changed completely. While the U.S. economy has recovered some—if not all—semblance of normality, the BRICS are far from growing as before. In China's case, its economy is undergoing a process of transformation surrounded by question marks. Three trends are operating simultaneously in the production of this new look.

First, there has been a redesign of trade tactics, driven by the explosive growth of productivity and expansion to other sectors and markets. As shown in the article by Song & Wagner (University of Chile), the density of trade links has its correlate in the Chinese investment that countries receive for financing infrastructure works and other public works projects.² It also relates to Chinese companies' inroads into the domestic economies and with the purchase of local enterprises that make use of its extraordinary savings rate.³

After a remarkable expansion, the Chinese economy is growing at the lowest rate in 30 years, putting the brakes on global markets. The consequences for the region have been immediate: 60% of external sales consist of commodities and almost 20% of hydrocarbons. The fall in raw materials prices (especially oil) has made the value of regional exports plummet.⁴

Consequently, there is an increased risk of suffering the aftermath of greater dependence and of the primarization of exports. These effects are due to a period of prosperity followed by a change in the phase of the cycle, reflected in falling commodity prices, as we have seen in recent years. The commodity boom could have given rise to a typical case of "Dutch disease" with its wake of exposure and vulnerability. The difficult remedies would have been

IT IS UNLIKELY
THAT THE UPTURN
IN THE CHINESE CYCLE
WILL GO ON FOREVER:
THERE IS NO AILMENT
OR GROWTH
THAT LAST
HUNDRED YEARS

the early formation of counter-cyclical funds and the implementation of active policies to encourage export diversification and so reduce the problems of primarized trade.

Despite a sharp slowdown, the Chinese economy is still moving on positive ground. But it is unlikely this ascending phase of the cycle will last forever: there is no downturn or growth that lasts one hundred years. Sooner or later, there will be a sea change and we have to be prepared.

The second prevailing trend is taking place in the financial sphere and is another key piece of the transformation under way. With such new banking institutions as the Asian Infrastructure Investment Bank (AIIB) or the New Development Bank (NBD), a gradual opening up of the capital markets and greater exchange rate flexibility, China has started down the road to internationalizing its finances.

Andrew Sheng of the Fung Global Institute, one of the leading experts in the new financial architecture of Asia, is optimistic vision about China's future.⁵ A follower of Nobel Prize Winner Douglass North, Sheng argues that the switch to market policies, the growth of competition, and the emergence of

globally competitive firms like Huawei or Alibaba are evidence of the sound health of an economy still bearing the burden of weak institutions.⁶

The risks for the region are associated with the potential infection and propagation effect of sharp swings in the markets. Macroeconomic stability, reputation, and clear rules are in this sense a powerful antidote to growing risk aversion and to capital starting a flight-to-quality. We now have the challenge to resist the temptation to reduce China's role to a last-resort lender and to rationally optimize the resources available for financing infrastructure.

Third, there is a trend in technological change that, as happened with the motor car, the telephone, or the Internet, could alter the way we interact with the world. And China is at the forefront of this disruption. According to a recent report by the Oxford Martin School, China replaced United States as the largest industrial automation market: 77% of Chinese jobs are at risk of automation, well above the 57% OECD country average.⁷

How will such exponential technological change impact our region? In November 2015, the China Daily newspaper reported that a Chinese consortium is to open the world's largest

cloning laboratory in the city of Tianjin, where it plans to produce a million head of cattle per year.⁸ The vision of a China specializing in intensive products and cheap labor, and a buyer of food is naive.

During his talk at INTAL 50, commemorating our Institute's fiftieth anniversary, Raymond McCauley of Singularity University stated that it will soon be possible on supermarket shelves to buy genetically and biotechnologically engineered burgers manufactured in laboratories. Companies such as Memphis Meats, Mosa Meat, and Modern Meadow are competing in Silicon Valley as pioneers in lowering the price and enhancing the popularity of artificial meat. We have to be careful: only MERCOSUR exports US\$9 billion of beef per annum.

Estimates show that a 10% increase in R&D investment translates into an almost 2% increase in total factor productivity (TFP), and China plans to raise its investment in R&D from 2% to 3% of GDP by 2020: a 50% increase.⁹

The region urgently needs to keep up with the pace of global innovation and to establish technology exchanges and knowledge transfer that help to avoid technological deglobalization while looking ahead to the impact of new technologies on its production structure and trade.¹⁰ Cooperation that closes the technology gap between the two regions can be achieved through mutually beneficial agreements.

To the risk of technological deglobalization is added other forces pointing in the same direction, such as currency wars or the oligopolistic concentration of production techniques.¹¹

Against this backdrop, the question that runs through this issue of Integration & Trade is what the region's stance should be toward the new situ-

THERE IS A TREND
IN TECHNOLOGICAL
CHANGE THAT COULD
CHANGE THE WAY
WE INTERACT
WITH THE
WORLD

WE ASK OURSELVES
WHAT THE REGION'S
STANCE SHOULD BE
TOWARD
THE NEW
LANDSCAPE
IN CHINA

ation in China. We put an emphasis on the new set of problems with the aim of setting a benchmark for the stances to be adopted by LAC toward these three trends.

We begin the journey with a general orientation, from the beacon of structural transformations, with Margaret Myers of Inter-American Dialogue, Carlos Moneta of the University of Tres de Febrero, Evan Ellis of the U.S. Army

College, Dominik Hartman of MIT, and Rhys Jenkins of the University of East Anglia explaining the keys to Chinese progress, the outlook for 2030, the possibilities offered by the New Silk Road, and the relationship between growth and social inclusion.

From the beacon of trade, Kevin Gallagher of Boston University, Mauricio Mesquita Moreira of IDB, Tang Jun of Zhejiang International Studies University, and INTAL's own Romina Gayá and Rosario Campos analyze the future of trade with China and the prospects opened up by its status as a market economy within the WTO.

From the beacon of food security and energy sustainability, Yang Wanming Chinese Ambassador to Argentina, Nelson Pizarro of CODELCO, Martin Piñeiro and Eduardo Bianchi of the CEO Group, and Iacob Koch-Weser of the U.S. Department of Commerce review the synergies between the region and the Asian giant in mining, energy, and food.

From the beacon of innovation, Eric Warner of the Rand Corporation, Gary Gereffi of Duke University, and Pamela Aróstica of the Free University of Berlin explore China's thrust toward the knowledge society, new production processes, financing development, and the region's ability to take the road toward the knowledge society.

Throughout these pages, it will become clear that the phase of easy automatic complementarity (2000-2008) and the impasse that followed the 2009-2014 crisis must find a stage of overcoming in intelligent convergence. The days of passive adjustment are over and a change of strategy that goes hand in hand with vigorous initiatives is urgently needed. The partnership that was once natural must now be sought together with public active integration policies. The Nobel Prize in Economics, Edmund Phelps, what describes it perfectly in the piece that opens this issue: the lowest fruits on the tree have already been harvested and more effort will now be needed to achieve the same.

This new period is quite different to the previous one and therefore requires a different approach. Macroeconomic and financial volatility, low commodity prices, and lower rates of growth are just some of the causes that weaken the merely commercial connection between China and LAC.

It will also be more difficult to obtain the benefits of integration with China that the countries once achieved on an individual basis. The new forces of globalization are unfolding in the formulation of regional mega-agreements, in which negotiation and cooperation between the countries take priority on the agenda.

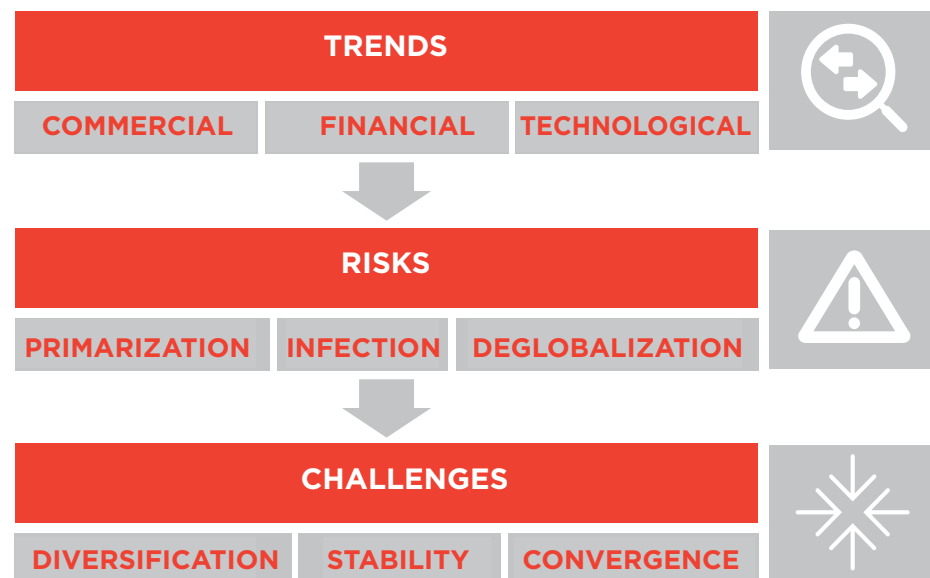
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DIVERSIFYING
EXPORTS AND
PROMOTING EXTERNAL
COOPERATION
ARE INGREDIENTS
IN THE RECIPE TO
CUSHION ANY
ADVERSE CURRENTS

interested in the intricacies of the link between China and our region. Different views are presented about how to deepen ties between the two regions, to learn from the passage of time, and to take advantage of the new outlook. We need to redefine and strengthen our relations with China so that it will grow to maturity based on mutual trust.

We are not starting with a blank slate. In multilateral cooperation, there are relevant precedents, such as the MERCOSUR-China dialog begun in Beijing in 1997 and resulting in successive rounds of meetings in 2000, 2003, and 2004. In mid-2012, the then Prime Minister, Wen Jiabao, visited Brazil, Uruguay, and Argentina, and expressed his interest in moving toward a free trade agreement with the MERCOSUR countries by promoting a feasibility study. But the joint negotiation lost momentum, and there was a proliferation of bilateral agreements, such as the comprehensive strategic partnership with Argentina and Brazil, or the various cooperation agreements with Uruguay and Venezuela, just within MERCOSUR.

The new modality of "made-to-measure" agreements signed by China, as shown in the article by Renato Baumann of the Institute of Applied Economic Research (IPEA), and the nego-



tiating experience of Costa Rica, Peru, and Chile, which we also describe here in detail, are essential background to any regional perspective.

In November 2015, Chinese and Latin American experts participated in the international seminar “Latin America’s Economic Relations with China: a Vision for the Future,” organized by INTAL. The seminar discussed the potential of non-traditional exports, the cultural challenges facing businessmen and women when they make inroads into new markets, and the need to bring down logistics and transport costs for the region to raise its competitiveness. Trade Not Aid was the motto on which both regions’ representatives coincided.¹²

A recipe to alleviate the adverse currents may have many ingredients: diversifying exports, gaining inser-

tion in global value chains, nurturing small and medium enterprises, reducing trade friction, training public officials, moving toward transparency in regulations,¹³ raising incentives for local competition and external cooperation, expanding the scale of transfer policies, improving environmental standards, promoting food security, social inclusion, investing in innovation and technology, adding value, and creating quality employment.

The days of favorable winds from the East and plain sailing have come to an end. It is time to chart a creative course, to lucidly calibrate an integration strategy that allows us to overcome the difficulties presented by the rough sea of globalization in the twenty-first century. To come back to Confucius, we have to stay busy and worry less. The opportunities are still there. ■

NOTES

¹ IDB/INTAL (2015).

² Between 2005 and 2014, 40% of the loans received by the region from China went to infrastructure projects. See Gransow (2015).

³ This is, however, a global phenomenon. We have only to recall ChemChina’s incursion into the Italian company Pirelli (2015) or the Swiss company Syngenta (2016).

⁴ Giordano (2015). The report shows that, between July 2014 and June 2015, the value of global trade declined by 11.8%, a fall equivalent to a third of the 2008-2009 commercial collapse.

⁵ See the interview with Sheng in the current issue and Sheng (2015), available at www.weforum.org.

⁶ McKinsey too is optimistic about the changes in China. While predicting that there will be fewer new jobs and that income will stagnate, he assures that it will gain

share in the British market and will continue to import primary goods. See Orr (2016), available at www.mckinsey.com.

⁷ Frey, Osborne, & Holmes (2016).

⁸ Jiang (2015). Available at <http://www.chinadaily.com.cn/>.

⁹ See the document by the World Bank and the Development Research Center (2013). On the impact of production shocks, see Gruss (2014).

¹⁰ The last issue of Integration & Trade looked in depth into the question of the impact of new technologies on trade and regional integration.

¹¹ A case of concentration such as may occur in the primary sector with genetically modified seeds.

¹² IDB (2015). Available at <http://www.iadb.org/intal/conexionintal/?lang=en>.

¹³ ICTSD (2016). Available at <http://www.ictsd.org/>.

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STRUCTURAL TRANSFORMATION

CHINA'S GROWTH IN RECENT DECADES PRODUCED PROFOUND MOVEMENTS IN THE GLOBAL GEOPOLITICAL CHESSBOARD. WHAT WERE THE TOOTS OF CHINESE DEVELOPMENT AND ITS DIFFERENT STAGES. WHAT LESSONS

CAN LEARN LATIN AMERICA AND THE CARIBBEAN FROM ASIA. IN A NEW SCENARIO OF GLOBAL VOLATILITY, HOW WE CAN MOVE FORWARD INTO A WIN-WIN COOPERATION FOR BOTH REGIONS.

Latin America should learn the Chinese recipe to raise its productivity

Edmund Phelps
Nobel Laureate in Economics

Latin America in China's new reform era

Margaret Myers
Inter-American Dialogue

From Production to Consumption: The Transformation of China by 2050

Carlos Moneta
National University of Tres de Febrero

Who attract investments?

Evan Ellis
Nobel CSIS

Strategic partnership

Infographic

China and the IDB: partners for prosperity

Dominik Hartman y otros
MIT LAB

Interdisciplinary studies for a common research agenda

REDALC
Knowledge Transfer

State of the art in China-LAC scientific literature

Rhys Jenkins
University of East Anlia

A portrait of Edmund Phelps, an older man with white hair, wearing a dark suit, white shirt, and a striped tie. He is smiling and has his hands clasped in front of him.

INTERVIEW

EDMUND PHELPS

Nobel Laureate
in Economics

“

Latin America
should learn
the Chinese
recipe to
raise its
productivity

”

The Nobel Laureate in Economics, Edmund Phelps, knows the Chinese economy like no other top international academic. Although he operates from Columbia University, New York, where he teaches Macroeconomics and directs the Center on Capitalism and Society, he spends a large part of the year in China. Phelps is also Dean of the prestigious New Huadu Business School, based in Fuzhou, Fujian Province, and has study centers in Beijing, Shanghai, and Zurich, Switzerland. In 2014, the Chinese government presented him with the Friendship Award, one of the highest honors the country can offer a foreigner, which prize he received from the hands of Prime Minister Li Keqiang. In the following interview, the Nobel Laureate argues that innovation has been the key to the dynamics of growth in the Asian giant, that the model must be transformed so that investment continues to be profitable, and that Latin America should follow much of China's recipe to raise its productivity.

What do you think about the developments in the Chinese model of growth?

I think the Chinese model is in the process of being changed. Premier Li Keqiang is pushing very hard to transform the economy into a highly innovative economy. Of course that is going to be a long and difficult road but they made considerable progress in that direction. I think that is being overlooked by many commentators on China. But it is this tremendous spirit of innova-

PART OF THE SUCCESS WAS BASED ON MOVING LABOR FORCE FROM THE WEST, WHERE IT WAS LESS PRODUCTIVE, TO THE EAST. BUT YOU CAN ONLY DO THAT ONE TIME

tion that has swept through the country. Especially young people are all thinking about start-ups and... On the other hand young people are also being warned not to join the start-up sector because it is so risky. So young people are intrigued and excited by this idea of innovative enterprises but they are also a little scared.

How important has innovation been in China's development over the last decade?

Oh, yes, very important. I am encouraging that. I started getting involved in this in 2010 when I became the Dean of the New Huadu Business School in Fuzhou, the capital of the Fujian province. And yes, I have been encouraging the students to be bold, to brave the unknown and go on a journey of exploration and creation. I have been doing it since 2010 and I still do it.

Do you think China could maintain this extraordinary rate of growth?

I think it is evident that China has passed the time in its development



Edmund Phelps and Li Keqiang, Premier of the State Council of the People's Republic of China.

THE OPPORTUNITY FOR ENORMOUS GAINS HAS BEEN EXHAUSTED. THE LOWEST FRUITS ON THE TREE HAVE ALREADY BEEN HARVESTED

where it could expect to grow at a two digit rate like 12% or 11% or 10%. It looks like China has to expect a much lower growth rate because if China has already taken advantage of the low line fruit that had been there for the picking moving labor away from the west where it had zero productivity into cities on the coast. That was a huge improvement in the efficiency of the economy. But you can only do that once. Now most of the labor is already in cities, in factories buildings. Now I know a lot of people are talking about transforming China into a consumer good economy with emphasis on services. And that will of course increase well-being in China that will have better schools, better hospitals. Moving resources from the capital good sector to the consumer goods sector is

not going to increase the growth rate. If anything it is a recipe for slower growth. But as I was saying before, the opportunities for huge productivity gains have been used up, there have been diminishing returns to investment. In the process of taking advantage of these opportunities, first the biggest ones, the biggest opportunities, and then later the smaller ones. The consequence of that is that the investment has run into diminishing returns and I don't think that the emergence of a consumer goods sector will offer huge rates of return to investment. I don't think so, I think there will be only modest returns to investments. So that's why it's so important that the real transformation that is needed is to transform every industry into a more innovative operation, a more innovative mode of operation.

What lessons should Latin American countries learn from the Chinese model?

I think the lesson must be staring Latin America in the face. The lesson is that it is possible to transform a rather low productivity economy relative to the US, Scandinavia, Germany and France and transform it into a middle income economy or perhaps even

EDMUND PHELPS

HE WAS BORN IN 1933 IN THE CITY OF CHICAGO. A GRADUATE FROM YALE AND A PROFESSOR AT COLUMBIA UNIVERSITY, HE RECEIVED THE NOBEL PRIZE FOR ECONOMICS IN 2006 FOR HIS STUDIES ON GROWTH, WAGES, AND EMPLOYMENT. HE MARRIED THE ARGENTINE, VIVIANA MONTDOR, IN 1974.



LATIN AMERICA
CAN BEGIN A
TRANSITION
TO A MORE EFFICIENT
ECONOMY, BUT
SECONDLY A MORE
INNOVATIVE ECONOMY

a somewhat higher income economy. China has shown the possibility of going from an abysmally low productivity to a middle income economy based on mid-size levels of productivity. And now China of course is going to test the hypothesis that it can make a further transformation into an innovative economy and of course Latin America ought to be looking at how that experience works out. I am not recommending that they wait to see how China does. I think that Latin America should also be attempting to reform enterprises into more innovative operations.

How do you evaluate the Asian giant's monetary policy? How might the currency evolve after the latest developments?

Well I think the stock market has already fallen enormously. I don't think it's a foregone conclusion that it will fall further. I don't expect that. As for monetary policy, the interest rate is pretty high in order to keep the Chinese currency, the yuan, pretty high. And now over the past 4 or 5 years the government has allowed a slow decline of the real exchange rate in China, visibly the dollar and the euro. I think some other countries in Asia have depreciated more so that the yuan was appreciating against the Asian currencies but depreciating against the dollar and the euro. I don't have any forecast to make about

monetary policy in the future. I think monetary policy has already done a lot and it remains to be seen what tasks monetary policy might have to undertake in the future.

How can the region incorporate value-added to its primary exports to China?

Certainly Argentina historically has been a country whose comparative advantages lies in natural resources so it's certainly not surprising that when China appeared, rose up in the global economy, that Argentina would be exporting some of its resources or resource intensive products. I think it would take quite a transformation to Latin America before that ceases to be the pattern. But to the extent that Latin America can begin a transition to first of all a more efficient economy, but secondly a more innovative economy, to the extent that if Latin America succeeds in that it will become less export dependent and we will be able to rely more on a diverse set of products. I don't think that the transfer of technology is something that is extremely difficult. It goes on all the time in the European countries and in North America. The whole history of the west in recent decades has been one of a convergence of productivity levels. Sooner or later all the technology gets copied overseas but of course if you want to be at the frontier if you want to be ahead of the pack then you have got to do your own indigenous innovating.

How would you recommend the region's countries to negotiate with China? Bilaterally or multilaterally?

I think it is pretty clear that if some Latin American countries can form an alliance such as the Mercosur... The Mercosur organization might be useful. You might also wanna team up with Mexico ■

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ANALYSIS

LATIN AMERICA IN CHINA'S new REFORM ERA

Margaret Myers

Director of the China and Latin America program
at the Inter-American Dialogue in Washington, DC.



LATIN AMERICAN EXPORTS AND MARKETS HAVE FOR DECADES SUPPORTED CHINA'S DOMESTIC POLICY OBJECTIVES. THE REGION WILL BE OF CONTINUED INTEREST TO CHINA AS THE CHINESE LEADERSHIP EMBARKS ON A NEW, COMPREHENSIVE PROGRAM OF ECONOMIC REFORM. BEIJING IS RELYING GROWING GLOBAL "OPENNESS" TO PROMOTE ECONOMIC UPGRADING, TRADE, AND EFFICIENT USE OF EXCESS CAPITAL AND PRODUCTION CAPACITY. TO ACHIEVE THESE OBJECTIVES AND A BROADER "ECONOMIC TRANSFORMATION" (经济转型), CHINA HAS BEGUN MAJOR DIPLO-ECONOMIC PROJECTS IN ASIA AND EUROPE, SUCH AS ONE BELT, ONE ROAD AND THE ASIAN INFRASTRUCTURE BANK. THOUGH FAR SMALLER IN SCALE, CHINA'S NEWLY-ANNOUNCED COOPERATION, INVESTMENT, AND FINANCIAL AGREEMENTS IN LATIN AMERICA ARE ALSO CLOSELY ALIGNED WITH BEIJING'S NEW REFORM AGENDA. IF THEY COME TO PASS, CHINA'S NEWEST INVESTMENT AND INFRASTRUCTURE PROJECTS COULD BE A MAJOR BOON FOR THE LATIN AMERICA, RATHER THAN CONFINING IT TO THE LOWER RUNGS OF PACIFIC VALUE CHAINS. THE CHALLENGE FOR LATIN AMERICA WILL BE TO ATTRACT MUCH-NEEDED CHINESE INVESTMENT WHILE ENSURING THAT PROJECTS ARE DEMAND-DRIVEN AND PROMOTING OF LONG-TERM, RESPONSIBLE, AND SUSTAINABLE ECONOMIC GROWTH.

The Latin America and Caribbean region has historically ranked fairly low on China's list of foreign policy priorities. Political ties were evident as far back as the Mao Zedong era, when the Chinese Communist Party (CCP) established like-minded allies throughout the region. But commercial activity and investment were fairly limited---the result, in large part, of geographical distance (Sheng & Pan, 2012, May 26, 2015 and Devlin, Estevadeordal, & Rodriguez-Clare, 2006, pp. xiv).

Latin America has steadily grown in importance to China since the CCP introduced market-oriented reforms in the 1980s. The region's commodities and markets have since supported

China's economic growth model, which relied heavily on exports and a process of unprecedented urbanization. China became a critical partner for Latin America during this period, although the commercial relationship has been fairly imbalanced, with Latin America exporting mostly primary commodities and importing Chinese manufactures.

The China-Latin America relationship will continue to be shaped by trade complementarities, but is poised to grow in new and promising ways as China embarks on yet another round of economic reforms. As indicated in the draft of China's soon-to-be released 13th Five-Year Plan, Beijing is relying growing global "openness" to promote

economic upgrading, trade, and efficient use of excess capital and production capacity. To achieve these objectives and a broader "economic transformation" (经济转型), China has begun major diplo-economic projects in Asia and Europe, such as One Belt, One Road and the Asian Infrastructure Bank. Though far smaller in scale, China's newly-announced cooperation, investment, and financial agreements in Latin America are also closely aligned with Beijing's newest reform agenda. If they come to pass, China's reform-minded proposals will focus on a wider variety of sectors than in previous decades---a promising prospect in the face of declining commodities prices.

LATIN AMERICA'S ROLE IN CHINA'S ECONOMIC REFORMS: A HISTORICAL OVERVIEW

China's post-Mao Zedong economic history can be divided into two phases. The first began in the late 1970s, at the end of the Mao Zedong era. In 1978, then paramount leader Deng Xiaoping began an experiment in economic openness and development that shaped much of China's economic policy-making over the next three decades. In addition to introducing critical market reforms under the banner of "socialism with Chinese characteristics," it was during this time that China sought enhanced partnerships with Latin America and other regions in support of domestic objectives.

The second phase corresponds with China's newest attempt at economic overhaul, which was broadly outlined in the 11th and 12th Five-Year planning periods (1996-2010; 2011-2015), but more clearly articulated once President Xi Jinping took office in 2013. Though still supportive of Deng-era principles (and cautiously respectful of Mao-era ones), the "Xi era" is characterized by its divergence in terms of economic and foreign policy. As China's

1%

IT WAS JUST
THE PARTICIPATION
OF CHINESE IN
LAC EXPORTS IN
THE YEAR 2000



new paramount leader, Xi Jinping is pursuing an even more complex and far-reaching domestic reform agenda than Deng and other predecessors (Xinhua, August 20, 2014; Rosen, 2014), a larger Chinese footprint in nearly every region of the world, and an increasingly prominent role for China in global economic governance (Cohen, 2015).

Though distant from and comparatively foreign to China, Latin America played an important role in China's initial reform era. The region will continue to be a key partner for China as it embarks on a new phase in economic development.

PHASE ONE: "REFORM AND OPENING-UP"

China's post-Mao reform agenda (known as 改革开放 or "reform and opening up") is generally attributed

to Deng Xiaoping, who provided the "steady hand and the political skill" needed for China to begin developing into the economic powerhouse that it is today (Vogel, 2011). Deng's reforms included the incremental introduction of market principles and measured overseas engagement. The emphasis on market "openness" was further promoted by Deng's handpicked successors, Jiang Zemin and Zhu Rongji, when they assumed control of the economic reform movement in the 1990s. In 1999, Jiang and Zhu introduced the "going-out" strategy in an effort to supplement domestic supply of raw materials, establish new export markets, and improve the international competitiveness of Chinese firms.

Although China had established relations with many Latin America and Caribbean countries in previous decades, economic relations expanded measur-



THE NUMBER 1 MEANS
ONE PLAN, REFERRING
TO THE CHINA-CELAC
COOPERATION PLAN

ably in 1990s and early 2000s, as the government promoted more overseas activity. It was in the mid-1990s that Chinese state-owned enterprises began establishing a marked presence in the region's oil & gas, mining, and agricultural sectors.

China's global trade grew rapidly following accession to the World Trade Organization in 2001. China's demand for commodities from Latin America and other regions also grew at a remarkable rate as new social and economic policies triggered a construction boom, the mass migration of rural residents to urban centers, and other demand-inducing outcomes. China's share of Latin American exports climbed from around 1 percent in 2000 to 7.6 percent in 2009 (Rosales & Kuwayama, 2012). Four years later, Latin American and Caribbean exports to China made up about 2 percent of the region's total GDP (Ray & Gallagher, 2015).

Latin America also became an important (though not a top) destination for Chinese exports during this time period. Once comprised almost entirely of low-skill labor-intensive manufactures, China's exports to Latin America and the Caribbean evolved over the past decade to include a numerous high-tech goods. Chinese cars are now prominent throughout the region, including in Brazil, Peru, Venezuela, and Colombia. Chinese cell phones, com-

puters, and household appliances are also increasingly popular options for Latin American consumers. Chinese companies (e.g., Huawei, ZTE, and Lenovo) are now competing with US, Korean, and Japanese in Latin America and other markets.

Chinese engagement in Latin America has also supported various other government and firm-level objectives. The State Administration of Foreign Exchange (SAFE) and China Investment Corporation (CIC), China's sovereign wealth fund, have sought to put China's reserves to good use by investing a variety of Latin American sectors and industries (Xue & Xu, 2015). China's policy banks, China Development Bank (CDB) and China Ex-Im Bank, provided tens of billions in finance to Latin America and the Caribbean between 2005 and 2013, much of it tied to commodities export or the use of Chinese equipment or companies (Gallagher, Irwin, & Koleski, 2012). As Erica Downs (2013) explains, certain energy sector contracts provide employment for excess national oil company (NOC) service teams. Others, such as China's 2014 investment in Brazil's pre-salt oil fields, are thought to facilitate Chinese NOC acquisition of advanced technologies (Mendoza, 2015).

Despite the rapid growth in China-Latin America relations in this first phase of post-Mao development, the region has accounted for a relatively small share of China's overall trade and an even smaller share of Chinese foreign direct investment (6.2% and 13.3%, respectively, in 2013, according to the National Bureau of Statistics of China). For Latin America, however, China's growing presence over the past three decades was transformative. China is now the top trade partner for Peru, Chile, and Brazil and the second largest trade partner for several other countries in the region. In 2013, China surpassed

BY THE NUMBERS

The "1+3+6" cooperation framework" was first announced during President Xi Jinping's trip to Fortaleza, Brazil for the BRICS Summit in 2014.

The "1" here means one plan, referring to the China-CELAC Cooperation Plan (2015-2019), which was made public following the China-CELAC ministerial meeting in Beijing in January 2015. The "3" refers to the economic "engines" – trade, investment, and financial cooperation – that will drive China's relations

with the region. And the "6" in this framework refers to the six industries in which China will focus its attention (and money) in the coming years: energy and resources, infrastructure construction, agriculture, manufacturing, scientific and technological innovation, and information technologies.

Premier Li largely upheld this new framework during his trip to Latin America in May 2015. The tens of billions in deals announced during that trip focused overwhelmingly on the "6" industries out-

lined above.

Premier Li also introduced a new numerical policy – the "3+3" model for Sino-Latin America economic cooperation – during his visit. This policy proposes cooperation between Chinese and Latin American enterprises, societies, and governments (3) in logistics, power generation, and information technology (3). Li simultaneously proposed a \$30 billion special fund to develop production capacity in these and other industries.

the United States as the top destination for Chinese exports. Chinese demand contributed to considerable growth in the region's extractive and agricultural sectors and, for a time, in regional GDP. But the region's reliance on raw materials export to China left many countries exposed when commodity prices dropped in 2014.

PHASE TWO: A "NEW 30 YEARS"?

For many, President Xi Jinping's wide-ranging domestic and international initiatives are indicative of a new era in Chinese economic and foreign policy. This is a "new journey of reform, opening up, and modernization," as Minister of the State Council Information Office Cai Mingzhao described Xi's foreign policy outlook (in China.com.cn, October 23, 2014). A Ministry of Commerce (MOFCOM) official interviewed by finance magazine *Caijing* characterized Xi's overseas policies as a "new 30 years," following on the approximately 30-year-long Mao Zedong (1949-1976) and Deng Xiaoping (1978-2013) eras (Cohen, 2015).

The comprehensive program of economic reform announced by President Xi and other leaders in November 2013 is the "boldest ever," according to Xinhua commentary in August 2014, dramatically expanding on Deng's notions of "reform and opening-up." The proposed reforms---articulated in the "Decision of the Central Committee of the Communist Party of China on Some Major Issues Concerning Comprehensively Deepening Reform" document---are extensive by all accounts. In addition to reforms to fiscal, competition-related, financial, foreign trade, and foreign investment policy, the "Decision" is also a "manifesto on modernizing governance," according to Daniel Rosen (2014). Rosen views Xi's "sweeping overhaul" as a departure from China's 30-year-old growth model. It is an indication that "China's development model is obsolete and urgently in need of replacement."

Xi's foreign policy is also thought to be different from that of previous Chinese leaders. In his recent book, Xi Jinping: The Governance of China, Xi presents himself as a "strong advocate of...[the] core tenets of Chinese foreign policy evident since at least the advent

of the reform era and often earlier" (Swaine, 2015). While there is considerable continuity in Xi's foreign policy, his approach is described as more proactive or assertive than that of previous leaders (see Swaine, 2015 and Zhang, 2015). These arguments are often made in reference to Chinese dealings in maritime Asia, but encompass China's perceived challenge to existing principles of global economic governance, as well as heightened Chinese diplomatic and economic engagement in most every region of the world.

The One Belt One Road (OBOR) initiative, which includes the land-based Silk Road Economic Belt (SREB) and the 21st Century Maritime Silk Road, is an example of the Xi administration's "proactive and enterprising" diplomacy in a multipolar, globalized, and development-oriented world, according to Zhao Kejin and Yan Xuetong (in *The Diplomat*, April 9, 2015). Although it will be in the planning phase until 2021 (Cohen, 2015), the OBOR is intended to achieve a wide range of reform-related, political, and security objectives. Silk Road projects will leverage China's advantages in finance, markets, technology, and

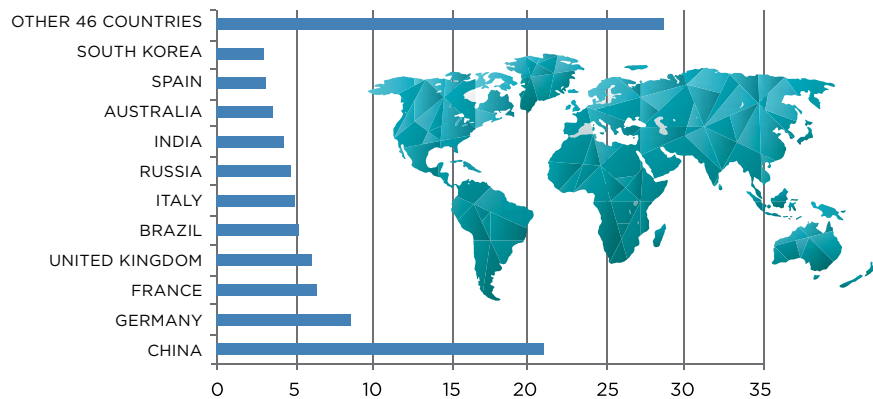
production capacity, according to Chinese political scientist Zheng Yongnian. One Belt, One Road development is also intended improve China's "capacity for transnational operations" and establish "foreign trade strongholds" and "production bases" (Kratz, 2015). Promoting economic development in the troubled western province of Xinjiang, where separatist violence has been on the upswing, is another motivating factor, as is securing long-term energy supply (McBride, 2015). The AIIB---the centerpiece of the OBOR---will provide much of the finance needed to advance Silk Road infrastructure projects, but also supports China's goal of increasing its leadership role in global economic governance, as indicated in the draft 13th Five Year Plan.

Latin America is not an official stop on the new Silk Road and, with the exception of Brazil, is not affiliated with the AIIB or New Development Bank. But China's recent initiatives in Eurasia and Latin America share many key traits. Like the OBOR, China's new foreign policy agenda in Latin America is largely intended to support Beijing's increasingly critical economic and social reform agenda. Resources and markets will continue to feature prominently in the China-Latin America dynamic, but China is looking to Latin American and other regions to support its process of "economic upgrading and rebalancing," as Peking University international relations professor Jia Qingguo writes (Cohen, 2015).

The 1+3+6 and 3x3 frameworks, which were announced during President Xi Jinping's and Premier Li Keqiang's recent trips to Latin America, support industrial upgrading by encouraging greater involvement of China's private and public companies in high-tech and manufacturing sectors in Latin America, such as telecommunications, logistics,



FIGURE 1
GDP SHARE IN AIIB MEMBERSHIP (%)



Source: China Daily (based on World Bank and Ministry of Finance data, 2013).

rail and shipbuilding (see Box 1 for a description of these policies). Though fairly vague at this point, the 3x3 model appears to promote the relocation of some Chinese industrial production to Latin America.

China's plans for Latin American in-

frastructure pale in comparison to the Silk Road objectives, but several new proposals have been made for infrastructure projects and finance in the region. China leaders view these projects as supportive of both Latin American infrastructure needs and their own de-

velopment objectives. Chinese overseas infrastructure projects often facilitate the movement of commodities from mine, energy asset, or farm to port, and address China's labor, steel, and other deficits. If built, the Curaba-Santarem railroad in Brazil will transport soy from Curaba in Mato Grosso (Brazil's top soy-producing region) to the Santarem port at the mouth of the Para River. There are indications that China Development Bank could finance the railway, possibly in exchange for exports of soy or the use of Chinese equipment or companies. China is pursuing similar objectives in Argentina, by means of the China Development Bank and ICBC-backed Belgrano Cargas rail line restoration. The rail network connects Argentina's major soy producing regions to neighboring countries.

Chinese government officials have also expressed interest in financing trans-regional transport infrastructure, including the Peru-Brazil railway, a Venezuela-Colombia oil pipeline, a "dry canal" in Colombia that would run from the Atlantic Coast to the Buenaventura port on the Pacific, a tunnel connecting Chile and Argentina, and other projects largely aimed at transporting raw materials and other goods to Pacific ports. In addition to supplementing China's raw materials supply and/or facilitating contracts for Chinese firms, there are also geostrategic motivations behind these projects. Shipping raw materials and other goods to China across the Pacific could provide an alternative to other transport routes that are unsafe or costly (Koch-Weser, 2014).

Like with OBOR, China has an-

CHINA IN BRAZIL: "ON THE UP AND UP"

Chinese companies have already made considerable inroads in the six industries - mining, agriculture, electricity, clean energy, oil & gas, and rail/ships - promoted by Premier Li Keqiang during his 2015 visit to Brazil.

China is a top market for Brazilian iron ore and soy exports. China's major grains trader, COFCO, is seeking greater involvement in various phases of agricultural production in Brazil and other countries. The company's 2014 acquisition of Dutch firm Nidera, which owns assets throughout Latin America, supports this objective.

Chinese electricity transmission giant State Grid made quick inroads into Brazil's transmission market after founding a Brazilian subsidiary in 2009. State Grid Brazil's outspoken Chairman, Cai Hongxian, indicated in 2014 that it's "only a matter of time" before his company expands operations in Brazil beyond electricity transmission. Chinese firms have been eyeing Brazil's clean energy industries for years, though dis-

couraged at times by Brazil's often challenging investment environment.

Chinese electric car manufacturer, BYD, chose the city of Campinas (in the Sao Paulo region of Brazil) for its first South American manufacturing facility. Slated to open in 2015, the factory will manufacture and assemble the world's only long-range pure electric transit bus in South America, as well as related battery packs. A leader in green technology at home, BYD Founder and Chairman, Mr. Wang Chuanfu, is also seeking to build solar panels and energy storage systems in Brazil. As indicated in a 2014 Dialogue report, Chinese companies Yingli Solar and AstroEnergy are also active in Brazil's solar industry, having initiated projects in Ceará and Rio, respectively. Chinese wind energy companies, Sinovel and Goldwind, are looking for space in the country's booming wind industry.

China's national oil companies are also on a steady course to grow their presence in Brazil's upstream. Chinese



oil companies have acquired stakes in Repsol Brazil, Statoil's Peregrino field, and Galp Energia Brazil in recent years. Together, CNOOC and CNPC maintain a twenty percent stake in the Libra pre-salt consortium. And Premier Li announced yet another multi-billion dollar loan for Petrobras during his May visit.

Shipping has been a source of contention between China and Brazil. China for two years prevented Vale's Valemax

ships from docking in Chinese ports, likely at the behest of Chinese shipping giant COSCO. Vale and COSCO reconciled their differences in advance of Li's visit, however, by firming up agreements to transport iron ore to China.

If history is any indication, it's unlikely that all of the deals and agreements announced during Li's visit will come to fruition. China is nonetheless laying the groundwork bigger investment in Brazil and other Latin American nations.

FIGURE 1
NEW SILK ROADS

Source: The Wall Street Journal

nounced billions in finance for new Latin America projects and frameworks. In addition to the tens of billions in bilateral loans issued to some Latin American nations (e.g., Venezuela, Brazil, Ecuador, and Argentina) over the past few years (see chart below), China confirmed a \$10 billion line of credit for Latin America in September 2015 focused on developing the region's productive capacity in the 3x3 model's key industries. Another approximately \$30 billion in investment and finance was announced in Brazil in May, largely directed toward those economic sectors outlined in the "1+3+6" framework (see Box 1). A \$20 billion dollar credit line for infrastructure development was promised in association with the China-CELAC Forum. An additional \$10 billion is being funneled to the BRICS-led New Development Bank.

Latin America in the 13th Five-Year Planning Period

Consistent with Xi Jinping's approach to economic and foreign policy, Latin America can expect both continuity and divergence in terms of Chinese engagement in the coming years. The region has been a critical source of raw materials and an important destination for Chinese exports for multiple decades and will continue to be so by all accounts.

China's slowing growth has had a downward effect on commodities prices, dealing a considerable economic blow to Latin America's major raw materials exporters. But still high rates of Chinese demand for Latin America agricultural, energy, and other resources are expected in the near-, medium-, and long-term. In their Inter-American Development Bank publication, Espinasa, Marchan, and Sucre (2015) indicated that China will remain the dominant driving force behind the rise in global energy demand. By 2025, China's share of global energy demand is projected to rise to 31 percent, reaching 3,802 million tons of oil equivalent.

Demand for agriculture is also soaring. China's need to supplement internal production with foreign agricultural is urgent, especially in the case of soy. Driven by commercial policy and growing demand, soybean imports are predicted to rise to around 83 million tons in 2024 (soy imports totaled 63.38 million tons in 2013 and 71.4 million tons in 2014). Demand for meat, fruit, milk, and eggs has also grown across all income groups in recent decades. These and other factors likely contributed to Xi Jinping's projection in January 2015 that China and Latin America will achieve \$500 billion in total trade over the next ten years.

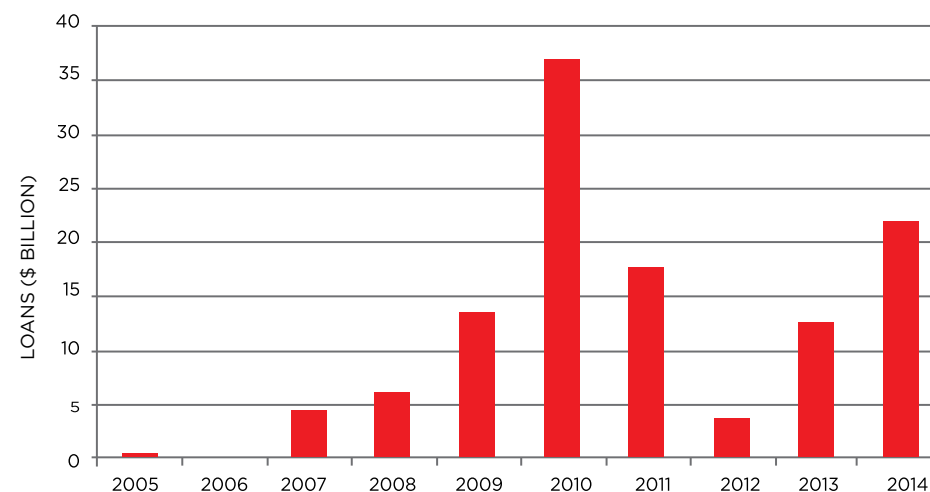
The relationship is also changing

in some fairly dramatic ways. Chinese public and private firms are investing to a considerable degree not only in natural resource-related sectors in Latin America, such as mining, oil, and agriculture, but also in the various industries promoted in Chinese new "cooperative frameworks" (see Box 2 for examples in Brazil), although many, such as Chinese telecommunications giant Huawei, wait years before turning a profit in the region (author interview with Huawei official, April 14, 2015). Recent reform-minded changes to overseas investment policy, such as MOFCOM's 2014 easing of the approval process for overseas investment, have opened the door for more in the way of overseas deal-making. These and other plans to support the country's private enterprises will also change somewhat the makeup of Chinese companies in the region.

The China-Latin America relationship will be shaped in the coming years by China's progress toward economic reform. Assuming that China achieves "economic transformation," demand for

certain minerals will decline as the Chinese economy shifts from resource-intensive industry and into service provision (Espinasa, Marchan, & Sucre, 2015). Rising consumption in China would provide new opportunities for Latin American exports, however. Further OBOR-related value chain integration throughout Eurasia could have both positive and negative consequences for Latin America. The indirect effects on Latin America's trade in raw materials would likely be positive, for example. But improvements in Eurasian "connectedness" could negatively affect Latin America's export competitiveness.

If they come to pass, China's newest investment and infrastructure projects could be a major boon for Latin America, rather than confining it to the lower rungs of Pacific value chains. The challenge for Latin America will be to attract much-needed Chinese investment while ensuring that projects are demand-driven and promoting of long-term, responsible, and sustainable economic growth. ■

FIGURE 2
CHINESE STATE-TO-STATE FINANCE IN LATIN AMERICA, 2005-2014Source: China-Latin America Finance Database, Inter-American Dialogue.¹

NOTES

The Inter-American Dialogue, in cooperation with Boston University's Global Economic Governance Initiative, tracks Chinese state finance to Latin American

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TEN TECHNOLOGIES WHICH COULD CHANGE OUR LIVES POTENTIAL IMPACTS AND POLICY IMPLICATIONS

2016 Edition



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ANALYSIS

FROM PRODUCTION TO CONSUMPTION: THE TRANSFORMATION OF

CHINA BY 2050

IN RECENT DECADES, THE CHINESE ECONOMY HAS UNDERGONE CONSIDERABLE STRUCTURAL CHANGE IN A MODEL WHOSE MAIN OBJECTIVE WAS TO INCREASE PRODUCTIVE CAPACITY. HOW WILL THAT SYSTEM CHANGE IN THE YEARS TO COME AND WHAT WILL THE IMPACT BE FOR LATIN AMERICA AND THE CARIBBEAN?

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THIS PAPER DESCRIBES POSSIBLE SCENARIOS FOR THE MAKEUP OF CHINA TOWARD THE YEAR 2050 SHOULD THE PLANNING ADOPTED BY THE CHINESE AUTHORITIES TO CONTINUE THE PROCESS OF TRANSFORMATION BEGUN BY PRIME MINISTER DENG XIAOPING AT THE END OF THE 1970s BE SUCCESSFUL. BASED ON OFFICIAL DOCUMENTS AND WORKS BY CHINESE SPECIALISTS, IT REVIEWS THE PROGRESS EXPECTED IN THE PERIODS 2010-2030 AND 2040-2050 AT THE LEVELS OF THE ECONOMY AND TRADE, AND CITIES AND COUNTRYSIDE, POLITICS AND GOVERNMENT, INTERNATIONAL CONNECTIVITY, AND SCIENCE AND TECHNOLOGY. IT CAN BE CONCLUDED THAT CHINA HAS A HIGH PROBABILITY OF ACHIEVING A RELEVANT PORTION OF THE INTERNATIONAL INTEGRATION DEVELOPMENT GOALS THAT IT HAS SET FOR ITSELF, AND THAT THIS WILL INVOLVE SIGNIFICANT TRADE AND FINANCIAL OPPORTUNITIES FOR LATIN AMERICA AND THE CARIBBEAN. HOWEVER, UNLESS IT JOINS FORCES AND WORK CONCERTEDLY WITH MEDIUM- AND LONG-TERM HORIZONS, IT IS ESTIMATED THAT THE REGION WILL SEE ITS EXISTING ASYMMETRIES WITH CHINA DRAMATICALLY MULTIPLIED OVER THE DECADES TO COME.

REFORM AND TRANSITION: THE PATH TO DEVELOPMENT

After Cultural Revolution, Deng Xiaoping proposed the national objective of achieving for China the status of “moderately prosperous society” by the year 2020. With that in mind, a growth model was launched based on external economic and financial openness, expanded consumption, raising the level of technology in industry, the internationalization of the yuan, increased competitiveness, and the development of Chinese “soft power” (Deng, 1994).

Against this background, Chinese leaders devised their own strategies for reform, which are different from those applied by other socialist economies: a cumulative endogenous model of mu-

tual strengthening in the interaction between the market, institutional change, technical innovation, and economic behavior (Jefferson & Rawski, 1994).

We are looking at a socialist state geared to development and turning to markets and deregulation, but, at this stage, still retaining a clearly predominant role in terms of state ownership, control of distribution and finance, and economic planning (BEH, 2007). Nevertheless, it is already working toward the right balance between market forces and the state. This search for harmony is a central challenge: it is not a question of intervening in the economy or not—all States do so in one way or the other—but to what extent, in what way, and in what sector it is done.

The process was divided into three

stages:

1) Ensuring the survival of the population (food for subsistence).

2) Reaching a medium level of development.

3) Implementing an advanced stage of modernization and transformation, placing it in the top global positions between 2040 and 2050, around the centenary of the end of imperialism in China.

The Twelfth Five-Year Plan realistically identifies new challenges linked to the processes of change and transformation at the international and internal levels (Jia & Li, 2011).

In the internal framework, the Plan points to the imbalance between investment and consumption, the disparities in income distribution between regions, and between urban and rural areas, still weak agricultural capacity and scientific-technological innovation, the increase of social conflicts, the limitations that the environment and the availability of resources impose on economic growth, and the absence of an adequate rational structure in industry.

In this paper, we set out criteria and guidelines produced by Chinese policy-making and academic bodies in order to facilitate understanding of the vision, logics, and strategies that shaped the direction of China’s medium- and long-term development in its response to changes in the international system and internal pressures.

SHARE IN WORLD TRADE

In 2009, China accounted for 9.6% of the total volume of global trade, overtook Japan, and was ranked as the number one global exporter. In the next three decades, China plans to totally transform its industry and raise the composition of its exports to the high end of value chains.¹

Against this background, a 2010 report from the Ministry of Commerce’s Research Institute estimated that Chinese foreign



TABLE 1
SOME REQUIREMENTS TO BE MET FOR DEVELOPMENT OF INTERNAL MARKET

- ▶ Ensuring the country's social and political stability.
- ▶ Possessing a modern, efficient, honest bureaucracy.
- ▶ Maintaining open policies with an emphasis on developing the internal market and those of neighboring Asian countries.
- ▶ Paying particular attention to markets in Africa and Latin America.
- ▶ Restructuring, promoting, and strengthening TNCs and SMEs in China to achieve adequate growth rates for the anticipated needs at each stage of the development cycles.

Source: Own preparation.

trade could achieve that target by 2030 and then start moving toward the role of “dominant power” in world trade. The model of imitative economic development and extensive trade would eventually become an economic model of innovation/creation and intensive trade.

Such a model would be based on the advantages to be gained in terms of efficiency, quality, and technology through modifications introduced into its industries, trade policies, FDI, and financing. It is also characterized by a gradual shift from the emphasis previously placed on

TABLE 2
TOWARD AN INTEGRATED RURAL-URBAN STRUCTURE

- ▶ New type of industrialization; modern service industries; modernization of agriculture and high industrial urban-rural interaction.
- ▶ Medium and small cities developed in coordinated fashion with complementary functions; gradual homogenization of infrastructure.
- ▶ Reduction of the urban-rural gaps; growing conversion of rural population into urban residents working in manufacturing and services.
- ▶ Administration that moves toward unity and gradually provides equivalent public services.
- ▶ Progressive narrowing of the income gap for both sectors.

Source: Based on State Development and Research Center data.



the goods market to trade in services.

This process was to accompany the main effort geared, after the 2008 international financial crisis, to the expansion and strengthening of the internal market.

The economist Chi Fulin is one of the key contemporary figures in the planning and management of the transformation process, and acted as coordinator of the work to draw up the Twelfth Five-Year Plan (2011-2015). Fulin felt that, in light of the financial crisis, the demand from European and U.S. markets would take somewhere between the medium and long term to recover fully. This situation created a serious difficulty for China: a need arose to change the emphasis previously placed on a model essentially reliant on exports as a driver of growth.

As a result, there was a need in this period to focus efforts on developing the internal market. Transforming China into one of the world's main consumer markets would bring about equitable internal social distribution of any benefits, as well as sustainable development (Chi, 2010a).

To achieve these goals, both the CPC and the Government are fully aware of the need to meet certain conditions (Table No. 1):

To achieve the rank of relevant global consumer, while simultaneously meeting the requirements of equity and

30%

WILL BE THE LIMIT
FOR FOREIGN
TECHNOLOGY
IN 2020

sustainable development, economic growth during the second phase of the transition period ceases to be an objective in itself. It has to be linked primarily to the ability to boost consumption and lead to the development and benefit of all members of the community. Consumption is interpreted as representing the best pathway to sustainable and equitable growth.

SECTORS AND DIRECTION OF CHANGE

Essentially, China intends to carry out four major transformations: 1) transition “under the rule of law” from a primary market economy to a modern economy; 2) transition from an extended economy to a green economy (low-carbon and environmentally sustainable); 3) movement from a dual urban-rural structure to an integrated urban-rural structure; and 4) transition from a people's society to a civil society (Chi, 2010a).

Point 1 occupies a substantial part of this work. Given the impossibility here to analyze the other transformations in the depth they deserve, we have selected one: Point 3, the problems of dual-

TABLE 3
THE URBANIZATION PROCESS IN THE PRC (2010-2040)

- ▶ 1% of the annual increase in the rural population's movement to cities represents 10 to 13 million people.
- ▶ The urban population could reach 926 million by 2025 and pass the 1 billion mark by 2030.
- ▶ Individual consumption in cities is 2.7-3% greater than in rural areas. It is estimated that the urbanization process will represent an annual 1.6% increase in total GDP.
- ▶ Rural migrants will become the main force of urbanization, boosting the urban population to 70% between 2002 and 2025.
- ▶ With this in mind, 100 cities are to be built in different provinces and regions for populations of 1 million people each. A further 200 smaller cities will have populations of 500,000 people each.

Source: Based on State Development and Research Center data.

ity and urban-rural imbalance, which are perceived as one of the possible determining causes of greater social and political instability in the future.

In each of these areas, wide-ranging programs are being carried out in an attempt to achieve a unitary rural-urban structure displaying some characteristics (Table 2).²

The urbanization process in China advanced approximately 35% be-

tween the levels of urbanized population in 1979 (18.96%) and those in 2013 (53.73%).

Studies carried out by the State Development and Research Center have helped design an thirty-year urbanization strategy that simultaneously meets two objectives: to make major progress in reducing existing asymmetries in income and quality of life among the urban and rural populations, and to boost

TABLE 4
LATIN AMERICA: 2025. URBAN RECONFIGURATION

- ▶ Latin America will have an urban population of 85%, bringing about major changes in mobility, work, and social life.
- ▶ Mexico D.F., São Paulo, Rio de Janeiro, Buenos Aires, Bogota, and Lima will have 10 million inhabitants.
- ▶ Latin America will have three urban megacorridors:
 - México-Southern United States;
 - Rio de Janeiro-São Paulo-Campinas (44 million inhabitants and 57% of Brazilian GDP)
 - Buenos Aires-Rosario-Córdoba (21 million inhabitants and 49% of Argentine GDP).

Source: IDB (2013).



consumption.

This vast urbanization program will generate new economic centers and alter the configuration and hierarchy of existing ones (Table No. 3).

ECONOMIC-TRADE LINKAGE

The urban-rural structure that the PRC aspires to in the coming decades presents encouraging possibilities for our region. With a carefully planned, coordinated effort on our part that takes account of the specific needs of an emerging middle class and the limitations of the knowledge and time available, this new social and territorial configuration would facilitate the emergence of more balanced axes of cooperation and economic-trade linkage.

In principle, the challenge would become more viable in terms of the action to be carried out by the countries, subregions, and cities of Latin America and the Caribbean (LAC): how to provide food and services to Chinese urban units of a more accessible scale for our management capacity. The size of these cities' populations and the level of requirements for their development, particularly in the initial stages, would facilitate the establishment of a broad spectrum of links among them, as through the twinning of these units, for example.

Also, given the enormous expertise China is accumulating in the planning and implementation of such development programs, major transfer projects could be organized to meet the needs of Latin America's rapid urbanization process, that would put us among the top places in the world by 2025, with 85% of our population living in cities (Table No. 4).

The new sociospatial configuration to be adopted by Latin America in a

relatively short space of time is a challenge and an opportunity of enormous importance, both in intra-Latin American terms and in terms of the links to be developed with the PRC, as well as other Asia-Pacific countries and India.

Consequently, the direction to be taken by Latin America must be defined in light of the context's demanding requirements of political, economic, social, industrial, cultural, and technological coordination.

As in any other strategic action undertaken in Asia to reduce existing asymmetries, it should not be forgotten that we would not be the only ones encouraging this end. Japan, for example, has had highly sophisticated studies for several years now, covering the needs of almost the whole of the emerging middle class in Asia-Pacific and India.

For these reasons, the brief suggestions, evaluations, and proposals set out in this paper are focused around two basic requirements: (a) the pressing need to achieve, in the long term, a higher degree of knowledge and capacity for strategic action over our Asian counterparts than currently exists, and b) to overcome, as far as is politically and economically possible, the current differences within LAC regarding integration processes and their differing objectives, national interests, and external insertion, and the existence of complex processes of institutional organization and regional decision-making faced with a relatively unified actor such as China.

BASIC INDICATORS AND FEATURES OF GROWTH

Taking into account the complexity, the multiplicity of actors and factors, and the scale of the different processes and stages considered in the planning

TABLE 5
BASIC ECONOMIC GROWTH MODE FEATURES AT THE PRODUCTION-FOCUSED
AND CONSUMPTION-FOCUSED STAGES

	ECONOMIC GROWTH MODE AT PRODUCTION STAGE	ECONOMIC GROWTH MODE AT CONSUMPTION STAGE
ULTIMATE OBJECTIVES	Efforts to grow GDP and economic aggregates	Search for free and full development of individuals
ECONOMIC DEVELOPMENT MODE	Shift from production to consumption with emphasis on production, but with shortfalls resulting in loss of resources and wealth	Shift from consumption to production, prioritizing consumption. Production executed with the aim of satisfying social demands and promoting the overall growth of social wealth
ECONOMIC STRUCTURE	Orientation to heavy industries, with secondary industry playing the leading role	Orientation to light industry with tertiary industry playing the leading role
FORCES DRIVING ECONOMIC GROWTH	Focus on key factor investments, including funds, resources, and the formation of favorable contexts	Focus on investment in intelligence, mainly including human resources
ORGANIZATION OF PRODUCTION	Large-scale industrial	Mass and customer-tailored
CONSUMPTION STRUCTURE	Emphasis on private consumer satisfaction, focusing products of individual satisfaction on mass production. Focus on both material consumption and survival	Emphasis on satisfaction of demands for small groups of people in some products for personal use, based on meeting demand for public services. Presence of centers focusing on consumption of services, luxury products, and development
CONSUMER READINESS	Weak consumption and high level of savings	Strong consumption and reduction in savings
SOCIAL STRUCTURE	Organized in pyramid form	Organized in oval form
LIFESTYLE	Production-centered; focus on services for production	Development-focused; focus on individual consumer satisfaction
DEVELOPMENT PERIOD	Takeoff and evolution to maturity	High mass consumption and search for quality of life

Source: Chi (2010b). Chapter 3, Table 3.1. Author's translation.

for the period of the Second Transformation (2010-2030/40-50), Table No. 5 summarizes its main features and characteristics (Chi, 2010b).

This table identifies the differences between the modes of economic growth corresponding to each stage of the transformation process (one centering on production, the other on consumption), together with its objectives, economic structures, acting forces, organization of production, structure of consumption, and expected consumer

attitudes.

Similarly, Table No. 6 shows how the features of the production-oriented growth mode differ from the consumption-oriented growth mode.

Tables Nos. 5 and 6 highlight some of the main qualitative and quantitative transformations expected to take place in Chinese society in the next two to three decades.

Of course, it is impossible to know if all these goals can be achieved. Many factors may hamper and disturb, to one

TABLE 6
BASIC FEATURES OF DEVELOPMENT MODES OF THE PRODUCTION-FOCUSED
AND CONSUMPTION-FOCUSED SYSTEM

	PRODUCTION-FOCUSED DEVELOPMENT MODE	CONSUMER-FOCUSED DEVELOPMENT MODE
BASIC PHILOSOPHIES	Growth-oriented	Consumer-oriented
GOVERNMENT ORIENTATION	To economic construction	To public services
TAX SYSTEM	Construction-focused: tax expenditure oriented by this sector	Public-focused: tax expenditure oriented by public services
TAX SYSTEMS	Production-based	Consumption-based
FINANCIAL SYSTEM	Guided by investment and production	Designed to serve consumption
COMMERCIAL POLICY	Export-oriented strategy; large volume of imports and exports; strong presence in international markets	Equal attention to domestic and international markets, imports and exports
INDUSTRIAL POLICY	Agriculture as the foundation and industry with a central role	Focus on tertiary industry, promoted by development
DISTRIBUTION SYSTEM	Capital-oriented	Work-oriented
SOCIAL SYSTEM	Social insurance based on the individual or the family; inadequate public services	Full social insurance system; equal access to basic public services for urban and rural residents

Source: Chi (2010b). Chapter 3, Table 3.2. Author's translation.

TABLE 7
EXPECTED AVERAGE GDP GROWTH
RATES IN SELECTED COUNTRIES
(2030-2060)

COUNTRY	AVERAGE GDP GROWTH IN PPP (US\$, 2005)		
	1995 - 2011	2011 - 2030	2030 - 2060
AUSTRALIA	3,3	3,1	2,2
CHILE	3,9	4	2
JAPAN	0,9	1,2	1,4
SOUTH KOREA	4,6	2,7	1
MEXICO	2,6	3,4	2,7
NEW ZEALAND	2,7	2,7	2,6
UNITED STATES	2,5	2,3	2,2
ARGENTINA	3,6	3,6	2,2
BRAZIL	3,3	4,1	2
CHINA	10	6,6	2,3
INDONESIA	4,4	5,3	3,4
INDIA	7,5	6,7	4
RUSSIA	5,1	3	1,3

Source: Johansson et al. (2012). Annex Table A1.

TABLE 8
PRC GOVERNMENT'S GENERAL GUIDELINES ON ECONOMIC GROWTH (2015-2030)

▶ CHINA HAS ENTERED A STAGE OF MEDIUM-HIGH GROWTH.
▶ ITS ECONOMIC STRUCTURE WILL BE SUBJECT TO STEADY IMPROVEMENTS AND ADJUSTMENTS.
▶ ECONOMIC GROWTH WILL HINGE INCREASINGLY ON THE INCORPORATION OF TECHNOLOGICAL INNOVATION AND A SELECTIVE REDISTRIBUTION OF FINANCING, WITH MARKETS AND CONSUMERS PLAYING A MORE IMPORTANT ROLE (51.2% OF GDP IN 2014).

Source: Based on speech by Xi Jinping, November 2014.

degree or another, the internal and external conditions deemed necessary for their success.

However, the nature, orientation, and depth of the transformations currently under way and their expected impact at the domestic, regional, and global levels will need to be duly taken into account by Argentina and the other LAC countries in formulating and implementing policies and strategies of medium- and long-term interaction with China and Asia-Pacific.

As in the previous case, this opens up a broad spectrum of opportunities for cooperation, for example, a horizontal exchange of experiences in the various different areas and levels of action included in Table No. 5.

CHINA IN 2030

One important recent OECD study, "Looking to 2060: Long-Term Growth Prospects" (Johansson et al., 2012), identifies the expected growth scenarios for the world economy over the next fifty years. Table No. 7 compares the rates of GDP growth maintained by the PRC and a group of Asian and Latin

TABLE 9
PROJECTED PERCENTAGE DISTRIBUTION OF GDP, SELECTED COUNTRIES

MILES DE MILLONES DE US\$ *	CHINA	UNITED STATES	INDIA	BRAZIL	RUSSIA	FRANCE	GERMANY	JAPAN	UNITED KINGDOM
% en 2005	6,3	30,6	1,9	1,7	1,1	3,9	5,1	14,3	4,4
% en 2020	10,8	30,1	2,6	1,1	1,4	3,1	4,4	11,8	3,9
% en 2050	21,8	26,9	4,8	0,4	1,1	1,8	2,7	6,9	2,7

Source: Based on Poncet (2006), Table 17. * 2005 current dollars and relative prices.

American countries between 1995 and the start of the current decade, including estimates for the periods 2011-2030 and 2030-2060 (Moneta, 2013).

This work by the OECD estimates that China will be able to maintain 6.6% average growth over the period 2011-2030. This rate is situated within the minimum parameters covered by Chinese planners to reach the growth and development stage necessary for the second stage of transformation (2010-2040).

With regard to the role China could play in global trade in manufactured goods and services by the year 2035, an econometric model developed by

the WTO, which includes two scenarios, allocates 22.5% in "High" and just 10.9% in "Low" to China's rising share in the volume of global exports, as well as a percentage of 20.4% of world GDP in the "High" scenario and a low percentage in the "Low," with 9.2% of the total (Fontagné, Fouré, & Keck, 2014).

With restrictive scenarios, the WTO study reminds us that low growth situations may well arise in the future, affecting different countries and regions in different ways and degrees.

Given this background, it is important to note that the current Chinese leadership is fully aware of this risk. Under the new leadership of Xi Jinping and Prime Minister Li Keqiang, the economic policy developed by their predecessor Wang Jiabao in the critical phase of the global financial crisis has been redirected.

The megagrowth policy, with GDP rates of 10% or above, is over. It is now hoped that GDP increment values display fluctuations in the range of 7%; the measures adopted by the current administration seek to ensure that these parameters can be generated.

On this note, in his speech at the Economic Leaders Meeting in the Asia-Pacific Economic Cooperation (APEC) Conference in Beijing, November 7-8, 2014, Xi Jinping gave clear signals on



TABLE 10
2020 PLAN: SELECTED DIRECTIVES AND GENERAL S&T GOALS

1	Obtaining innovation endogenously (reduction of foreign technologies' share to below 30%).
2	Advancing 60% in technological development and its contribution to Chinese national growth.
3	Using science and technology as the main instrument for economic growth and development.
4	Achieving key generic technologies in selected national industries; positioning China at the global leading edge.
5	Having basic research and the most advanced technology; creating new market and industry demands.
SPECIFIC TARGETS	
▶	R&D must cover 2.5% of GDP by 2020.
▶	Leading the field in agricultural science and technology, and the necessary production levels in this sector to meet China's food security needs.
▶	Forming scientific institutions and researchers for R&D with globally recognized quality.
▶	Obtaining fifth place in the world in the field of patents and quotations of their scientific publications.

Source: Own data.

the policy that China would move forward in the coming years (see Table No. 8).

In the coming decades, efforts will be made to move forward in production transformation, moving from “Made in China” to “Designed and Produced in China” (Moneta 2014a) by way of a massive injection of funds in education, geared to selected sectors (e.g.: biotechnology, ICTs, alternative energies, the environment), which have a positive impact on technological value added to production.

CHINA IN THE SECOND HALF OF THE TWENTY-FIRST CENTURY (2040-2050)

Table No. 9, which is taken from a study (Poncet, 2006) on growth prospects for the world economy by 2050,

prepared by France's Center for International Prospective Studies (CEPII), sets out the tentative distribution of the shares of China, United States, and other countries in global GDP growth, as well as their placing in the global economic hierarchy in the years 2005, 2020, and 2050.

According to this study, China could in 2050 take up nearly 22% of global GDP, second in the international ranking, with United States in first place, followed by China and Japan, and India in fifth.

In terms of material growth, China's industrial GDP would put it in first place worldwide, and its economy would grow in a stable and balanced way, with notable advances in its society's educational level and quality of life, and in scientific and technological capacity. It would also make significant progress

toward the construction of the “socialist democracy” and the legal system, as well as the political and development rights.

A WINDOW OF OPPORTUNITY

For its part, Table No. 7, taken from the OECD work quoted above on prospects for world GDP growth by 2060 (Johansson et al., 2012), shows the gradual convergence of the percentages of growth of national GDPs (calculated in PPP) for the period 2030-

2060, at values of between 1% and 3%. This situation occurs among the developed powers, the BRIC group (with the exception of India), and other emerging countries of Latin America and Asia-Pacific.

In this context, China, as well as a significant number of Asian and Latin American countries, would substantially reduce their growth rates to levels equivalent to those obtained by the so-called “mature” economies.

Given the major differences between the developed and developing

TABLE 11
S&T INDICATORS (2000-2020)

R&D AS % OF TOTAL GDP	2000: 0.8% 2010: 1.75%
INVESTMENT IN R&D (BILLIONS OF US\$)	2005: 85 (PRC) 2012: 257 (PRC) 2024/25: 600 (PRC) 2024/25: 470 (USA) 2024/25: 350 (EU) 2024/25: 110,000 (JAPAN)
INVESTMENT IN R&D AS % OF WORLD TOTAL (MEASURED IN PPP)	2009-2010: USA: 34.4%; EU: 23% CHINA-JAPAN: 12.3%
SHARE OF TOTAL GLOBAL RESEARCHERS	EU: OVER 2 MILLION USA-CHINA: OVER 1.4 MILLION
SHARE OF INTELLECTUAL PROPERTY (NUMBER OF PATENTS AS % OF WORLD TOTAL)	2010: USA+CHINA: 4/5 OF WORLD PATENT GROWTH 2011: 1ST: USA; 2ND: JAPAN; 3RD: GERMANY; 4TH: CHINA THE NUMBER OF CHINESE PATENTS TRIPLED BETWEEN 2006 AND 2009 (ELECTRICAL ENGINEERING AND ICTS, 58%; CHEMISTRY, BIOLOGY, AND MEDICINE, 21%)
SHARE OF WORLD TOTAL OF GRADUATES WITH HIGHER EDUCATION	2010-... : 200 MILLION FULL-TIME STUDENTS 2000: NO. OF GRADUATES WITH HIGHER EDUCATION: USA: 16.7%; CHINA 16.5% 2010: CHINA: 23 MILLION; USA: 17.7 MILLION. 2020: CHINA: 58.2 MILLION (28.5%); INDIA: 21.6% ; USA: 22.2 MILLION (19%)

Source: Based on Lu (2010), Moneta (2013), and OECD (2014).

TABLE 12
PRIORITY STRATEGIC SECTORS FOR CHINA'S DEVELOPMENT (2020-2050)

▶ Energies system and sustainable resources.
▶ Advanced materials and smart green (environmentally appropriate) manufacturing.
▶ New information networks and systems (toward the “knowledge society,” universalization of ICTs, and enhanced capacity of information networks and services).
▶ Health and social security system.
▶ Development of ecological and environmental conservation.
▶ Expansion of space exploration capacity.
▶ Expansion of space exploration capacity.
▶ Expansion of ocean exploration capacity. The National Public Security System (ensuring the peaceful use of outer space, ocean transport, and protection against biological and ecological threats).

Source: Lu (2010). Chapter 3.

countries in terms of economic capabilities, facing the prospect of achieving equivalent levels of GDP growth rates from 2030 may indicate for Latin America that its high growth window of opportunity could be relatively short: the next two to three decades.

SCIENCE AND TECHNOLOGY: THE LEAP FORWARD

To deal successfully with strong international competition in its modernization process and provide an adequate solution to critical challenges in its development in 2006, the Government adopted the National Medium to Long-term Plan for the Development of Science and Technology, 2006-2020 (Lu, 2010). The so-called “2020 Plan” was adopted at the end of December 2005 by the State Council’s Standing Committee and officially announced shortly after. The plan incorporated the second phase of reforms and opening proposed by the Government of President Hu Jintao and Prime Minister Wen Jiabao (2003-2013).³

The plan, whose preparation in-

involved two thousand experts over two years, establishes the general work guidelines in science and technology (S&T) (Table No. 10).

At the start of the current decade, Table No. 11 shows the substantive progress achieved by China in the field of investment in R&D, researcher and patent numbers, and human resources training.

In short, China is already a leader in S&T. It is second in the world after United States in agriculture and agrifood, aerospace, and rail transport. It is third in energy, and in IT and communications, and fourth place in the automotive industry, nanotechnology, and advanced materials (Moneta, 2013).

Based on the 2020 Plan, the Chinese Academy of Sciences (CAS) organized the Science and Technology Roadmap to China 2050. Published in 2010, it determines what will be the problems of basic sciences, as well as the priority technological areas and objectives to be realized by mid-century. With this in mind, eight basic strategic systems were laid down for China’s socioeconomic development (Table No. 12).

In the framework of these eight basic systems, 22 strategic S&T initiatives were identified. Programs were organized in each initiative with set objectives for 2020 and 2030-35, and approximations to 2050.

A priority objective is to ensure that China is a leader and a central player in S&T at the regional level, and an influential member in the international framework. With regard to external cooperation in this field, the use of cooperative models is encouraged to ensure balanced mutual gains on technological frontiers, keeping in mind long-term developments.

CHALLENGES AND OPPORTUNITIES FOR COOPERATION

A comparative analysis of our region’s current situation in this sector with Asia-Pacific and India shows, in general terms, a significant shortfall in manufacturing production and the incorporation of science and technology, with a major negative impact on our productivity and capacity for innovation. This situation favors the reprimarization of our exports due to the existence of a growing technology gap (Moneta & Cesarin, 2014).

Analysis of the objectives relating to Chinese scientific and technological de-

velopment to be achieved in the period 2030-2050 identifies challenges and opportunities for cooperation in various different areas critical to LAC (e.g. agrifood, or the exploitation of hydrocarbons and oceanic resources).

Accordingly, our region needs to have quantitative and qualitative evaluations in this field that contribute to the organization of intra-Latin American and Chinese cooperation projects in primary and high technological value sectors that increase and diversify our production spectrum, and adapt it to the requirements of the Chinese and world demand in that period.⁴

The Silk Road Economic Belt (The Belt) and the Maritime Silk Road (The Road) constitute a systemic and holistic project in their conception (Table No. 13). They are conceived as a new model of international cooperation and global governance. The project as a whole covers some sixty countries across three continents—Asia, Europe, and part of Africa—and a population close to 4.5 billion people.⁵

The new configuration that will give rise to the connectivity strategy for the Eurasian continent will have a strong impact on the axes of Latin America’s economic-trade linkage with the EU and Asia-Pacific, and will require a thorough joint review of the role the region could





play in this new scenario, in which the traditional divisions between regions begin to disappear materially, and new geopolitical and economic configurations emerge.

In this framework, LAC needs, among other things, to take urgent decisions in this field regarding the role assigned to transport and logistics in its global insertion model, keeping in mind important changes that our land and sea routes will undergo due to China's growing participation in financing and orientating intraregional and transcontinental transport routes, for example, the Brasil-Peru Train Project and Atlantic-Pacific Canal in Nicaragua.

A CHRONICLE OF THE FUTURE

Throughout this work we have attempted to provide a dynamic outline of China's evolution up to 2030/40-50. But what might our own region's situation be like by then?

According to an IDB study (2014), the annual growth rate by 2025 could stand at around 3.7%, while GDP could have doubled to US\$14 billion. In particular, it is estimated that, with an overall average of around US\$20,000, per capita income could rise above US\$23,000 in Argentina, Chile, Mexico, and Venezuela, followed by Brazil, Colombia, and Peru a few years later. Nevertheless, de-

spite the growth obtained, a significant income inequality could be maintained across the region.

It is also to be hoped that LAC will have managed—even partly—the worrying presented by its production structure, the weakness of its share in international value chains, the predominance of intra-industrial external trade, and its relative backwardness in the area of transport infrastructure and logistics services provision that plague us today and separate us from the levels of growth already achieved in China, Asia-Pacific, and India.

These possible projections and trends aside, the configuration of possible futures for the PRC presented here—to which might be added those of the other Asia-Pacific countries and India—still displays a fundamental gap in the two regions' levels of development.

In that context, the question is whether it is possible to overcome or at least minimize existing asymmetries. It is highly likely that, as has been noted elsewhere in this work, if profound reforms are not introduced in the way we conceive, plan, and implement the form and content that steer the processes of cooperation, regional integration and negotiation, and external insertion, these will not only still be present, but will increase.

We might mention some present-

EURASIA
COULD BE THE
NAME OF A NEW
CARTOGRAPHY
LOOMING IN
THE HORIZON

day examples. The region has not presented a unified response to the White Paper on Latin America published by China's Ministry for Foreign Affairs under the title "China's Policy Paper on Latin America and the Caribbean," November 5, 2008. In addition, the Prime Minister Wen Jiabao, on a visit to ECLAC in June 2012, proposed concrete initiatives in the area of food safety and other issues of great interest to our region (innovation, science and technology, sustainable development, and the establishment of intergovernmental consultation mechanisms). Given their significance, it may have been more appropriate for them to have been the initiative and result of a regional concertation exercise.

Similarly, China played a leading role in the organization and preparation of the content of programs emerging from the First Ministerial Meeting of China-CELAC Forum (Beijing, 01.23.15) and taking shape in the subsequent 2015-2019 Cooperation Program. Last, to this could be added Prime Minister Li Keqiang's mission to Brazil, Colombia, Chile, and Peru (05.21-28.2015). These visits included an impressive portfolio of funds and projects which, if realized, will favor those countries' growth and development, most likely in a manner consistent with the logic of spatial connectivity and the exploitation of natural

resources encouraged by China.

It will therefore be necessary to move forward in regional integration by providing strong momentum to intraregional interactions capable of overcoming the limitations inherent in the existence of different views, axes, and integration models in our region through cooperation that will scale up and update its approaches, and expand its scope and areas of action with respect to China and Asia-Pacific/India.

With this in mind, it is imperative to adopt concerted medium- and long-term competitive intelligence and strategic planning modalities for our policy-making when it comes to the linkage with China. This activity should be conducted at the regional, national, and subnational levels.

In this framework, the new role of regionalism and interregionalism in the upcoming decades would help our countries and their subregions to link up differently and more directly with their counterparts in China, and with other areas of Asia-Pacific and India.

In short, the dimension being acquired by the processes outlined in this paper requires joint reflection by LAC about its future in a world undergoing profound geopolitical and geoeconomic transformations. "Eurasia" may well be among the names given to one of the new cartographies looming on the horizon—taking shape under mega-agreements like the Trans-Pacific Partnership Agreement (TPP), for instance—for which Latin America and the Caribbean are not prepared.

The road ahead may well follow an old Taoist saying: "He who studies and reflects not stands before confusion; he who reflects and studies not cannot overcome complexity." The region must not get lost in confusion. It must overcome the complexity of the new globalization. ■

NOTES

¹ This section is based on Chi (2010a and 2010b), Jia & Li (2011), Li (2011), Moneta (2014b), and Wu (2012).

² Based on work of the Group on Research Strategy and Politics on Urbanization with Chinese Characteristics, State Development and Research Center, Beijing, 2009.

³ This section is based on Fabre & Grumbach (2013), Moneta (2013), Moody (2012), The Economist (March 10, 2012), and Zeng (2007).

⁴ One important analysis of the possible impact of so-

called "disruptive technologies" in Latin America and the Caribbean features in the special issue of the IDB-INTAL Journal, Integration & Trade No. 39, Disruptive Technologies in Latin America and the Caribbean: The Great Leap Forward. Buenos Aires, September 2015.

⁵ See article by Myers in this issue, and National Development and Reform Commission, Ministry of Foreign Affairs and Ministry of Commerce of the People's Republic of China (2015), 2-10.

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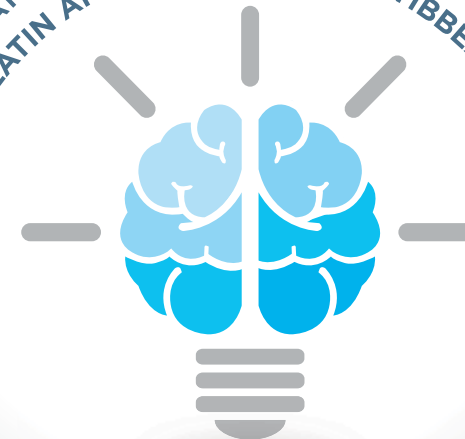
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Who attract investments?

**Economic priority sectors for China
in Latin America**

Evan Ellis¹
Professor U.S. Army War College



THE FOCUS AND DYNAMICS OF INTERACTION BETWEEN CHINA'S ECONOMY WITH EACH PLACE THE WORLD, FROM ASIA TO AFRICA TO LATIN AMERICA AND THE CARIBBEAN, HAVE VARIED ACCORDING ITS GEOGRAPHICAL PROXIMITY, THE LEVEL OF EXPERIENCE OF ENTREPRENEURS AND OFFICIALS WITH EACH REGION, AND THE ECONOMIC STRUCTURE OF THESE REGIONS. THE STYLE OF PARTICIPATION OF CHINA IN LATIN AMERICA AND THE CARIBBEAN HAS BEEN REMARKABLY CONSISTENT WITH THE ONE ADOPTED FOR THE REST OF THE WORLD: A FRAMEWORK OF AGREEMENTS WHENEVER IT WAS POSSIBLE. THIS ARTICLE ANALYZES SECTORS' DYNAMICS AND CHINA MAIN INTEREST IN THE REGION.

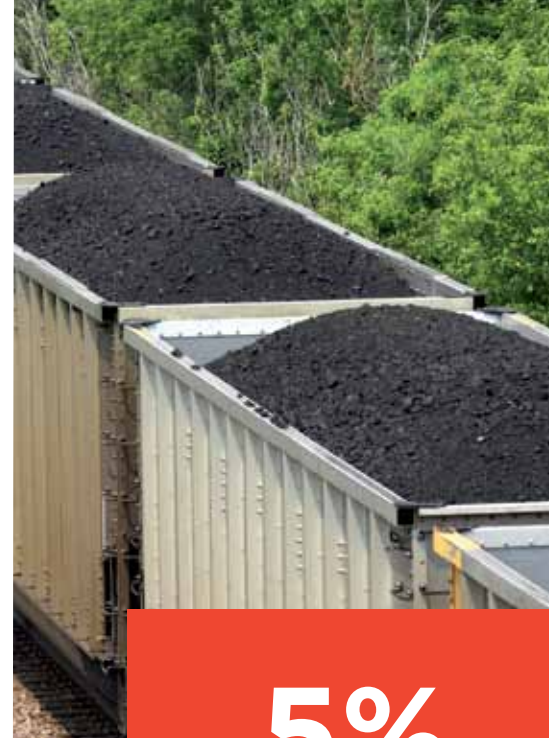
The ascension of Xi Jinping to the presidency of the People's Republic of China in March 2013 brought with it a change in leadership style and important reforms that have impacted not only the internal dynamics of the country and its engagement with neighbors in Asia, but also its activities, and those of its companies in the rest of the world, including Latin America and the Caribbean.

President Xi showcased his confident and assertive leadership style in May 2013 during his first trip to the Western Hemisphere, traveling to Costa Rica, Trinidad and Tobago, and Mexico

to conduct 11 bilateral meetings with leaders in the region before moving on to California for a summit with U.S. President Barak Obama. Little more than a year later, President Xi returned to the region with a politically significant trip to Brazil, Argentina, Venezuela and Cuba that included announcement of the BRICS bank initiative, the launching of the China-CELAC forum, and numerous important initiatives in the region including a \$35 billion development fund.²

In January 2015, President Xi hosted the first ministerial-level forum of the China-CELAC summit to occur on Chinese soil, with the Chinese leader publicly highlighting projections of \$250 billion of cumulative PRC investment in the region and \$500 billion in trade with it.³ Importantly, the forum also produced a five-year roadmap for the development of Chinese relations with the region, highlighting six "fields" as cooperation priorities, energy and resources, infrastructure construction, agriculture, manufacturing, scientific and technological innovation, and information technologies."⁴

In the years following the 2001 admission of the People's Republic of China (PRC) into the World Trade Or-



5%
OF CHINESE
INVESTMENT IN ALL
THE WORLD GOES
TO LATIN AMERICA
AND THE CARIBBEAN

ganization, PRC trade with Latin America and the Caribbean has grown by a factor of almost twenty, from \$15 billion in 2001 to \$288.9 billion in 2014.⁵ From 2005 to 2013, Chinese banks lent an estimated \$119 billion to the region, more than the International Monetary Fund and the World Bank combined.⁶ Cumulative Chinese non-financial direct investment in the region reached \$38.5 billion by the end of 2012, of which \$32.2 billion was made after 2009.⁷

China's growing trade, investment, and financial relationships with Latin America and the Caribbean are but one part of its economic engagement globally, as the expansion and transformation of the PRC economy through almost four decades of export-led growth has driven Chinese companies to seek new markets for their products, technologies to move up the value added

WHO ATTRACT INVESTMENTS?

chain, primary products to feed the demands of industrial production and urbanization, and agricultural goods to feed the Chinese people.⁸

China's engagement with Latin America and the Caribbean has generated both enthusiasm from those who view it as a vehicle for the region's development,⁹ and those who are concerned over its negative impacts on both manufacturing,¹⁰ and reinforcing the region's historic focus on agriculture and extractive sectors.¹¹ Scholars have also noted the impact of China on the structure the region's trade,¹² particularly U.S. trade with regional partners such as Mexico.¹³ Yet the standard for assessing PRC engagement with the region is unclear. Chinese policy toward the region have generally focused on areas in which it wishes to cooperate, rather than promises of specific results from such engagement. While the PRC and its companies have generated important opportunities for trade with, investment in, and finance for the region, evaluation of the relationship also requires recognition of the imperfect overlap between the PRC government and Chinese companies, and the co-responsibility of Latin America in how the region shapes and leverages opportunities to advance its own development.

GENERAL CHARACTER OF CHINESE ENGAGEMENT IN THE AMERICAS

The timing, focus, and dynamics of China's economic interaction with each part of the globe, from Asia to Africa to Latin America and the Caribbean has varied as a function of the region's geographic proximity to the PRC, the level of experience of Chinese businessmen and officials with the region, and the region's economic structure.

In general, the portion of Chinese FDI that has gone to Latin America and the Caribbean has oscillated between

**20
TIMES**

GREW THE
EXCHANGE BETWEEN
LAC AND CHINA SINCE
THE ASIAN GIANT
JOINED THE WTO

8-15% of its global FDI flows,¹⁴ and only 5% the \$90.17 billion that it invested globally in 2013.¹⁵

Such differences notwithstanding, the style of Chinese engagement with Latin America and the Caribbean has been remarkably consistent with that in the rest of the world; the PRC has preferred to establish government-to-government frameworks for its economic activities where possible, but competes within the framework of public procurement systems and free markets where necessary.

The Chinese government has supported its companies, in part, by working incrementally with each partner to develop legal, financial, and other infrastructures which facilitate expanded commerce and investment, including memorandums of understanding, free trade agreements and binational coordinating committees in the case of those countries deemed “strategic partners.”

A cornerstone of the PRC approach in the region is physical infrastructure projects, which provide work for Chinese companies and workers and a profitable use of Chinese capital, even while facilitating improved and less expensive access by Chinese goods to Latin American markets, and reciprocally the movement of Latin American commodities to the PRC.

The sectors in which the PRC has most strongly supported and encouraged the coordinated efforts of its companies and financial institutions to realize projects in Latin America and the Caribbean (as in Africa and elsewhere) illustrates the “instrumental” nature of the Chinese approach: petroleum and mining, agriculture and fishing (facilitating Chinese access to these commodities for industrial production, capital formation, urbanization and the feeding of its 1.35 billion people), shipping companies and port operations (to get Chi-

nese products to the region and extract commodities from it), manufacturing final assembly operations (to enhance access to large or strategically valuable markets such as Brazil and Mexico), banking (to facilitate transactions in the aforementioned sectors and further the internationalization of the RMB), and high technology (important for Chinese competitiveness in strategically valuable sectors such as telecommunications, aviation, space, and defense).

In pursuing such ends, Chinese initiatives in Latin America, such as the proposed \$10 billion railroad from the Peruvian port of Bayovar to the Brazilian port of Açu, parallel Chinese initiatives in Asia such as the “New Silk Road” initiative and the supporting Asia Infrastructure Investment Bank (AIIB).

MOTIVATIONS BEHIND PRC ENGAGEMENT WITH THE REGION

PRC engagement with Latin America and the Caribbean is arguably driven by imperatives arising from its role as a export-oriented manufacturing hub in the global economy, and its efforts to develop through moving up the value added chain. These imperatives include: (1) securing reliable access to primary products, such as petroleum and minerals necessary to sustain Chinese industrial production, capital formation, and urbanization, (2) reliable access to agricultural goods, particularly animal feeds such as soy and fishmeal, to produce the food to meet the needs of China’s 1.35 billion people, (3) reliable access to markets, as Chinese companies expand their capabilities in strategic, high value added sectors such as motor vehicles, electronics, telecommunications, aerospace and defense, construction, finance, and logistics, and (4) access to technology, often through commercial partnerships, to support advances in the aforementioned sectors.¹⁶

The interpretation of these imperatives has evolved with changes in Chinese leadership, and as the PRC has sought to transition to a model of growth more driven by domestic demand. The pursuit of goals related to such imperatives also often involves a complex balance between competing considerations. The growing demand for meat consumption by the Chinese population, for example, in the context of the imperative to maintain self-sufficiency in food production, has led the PRC to import vast quantities of animal feed, such as soy and fishmeal, in order to raise animals for human consumption on its own territory.¹⁷

THE EVOLUTION OF CHINESE ENGAGEMENT WITH LATIN AMERICA

China’s engagement with Latin America and the Caribbean has arguably evolved through a series of phases.¹⁸ Prior to the PRC 2001 acceptance into the World Trade organization, the potential of the PRC as a market, financier, and investment partner received little attention from most business and political leaders in the region.

From 2001 through 2009, while Chinese trade with Latin America and the Caribbean expanded exponentially, PRC-based firms had very little direct presence in the region. Nonetheless, during this period, actors in both the PRC and Latin America and the Caribbean were working to build the relationships, knowledge, and administrative, and physical infrastructures that would enable Chinese companies to greatly expand their footprint there.

In addition to free trade accords with Chile, Peru, and Costa Rica, the PRC and the governments of the region signed agreements covering investment protection, finance, and visas, as well as currency swap agreements to facilitate commercial transactions in RMB, and

loan funds in Venezuela and Ecuador, as a vehicle for simultaneously funding projects and product sales involving Chinese companies, while managing associate risks.

At the same time that government-to-government interactions were strengthening the framework for commercial interaction between the PRC and the region, individual Chinese and Latin American companies and businessmen, inspired by the perceived opportunities involved, were simultaneously laboring to develop their knowledge of, and contacts with each other through academic activities, exploratory trips across the Pacific, and to some degree, through government trade promotion organizations such as ProExport (Colombia), ProComer (Costa Rica), APEX (Brazil), Pro-Chile (Chile), and ProMexico.

By 2010, in the wake of the 2008 financial crisis, and with the maturation of enabling infrastructures and human networks, Chinese businesses, for the first time, were beginning to make significant investments in multiple countries and sectors in Latin America and the Caribbean.¹⁹

CHINESE ENGAGEMENT IN LATIN AMERICA BY SECTOR

During PRC-CELAC summit, the Chinese government advanced its so-called “1+3+6” approach: one “plan,” with “three engines” (trade, investment, and “financial cooperation”), and six “fields” as cooperation priorities, strongly paralleling where PRC has focused its efforts in the region to date: energy and resources, infrastructure construction, agriculture, manufacturing, scientific and technological innovation, and information technologies.²⁰

The approach does not represent a new focus for Chinese engagement with the region, so much as a clear and parsimonious affirmation of the sectors in

which Chinese economic initiatives in Latin America and the Caribbean continue to be focused, consistent with the priorities of the PRC government.

In each part of the economy in which the PRC is engaged in Latin America and the Caribbean, the size of the companies involved, their relationship with the Chinese state, local partners and consultants, communities, and interest groups, varies according to the characteristics of the sector. Yet in general, as suggested by the case of Baha Mar, Chinese advances in the region is, in part, about Latin businessmen reaching out across the Pacific to forge partnerships with their Chinese counterparts in the hope of mutual financial gain. Indeed, the story of the PRC's engagement with the Americas cannot be told without acknowledging the role of Latin American and Caribbean businesspeople reaching out across the Pacific in pursuit of opportunities.

In mining, following substantial advances into Peru, and to a lesser extent, Ecuador, Argentina, and Brazil, Chinese companies have demonstrated increasing sophistication in the use of consulting firms and in negotiating with local communities to circumvent obstacles. Positive examples include China Aluminum Corporation's successful negotiations with the community of Morococha, to relocate their town in order to begin work extracting copper from the Toromocho mountain mining site, as well as the mining firm Jinzhao's negotiation to change the location of the port supporting their planned operation in Pampa de Pongo, Peru.

Renewable energy has emerged as a particularly important area, to include important Chinese hydroelectric projects in Ecuador, Argentina, and Honduras, as well as wind farms and solar projects, with commitments to invest

\$1 billion in solar facilities in the north of Chile alone. In Brazil, the Chinese company State Grid has won important contracts in electrical transmission, including a 2,250 kilometer transmission line connecting the new Belo Monte hydroelectric facility to the national power grid.²¹

In agriculture, the Chinese have turned to purchasing controlling interest in agricultural companies already established in the region with technologies and infrastructures relevant to PRC needs, including two major deals in 2014 by China National Cereals, Oils and Foodstuffs Corporation (COFCO): the \$1.5 billion acquisition of a majority interest in H.K. Noble (with a significant infrastructure in the Southern Cone), and the \$1.2 billion acquisition of a controlling interest in Nidera.

In manufacturing, from appliances and consumer electronics to motorcycles, cars and heavy equipment, Chinese producers have become increasingly integrated with Latin American retailers, investing in final assembly facilities to avoid import taxes and better serve clients, generally in large markets such as Brazil and Mexico, also offering access to other countries through trade structures such as MERCOSUR and NAFTA.

In finance, Chinese banks have branched out from commercial representation relationships and loans in support of projects by partner companies, to branch banking in the region itself, including entry into the Southern Cone of Industry and Commerce Bank of China (ICBC) and China Construction Bank (CCB).²²

In telecommunications, Chinese firms Huawei and ZTE have considerably expanded their presence throughout the region, in both product sales and the construction of 3G and 4G networks,²³ including recent expansion into



Central America and Caribbean markets. China Telecommunications Corporation may participate in a \$10 billion venture in the Mexican telecommunications sector which would challenge the monopoly of billionaire Carlos Slim.²⁴

In the space sector, China has successfully built and launched four satellites for Brazil, two for Venezuela, and one for Bolivia. The PRC has also launched a microsatellite for Ecuador and has constructed a controversial facility for communicating with satellites and space vehicles, in the Argentine province of Neuquén. Future satellite projects for Nicaragua, Venezuela, Bolivia, and Brazil are reportedly in the works.

IMPACTS ON LATIN AMERICA AND THE CARIBBEAN

As PRC economic engagement with Latin America expands and deepens, it is transforming the economic structure and dynamics of the region.

For countries like Peru in the mining sector, Venezuela with respect to petroleum, Argentina with respect to agriculture, and Brazil with respect to all three, Chinese investment has helped to expand export-oriented commodity sectors. At the same time, across the

WHO ATTRACT INVESTMENTS?

region, Chinese manufactured imports have undercut domestic manufacturing, making the region as a whole more reliant on commodity exports, and more vulnerable in the face of the current weakening of commodity prices.²⁵

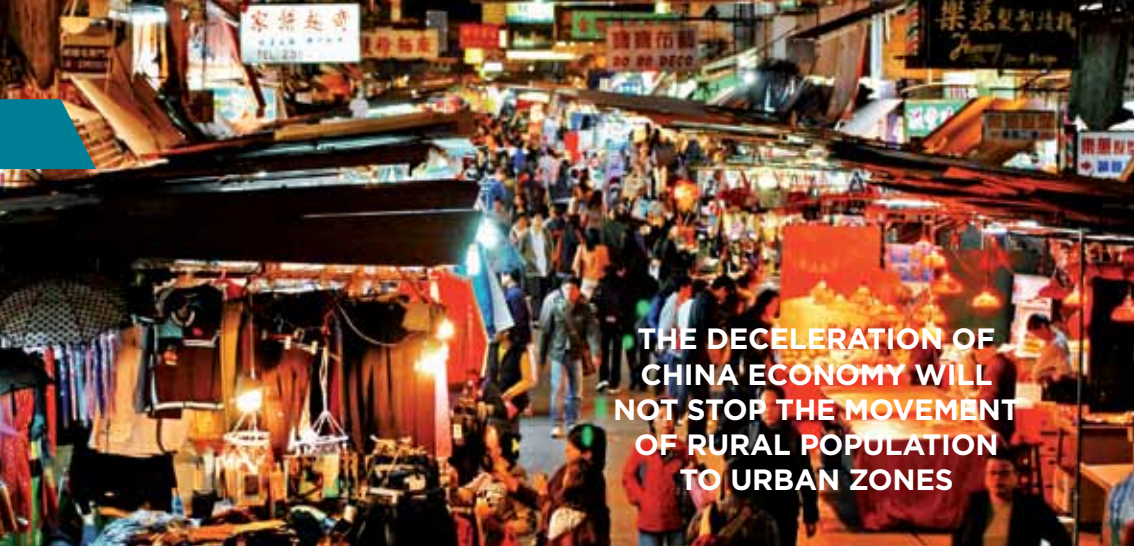
Trade with the PRC and other countries of Asia is also driving the modernization and expansion of the region's Pacific Coast port infrastructure, as well as new and upgraded roads connecting those ports to the rest of the continent. Such trade is also a key driver behind the expansion of the Panama Canal, the possible Nicaragua Canal, and projects to expand port capacity in the Caribbean, such as in Freeport, the Bahamas, Mariel, Cuba, and possibly Goat Island, Jamaica, to accommodate the flow of more, and larger ships from the region to Asia.

THE IMPACT OF SLOWING CHINESE GROWTH

The rate of growth of the Chinese economy has fallen from an average rate of near 10% since 1978,²⁶ to 7% for the current year, with a real possibility of falling to a rate of 6.8% or less in 2016.²⁷

Such growth would still exceed that of most developed countries, including the United States (with a current growth rate of 2.4%),²⁸ or the European Union (growing at 1.5%).²⁹ Indeed, if the China's \$10.36 trillion economy grows at a mere 6.8% in 2015, it will add \$704 billion of additional value to the global economy, roughly equivalent to the entire GDP of Saudi Arabia.

Nonetheless, some experts believe that the true rate of Chinese growth could be far less than 7%, and that the economy is currently fragile, rife with profound but hidden structural contradictions which could lead to a more serious financial crisis, as suggested by



THE DECELERATION OF CHINA ECONOMY WILL NOT STOP THE MOVEMENT OF RURAL POPULATION TO URBAN ZONES

the mid-2015 collapse of the Shanghai and Shenzhen stock markets.³⁰

Absent a significant crisis affecting Chinese companies and capital markets, slowing PRC growth will not precipitate a Chinese withdrawal from Latin America and the Caribbean, but rather, will likely to push Chinese companies and banks to more aggressively seek opportunities in the region (and in other parts of the world), as opportunities for sales and projects within the PRC itself dry up.

The net economic impact of such changes in China's patterns of investment in and trade will the region will probably be negative, making the debate regarding engagement with the PRC even more acrimonious than it is today. Yet the specific dynamics will be complex and will vary by country and economic sector.

In petroleum and mining, Chinese investment in the region could actually contract, as weakness in domestic manufacturing, construction and consumption sectors lower forecast demand for petroleum and mining industry products, leading PRC-based firms in those sectors to postpone investments for bringing overseas capacity online, where they can do so without jeopardizing their concessions.

On the other hand, a slowing Chinese economy is unlikely to slow the movement of the Chinese population from the countryside to urban areas in search of work, and the associated increase in

the consumption of animal protein driving Chinese agricultural firms such as its principal food purchaser, COFCO to import ever greater quantities of animal feed such as soy and fishmeal, from abroad.

Even with a slowing economy, the expansion of Chinese activities in strategically valued technology sectors in Latin America such as telecommunications and space is also likely to continue. Not only are such sectors prioritized by the Chinese government, but the growth of companies such as Huawei and ZTE arguably depends more on what happens in Latin America and the Caribbean, than the dynamics of the Chinese domestic economy.

In sectors such as construction, in which projects are particularly tied to financing from Chinese sources, the impact of slowing PRC growth may also vary by country, with Chinese banks aggressively seeking opportunities in healthy economies.

THE FUTURE OF LATIN AMERICA'S ENGAGEMENT WITH CHINA

The states of Latin America and the Caribbean are currently in the midst of a profound debate over how (not whether) to engage with the PRC and other economies of Asia³¹, which will only be made more polemical by slowing Chinese growth. The resolution of that debate will have profound consequences for both the character of the region and

the trade and international legal regime that prevails across the Pacific.

For both admirers and detractors, the PRC has become a center of gravity of the global economy, and in the process, an important part of the trade and investment landscape for Latin America

and the Caribbean. The challenge for the region continues to be advancing the most effective concepts and management, at both the national and firm level, to leverage the opportunities afforded by the PRC to achieve sustainable development. ■

NOTES

¹ Dr. Evan Ellis is Research Professor of Latin American Studies with the Strategic Studies Institute of the U.S. Army War College. The views expressed in this article are strictly his own.

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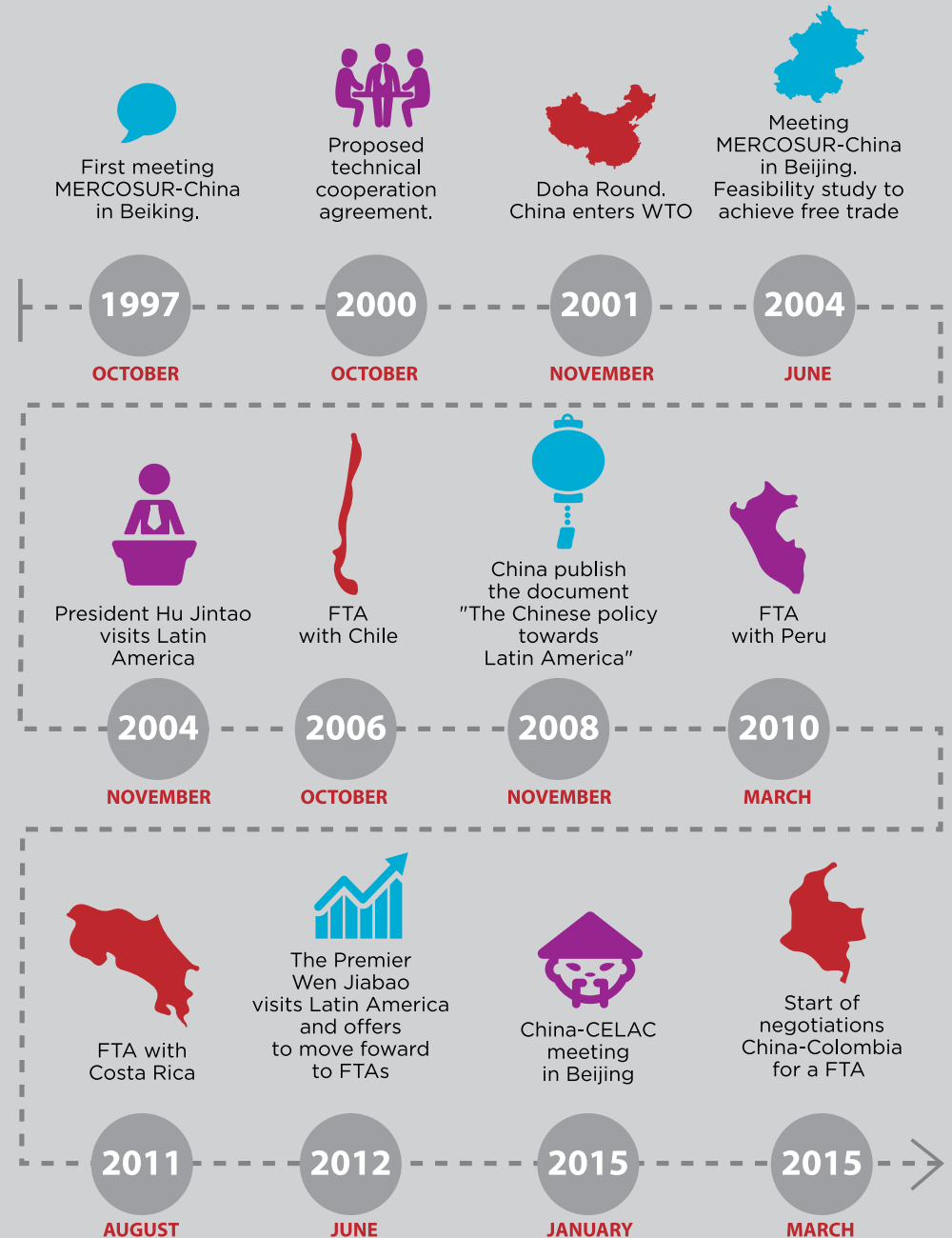
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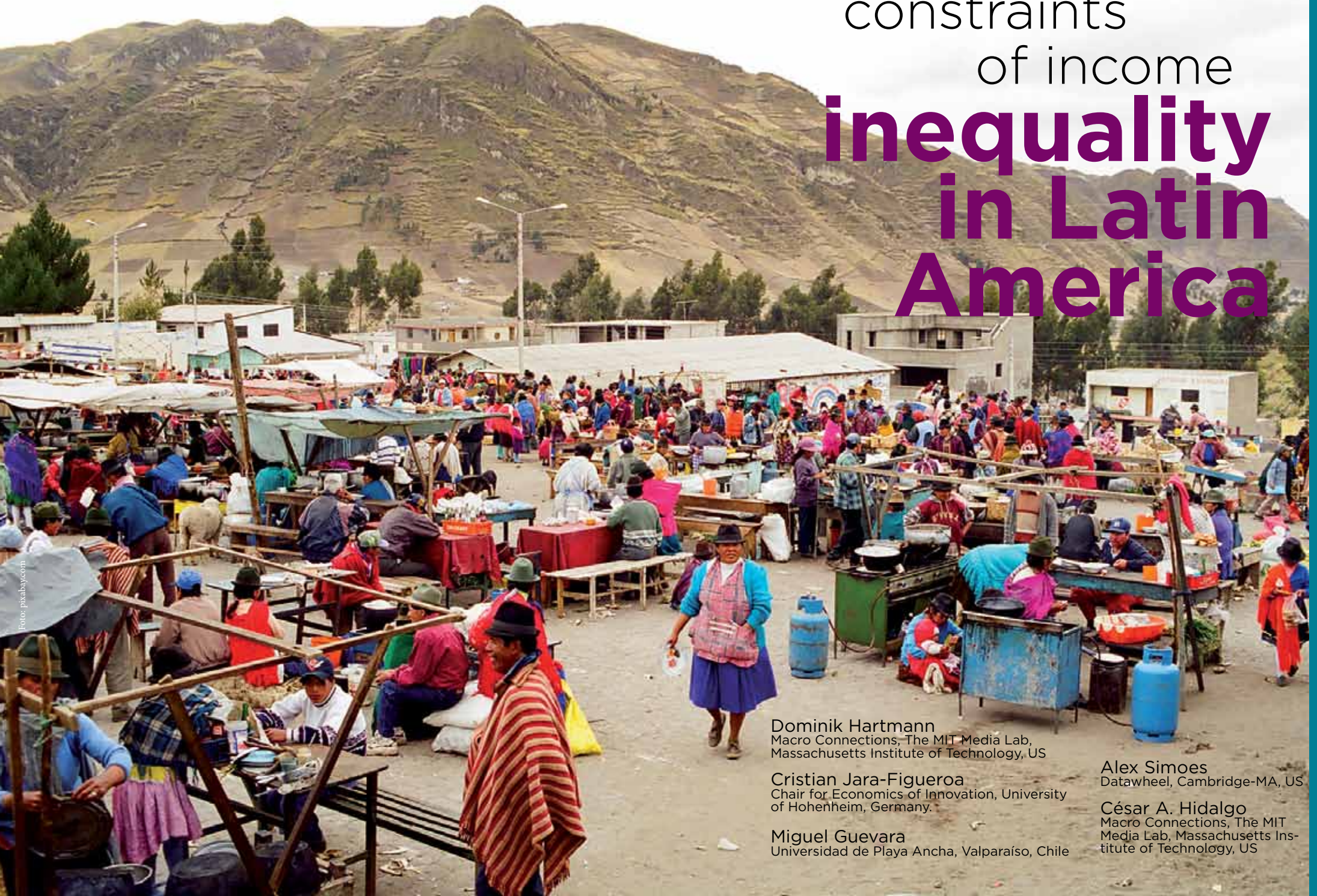


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The structural constraints of income inequality in Latin America



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RECENT WORK HAS SHOWN THAT A COUNTRY'S PRODUCTIVE STRUCTURE CONSTRAINS ITS LEVEL OF ECONOMIC GROWTH AND INCOME INEQUALITY. IN THIS PAPER, WE COMPARE THE PRODUCTIVE STRUCTURE OF COUNTRIES IN LATIN AMERICAN AND THE CARIBBEAN (LAC) WITH THAT OF CHINA AND OTHER HIGH-PERFORMING ASIAN ECONOMIES (HPAE) TO EXPOSE THE INCREASING GAP IN THEIR PRODUCTIVE CAPABILITIES. MOREOVER, WE USE THE PRODUCT SPACE AND THE PRODUCT GINI INDEX TO REVEAL THE STRUCTURAL CONSTRAINTS ON INCOME INEQUALITY. THE NETWORK REVEALS THAT HPAE HAVE MANAGED TO DIVERSIFY INTO PRODUCTS TYPICALLY PRODUCED BY COUNTRIES WITH LOW LEVELS OF INCOME INEQUALITY WHILE LAC ECONOMIES HAVE REMAINED DEPENDENT ON PRODUCTS RELATED WITH HIGH LEVELS OF INCOME INEQUALITY. WE ALSO INTRODUCE THE XGINI, A COEFFICIENT THAT CAPTURES THE CONSTRAINTS ON INCOME INEQUALITY IMPOSED BY THE MIX OF PRODUCTS A COUNTRY MAKES. FINALLY, WE ARGUE THAT LAC COUNTRIES NEED TO EMPHASIZE A SMART COMBINATION OF SOCIAL AND ECONOMIC POLICIES TO OVERCOME THE STRUCTURAL CONSTRAINTS FOR INCLUSIVE GROWTH.

Decades ago, in the 1950s and 1960s, Development Pioneers and Latin American Structuralists argued that the productive structure of a country constrains its ability to generate and distribute income (Rosenstein-Rodan 1943; Prebisch 1949; Singer 1950; Hirschman 1958; Furtado 1959). While the focus on productive structures waned in the 1980s and 1990s, it was recently revived by research that showed how the mix of products that a country exports is predictive of its future pattern of diversification (Hidalgo et al. 2007), economic growth (Hidalgo and Hausmann 2009; Hausmann et al. 2014), and income inequality (Hartmann et al. 2015). This new line of research on economic complex-

ity focuses on the ability of economies to produce a diverse and sophisticated mix of products.

In this paper, we compare the productive sophistication and structural constraints on income inequality of countries in Latin American and the Caribbean (LAC) with that of China and other high-performing Asian Economies (HPAE), such as South Korea, Singapore, or Malaysia. The results show a large gap in the productive capabilities of LAC and HPAE that has been significantly increasing since 1990. Moreover, we use the product space and the Product Gini Index (Hartmann et al. 2015) to reveal how changes in the productive structure translate into changes in op-

portunities for inequality reduction. The network illustrates how HPAE have managed to diversify into more sophisticated industrial products which are typically produced by countries with low levels of income inequality, such as electronics and machinery. Conversely, the productive portfolio of LAC countries has remained largely dependent on products related with high levels of income inequality, such as crude petroleum, copper, and coffee beans. We also introduce the Xgini, a coefficient which estimates the expected level of inequality associated to type of products a country makes and is able to capture the constraints on income inequality imposed by a country's productive structure. While the Xginis of LAC countries have remained at a very high level, indicating strong constraints on inequality reduction, the Xginis of many HPAEs have declined significantly. This means while HPAE have opened up many opportunities for inclusive growth and reduction of income inequality, LAC's productive structure strongly constrains its ability to generate and distribute income. From an economic policy perspective, we argue that LAC countries need to emphasize and move towards a smart combination of social and economic policies, rather than continuing the state versus market debate, in order to overcome their structural constraints on inclusive growth.

THE LATIN AMERICA DEVELOPMENT POLICY DEBATE

Debates connecting productive structures, economic growth, and income inequality have a long academic tradition, especially in Latin America. During the second half of the twentieth century Latin America was at the center of the discussion about development theories favoring free markets (Kuznets 1955; Krueger 1985) and theories promoting state intervention (Rosenstein-Rodan 1943; Prebisch 1949; Furtado 1959;



Sunkel and Girvan 1973).

The state versus market debate had profound consequences in Latin America, as economic policies based on both sides of the debate were implemented at different times. The industrialization efforts in Brazil, during the 1960s, 1970s, and 1980s, or the efforts to deregulate and liberalize the economy in Chile during the 1980s are clear examples of both strategies. However, both approaches had serious shortcomings. On the one hand, “state driven industrialization through import-substitution” led to major economic inefficiencies and the so-called “lost decade”. On the other hand the wave of market liberalization and structural reforms, adopted in the 1990s, stabilized the economy and generated economic growth, but failed to create an inclusive economy needed to integrate Latin America’s poorest citizens.

The failure of both extreme positions has led economists to consider a middle ground favoring a congruent mix of social and economic policies to promote innovation and economic complexity (Wade 1990; Rodrik 2004; Hartmann 2014). This middle ground makes use of the strengths of both approaches by overcoming both market

and government failures, investing in human capital, and promoting economic self-discovery processes and international innovation linkages (Rodrik 2004; Hartmann 2014). Several HPAEs experienced rapid economic development under policies that mixed markets and targeted state intervention (Wade 1990; Stiglitz 1996; Rodrik 2004; Hartmann 2014). Their economic success has been a motivation for a middle ground, mixing social and economic policies. Conversely, this strategic middle ground has not yet still to be implemented in Latin America, which is to a great extent still divided between factions that still believe that excessive state intervention is the solution to the regions problems, and factions that believe that complete liberalization and deregulation is the only way for economies to move forward.

In the meantime, the commodity boom, and the rise in the price of natural resources have provided LAC countries with the economic resources needed to implement social policy programs—like conditional cash-transfer programs or higher expenditures in education and health. These programs have led to a significant reduction in poverty and an increase in the region’s level of human development (Hartmann 2011). Nonetheless the commodity boom did not translate into a substantial increase in the capacity of LAC economies to produce more sophisticated products. In fact during the commodity and natural resources prices boom, many Latin American economies fell behind in terms of economic complexity. According to MIT’s Economic Complexity

Ranking, Brazil fell from position 29 to 56 between 1990 and 2013¹. Chile, which has been the economic darling of the region due to its economic growth, went from 54 to 67 between 1990 and 2013. As commodity prices decrease and the resources needed to support social programs become scarcer, Latin America once again finds itself in a predicament.

ECONOMIC COMPLEXITY, INSTITUTIONS, AND INCOME INEQUALITY

In this paper, we compare the evolution of economic complexity and the related structural constraints on the reduction of income inequality in LAC and HPAE. The connection between the complexity of a country’s economy and its level of income inequality can be understood by interpreting the industries present in the country as the embodiment of the many factors that make economies prosperous and inclusive. The industries present in an economy tell us about the knowledge embodied in its population, the job opportunities and bargaining power of workers, the industrial sectors that the economy can diversify into, and the quality of its institutions (Hartmann et al. 2015). For example, complex industries, such as advanced medical equipment or software development, require better-educated and more creative workers, and moreover institutions that are able to include the creative inputs of workers into the activities of firms. In consequence, an economy’s productive matrix can be seen as a proxy for a number of explanatory factors, such as the produc-

tive knowledge and the inclusiveness of institutions, that profoundly affect economic growth and inequality, but that are typically difficult to measure directly.

The close relationship between an economy’s industries and its institutions implies that social policies alone might lack the strength required to modify a country’s level of income inequality beyond the range that is typically expected given its productive structure. Therefore, industrial policies need to compliment social policies in order to achieve a substantial change (Amsden 2010; Hartmann 2014).

In this article, we use methods from network science, economic complexity research, and data visualization to show LAC’s structural constraints on economic growth and inequality reduction. These methods enable a more detailed picture, or fingerprint, of the economy, revealing the knowledge landscape and economic opportunities of countries and regions. Moreover, these methods allow for a more detailed comparison between LAC economies with high performing Asian economies (HPAE).

The remainder of the paper is structured as follows. Section 2 introduces the Data and Methods. Section 3 compares the economic complexity and structural transformation of LAC and HPAE, showing a large gap in productive capabilities and know-how of both regions. Section 4 then illustrates how the productive structures of LAC constrain their possibilities for inclusive growth and inequality reduction. Section 5 interprets the empirical results from an economic policy perspective,

**US\$ 1.9
BILLION**

EXPORT TOGETHER
LAC COUNTRIES. VERY
NEAR TO THE US\$ 2.2
CHINA BILLION



THE DEGREE OF ECONOMIC COMPLEXITY DETERMINES THE INCLUSION STRUCTURAL CONSTRAINTS

and highlights the need for establishing prolific innovation systems to overcome LAC's structural economic constraints. Section 6 provides concluding remarks.

DATA AND METHODS

We use data on world trade, economic complexity, and income inequality to compare the structural constraints of LAC and HPAE. Data on income inequality comes from the Galbraith et al., 2014 (GINI EHI dataset). Due to the sparseness of the Gini data, we interpolate the missing years using linear splines. Moreover, we consider only the countries for which the Economic Complexity Index is available. The data on world trade, compiled by Feenstra et al. (2005), combines exports data from 1962 to 2000 with data from the U.N. Comtrade from the period between 2001 and 2012. The values for the Economic Complexity Index come from MIT's Observatory of Economic Complexity (atlas.media.mit.edu) (Simoes and Hidalgo 2011).

We use the Economic Complexity Index (ECI) as indicator for the know-how and productive capabilities of LAC and HPAE countries. ECI measures the sophistication of a country's productive structure, combining information on the diversity and ubiquity of the products a country's exports (Hidalgo and Hausmann 2009). The intuition behind ECI is that sophisticated economies are diverse and export products produced by few other economies. ECI can be inter-

preted as a measure of a country's productive capabilities that are embodied in its institutions and people. Further information about the calculation of ECI can be found in Hidalgo and Hausmann (2009).

In order to reveal the structural transformation processes of LAC and HPAEs, we make use of the product space, which is a network that formalizes the idea of relatedness between products traded in the global economy (Hidalgo et al., 2007; Hausmann et al., 2014). Moreover, we combine the product space with the Product Gini Index (Hartmann et al., 2015) to reveal the relationship between a country's mix of products and its structural constraints on inequality reduction.

The Product Gini Index (PGI) is a measure recently introduced by Hartmann et al. (2015) that relates each product to its typical level of income inequality. Formally, the PGI is defined as the average level of income inequality of a product's exporters, weighted by the importance of each product in a country's export basket.

Finally, in this paper we introduce the Xgini as the average PGI of the products present on a country's portfolio. The Xgini aims to estimate the structural constraints to inequality imposed by a country's productive matrix. Formally, the Xgini of country c is calculated as:

$$Xgini_c = \frac{1}{N_c} \sum_p M_{cp} s_{cp} PGI_p \quad (1)$$

$$N_c = \sum_p M_{cp} s_{cp} \quad (2)$$

where s_{cp} is the share of product p in the country's c total export, M_{cp} is 1 if product p is produced by country c with revealed comparative advantage and 0 otherwise, and N_c is a normalizing factor to ensure that the Xgini is a weighted average of the PGI.

The gap in the productive capacities

of LAC and HPAE

As previous work has shown, a country's mix of product can be seen as an expression of its institutions and the productive knowledge and know-how embedded in its society (Engerman and Sokoloff, 1997; Hidalgo, 2015; Hartmann et al., 2015). Here we compare the mix of products produced by LAC countries with that of HPAEs. The total export of all LAC countries is very similar to China's total export—\$1.9 trillion vs. \$2.2 trillion dollars in 2013, respectively. However, the differences in the productive capabilities between LAC and China become evident when looking at the types of products these economic regions export.

While a big part of China's total exports involves a gamut of manufactured goods, such as electronics, computer parts, or machinery, the percentage of manufactured goods in LAC countries' export portfolio is significantly lower. LAC economies export mainly raw materials and agricultural products, such as Crude Petroleum, Iron Ore, Copper, Coffee, and Soy Beans (Figure 1 A-B). The difference in the productive specialization and comparative advantages becomes even more pronounced when looking at the bilateral trade between these two parts of the world. LAC exports to China mainly raw materials, while China exports to LAC more sophisticated industrial products (Figure 1 C-D).

If we think of the productive sophistication of a country as an expression of the knowledge and knowhow embodied in its economy (C. Hidalgo 2015), then the trade pattern can be seen as an expression of the gap in knowledge and knowhow that exists between Latin American countries and China. The Economic Complexity Index (ECI) captures the differences in country's productive sophistication, taking both the diversity

and the sophistication of a country's mix of products into account.

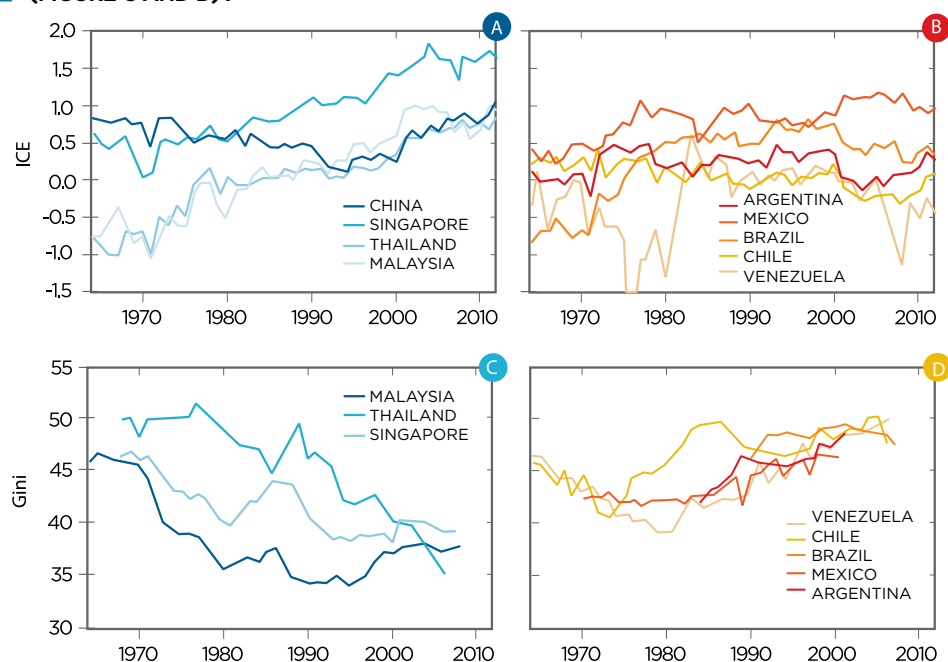
In the 2013 Economic Complexity ranking (Table 1), most LAC countries are significantly behind China (22th) and other Asian economies, such as South Korea (7th), Singapore (10th), Thailand (29th), or Malaysia (34th). The only outlier is Mexico, which ranks significantly higher than most LAC countries (23). But this is a fact that needs to be taken with reservations, since more than 70% of Mexico's exports are sent to the United States, suggesting that the apparent complexity of Mexico's economy is inflated due to its relationship with the U.S. Otherwise, we would expect a country with that level of productive sophistication to export to a larger number of destinations.

STRUCTURAL TRANSFORMATION WITH EQUITY

In this section, we compare the structural economic transformation of both regions to reveal the structural constraints and opportunities for inequality reduction. In the last decades, China and other HPAEs showed an increasing upward trend in their level of economic complexity (Figure 2-A). In LAC economic complexity has slightly increased until the debt crisis in the 1980s, and then remained or even declined in some cases (Figure 2-B). In the same time period, the Gini coefficients of countries such as Singapore, Thailand or Malaysia declined (Figure 2-C), while income inequality in LAC countries has increased since the 1980 (Figure 2-D). It must be noted that for China, reliable data is not readily available, though it seems that its level of income inequality has strongly increased (Xie and Zhou, 2014).

However powerful the aggregate view provided by ECI and Gini might be,

FIGURE 2
DYNAMICS OF COMPLEXITY (FIGURE A AND B). INCOME INEQUALITY
(FIGURE C AND D).



Source: author's calculation

development has shown (Furtado, 1959, Innis, 1970, Engerman and Sokoloff, 1997, Collier, 2007, Hartmann, 2014, Hartmann et al., 2015). A more diverse and sophisticated productive structure creates more opportunities for labor mobility and bargaining power of the workers, favors a better distribution of economic and political power, and is associated with more inclusive institutions (ibid.).

Figure 6 shows the evolution of the average Xgini for LAC and Asian economies. The HPAE's average Xgini has significantly declined since the mid 1980s, implying that these countries have diversified into products related with lower levels of inequality. As a result of these transformations, HPAEs have been able to generate a large amount of job opportunities in new industries. While China and other HPAEs created the potential for a more complex and inclusive economy, most LAC countries have not yet created these opportunities at the same scale. Instead, the Xgini of most LAC economies has remained

the same—with the exception of Mexico. In other words, LAC countries continue to export products associated with high levels of inequality and low levels of economic complexity.

ECONOMIC POLICIES IN HPAE AND LAC

While the economic policies of LAC countries have oscillated between advocates of strong state intervention or complete liberalization and deregulation, HPAEs are good examples of a more successful middle ground, introducing both market forces and strong government investment in human capital and innovation. The double emphasis on both social and industrial policies has helped the HPAE to promote technological upgrading and increase their economic complexity.

The profound structural transformation and increase in economic complexity of HPAE has led to profound changes in their distribution of income. Through the concerted mix of social and eco-



Xgini

IT IS THE INDICATOR
PRESENTED HERE
TO ESTIMATE THE
LIMITS FOR INCLUSION
GIVEN BY ECONOMIC
COMPLEXITY

nomics policies, smaller to middle sized HPAEs, like Singapore, South Korea, Malaysia or Thailand, have been able to spread the benefits of the increase in economic complexity and effectively decreased their income inequality (Stiglitz 1996, Wade, 1990). In the case of China the economic reforms, and associated increase in economic complexity, have helped hundreds of millions of Chinese out of extreme poverty. Due to several factors, though, such as the spatial concentration of the economic activity and the urban-rural divide, it has also seen a strong increase in its level of income inequality (Xie and Zhou 2014). Nonetheless, the increase in economic complexity and ongoing technological catch-up is also creating the opportunities for further employment generation and the potential to further spread social welfare. Moreover, the rise of new industrial sectors in China has generated the need for institutional changes to address societal problems like urbanization, ecological problems or migrant workers. If China manages to address

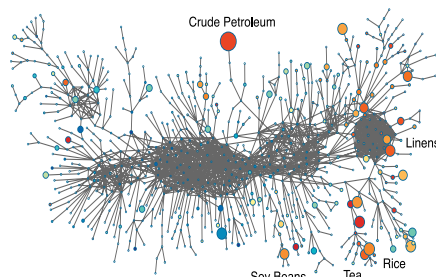
INCOME INEQUALITY

these challenges by spreading technological progress and implementing inclusive institutions across its vast country, then—in line with the arguments of the Kuznets' curve (Kuznets 1955)—this process can lead to a decrease in income inequality. Thus, China is certainly still facing many difficult challenges, but its increase in economic complexity has also opened up opportunities for further inclusive growth, reducing both absolute and relative income inequality.

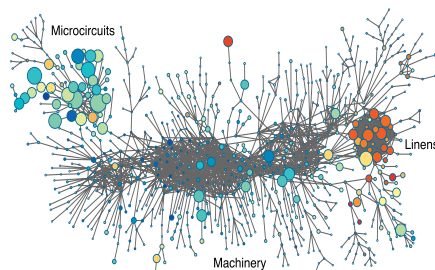
The same economic opportunities for inequality reduction are not yet present in most of LAC economies, since they are still constrained by productive structures centered on natural resources. While HPAEs are rapidly catching-up and forging ahead in several technological and productive areas, most LAC countries are still dependent on a much smaller set of productive activities that provide a narrower set of new job opportunities. As shown by several works in institutional and development economics, the historical pattern of economic specialization in resource-exploiting activities in LAC countries has undermined its capabilities for inclusive growth and led to high levels of income inequality, and often to exploitative institutions (Engerman and Sokoloff 1997; Acemoglu and Robinson 2012; Hartmann et al. 2015). In recent years, several LAC countries have been able to reduce poverty and inequality by raising social expenditures and implementing several social policy programs—like the conditional cash-transfer-program “Bolsa Familia” in Brazil. Measures like these have also increased the average years of schooling and life expectancy. However, despite comparatively high levels of years of schooling, life expectancy, and active social interest groups, most of the LAC countries have not managed to significantly change their productive matrix. In consequence, the

GRÁFICO 3
BRAZIL AND CHINA STRUCTURAL TRANSFORMATION

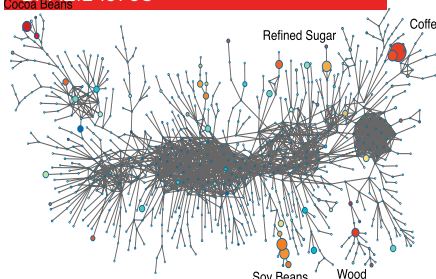
CHINA 1970S



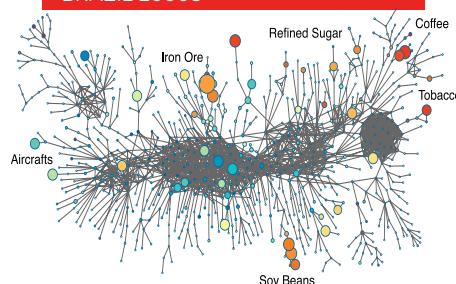
CHINA 2000S



BRAZIL 1970S



BRAZIL 2000S



Source: author's calculation

increase in education and human development has not been matched by economic opportunities for the labor force to work in more knowledge based and complex industries.

If LAC countries are ever to significantly reduce their levels of income inequality, the main remaining challenge is to match the social policies with industrial policies that facilitate higher levels of economic complexity based on opportunity based entrepreneurship and innovation systems. In order to create prolific innovation systems, social and industrial policies need to complement each other in a congruent way. Therefore, it is important to overcome the still persistent state versus market battle in the Latin American policy debate. Effective innovation and industrial policies involve both market forces

and state intervention to raise human capital, address both market and government failures, establish innovative industrial clusters and promote interactive learning between all the agents involved in the economy (Lundvall 2010; Giuliani, Pietrobelli, and Rabellotti 2005; Hartmann, 2014). In order to achieve the difficult task to overcome the structural constraints and increase the economic complexity of Latin America, companies, government agencies, academia, and the civil society need to work together and learn from each other in order to spread knowledge, introduce innovations and increase economic complexity (Lundvall et al., 2011; Hartmann, 2014). In order to create and establish new industries, the economic agents need to be enabled to figure out which products work best in their



5.8%
OF CHINESE
SALES TO THE
WORLD
ARE PERSONAL
COMPUTERS,
NUMBER ONE
EXPORT PRODUCT

regions or countries in a self-discovery process (Hausmann and Rodrik, 2003; Hartmann, 2014). It is important to note, though, that a single country cannot produce all inputs in a competitive way in the modern globalized economy. Thus when figuring out economic opportunities economic agents also need to deliberately search for and access international markets and knowledge sources, for example through, commuting entrepreneurs and outwards oriented development strategies (Saxenian 2007; Pyka, Kustepeli, and Hartmann 2016).

CONCLUDING REMARKS

This paper adds to the mounting evidence that the mix of products a country exports is important for its economic development in terms of GDP (Rodrik 2006; Hausmann, Hwang, and Rodrik 2006; Hidalgo and Hausmann 2009; Hausmann et al. 2014; C. Hidalgo 2015) and income inequality (Hartmann

INCOME INEQUALITY

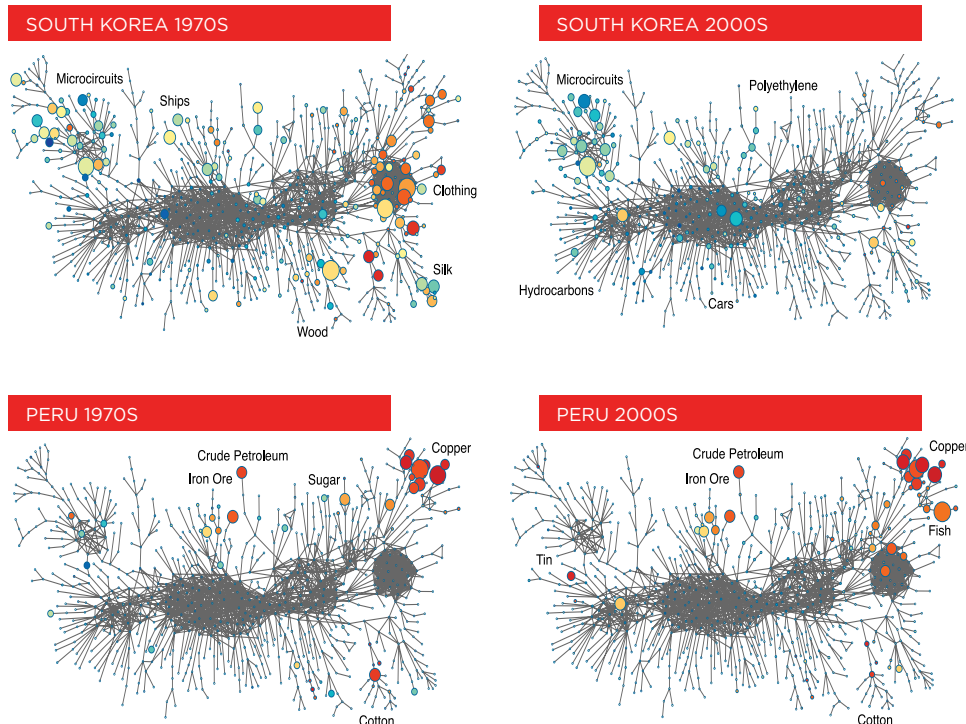
et al., 2015). Here, we have used methods from economic complexity research to reveal the gap in productive capabilities and opportunities for inequality reduction of LAC and HPAE. The results show that HPAE have been capable of increasing their level of economic complexity and thus overcoming structural constraints on income inequality—as expressed in the decline of their Xgini—. Conversely LAC are still strongly constrained by its natural-resource centric productive structures and its Xgini has remained on a high level.

Despite the recent positive impact of successful social policy programs in Latin America, without also simultaneously raising the level of economic complexity, social policies may lack the strength required to modify a country's level of income inequality beyond what is expected due to its productive structure. In consequence, to have sustained economic growth and reduction of income inequality in LAC, prolific industrial policies that complement social policies are necessary (Amsden 2010; Dominik Hartmann 2014; D. Hartmann et al. 2015). This also implies the need to overcome polarizing state versus market policy debates and implement a smart combination of both market forces and state subsidies that are able to promote prolific innovation systems and raise economic complexity in Latin America and the Caribbean.

ACKNOWLEDGEMENTS

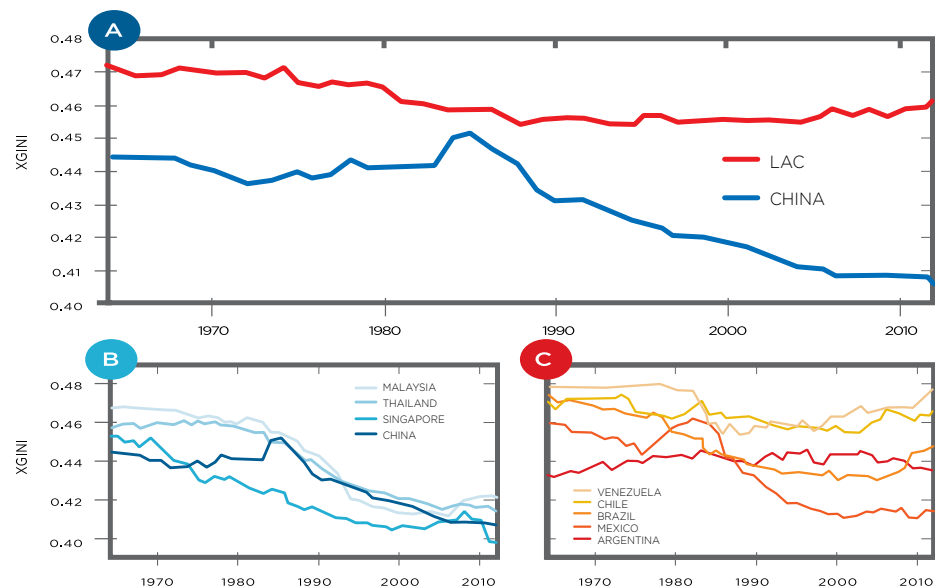
All authors acknowledge the support from the MIT Media Lab consortia. Dominik Hartmann acknowledges support from the Marie Curie International Outgoing Fellowship No. 328828 within the 7th European Community Framework Programme. Miguel R. Guevara and César A. Hidalgo acknowledge support from MIT-Chile MISTI fund. ■

FIGURE 4
STRUCTURAL TRANSFORMATION IN KOREA AND PERU



Source: author's calculation

FIGURE 5
THE EVOLUTION OF XGINIS IN HPAE AND LAC COUNTRIES BETWEEN 1962-2013. (A) COMPARISON OF THE XGINI OF CHINA WITH THE XGINI OF THE AVERAGE XGINI OF LAC COUNTRIES EXCLUDING MEXICO. (B) XGINIS OF HPAE (C) XGINI OF LAC COUNTRIES



Source: author's calculation

NODE i+i

DOMINIK HARTMANN, CO-AUTHOR OF THIS ARTICLE, WAS ONE OF THE PARTICIPANTS OF THE NODE I + I (REGIONAL INTEGRATION + SOCIAL INCLUSION) ORGANIZED BY THE INSTITUTE FOR THE INTEGRATION OF LATIN AMERICA AND THE CARIBBEAN (INTAL), TOGETHER WITH IDB SOCIAL SECTOR AND COLUMBIA UNIVERSITY. ACADEMICS AND REPRESENTATIVES OF CIVIL SOCIETY HELD A MEETING IN NEW YORK WHERE THEY SHARED INSPIRATIONAL IDEAS TO REDUCE THE INEQUALITY GAP IN THE AMERICAS. THE PRESENTATIONS AND AGENDA OF THE NODE I + I IN 2016 CAN BE SEEN AT WWW.IADB.ORG/INTAL/NODOI.

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Interdisciplinary studies for a common research agenda

The speed with which China and Latin America and the Caribbean (LAC) have forged ties has been so dizzying in recent years that the body of institutions specializing in the subject does not yet match the scale required by the relationship. One of the pioneers in the interdisciplinary study of this linkage has been the Academic Network of Latin America and the Caribbean on China (RED ALC-CHINA), set up in Mexico, but with the participation of 200 experts from all over the continent. RED ALC-CHINA studies the opportunities for closer ties with China, reflecting Latin America's needs in aspects ranging from investment in infrastructure to natural resources, from language learning to diplomatic relations. RED ALC-CHINA's Director, Enrique Dussel Peters, argues that asymmetries in the relationship with China will persist without an adequate knowledge of Asian culture and investment in developing institutions that enable concrete dialog with China on specific projects.

What is REDALC and what are its goals?

The Academic Network of Latin America and the Caribbean on China (RED ALC-CHINA) is an initiative set up in 2012, supported by the Union of Univer-

sities of Latin America and the Caribbean (UDUAL) and the Center for Chinese-Mexican Studies (CECHIMEX) of the Faculty of Economics of the National Autonomous University of Mexico (UNAM). Based on over ten years of CECHIMEX's experiences and growing Latin American demand, the aim is, through the Academy, to achieve dialog with the public and private sectors, in addition to others with expertise and interest in China. To achieve an effective process of interdisciplinary dialog, the network is divided into four thematic areas: Economy, Trade and Investment; Political and International Relations; Natural Resources and the Environment; and History, Culture and Chinese Language Learning. Each area has a leader and a group of academics involved in the selection of various proposals. The Network currently has over 25 institutional and almost 200 individual members, from various countries

650.000

IS THE NUMBER OF
DOWNLOADS OF THE
DOCUMENTS PRODUCED
BY THE BODY

25

academic
institutions
are part of the
knowledge
network



Enrique Dussel Peters. Professor of Economics at Universidad Autónoma de Mexico and Coordinator of the Research Center for China - Mexico Studies (Cechimex).

and sectors. The Network has published five books since its inception and is to publish five more by the end of 2015; the first five books have been downloaded over 650,000 times. This reflects huge interest in the subject, both in LAC, and in China and elsewhere.

What potential is offered by Chinese cities and municipalities?

The region has become an important place for the outflow of Chinese foreign direct investment (FDI) as a result of growing Chinese demand and need for raw materials (minerals, soybean, meat, etc.) and energy. If, since the 1990s, the flow of trade has risen dramatically, since the 2007-2008 international crisis, so has FDI and China's financing of infrastructure and other projects. There is relative flexibility within the Chinese public sector, and the cities, provinces, and municipalities have achieved a growing presence in investment in LAC. Although central government plays a critical role in enabling FDI, it is also important to recognize China's increasing regionalization and the importance of decision-taking at the territorial level.

How can China-related knowledge be spread?

It's essential to

improve the quality and financing of public, private and academic institutions in LAC, and to generate many new ones. There's a huge gap between the economic dynamics described above and generally very poor institutions, with little specialization and little knowledge about Chinese features in their trade, investment, financing, turnkey projects, and so on. Without these institutions, tensions and pressures will significantly rise in the future. In this area, LAC needs decision-making with respective long-term financing: the systematic sending of students to China by priority area, the strengthening of business organizations connected with that country, support for specialized educational institutions in China in specific headings, and so on. The cooperation between these institutions in LAC will be critical for the future: if no mutual benefits and incentives are obtained for this cooperation, the relationship with China will suffer many setbacks.

Are the region's institutions ready to interact with their Chinese counterparts?

Not yet, no. And if the bilateral and regional relationship with China isn't a harmonious one, it won't be in the long term either.

It's therefore indispensable to invest



200

EXPERTS ACROSS THE
REGION HAVE BEEN
BROUGHT TOGETHER
BY THE NETWORK

and create institutions that allow specific dialog on specific projects, with trained and qualified personnel, dialog that goes beyond generalities. The monitoring and assessment of Chinese companies in LAC—and of LAC in China—the experiences in trade, tourism, visas, infrastructure in general, and specific experiences of trade with China (education, culture, language learning, etc.) are fundamental and are not being addressed strategically. The academic sector in LAC has developed certain proposals vis-à-vis China in the last decade (projects on specific goods and productive processes, and in education, culture, business, etc.), but a minimum of coordination has not been achieved between decision-makers at national level and their relations with China, far less so at regional level, as in the case of the Community of Latin American and Caribbean States (CELAC). Institutions like CELAC should be proactive in strengthening expertise on China and rely on existing institutions in LAC.

How can the statistical problems presented by the analysis of China-LAC trade relations be solved?

The issue has been investigated by CECHIMEX for more than ten years. It has also been presented at several countries' binational meetings with China: there are differences in the records from country to country, as well as triangular flows, which are recorded in third countries and ports—e.g. Long Beach or Panama—and which therefore change their “nationality.” Projects with the participation of LAC

300%

IS THE VARIATION
BETWEEN THE TRADE
STATISTICS ON ORIGIN
AND DESTINATION

and China are also required in this field in order to obtain conclusive and convincing results. Today there are still LAC countries whose trade statistics display a variation of over 300% with China's information; in the case of FDI, the differences can even be plus or minus.

What kind of development agenda is needed to incorporate China as a strategic ally?

LAC and China should set a long-term development agenda that includes short- and medium-term projects. Structural difficulties generated by LAC's trade with China would have to be overcome (minimal levels of value added and technology level, a high and growing trade deficit, as well as a high degree of concentration in few products and companies), difficulties that are deepened by Chinese FDI and the new turnkey projects which only complicate the integration of any local and regional inputs. China has a great understanding of these challenges because that has been precisely its own experience over the last four decades. Accompanied by these efforts, LAC and China could establish a bilateral and multilateral policy dialog on issues such as the United Nations, energy and military cooperation, as well as in educational, cultural, science and technology, and academic issues. The potential is enormous, provided that there are appropriate national and regional institutions for their periodic monitoring and assessment; unfortunately, these do not exist today. ■

CHINA AND THE IDB: PARTNERS FOR PROSPERITY



BERNARDO GUILLAMON
MANAGER OF THE OFFICE OF OUTREACH AND PARTNERSHIPS OF THE IDB

At the Inter-American Development Bank, we've long believed that partnerships are the key to accelerated development, that collaboration sets the stage for greater impact than any single organization can achieve alone. That's why when the Sustainable Development Goals were established last year as a roadmap toward a future of equitable growth, Goal #17¹, which calls for “Partnerships for the Goals,” resonated with us deeply, inspiring us to reflect upon and strengthen our most valuable partner relationships.

In this exercise, China clearly stands apart. A member of the IDB since the year 2009 and an essential partner in our efforts to improve lives, our work with China is a testament to the power of Goal #17, and a reminder that investing in partnerships is truly the way forward in our quest to reduce poverty and spur sustainable growth. Through the US\$2 billion China Co-Financing Fund and our close cooperation with diverse Chinese ministries and development actors, we've channeled resources and knowledge to groundbreaking projects in Latin America and the Caribbean (LAC), improving infrastructure, enhancing energy efficiency efforts, and inspiring small business growth as a result.

But the importance of China to our region goes beyond its work with the IDB. For instance, between 2000 and 2014, trade between LAC countries and China expanded 22 times. President Xi Jinping's commitment to generating US\$500 billion in bilateral trade and US\$ 250 billion direct investment in the LAC region over the next decade² have helped to maintain this momentum, positioning China as the largest trading partner and creditor of several

LAC countries and the regions' second largest investor. With challenges on the global horizon, this relationship reassures us that both LAC and China will navigate these uncertain economic waters safely, generating further trade, investment, and collaboration that will help maintain growth.

This, we believe, is where the IDB comes in. As the longest standing source of development financing and innovation for the region, we know the Latin American and Caribbean region well. We have close relationships with LAC governments, and have a deep understanding of the intricacies, gaps, and opportunities that characterize our region. In this context, we can help our Chinese partners capitalize on the region's great possibility, facilitating investments in fruitful sectors such as agriculture, infrastructure, energy, and technology, and by leveraging the resources and knowledge in our own institution and across our partnership network to take China's efforts that much further. And given our close ties to Chinese actors we can provide the service to LAC companies, helping them to better understand China, boost exports, and link up with robust global supply chains in the country.

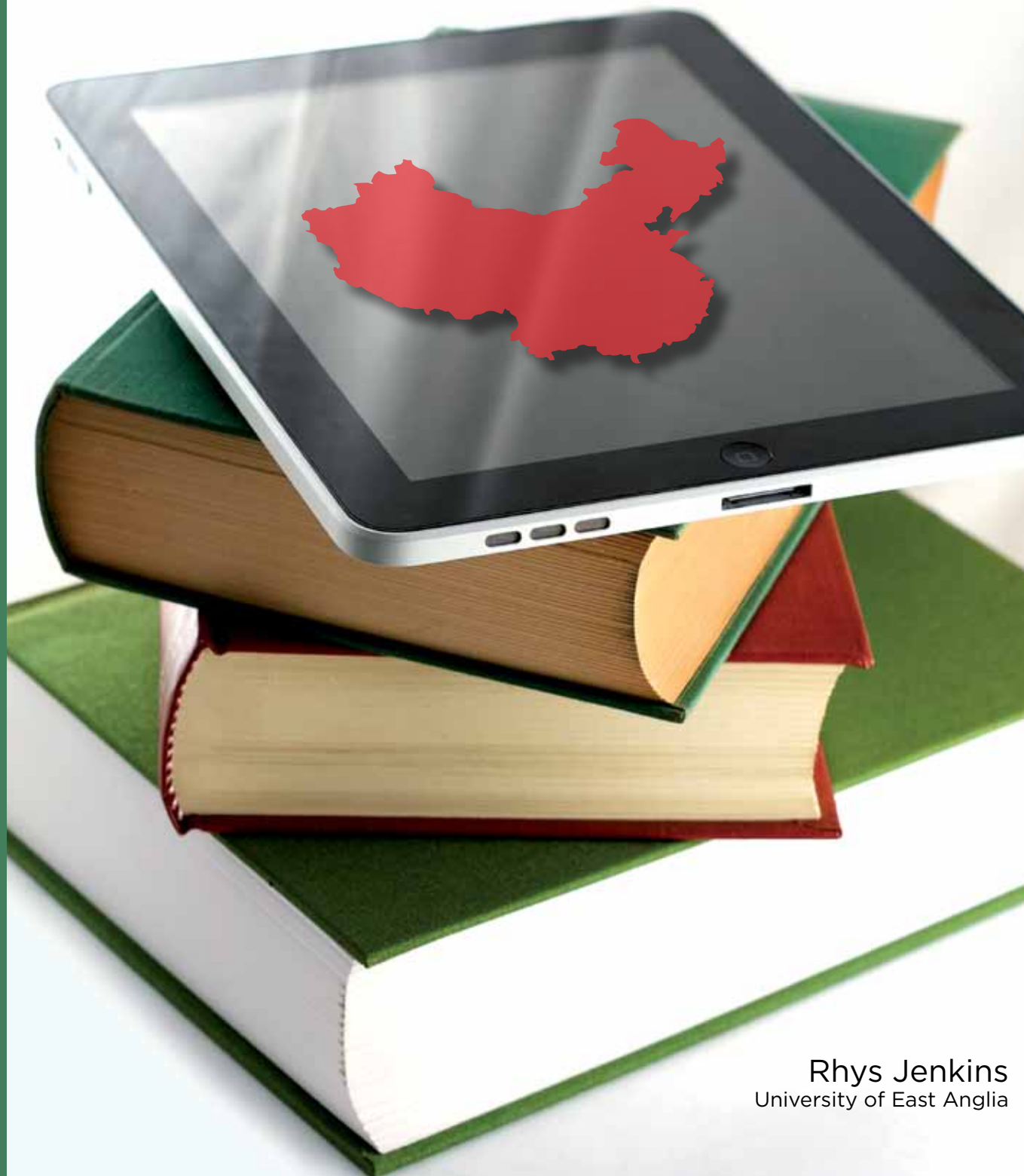
Across Latin America and the Caribbean, untapped opportunity awaits. Our region is open to doing business with Chinese companies and investors, and ripe for transformation at the hands of partnerships with key Chinese development actors. In both of these settings, we at the IDB are at your service, ready to collaborate with you to strengthen China-LAC ties, and to build a brighter future for Latin America and the Caribbean, China, and the world. ■

¹ Resource: United Nations Sustainable Development Goals <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>

² Resource: http://news.xinhuanet.com/english/china/2015-01/08/c_133905202.htm

State of **art** in **China** **LAC** scientific literature

PROMOTE INTERDISCIPLINARY RESEARCH IS ONE OF THE KEYS TO ADVANCE KNOWLEDGE OF RELATIONS BETWEEN LATIN AMERICA AND THE CARIBBEAN AND CHINA, HELPING TO STRENGTHEN THE TIES AND CREATING BETTER TOOLS TO OVERCOME THE OBSTACLES OF THE FUTURE. THIS ARTICLE OUTLINES THE SCIENTIFIC LITERATURE ABOUT THE LINKS BETWEEN THE REGION AND THE ASIAN GIANT, AND ITS A GUIDE FOR ANY RESEARCHER OR PERSON WHO MAY BE INTERESTED IN THE SUBJECT.



Rhys Jenkins
University of East Anglia



ECONOMIC RELATIONS BETWEEN CHINA AND LATIN AMERICA HAVE GROWN SINCE THE BEGINNING OF THE MILLENNIUM.

FOREIGN DIRECT INVESTMENT (FDI) FROM CHINA ALSO GAINED MOMENTUM TOWARDS THE END OF THE FIRST DECADE OF THE CENTURY. CHINESE ENTERPRISES IN THE REGION INCREASED SIGNIFICANTLY, LIKE THE DIPLOMATIC EXCHANGE, SOCIAL AND CULTURAL EXCHANGE. THESE PHENOMENA GAVE RISE TO VARIOUS STUDIES THAT ANALYZES ON THE DIMENSIONS OF THE CHINA-LAC RELATIONSHIP. THIS ARTICLE REVIEWS THIS SCIENTIFIC LITERATURE.

Economic relations between China and Latin America have grown rapidly since the start of the millennium. In the late 1990s total trade flows (imports plus exports) were less than US\$10 billion a year. By 2012, despite a temporary blip in 2009 when trade contracted as a result of the global financial crisis, they had reached more than US\$250 billion. However with the Chinese economy slowing down and global commodity prices falling sharply the growth of trade levelled off in 2013 and 2014.

Chinese foreign direct investment (FDI) in Latin America lagged behind the growth of trade, only taking off towards the end of the first decade of the twenty-first century. In the first half of the decade, Latin American investment flows to China exceeded Chinese FDI in Latin America but the situation was reversed in the second half as Chinese FDI grew rapidly (Figure 2). The value of projects carried out by Chinese firms in the region has also increased significantly and is considerably greater than official FDI flows.¹ In the same period Chinese banks, particularly the China Development Bank, the Exim Bank and the ICBC began to lend to the region on

a significant scale (Figure 3; Gallagher et. al., 2012). Although there was a step change in both Chinese FDI and bank lending to Latin America, the last few years have shown fluctuating levels rather than a continuous growth (Figure 3). It remains the case that the trade relationship dominates in terms of economic links between China and Latin America.

EXPLAINING THE GROWTH OF ECONOMIC RELATIONS

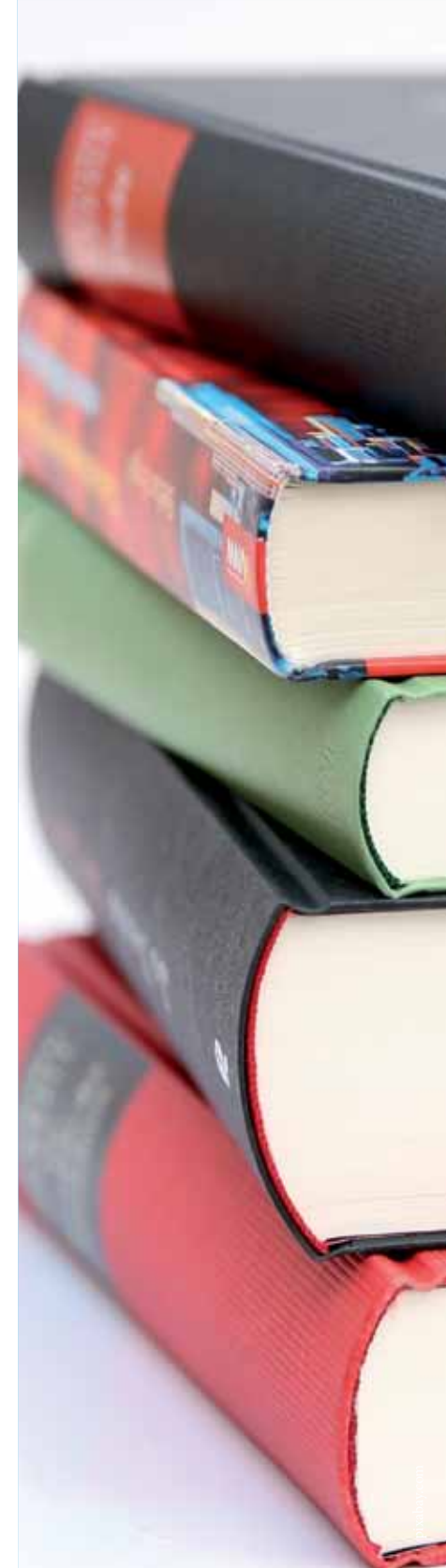
The most common explanations of the dramatic growth in economic relations between Latin America and China since the turn of the century emphasize the rapid economic growth of China and the complementarity of factor endowments. Growth has been accelerated by the increased integration of China with the global economy as reflected by its accession to the WTO in 2001. China's phenomenal growth has led not only to opportunities for Latin America in terms of the growing demand for exports but also to challenges as a result of the increased supply capacity and competitiveness of Chinese manufacturing.

Several recent empirical studies

have used some form of "gravity model" to explain trade between Latin America and China (Lederman, Olarreaga and Soloaga, 2009, Montenegro et. al. 2011, Kawai and Zhai, 2012, Estevaderodol et. al. 2012, Perrotti, 2015).² Although the size of the estimates vary, they are consistent in showing that the impact of Chinese growth on Latin American trade has been significant with elasticity estimates considerably greater than unity. There is also evidence that the elasticity of Latin American exports to China has increased since 2001 compared to the 1990s (Estevaderodol et. al., 2012).

The second factor that is often cited to explain the growth of trade is the complementarity of factor endowments with Latin America seen as a resource rich region and China as a labour abundant, resource poor economy (Devlin et. al., 2006, Ch.4). Such differences in factor endowments are the major driver of trade according to the Hecksher-Ohlin theory. It is also a consistent theme in official Chinese statements as indicated by the 2008 White Paper and in the writings of Chinese academics (PRC, 2008, Jiang (2008), Zheng Bingwen et. al., 2012). It is certainly consistent with the current pattern of trade where Latin America's exports to China are overwhelmingly made up of primary products and resource based manufactures, while its imports from China are almost exclusively non-resource based manufactures.

However the growth of Sino- Latin American economic relations cannot be explained purely in terms of "natural" market forces reflecting growth and factor endowments. Ferchen (2011) criticizes this view showing that the boom in Chinese demand for Latin American resources was a result of a shift in China to a more energy and capital-intensive industrial growth strategy in the early 2000s. This illustrates a more general point that expand-





90%
OF CHINESE
FDI IN THE REGION
FOCUSES IN NATURAL
RESOURCES

THE NATURAL RESOURCES SECTOR

Natural resources play a key role in the economic relations between China and Latin America. Primary products and resource based manufactures account for over 90% of the region's exports to China (CEPAL, 2015, Grafico III.5). Minerals and metals are the most important commodities exported, followed by agricultural products and fuels. Almost 90% of Chinese FDI in the region is in the natural resources sector (ECLAC, 2013, p.13).⁷ Oil and gas has been the most important sector for Chinese investment with an estimated US\$24 billion invested by the four major Chinese companies between 1994 and 2010 (ECLAC, 2013, Table 2).⁸ This is followed by mining where Chinese companies invested almost \$8 billion in Peru and Brazil between 1990 and 2012 (ECLAC, 2013, Table 3).⁹ Although the bulk of Chinese loans to the region do not go directly to the resource sector (Gallagher et. al., 2012, Table 8) the fact that a large proportion of such loans are commodity-backed gives the sector an important role.

China's growth has had both a direct and an indirect impact on the natural resource sector in Latin America. The "commodity boom" which began in 2002 was clearly beneficial to Latin America in the short and medium-term by improving the region's terms of trade. The growth of China clearly contributed to the increased prices of "hard" commodities (minerals), energy commodities and some "soft" (agricultural) commodities. However, not all the countries of the region benefitted from this and for some countries, particularly in Central America and the Caribbean, the impact was negative (Jenkins, 2011).

In terms of the direct effects, Chi-

ed economic ties need to be seen in the context of the development strategies and trajectories being followed in China (and in the Latin American countries).

A similar point can be made in relation to the expansion of Chinese FDI in Latin America. The conventional analysis of the motives of companies investing abroad distinguishes between four main types of investment: Resource seeking; market seeking; efficiency seeking; and strategic asset seeking. According to this classification, by far the greater portion of Chinese investment in Latin America is motivated by resource seeking (Zhao, 2012; Bianco et. al., 2012, pp.243-4).³ However this

framework is predicated on corporate decision making and ignores the specificity of the Chinese case. The Chinese state has played a key role in outward investment both through its "Go Global" policy and as a result of the role played by state-owned enterprises.⁴ There is debate in the literature over the extent to which investment by Chinese SOEs, particularly those that come under the central government rather than provincial governments, respond to government directives rather than commercial motives.⁵ However while promoting outward investment in general, the Chinese government has particularly emphasized investment in natural resources by

SOEs. This is reflected in the fact that SOEs are more heavily concentrated in extractive industries in the region than private firms (Dussel-Peters, 2012; Lin Yue, 2013).

The growth of Chinese lending to Latin America is partly a consequence of the massive foreign exchange reserves built up as a result of China's strategy of export led growth. There is debate in the literature over whether lending is driven by non-economic objectives such as extending Chinese soft power in the region, or by a strategic effort to "lock up" the region's natural resources, or by the commercial objectives of a developmental state. Gallagher and Irwin (forthcoming) conclude that Chinese banks loans are most consistent with the last of these views. In contrast Stallings (forthcoming) analyses Chinese aid to the region, defined much more narrowly, to argue that this is used as a political tool by China to enhance Chinese influence. One specific aspect of the political use made of aid has been to compete with Taiwan for recognition (Aguileara-Peralta, 2010; He Li in Arnson et. al.).⁶ However as Stallings (forthcoming) argues much of Chinese aid has been demand driven and the same is true of lending to Latin America more generally. Most Chinese loans to the region have gone to Venezuela, Argentina and Ecuador, countries that have found it difficult to borrow on international capital markets and that have turned to China as a "lender of last resort" (Gallagher et. al., 2012, p.8).

DATA PROBLEMS IN ANALYSING SINO-LATIN AMERICAN FINANCIAL RELATIONS

The official Chinese statistics on outward FDI published by MOFCOM are widely thought to underestimate the real level of investment in Latin America. One reason for this is that the data only identifies the immediate destination of the investment and since a large share of Chinese FDI goes through Hong Kong or tax havens such as the British Virgin Islands and the Cayman Islands, the final destination of these investments is not known. The data also only includes those firms which report to MOFCOM and may not capture all investment overseas. As a result other organizations have tried to estimate Chinese FDI in the region from announcements in the media which are captured in commercial databases. These may also be inaccurate because on the one hand only larger

investments tend to be reported (so that the total is underestimated) and on the other hand, not all announced investments are in fact carried out (leading to an overestimate of actual investment). One commonly used source is the American Enterprise Institute/Heritage Foundation, China Global Investment Tracker database which reports on announcements of both Chinese FDI and contracts (<http://www.heritage.org/research/projects/china-global-investment-tracker-interactive-map>).

There are no official Chinese statistics published on loans to Latin America so that the only sources obtainable rely on media reports. The most widely used is the Inter-American Dialogue, China-Latin America Finance Data Base (http://www.thedialogue.org/map_list).



nese imports from the region have been concentrated in a relatively small number of countries. They have also been concentrated in a small number of products, particularly iron ore, copper, oil and soybeans (Rosales and Kuwayama, 2012, pp.96-107; IDB, 2010, Table 17). This is reflected in a high level of the Herfindhal-Hirschman Index of Export Concentration which shows no evidence of diversification of exports despite the rapid growth of trade (Jenkins, 2012, Table 9).

A further concern has been the tendency for exports to China to be confined to the earliest stages of the value chain while downstream activities are concentrated in China. There is broad agreement on the need to diversify the region's exports to China and to add value locally to resource exports. While some authors see factors internal to the region such as insufficient investment in innovation, low levels of human capital and poor infrastructure as the main obstacles to such a change (Avendaño and Santiso, 2012), others emphasize the obstacles posed by Chinese policies including escalating tariffs and industrial policies which aim to retain processing activities in China.¹⁰

There are also social and environmental concerns related to the growing involvement of China in the resource sector. Much of the evidence on this is anecdotal focussing on the negative impacts of some Chinese companies. A few studies have been carried out

in Peru which compare the social and environmental impacts of Chinese and other mining companies which found that they were not necessarily the worst performers (Kotschwar et. al., 2012; Gallagher and Irwin). Research has also recently started to explore the impact of Chinese involvement in resource extraction on the environment in several Latin American countries.¹¹

THE MANUFACTURING SECTOR AND TECHNOLOGY TRANSFER

China's impact on Latin American manufacturing has been felt mainly through imports from China which are overwhelmingly of manufactured goods and through competition with Chinese goods in third markets and to attract inward investment from third countries. Chinese investment in Latin American manufacturing has so far been relatively limited.

The growth of imports from China can represent both a threat and an opportunity for Latin American manufacturers. On the one hand, increased competition in the domestic market can lead to firms reducing production and employment or closing down altogether. On the other hand, imports of low cost Chinese inputs or capital goods can help reduce production costs and increase profitability for local producers. There is some evidence on both these effects in the region.

Negative impacts on domestic industry in terms of lower production, plant exit and reduced employment have been found in Argentina (Lopez and Ramos, 2009; Castro et. al., 2009; Artuc et. al., 2015), Brazil (Jenkins and Barbosa, 2012; Artuc et. al., 2015), Chile (Alvarez and Claro, 2009) and Mexico (Shigeoka et. al., 2006; Iacavone et. al., 2013; Mendez, 2015; Camaal-Olivera et. al., 2015; Artuc et. al., 2015). However, despite increasing substantially since



LATIN AMERICAN FDI IN CHINA

FDI by Latin American firms in China has not received much academic attention. Two IDB studies (2012 and 2014) have started to collect data on a sample of Latin American firms with operations in China and develop a classification of such firms. Not all the firms are involved in production (or direct service provision) in China - some have so far simply set up commercial offices there. In terms of the motives for FDI, most of the investments in production can be classed as market seeking, driven by the size and growth of the Chinese market. Even FDI by companies from the extractive industries tend to be in downstream activities such as refining and processing to serve the Chinese market. Firms setting up commercial offices are simply an extension of their export activities to China and are also driven by market seeking. A few firms have invested in China in order to exercise quality control over the products that they import to use as inputs in their production processes in Latin America (IDB, 2014, p.13).

2000, the share of Chinese imports in total consumption of manufactured goods in the main Latin American countries remains relatively low.¹² However at the level of individual industrial sectors such as textiles and clothing or computer, machinery and electronics, China's share of consumption was much higher.¹³

Although a significant share of Latin American imports from China is accounted for by intermediate products and capital goods, evidence that such imports have had a positive impact on Latin American manufacturers remains rather sketchy. Since trade data does not indicate the sector in which products are used, the effects of Chinese inputs on performance has generally only been analysed in studies which use plant level data. The few studies that have examined this issue report contradictory results. Shigeoka et. al., (2006) study of Mexico found some evidence that Chinese inputs tended to increase production and exports. Iacavone et. al. (2013), also on Mexico, found that Chinese inputs were associated with lower sales and higher plant exits. The benefits derived from low cost Chinese inputs and capital goods therefore remain empirically unproven at present.

Since the time of China's accession to the WTO in 2001, one of the most studied aspects of China's impact on Latin America has been the effect on the region's exports to third markets.¹⁴ Most of the early studies were optimistic conclud-



ing that, apart from Mexico, the countries of the region were less threatened by Chinese exports to third markets than were the Asian economies or the transition economies of Eastern Europe, and that the effects were confined to a few manufacturing industries (Blázquez-Lidoy et. al. 2007, Devlin et. al. 2006, Lederman, Olarreaga and Perry (2009). However other authors, using more recent data and different methods, have argued that the impact of China on Latin American exports have been both more severe in the case of Mexico (Gallagher and Porzecanski, 2007, Gallagher et. al. (2008), and more widespread, in terms of the countries that have been affected, than this optimistic view claimed (Moreira, 2007; Jenkins, 2010).

Two recent developments in the literature have been to look at the impact of increased Chinese competition on intra-regional trade and to analyse the impacts on exports to third countries in a more disaggregated way according to product quality and firm size. Studies have found that Chinese imports have displaced exports between Latin American countries, particularly from the mid-2000s.¹⁵ In terms of quality, as measured by the unit value of exported products, there is evidence that Chinese competition has been particularly intense in low quality segments (Hiratuka and Cunha, 2011; Dos Santos and Zignago, 2012; Hiratuka et. al., 2012). A few recent studies have emphasized the importance of plant heterogeneity in analysing the impact of China on exports. Two Mexican studies based on plant level data have found that it is smaller, more labour-intensive firms that are most affected by Chinese competition in the US market (Shigeoka et. al., 2006;

lacavone et. al., 2013). However in the case of maquila plants, Mexican firms face competition from China in the US market irrespective of size or technology level (shigeoka et. al., 2006; Sargent and Matthews, 2007, 2008).

INFRASTRUCTURE AND FINANCING

Latin America suffers from a significant infrastructure deficit in terms of energy, road and rail links, ports etc. and these have been a constraint on economic growth. China has the financial capacity to fund significant infrastructure investment in the region and the major construction, engineering and energy companies with the capacity to undertake such projects. Between 2005 and 2014 infrastructure projects accounted for around 40% of all Chinese loans to the region (Gransow, 2015, p.96). This contrasts with the lending by the International Financial Institutions which have been more concentrated on social sectors such as health and education (Gallagher et. al., 2012, pp.17-18). In the cooperation plan for 2015-19 drawn up at the China-CELAC summit in January 2015, the Chinese government pledged further loans of \$10 billion for infrastructure projects in the region (CEPAL, 2015, p.27). This has given rise to high expectations in Latin America.

There have been relatively few studies of Chinese lending in Latin America and they have been largely descriptive, focusing on establishing the key characteristics of such loans including the modalities used, geographic and sectoral distribution and the terms on which they are given (Gallagher et. al., 2012; Gransow, 2015; Gallagher and Irwin, forthcoming). Chi-



US\$ 24 BILLIONS

INVESTED THE ASIAN GIANT IN THE REGIONAL OIL SECTOR

nese loans are not always transparent but what information has come out shows that generally loans to Latin America have not been subsidized to gain political support, but nor have the terms been highly unfavourable to the recipients as has sometimes been suggested (Gallagher et. al., 2012; Gallagher and Irwin, forthcoming). They do however often require part of the loan to be spent on Chinese goods or services provided by Chinese companies.

Two aspects have attracted particular attention. First more than half of Chinese lending in Latin America involve payment in commodities, particularly oil (Brautigam and Gallagher, 2014). These type of arrangements, sometimes referred to as Resources for Infrastructure (R4I) have been a common feature of Chinese lending and discussed extensively in the African context. Brautigam and Gallagher conclude that contrary to the perceptions of some, these arrangements have not been to the disadvantage of the Latin American borrowers.

A second concern is that the Chinese banks have been less insistent on social and environmental standards than the IFIs and Western lenders when

they fund projects in Latin America. As relative latecomers, Chinese lenders were later in developing environmental guidelines and those that have been established are less comprehensive than those of the IFIs.¹⁶ So far studies have mainly looked at the formal guidelines which different lenders are meant to follow but little is known about their effectiveness. More research is required to see to what extent they have led to changes on the ground when projects are implemented,

MACROECONOMIC IMPACTS AND GROWTH

At the macroeconomic level, there was very little relation between output movements in China and Latin America before the 2000s. However, since then, several studies have shown a marked increase in the correlation between economic growth in Latin America and growth in China (Calderon, 2009, pp.51-54; Cesa-Bianchi et. al., 2011, Fig. 2; World Bank, 2011, Fig.1.6). Although this is true for the region as a whole, there are marked differences between sub-regions with a positive and increasing correlation between the Andean countries and the southern cone countries and Chinese GDP accounting for the overall result (Calderon, 2009, p.54).

While one needs to be cautious in inferring causality from such correlations, they are consistent with the view that growing Chinese demand for Latin American exports and the role of China in the post-2002 commodity boom, contributed to the improved economic performance of a number of Latin American countries between 2002 and 2012. Both Calderon (2009) and Cesa-Bianchi et. al. (2011) suggest that the increased synchronization of business cycles between China and Latin America is due at least as much to the indirect



US\$ 10 BILLIONS

IS THE COMMITMENT
OF NEW INVESTMENTS
IN INFRASTRUCTURE

effects of China on the global economy as to the growth of direct bilateral relations.

Two recent papers have used a Global Vector Autoregressive framework to further explore the impacts of China's growth on Latin America and to simulate the effects of output shocks in China on the region (Cesa-Bianchi et al., 2011; Gruss, 2014). Both find that changes in Chinese output have a significant effect on the output of the Latin American countries. Cesa-Bianchi et al. (2011) find that Latin America's growth now depends more on the performance of the Chinese economy than on that of the US, which helps explain why the region was able to recover so rapidly from the effects of the 2008-9 global financial crisis. However it also leads to concern over the likely impacts on the region of the slowdown in growth in China and changes in Chinese economic strategy to give more emphasis to consumption as opposed to investment and exports (Shellekens, 2013). These effects are already being felt in a number of countries as commodity prices fall and economic growth falters.

While these studies emphasize the positive impact of China on growth in Latin America, another strand of literature has raised concerns about the long term implications of increased dependence on China for development (Morei-

ra, 2007; Paus, 2009, Gallagher and Porzecanski, 2010, Ch.2; Jenkins, 2012; Rosales and Kuwayama, 2012, Ch.II.F). Central to this view is the negative impact of increasing "primarization" of the region's economies associated with the growth of resource exports. In the structuralist and dependency traditions, this view emphasizes the tendency for commodities to suffer from volatile prices in global markets and for their production to be less technologically progressive and to create fewer spillovers than manufacturing. It is also associated with concerns that the commodity boom has led to "Dutch Disease" effects and deindustrialization in the region.

CONCLUSION

The literature on Sino-Latin American economic relations has grown rapidly in recent years. It is still focussed mainly on trade issues, which is not surprising given that trade continues to be at the centre of the relationship. Research on other aspects of China's presence in the region, particularly through FDI, loans and infrastructure projects is hindered by the problems faced in obtaining reliable data. As these aspects are likely to become increasingly significant in the future, it is crucial that they should become a focus of research and that efforts are made to improve the data available. ■

NOTES

¹The Chinese National Bureau of Statistics refers to this as "Economic Cooperation with Foreign Countries" and it includes civil engineering and construction projects overseas which would not be regarded as FDI.

²Gravity models explain bilateral trade by the GDP of trading partners, the distance between them and other geographical variables such as whether a country is landlocked or an island. In terms of the growth of trade, since geographical variables are time invariant, the gravity model approach tends to emphasize the role of GDP growth and elasticities of demand and supply.

³There has been some market seeking investment, especially by private investors and provincial SOEs. These are estimated to account for between 10% and 15% of the total value of Chinese FDI in the region (Dussel-Peters, 2012, Table 5, Bianco et al., p.244). The other two forms of investment account for a negligible share of the total.

⁴Estimates suggest that over 80% of Chinese FDI in Latin America is by SOEs (Dussel-Peters, 2012, Table 5).

⁵Blanchard (2011) refers to these two views as "Beijing as puppeteer" and "the Business of Business is Business".

⁶This has been less of a factor since 2008 when there was a tacit truce between Beijing and Taiwan.

⁷Similar estimates of the dominance of natural resources are provided by Dussel-Peters (2012, Table 5) and Bianco et al. (2012, p.243). This is a far higher share than for other investors in the region since only a quarter of all FDI in the region was in resources (ECLAC, 2015, p.37).

⁸For reviews of Chinese involvement in the Latin American oil industry see Koch-Weser (2015) and Hogenboom (2014).

⁹Studies of China's involvement in mining in Latin America include Koch-Weser (2014) and Kotschwar et al. (2012).

¹⁰The soybean industry provides a good example of this with China developing a crushing industry in the 1990s, which meant that imports of soybean flour from Argentina virtually disappeared.

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red to be replaced by imports of unprocessed soybeans (Lopez and Ramos, 2009).

¹¹See the studies carried out by the Boston University, Global Governance Initiative in a number of Latin American countries summarized in Ray et al. (2015).

¹²A forthcoming OECD study estimates the share of China in eight Latin American countries going from the lowest in Brazil of 3% to the highest of 9% in Chile in 2012.

¹³In Chile, the country with the highest level of import penetration, the Chinese share in 2011 was 65% in textile and apparel and 41% in computer, machinery and electronics (OECD, forthcoming).

¹⁴A variety of different methodological approaches have been used to estimate the impact of Chinese exports on the exports of other developing countries. These include calculating Finger and Kreinin's Export Similarity Index or related indices (Blazquez-Lidoy et al., 2007; Devlin et al.2006), comparing changes in market shares of China and Latin America (Lall and Weiss, 2005), extensions of constant market share analysis (Jenkins, 2010; Hiratuka et al., 2012), econometric analysis based on the gravity model (Hanson and Robertson, 2009; Montenegro et al., 2011; Hiratuka et al., 2012; Bellucci Módo and Hiratuka, 2015) and econometric studies based on plant level data (Utar and Torres Ruiz, 2013; Iacavone et al., 2012; Shigeoka et al., 2006, Sargent and Matthews, 2008). While the studies that use trade data and indicators cover most of the main Latin American countries, up to now the studies based on plant level data have been confined to Mexico.

¹⁵See Gallagher and Porzecanski (2010, Table 3.4) on Argentina, Brazil, Chile, Colombia, Costa Rica and Mexico; Hiratuka et al. (2012) on Argentina, Brazil, Mexico and Uruguay; Jenkins (2014) on Brazil.

¹⁶For a discussion of sustainability standards in Chinese lending to Latin America, see Blackmore et al. (2013), Gallagher et al. (2013), Grasnow (2015), Yuan and Gallagher (2015).

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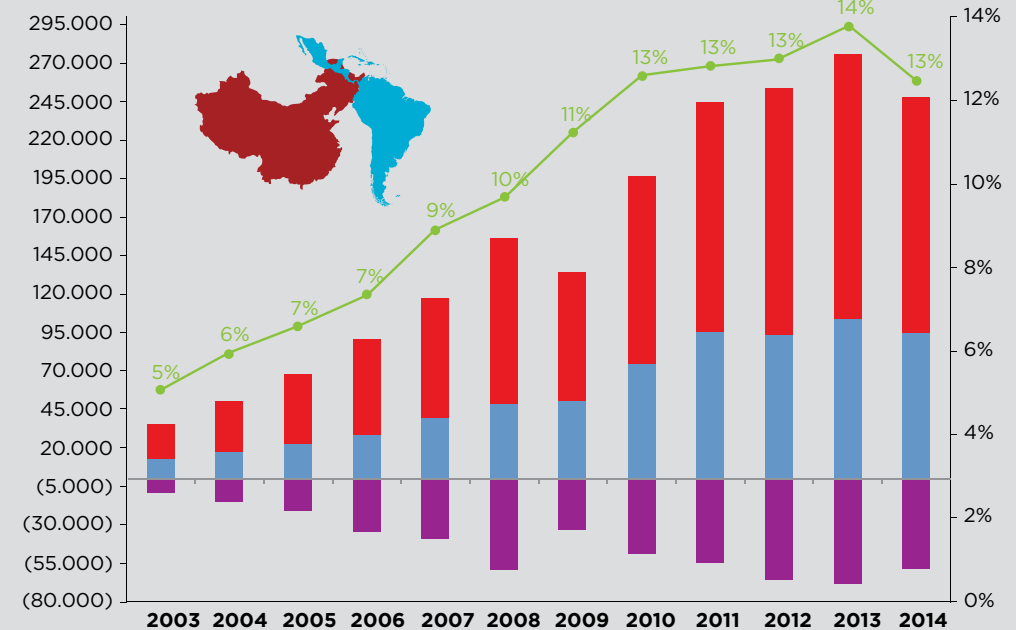
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LAC'S TOTAL TRADE WITH CHINA

US\$ MILLIONS



EXPORTS IMPORTS TRADE BALANCE CHINA'S PARTICIPATION ON TRADE (SEC. AXIS)

Source: INTRADEBID

18%

WAS THE ANNUAL GROWTH RATE OF TRADE BETWEEN CHINA AND LAC (2003-2014)

IS THE GOAL FOR TRADE FOR 2024

US\$ 500 BILLIONS

2015

IS THE YEAR WHEN NEGOTIATIONS WITH COLOMBIA FOR A FTA STARTED



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MAGNETIC TRADE

IN 2016 THE WTO MUST DECIDE WHETHER TO GRANT MARKET ECONOMY STATUS TO CHINA. MEANWHILE, THREE COUNTRIES OF THE REGION, CHILE, COSTA RICA AND PERU, HAVE ALREADY SIGNED FTAS WITH THE ASIAN GIANT. WHAT WERE THE KEYS OF THESE NEGOTIATIONS

AND WHAT WAS THE IMPACT FOR COMMON CITIZENS. WHAT IT IS THE CONTENT OF THE NEW ARRANGEMENTS AND HOW IT IS POSSIBLE TO EARN FLEXIBILITY. WHAT IS THE RELATIONSHIP BETWEEN THE INCREASE IN EXPORTS AND INVESTMENT RECEIVED FOR INFRASTRUCTURE

"Trade agreements are no longer about trade"

Kevin Gallagher
Professor at Boston University

How to negotiate with China

Ruiz, Rebolledo, Ferreyros
Costa Rica, Chile, Peru

After the boom: The costs of Latin America-China agricultural trade

Mauricio Mesquita Moreira
BID
André Soares
BID

Tailor-Made

Renato Baumann
IPEA and Universidade de Brasília

China in the wto

Rosario Campos ROrnina Gayá
IDB-INTAL consultant

Foreign investment and exorts: Two sides of de same coin

Son, Wagner
University of Chile

Chinese tourist offer a graet opportunity for de caribbean

IADB
Turism

“Trade
agreements
are no longer
about
trade”

KEVIN GALLAGHER

Professor at Boston University

Knowledge and technology transfer, investments, patents, intellectual property laws, capital mobility, financial liberalization, exchange of banking information. So-called trade agreements contain ever fewer pages about trade but a surplus about other issues. For Kevin Gallagher, one of the world's leading lights in the analysis of relations between China and Latin America, the unconditional loans being offered by the Asian giant represent both a novelty and a huge challenge. According to Gallagher, a professor at Boston University, if countries use their resources to close the infrastructure gap, and encourage innovation and productive diversification, they will benefit from the new context. Otherwise, they will have wasted a good opportunity to climb aboard the development train once and for all.

Why do you claim that trade agreements are no longer about trade?

I'm more than a little concerned that the world appears to be abandoning the WTO. It's the only global institution where every country has a vote. In the IMF or the World Bank, United States has the power of veto. The WTO moves slowly because it's more democratic, and many countries get rather frustrated at its sluggishness. United States, in particular, has moved toward a strategy of bilateral and regional agreements with economies, accounting for 80% of world production. Yet the benefits in terms of trade are not that great. For example, the Transatlantic Trade and Investment Partnership (TTIP), the agreement between United States and Europe, will grant benefits of 0.3% of GDP by 2025 in the area of trade. Why are countries so concerned about this if the impact on trade is minor? What is strictly trade-

JUST
0.3%
OF GDP IS THE
BENEFIT EXCLUSIVELY
IN TERMS OF TRADE
PROVIDED BY THE TTIP

related is the only segment that can be quantified. Yet there's a huge part of the agreement, hundreds of pages, about other issues, such as intellectual property and patents, which have nothing to do with the prospect of free trade. In the TTIP, the patent regime is extended to twelve years, which United States has been trying to achieve globally and does not benefit the developing countries. For example, in the pharmaceutical sector, countries like Brazil have a policy of purchasing generic drugs in order to offer them to its population more cheaply. Under a twelve-year patent regime, the price of these medicines will rise, and there will be less competition, due to protection. It's, actually, the opposite of free trade.

Is the broadness of the issues in the negotiations a positive thing?

The theory of free trade is extremely robust in economics, and its conclusions are clear under certain conditions: when trade is liberalized, both partners benefit. But there is no such theory for the liberalization of investment. The new agreements focus on liberalizing investment, not just imports and exports of goods, and on opening the banking system to bring in short-term capital. But there are many econometric studies that demonstrate that the flow of short-term capital is actually



destabilizing for countries—some even conducted by the International Monetary Fund (IMF). As it has comparative advantages in the financial sector, that doesn't matter to United States, even if it isn't beneficial to the emerging countries. Those conditions are not incorporated into the agreements negotiated in the WTO, where emerging countries have relatively equal weight. When it comes to bilateral negotiations between United States and a smaller emerging country, it's easier for United States to get what it wants.

Is it possible to successfully regulate short-term capital?

Sure, Peru does it very well. Chile did it in the '90s, Colombia in the 2000s, and Brazil has in the 2010s. They all did good jobs of regulating capital flight through exchange rate policy, or by levying taxes on the sale of short-term financial assets. Under some of these agreements, such measures will become illegal. There is a debate currently raging over the issue in United States, because ensuring that partners are financially stable can be more profitable in the long run than the benefit obtained by the financial sector lifting regulations on short-term capital flows.

80%

OF THE GLOBAL
ECONOMY IS SPOKEN
FOR BY AGREEMENTS
SIGNED BY UNITED
STATES

United States has, at least, agreed to discuss the inclusion of such measures in the TTIP. If progress is made on this issue, it would be the first agreement to include restrictions on capital.

What lessons can be learnt from the Chinese growth model for Latin America?

China became bigger than the whole of Latin America put together back in 2003. In 1980, the Chinese economy was only half as big Latin America's. The main foci of Chinese growth were investment and structural change. Both China and Latin America have attempted to integrate into the world economy, but China's liberalization was gradual: a little opening, then adapt; more opening, then more adaptation. This created new industries as the economy





**US\$ 119
BILLION**

IS THE TOTAL OF
LOANS FROM CHINA
TO THE REGION SINCE
2005

opened up. Latin America, on the other hand, opened up altogether, which left it wide open to external shocks. The most important lesson left by China is that both markets and state have an important role to play, but opening has to be more gradual than in the form of a shock.

How do you rate the more intense ties between China and the Latin American countries?

I'm generally optimistic, because I like diversity. Latin America has always been highly dependent on demand from Europe and United States. Adding China to the mix is good because, if one partner has a crisis, the other might not. If it hadn't been for Latin America's links with China, the financial crisis would have hit the region a whole lot harder. China buys a lot and that helps keep commodity prices high. But my optimism can turn to pessimism if the region's governments don't take advantage of those link for long-term benefits. An important aspect of the relationship is loans to governments. Since 2005, China lent US\$119 billion to the region's countries, but only US\$22 billion in 2014. That's more than the Inter-American Development Bank and

the World Bank put together. The new thing is that, instead of laying down conditions, like the IMF, China lends the money for countries to do what they want with it.

Do you think those funds are being used appropriately?

The countries of Latin America don't like the multilateral organizations' conditions. Well, now they have money without conditions. It's a big challenge. The world is watching to see if they'll invest appropriately in infrastructure, diversification, education, and environmental care. Latin America wanted a different kind of agreement, and now it has it. Some countries appear to be making good use of those loans. A case in point is Ecuador, where the new roads and energy plants are there for all to see, and there's plenty of investment in fixed capital formation. These advances aren't being seen in other countries. Governments have to think creatively about how to use these funds to transform their econo-



6.2%

OF GDP IS THE
INFRASTRUCTURE GAP
IN LATIN AMERICA

mies and stop being tied to the vagaries of commodity prices, connect to industrial global value chains, boost intraregional trade, and create trade patterns with Asia, Europe, and United States. It's a very big challenge, but it's also a unique opportunity, the kind of opportunity that hasn't presented itself to the region in a long time.

Do you think will the Chinese demand for natural resources will hold up?

At present, China's per capita consumption of copper, soybeans, or steel is still below Japan, United States, and South Korea's. For that reason, we think the demand for natural resources will continue to grow. However, it's essential that the region's countries protect the environment and ensure that resources are available for the long haul. They should also ensure that primary sector benefits are invested in innovation, diversification, education, and areas that aren't necessarily direct related with natural resources.

Do you believe it is better to negotiate with China on bilateral or multilateral terms?

The terms can be bilateral or multilateral. In 2009, the CELAC-China Summit set a very extensive negotiating agenda in science and technology, cooperation, exports, environment, and investment. But every country has

its own needs. Argentina is probably more interested in currency swaps than Peru. I believe Latin America's bargaining power has been underestimated. Almost half China's copper imports come from Peru and Chile. And almost all its soya imports come from the region, a situation that provides very serious bargaining power. In industry, one can always negotiate with the threat of going in search of competitors if the negotiation doesn't move forward. But in primary sectors, there just aren't the competitors. There are few places where China can acquire those strategic resources, so essential to its functioning. In return, the Chinese are willing to negotiate and work together. The strategy where MERCOSUR presents a more united front in its negotiations with China hasn't been explored yet. South-South cooperation is different: an exciting experiment.

What is your opinion of the scheme to join up Brazil's Atlantic coast with the Pacific port in Peru, using Chinese money?

The whole world is looking at these projects. On the one hand, the region needs more intraregional trade and for the Atlantic countries to have greater reach in Asia. It takes a long time to cross the Panama Canal, and there's an urgent need for better infrastructure in the region. On the other hand, there's considerable social and environmental

KEVIN P. GALLAGHER

PROFESSOR OF GLOBAL DEVELOPMENT POLICY AT BOSTON UNIVERSITY, WHERE HE DIRECTS THE ECONOMIC GLOBAL GOVERNANCE INITIATIVE. HE IS THE AUTHOR OF THE BOOKS THE CHINA TRIANGLE: LATIN AMERICA'S CHINA BOOM AND THE FATE OF THE WASHINGTON CONSENSUS, AND THE DRAGON IN THE ROOM: CHINA AND THE FUTURE OF LATIN AMERICAN INDUSTRIALIZATION (WITH ROBERTO PORZECANSKI), AMONG OTHER PUBLICATIONS.



risk involved in these schemes, such as the Amazon, which has implications for climate change. There are also indigenous communities who have to be consulted and respected. If that isn't done, the projects will get a very bad press, and there'll be associated political risks and social protests, which have not just ethical and moral dimensions, but economic ones. For Brazil's Belo Monte Hydroelectric Dam, no consultations with local residents or even an environmental impact study were carried out, and that generated a lot of controversy. What was going to be a four- or five-year scheme was made much more protracted by those conflicts, with the consequent economic cost. The most advisable thing is to conduct good environmental impact analyses, not only for the sake of human rights, but because it reduces the costs associated with the scheme considerably. If the scheme can be carried through in a way that's socially inclusive and has low environmental impact, it may set a precedent for the region. Latin America has an infrastructure gap of 6.2% of GDP, but there are right ways to close that gap, and others that cause problems.

What is the conclusion of your new book, *The China Triangle: Latin America's China Boom and the Fate of the Washington Consensus*?

China and Latin America saw very strong growth between 2003 and 2013. Some countries managed to use that growth to reduce social inequality and improve their social indicators. The problem is that Chinese demand is no longer growing as fast as before, and commodity prices aren't rising so fast either. The region didn't do enough to invest in alternatives that would

IF YOU MAKE
BAD INVESTMENTS,
THE REGION
WILL HAVE WASTED
A GREAT
OPPORTUNITY,
AND CHINA
A LOT OF MONEY

see it through when that main driver of growth is no longer so powerful. It didn't save enough, governments didn't improve collection, they didn't handle exchange rates to combat the curse of natural resources, and they didn't invest enough in innovation. In the new lower-growth scenario, other drivers are also weak: the performance of the industrial sector isn't good, there's financial instability, and environmental concerns are greater than ever. In my book, I explore these issues, and argue that it isn't yet too late for Latin America, since it has stronger internal markets and more export options. But it will take time to coordinate a strategy based on innovation, environmental care, education, and the diversification of local economies to achieve sustainable development. China offers an opportunity for Latin America. But only the Latin Americans can redeem themselves. It offers them loans for longer periods of time and without conditions. Can Latin Americans turn that investment into inclusive productive development with low environmental impact? If it can, China will be part of the solution, but Latin America should take most of the credit. If they can't, the region will have wasted a great opportunity, and China will have lost a lot of money. ■



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HOW TO NEGOTIATE WITH CHINA

**THE REGION'S NEGOTIATORS
PROVIDE KEYS TO STRIKING
SUCCESSFUL AGREEMENTS**

Marco Vinicio Ruiz
Costa Rica

Andrés Rebolledo
Chile


Eduardo Ferreyros
Perú

**THE INSTITUTE FOR THE INTEGRATION OF
LATIN AMERICA AND THE CARIBBEAN
(INTAL) CALLED A MEETING OF NEGOTIATORS
OF FREE TRADE AGREEMENTS (FTAs) WITH
CHINA. REPRESENTATIVES OF PERU, CHILE,
AND COSTA RICA SHARE THEIR EXPERIENCE.
WHAT ARE THE OBSTACLES AND OPPORTUNITIES
OF THE NEGOTIATION, AND WHAT RESULTS WERE
OBTAINED AFTER THE AGREEMENTS?**




THREE LATIN AMERICAN AND CARIBBEAN COUNTRIES HAVE SIGNED FREE TRADE AGREEMENTS (FTAs) WITH CHINA. IN THIS ARTICLE, THEIR PRINCIPAL NEGOTIATORS EXPLAIN THE DETAILS OF THE PROCESS LEADING UP TO THE SIGNING OF THE AGREEMENTS. MARCO VINICIO RUIZ, THE COSTA RICAN NEGOTIATOR, ANDRÉS REBOLLEDO SMITMANS, THE CHILEAN NEGOTIATOR, AND EDUARDO FERREYROS, THE PERUVIAN NEGOTIATOR, ALL AGREE THAT THE LINK TO THE ASIAN GIANT HAS CONTRIBUTED TO THEIR ECONOMIES' DEVELOPMENT, TO DIVERSIFYING EXPORTS, AND TO PROMOTING DOMESTIC CONSUMPTION.

**WHAT SPECIAL
CHARACTERISTICS ARE THERE WHEN
IT COMES
TO NEGOTIATING WITH CHINA?
HOW IS IT DIFFERENT
TO OTHER COUNTRIES?**

 The special characteristic is that they ask for a feasibility study of future trade arrangements as a requirement. We aren't used to doing that in Latin America, and it's extremely interesting. For us, at least, it was an eight-month exercise. We learnt first-hand about their sensibilities, their concerns, and obviously their strengths, and at the end of the feasibility study the decision is taken over whether an agreement is interesting or not. This is normal when they are countries that haven't had very strong economic relations over the years, as in the case of Costa Rica and China. Another feature of theirs is pragmatism. The Chinese are very direct in their negotiating style, and the process is rather to try to convince them to move away from that perhaps overharsh position. Third, China can be sensitive about some of the products we make. It's essential how the access of agricultural products to China is negotiated. Everything is sub-

ject to the approval of an omnipotent health authority, and it's a long-drawn-out process. They won't accept international institutions in food; things have to be done on a product-by-product basis and a protocol drawn up, a process that can take many years. So it's vital to be patient.


 We've been negotiating a free trade agreement with them for ten years. What China's been doing this decade is different. When we negotiated the agreement with China, it was our fifth biggest market; today it's now our single biggest. It was very significant for us and had a major impact in relation to what we did with the other Asian countries after the negotiation. In that sense, for us, China also in a way gave us a kind of seal of approval in other negotiations: it perhaps made us more attractive for other agreements, other countries that probably wondered why they negotiated with Chile, and it opened the doors to other countries for us.

 In general terms, Peru's negotiation process toward a free trade agreement with China was along the same lines as with United States and the European Un-




ion. What were the differences? The coverage, in that Peru did have sensitivities with China in certain industrial products, mainly textiles and footwear, and we tried and succeeded to keep them out of the negotiation: in other words, those products weren't going to eliminate the tariff because of the potential competition that would come from China. The tariffs were never lowered. There were also differences in coverage in investments and services, unlike other agreements that China had. In that sense, it was a modern agreement: it strengthened the investment agreement we had, while broadening the scope and including mechanisms that promoted trade in cross-border services. But we don't have a chapter on government procurement. Unlike United States, China doesn't put an emphasis on intellectual property issues. The intellectual property chapter with China is very light.

**WHAT WERE THE OBSTACLES YOU
ENCOUNTERED DURING YOUR
PARTICIPATION AS A NEGOTIATOR
WITH CHINA AND HOW DID YOU
OVERCOME THEM?**

 It seems to me there are two types


of obstacles: in Costa Rica, at least, all trade agreements are brought before Congress, to the Legislative Assembly, for final approval. In parallel with the negotiation process with the different groups in society, and the negotiation has to be explained so that, when the time comes for the agreement to be sent, it has the necessary support. One has to gauge which areas China may pose a threat to local producers in. In Costa Rica, industry was concerned because China could kill off infant industries: future developments that could take place in the metallurgical industry, for example. There is a special status, then, for those projects in that business. That hadn't been negotiated in any agreement before, and so we did it. The other issue was that China had a special interest in tires, a product that we produce, and we managed to negotiate a long tariff relief period. We had a special interest in dairy products, for example, which China imports, and despite a lot of regulation, our negotiation was also successful. The issue of business visas was complicated, because aspects of visas in certain sectors are highly sensitive, especially down to situations surrounding illegal activities by certain groups. We found a rather creative way to grant permission to enter the country. We ensured that, if a visa was held for United States, Japan, or the European Union, businessmen could enter Costa Rica without a visa. That way, the business community, which was what we were interested in, could enter our country with ease. These were a few of the interesting aspects of the negotiation.

 We were sort of prejudiced that it would be a complex negotiation, in which China would act very conservatively where opening its market was concerned. But, it proved not to be so. In the end, the negotiation, which was fairly fluent, took just ten months, which is also almost unheard-of in a trade negotiation.




PRAGMATISM IS
THE MAIN
CHARACTERISTIC OF
CHINESE NEGOTIATORS

Chile and China are countries that depend on external trade and are therefore ready to open up their economies fast. The difficulties were to do with the more cultural side of the negotiation. It's relevant that China is an economy where the state sector has such a high share. This poses a challenge from the point of view of understanding the negotiation processes.

 We started negotiating in January 2008. The APEC meetings were based in Peru all that year and, toward the end, in November, there was going to be a Presidents' Summit in Lima, and it was in the interests of both the Chinese and the Peruvian presidents—but more so of the Chinese President—to announce the completion of the agreement. We then spent the whole of 2008 on a very strenuous negotiation, but with the goal of finishing that year. There were difficulties, just as there are in all agreements: for example, China's difficulties over excluding textiles and footwear from the negotiation. But basically it was quite a westernized negotiation, in English and in a traditional format—a very amicable affair all round. There was an issue at the start of the negotiations where we wanted to be granted a small economy's principle of special and differential treatment from a larger economy. The Chinese negotiators managed to turn the tables on us by claiming that China is


a poorer country than Peru because, if Chinese GDP is divided among its inhabitants, it works out less than Peru's per capita income. So the attempt to have this principle accepted was unsuccessful. In any case, we excluded more headings than China, and they opened their market more than we did.

IS IT BETTER TO NEGOTIATE AS A
BLOC OR BILATERALLY?


 Our case is a very special one because we are part of the bloc of the oldest customs union on the continent: Central America. And we were in the middle of the process of negotiation with the European Union, which is now over, even as a region. And we have, as a region, negotiated the free trade agreement with United States. The peculiar thing is that Costa Rica was the only country in the Central American region that had diplomatic relations with the People's Repub-



lic of China, so we couldn't go as bloc. I believe it's desirable to negotiate as a bloc. But if other countries can't negotiate, it isn't a bad thing for one to move alone, because that country then has the expertise and paves the way for the rest. We don't believe in a do-nothing policy; the regional bloc should not be a limiting factor. Also, the agreement also benefits Central American firms with headquarters in Costa Rica, or subsidiaries and operations. There really is a direct benefit then.

 The different ways of negotiating have benefited our export sector. In this respect, we have 25 bilateral trade agreements that have been the cornerstone of export sector's growth and development in our country. There is currently a different setup from the point of view of international trade. The negotiations are taking place around these economic megablocs. And, no doubt, negotiating powers will change and, in that context, the option of negotiating between blocs can become meaningful. We'll attend a negotiation—be it bilateral, plurilateral, or multilateral—insofar as it can be ben-

eficial and as Chile has been doing for more than 20 years: inserting itself very deeply into the world.

 You have to negotiate with countries that have the same development model. In the Andean Community, Peru and Colombia have a development model based on integration to the world and opening up markets. On the other hand, Bolivia and Ecuador have a more closed model. So we can't negotiate as an Andean Community bloc either with the European Union or United States. That's why Colombia and Peru have set about creating the Pacific Alliance with countries that have the same development model: Chile and Mexico. The four countries are seeking to open borders, bring in products, and remove barriers to trade. And it's working: our countries are growing and our most competitive industries are diversifying. But to get a Peruvian product to cross the border into Argentina or Brazil is very difficult: lots of procedures, lots of barriers; not tariffs, but previous licensing and movement certification. So there are countries where trade flows and there are others with difficulties. Peru is going for free trade. We've just finished negotiating the Trans-Pacific Partnership Agreement (TPP) and we're strengthening the Pacific Alliance. Without neglecting bilateral relations with MERCOSUR, by the way. But we want it not just to lower tariffs, but to remove barriers to trade.



UNLIKE THE US,
CHINA DOES NOT
PUT EMPHASIS
ON INTELLECTUAL
PROPERTY
ISSUES

HAS YOUR COUNTRY'S EXPORT AND
PRODUCTION MATRIX CHANGED
SINCE SIGNING THE AGREEMENTS
WITH CHINA?

 An agreement is bilateral; it isn't just to make importation easier and cheaper. Costa Rica imports plenty of products from the world that China manufactures



IT IS NECESSARY
TO RECOGNIZE THE
IMPORTANCE OF THE
PUBLIC SECTOR AND
ITS INFLUENCE IN CHINA

very well and that are of great benefit to the population. For example, something as simple as slippers today is cheaper than before in Costa Rica. In the closed model, only large exporters had access to Chinese products. Today it's been democratized a great deal, which has led to more competition in sectors like toys or cell phones. They're easy to import from China and that's brought a huge benefit. In exports, we wanted to participate in agricultural products where we have export capacity. Costa Rica exports wood products, we have certified teak forests, which is a wood in high demand in China. We produce juices, fruit concentrates, and China is a big market. We're boosting our coffee output. Dairy products have entered China after a long process of certification, as well as beef. Our plan has been to place Costa Rica's wide range of agricultural products in that consumer market and, little by little, we've been getting there.

We still have a very high concentration in commodities, mining, and copper in the case of Chile. But perhaps the most relevant sector to have emerged this decade—no doubt underlining Chile's comparative advantage and increased competition in the world—is food exports. When we negotiated the FTA with China, we were selling around US\$200 million; today we're selling almost around the US\$2 billion mark in food. So, while it's true that copper still accounts for over 60% of what we sell to

China, I think food is now the standout marker of Chile's diversification of sales to Asia and, in particular, to China.

The export matrix hasn't changed radically. Making a free trade agreement involves building a vast highway, and you have to have cars that are ready to use highway. We're in the process of production diversification. Luckily, Peru is blessed with raw materials to export to the world, and we'll sell them with or without a free trade agreement. The country has high mineral exports, but they've fallen now due to the international recession and China's slower growth. But we also export agricultural products, fish products, which have value added as canned food, frozen food, and textiles. There is a process of production diversification that takes time. What has happened is that industry in Peru has not disappeared, as everyone claimed when it came to signing free trade agreements. It was claimed industry would disappear and that hasn't come to pass. Far from companies going bust, new ones are opening.

HOW DO YOU THINK NEW TRADE AGREEMENTS LIKE THE TPP WILL IMPACT THE RELATIONSHIP BETWEEN CHINA AND THE REGION?

The TPP is in line with Chinese reforms. What China needs is time: it's no longer considered the factory of the world, the way we did ten years ago. They're going for more value added, they have labor needs. So the TPP looks to us like a big step in that it can get other actors involved. And China has changed its discourse. Once they have their program of reforms, I'm certain they'll come in on the TPP. The economic dynamism is no longer in the European



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Union or United States. Asia is where the economic growth and middle-class consumers that can consume our products are. So we have to link up with Asia in smarter ways. Both the TPP and the Pacific Alliance, in this case, are initiatives that can help in that direction.

Nowadays the world is built around plurilateral agreements. Multilateralism in trade, historically the GATT, then the WTO, has not been able to make a leap forward or major breakthrough in terms of creating new rules of international trade. This is bound up with the fact that the world has changed, with emerging countries having a different role. The TPP is the most relevant agreement in this respect in 20 years of WTO negotiations. And on the map in the area of international trade, the TPP is just a part of many ongoing negotiations. What is happening in the world is that these new rules of international trade are being segmented. There's a tension, undoubtedly. There's competition for countries like Chile: we represent 0.4% of the world economy and a significant portion of our product is sold beyond our borders. We have to participate in the creation of these new rules of international trade. We would like to have more robust multilateralism that applied to the entire region, but for now we're working on this "second best," which is the best way to develop rules with a view to the future.

China is trying to promote other agreements to create balances in trade. The TPP is the most important trade

agreement in the world: there are now twelve economies waiting for more APEC economies to join, and we have clear trade rules among us. Free trade agreements divert trade. I stop buying from someone and start buying from these new partners where I pay no tariffs. That has an impact. I don't believe only China should pay attention to this; MERCOSUR has to as well, because trade is going to shift from one side to another. Opening borders worked well in Peru from the 1990s. Our average tariff is 1.6%: it's like it didn't exist. China eliminated the one-child policy in 2015. This is going to increase the food market and consumption, and the impact on the region is going to be a positive one.

HOW TO ADD VALUE TO EXPORTS MADE TO CHINA AND TO AVOID THE RISK OF PRIMARIZATION ECONOMY?

Costa Rica established certain guidelines. For example, being a country with a vocation for conservation, we don't prioritize mining. In fact, mining or extraction activities in our country are



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IN ORDER TO EXPORT
COPPER A FTA
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INDUSTRY HAS NOT
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WE CREATED
NEW COMPANIES



MOST OF OUR
EXPORTS ARE NATURAL
RESOURCES.
DIVERSIFICATION
TAKES TIME

minimal. So we perhaps can't offer China the product they most want. Nor are we characterized by the export of commodities or basic goods; we've always done specialties. Our products, like bananas for example, or coffee, are traded at international level well above the average because these are products with value added, such as top-level planting practices, fair work, even organic products. From the outset, we have tried to place value-added products. We also have a program of immersion in the Chinese economy, where we prepare companies for a year, after which they're taken to China and helped with the business office there. There's a whole country strategy to position the Costa Rica Especial brand, which involves a group of products specially for the Asian market. When you look at the trade deficit, it's very favorable for Costa Rica, because we don't produce cars, and Chinese cars are becoming more and more popular, and coming in at lower prices. We don't produce mobile telephones. These imports are articles that would have been imported from other countries anyway, and are now being imported cheaper from China.

The important thing is to build on comparative advantages and to be aware that countries have different production structures and economic institutions. We have to complement each

other in our production, which is what happens with Chile and China. Today exporting food isn't the same as it was ten years ago. There's more value added here. There are more services associated with the sale in a heading. Value added in the field of exports is also bound up with the possibility of selling services. Tourism alone is one of our countries' export areas to the extent that the regulatory and promotion conditions are created to attract Chinese tourists, who are today travelling around the world en masse. The value added can be expressed in direct sales, or sales with more attendant services, technology, and logistics.

Most of what we export to China is primary products, and that's going to remain so. But non-primary products with value added have grown 83% in the early years of the agreement with China. 411 new products have begun to be exported and over 200 companies have started exporting to China. It's a process that's already under way. Production diversification doesn't come about overnight; free trade agreements help it, because to export copper you don't need a free trade agreement.



NEGOTIATION IS ALWAYS
HARD. YOU NEED TO BE
VERY PATIENT. THE IDEAL
WOULD BE TO NEGOTIATE
AS A GROUP OF
COUNTRIES OR A REGION
TO HAVE MORE
NEGOTIATION POWER

WHAT ARE THE MAIN LESSONS TO BE LEARNT SO FAR FROM THE NEGOTIA- TION PROCESSES AND THE IMPLI- MENTATION OF TRADE AGREEMENTS WITH CHINA?

Negotiation is relatively easy, but at the same time it's tough. You focus on the important issues. There are peripheral things, but what's most important is access to the Chinese market, which is achieved by preparing the exporting class, by preparing the private sector, by government support, and by having a trade facilitation office that can break down the traditional barriers that exist in China's public institutions due to language limitations and ignorance of many Chinese activities in international markets. They're new in international markets, so a great deal of public-private partnership is needed to get in. The private sectors can't get in on their own. We aren't big enough to go. Ideally, we should go as part of a group of countries.

There are three concepts applicable to other negotiations. First, patience.

The processes with the Asian countries generally take time from the point of view of deepening the economic, political, and even personal links. Second, a lot of flexibility is needed. And third, a large dose of pragmatism.

The important thing is to have a negotiating team that isn't improvised, but is multisectoral, covering the various ministries with leadership. In our case the Ministry of Foreign Trade. But it has to be a team that is convinced about free trade, about trade openness. It's also key to unify positions. Many times the Ministry of Agriculture has different interests than the Ministry of Labor. So there has to be a political decision at the highest level to indicate which road to take. You also have to be very persistent, very clear about where your red lines are, what you aren't capable of conceding as a country, including the risk of not striking an agreement. I've taken part in 17 FTA negotiations. The best are those where trust in others, trust in your counterpart, is built from day one. Those negotiations are very quick and very honest. ■



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TODAY, EXPORT FOOD
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ANALYSIS

After the Boom: The Costs of Latin America- China Agricultural Trade

Mauricio Mesquita Moreira
BID

André Soares
BID



IN JUST TEN YEARS, TWO ECONOMIES THAT BARELY TRADED WITH EACH OTHER HAVE BECOME IMPORTANT TRADING PARTNERS. THE BOOM IN COMMODITY PRICES WAS ESSENTIAL. LOOKING FORWARD, LOWER PRICES DEMANDS A MORE IMPORTANT ROLE FOR TRADE POLICY. THIS ARTICLE PRESENTS THE PRELIMINARY RESULTS OF AN ONGOING INVESTIGATION BY THE INTEGRATION AND TRADE SECTOR OF THE IDB. THE MAIN GOAL IS TO ANALYZE TRADE BARRIERS AND THEIR IMPACT ON EXPORTS FROM LATIN AMERICA AND THE CARIBBEAN TO CHINA. IT FOCUSES MAINLY ON THE ISSUES OF MARKET ACCESS FOR AGRICULTURAL PRODUCTS, USING DATABASES ON TRADE, OFFICIAL DOCUMENTS AND A SERIES OF INTERVIEWS WITH GOVERNMENT OFFICIALS AND BUSINESSMEN.

In the space of ten years, two economies that barely traded, let alone exchange investments, have become major trade partners. Driven by a booming exchange of commodities for manufacturing goods, China became LAC's second largest trading partner— with 12.9% of the region's trade in 2014-- and the largest trading partner of countries such as Brazil, Chile and Peru. Since 2012, however, this boom seems to have come to an end. Bilateral trade growth has decelerated sharply and turned negative in 2014, on the back of marked and intertwined slowdowns of China's and LAC's growth, whose roots range from a protracted recovery of the world economy, to the diminishing returns of China's growth and to macroeconomic mismanagement in some LAC's largest economies.

This turn of events has been raising questions about the future of the relationship. Does this slowdown signal a new pattern and loss of dynamism of bilateral trade or just a strong cyclical adjustment, prompted by an unusually

long commodity cycle?

The right answer to this question seems to have elements of both, but the cyclical adjustment seems to explain most of the story, if only because there has been no significant change in the fundamentals behind last decade's dynamism. Yes, China is unlikely to return to a two-digit growth because it is already experiencing inexorable diminishing returns. As the stock of capital grows and the productivity gains associated with moving people to higher productivity activities are exhausted, return to investment tends to fall and so does growth. Lower growth, in turn, compounded by the growing share of services in GDP, translates into a less dynamic demand for commodities.

However, with a GDP per capita of US\$ 7.6 thousand, China is still far from experiencing the low rates of return seen in developed countries or their levels of services participation in the GDP. If we add to these expectations the fact that the country's natural resource constraints will not get any better, it


is not hard to see a scenario where the growth of the demand for LAC commodities remains robust, though not epic as in the last decade. Therefore, there is no good reason to believe that bilateral trade will lose its relevance or that its pattern will be radically altered.

Looking forward, there will be less tolerance to the sort of neglect lent to trade barriers that has marked the boom years. That is particular the case for most of LAC, which was granted "overnight" a huge market for its commodities, and, therefore, had little incentive for a more forceful trade policy.

In this scenario, we expect that trade policy will gain more relevance, but any greater policy activism will face a significant obstacle. There is not enough infor-

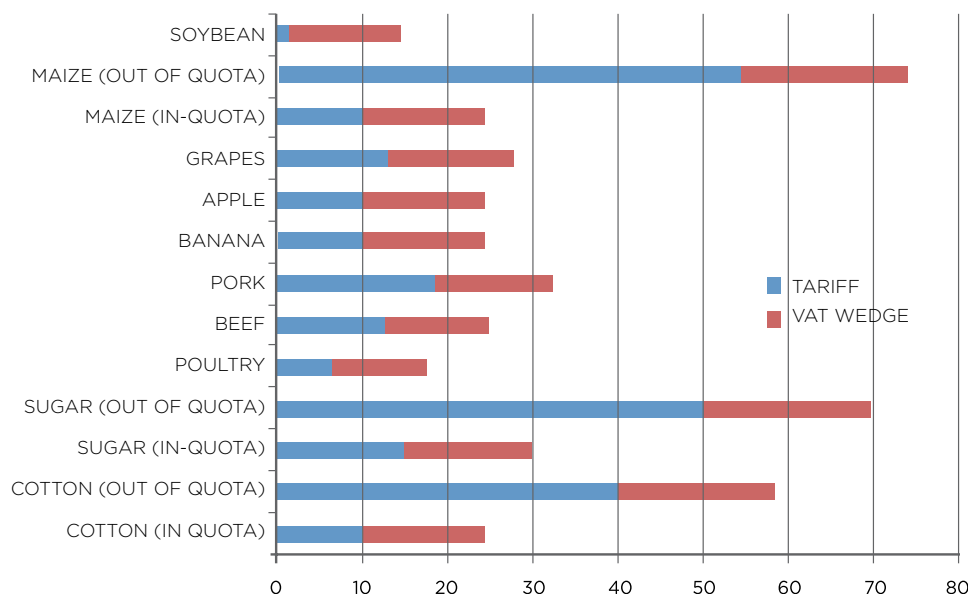
mation on the specifics of China's trade regime, nor enough policy analysis on its impacts on trade and investment flows. This paper presents the preliminary results of an INT's ongoing research and hopes to contribute to close this gap by offering a more detailed analysis of the trade barriers and their impact on LAC exports to China. It is not intended to be exhaustive. It focuses mainly on more pressing market access issues for agricultural goods, identified by an extensive analysis of trade data and official documents, as well as by several interviews with government officials and firm executives on both sides of the relationship. Most of the no less important, but exceedingly complex, government support issues are left for future research.

TABLE 1
China's Import Tariffs. 2013

 Average Applied MFN Tariff (%)	Total	Agriculture	Manufacturing	Mining
Simple average (6-dig)	9,9	13,4	9,3	3,2
Average weighted by Chinese imports	4,6	10,3	5,4	1
Argentina's exports to WLD	14,4	17,3	13,1	1,7
Brazil's exports to WLD	10,1	17	9,2	0,8
Colombia's exports to WLD	4,1	12,3	9,5	1,4
Mexico's exports to WLD	9,6	16,1	10,9	0,7
World's exports to WLD	8	16,1	8,5	2,4

Note: See technical appendix for classification.
Source: tariffs from WTO, trade UN COMTRADE, 2013.

FIGURE 1
IMPORT TARIFFS AND THE VAT WEDGE



Note: VAT wedge is the difference between the effective VAT rates for domestic production and imports
Source: IDB-INT with Tains data for tariffs and interviews and USDA 2007 for the VAT wedge.

DO TARIFFS STILL MATTER?

LAC's well known difficulties to diversify its exports to China go well beyond trade costs and are rooted in plain comparative advantages, as well as historically low investments in education and technology. That does not mean, however, that trade barriers do not play a role in these difficulties or that trade policy is powerless.

In fact, despite China's significant progress toward trade liberalization, LAC's exporters still face significant barriers to penetrate the Chinese market, which are particularly binding for natural-resource intensive sectors, where LAC has strong comparative advantages

and where diversification is more likely to occur. Even more worrying is the fact that the relevance of these barriers often increases with the exports' levels of processing and sophistication.

A brief overview of the current structure of China's import tariffs, shown in Table 1, leaves little doubt that agriculture should be at the top of LAC's bilateral trade agenda. The average tariff for agriculture is significantly higher than those for the other sectors, with tariff peaks as high as 65%. Not only tariffs are higher, but they are particularly stacked against LAC exports. With the exception of Colombia, the weighted average based on the composition of LAC's exports to the world is significantly higher than either the simple average

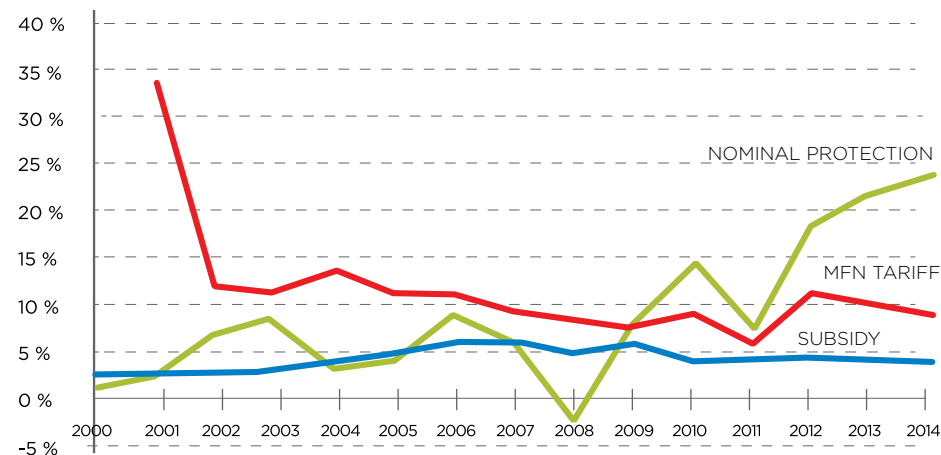
or the weighted average based on China's current imports.

Although revealing, average applied tariffs do not tell the whole story, particularly in the light of the complexities of China's trade regime. As with other East Asian economies in the past, processing trade plays a major role in China's dealings with the rest of the world, with imports facing radically different levels of protection depending on their end use (e.g. intermediate, capital or consumer goods) and their final destination. Goods imported to be processed and re-exported enjoy zero tariffs under special regimes, which consist mostly of (manufacturing) intermediate goods. Recent estimates (2010) put processing imports at 45%

of all imports—a number that is significantly higher when commodity imports are excluded.¹

What this means in practice is that if a country exports goods that are part of China's exporting value chain, it can take advantage of duty free access to a market that is currently valued at US\$ 881 billion. Unfortunately, that is not the case of Latin American exporters, who export a limited amount of manufacturing goods to China. Recent estimates are hard to come by, but data from China Customs Administration for 2006 indicates that in that year only 25% of imports from LAC were considered "processing imports" and therefore enjoyed duty-free status. If exporters are targeting the domestic market, which,

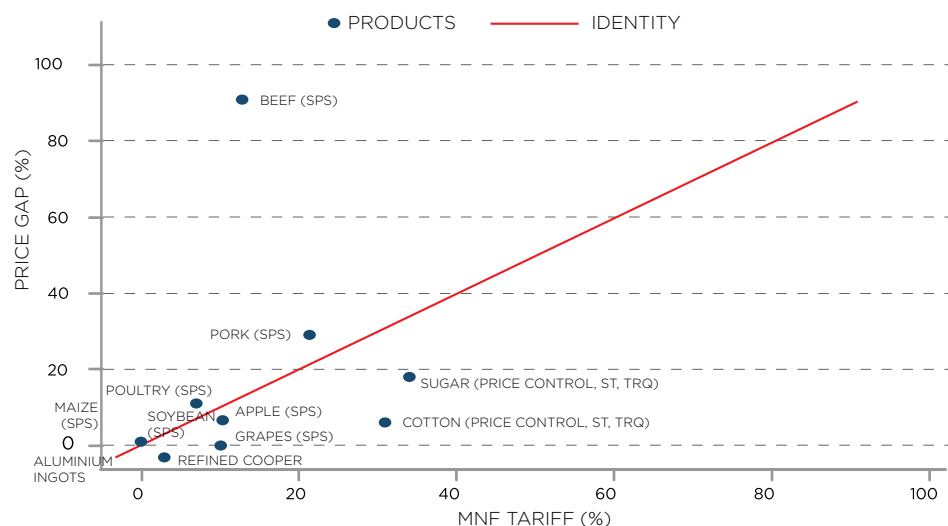
FIGURE 2
CHINA'S NOMINAL PROTECTION, SUBSIDIES AND MFN TARIFFS FOR AGRICULTURAL GOODS



Note: Nominal protection is the ratio between the average price received by producers at farm gate (including payments per ton of current output), and the border price (measured at farm gate). Subsidy (measured as a percentage of the value of output) includes payments based on input use, area, income and non-commodity criteria. Payments based on output are estimated to be virtually zero for most goods (See OECD Producer and Consumer Support Estimates Database). MFN is the weighted average (China imports from the world) most favored nation applied tariff.

Source: IDB-INT with OECD (subsidies and nominal protection) and WTO (tariffs) data.

FIGURE 3
PRICE GAP AND IMPORT TARIFFS FOR SELECTED COMMODITIES (2014)



Note: Price gap is the difference between domestic wholesale prices and international border prices. SPS are phytosanitary measures, TRQs are tariff-rate quotas, ST is state trading and HK are used when Hong Kong imports are used as a reference in the face of a mainland import ban. Source: IDB-INT with UNCTAD TRAINS, NDRC Price Monitoring Center, Ministry of Agriculture & COMTRADE

as suggested, is the overwhelming case of Latin American exporters, then applied average tariffs tend to under rather than overestimate the amount of protection they face.

BEYOND TARIFFS: TAXATION AND SUBSIDIES FOR AGRICULTURE

As mentioned earlier, the barriers that LAC exporters face to access the Chinese market go well beyond tariffs and involve other forms of protection. Tax policies and subsidies are some of these less visible but no less effective barriers, particularly for agricultural goods. Taxation stands out in terms of both low visibility and impact on exports.

The extra protection arises mostly from the way value-added taxes (VAT)

are applied to local and imported goods. This policy grants farmers a number of VAT exemptions, including the 13% tax on the sale of their products to wholesalers.² To have a better grasp of how much more protection this VAT wedge adds to tariffs, Figure 1 presents estimates for some of LAC's most important agriculture commodity exports. On average, the VAT wedge raises protection by as much as 63 percent, led by soybeans, whose import tariff jumps from 1.5 to 13.2 percent (tariff plus the VAT wedge). As discussed later, given that the demand for these commodities are in general very price sensitive, this extra protection can be easily be translated into billions of dollars of foregone revenue for exporters.

Even though the VAT wedge is about revenue foregone and not expenditure,

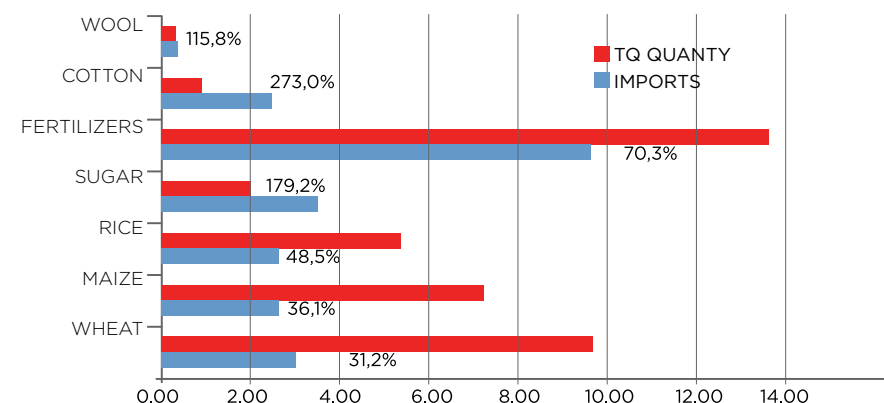
TABLE 2
China's STE, TRQ and price control policy characteristics

Product	HS-Code	Price control	TQ quantity (tons)
Wheat	10011000; 10019010; 10019090; 11010000; 11031100; 11032100	minimum procurement price scheme	9,636,000
Maize	10051000; 10059000; 11022000; 11031300 11042300	reserves set at market prices	7,200,000
Rice	10061011; 10061019, 10061091; 10061099 10062010; 10062090, 10063010; 10063090 10064010; 10064090, 11023010; 11023090 11031921; 11031929	minimum procurement price scheme	5,320,000
Sugar	17011100; 17011200, 17019100; 17019910 17019920; 17019990	temporary price program	1,945,000
Fertilizers	31021000, 31052000, 31053000, 31022100; 31022900, 31023000; 31024000 31025000; 31026000, 31027000; 31028000 31029000; 31031000, 31032000; 31039000 31041000; 31042000, 31043000; 31049000 31051000	benchmark factory prices and fluctuations	13,650,000
Cotton	52010000; 52030000	temporary price program	894,000
Wool	51011100, 51011900, 51012100, 51012900, 51013000, 51031010	not regulated by this measure	287,000
Tobacco	24011010; 24011090, 24012010; 24012090 24013000; 24021000, 24022000; 24029000 24029000; 24031000, 24039100; 24039900 48131000; 48132000, 48139000; 55020010 56012210; 84781000, 84789000	price of tobacco is set at the central level	not regulated by this measure
Crude Oil	27090000	not regulated by this measure	not regulated by this measure
Processed Oil	27100011; 27100013, 27100023; 27100024 27100031; 27100033, 27100039	determined on the basis of the price of crude oil on the international market plus the average processing fee, taxes and reasonable transportation fees in China	not regulated by this measure

Continúa en la siguiente página.

Out of quota rates	In quota rates	TQR allocated to STE in 2014	STE
65%	1-10%	90%	COFCO - China National Cereals, Oil and Foodstuff Import and Export Co. (Group)
20-65%	1-10%	60%	COFCO - China National Cereals, Oil and Foodstuff Import and Export Co. (Group)
10-65%	1-15%	50%	COFCO - China National Cereals, Oil and Foodstuff Import and Export Co. (Group)
50%	15%	70%	COFCO - China National Cereals, Oil and Foodstuff Import and Export Co. (Group) China National Export Bases Development Co. China Sugar and Wine Co.(Group) China Commerce Foreign Trade Co
50%	4%	90% for urea 51% for NPK 51% for Diammonium phosphate N/A for the others	China National Chemicals Import and Export Co. China National Agriculture Means of Production Group Co
40%	1%	33%	China National Textiles Import and Export Co. China National Cotton Reserve Corporation Beijing Jiu Da Textiles Group Co. Tianjin Textiles Industry Supply and Marketing Co Shanghai Textiles Raw Materials Co.
38%	1-3%	not regulated by this measure	not regulated by this measure
not regulated by this measure	not regulated by this measure	not regulated by this measure	China National Tobacco Import and Export Co. (Group)
not regulated by this measure	not regulated by this measure	not regulated by this measure	China National Chemicals Import and Export Co. China International United Petroleum and Chemicals Co. China National United Oil Co. Zhu Hai Zhen Rong Company
not regulated by this measure	not regulated by this measure	not regulated by this measure	China National Chemicals Import and Export Co. (all processed oil) China International United Petroleum and Chemicals Co. (all processed oil) China National United Oil Co. (all processed oil) Zhu Hai Zhen Rong Company (all processed oil) China Aviation Oil Import and Export Co. Ltd (Aviation kerosene) 64 Other companies (Fuel Oil)

Source: IDB-INT based on China's notifications to the WTO.

FIGURE 4
CHINA IMPORTS AND TRQ BY PRODUCT.
2014 (THOUSANDS OF TONS)

Source: IDB-INT with COMTRADE, MOFCOM and NDRC data.

it falls under the category of agricultural subsidies as defined by the WTO agreement on agriculture.³ It is not, however, the only agricultural subsidy LAC exporters should be worried about. The OECD, for instance, listed 24 active programs in China, ranging from payments based on input use to payments based on area, animals or income. They are estimated to have reached US\$54.2 billion, or 4 percent of the agricultural output, in 2014.⁴ This is substantial but considerably less than the revenue foregone under the VAT exemption, which can go as high as US\$ 1.1 trillion or 13% of the agricultural output, assuming it is being fully implemented.⁵

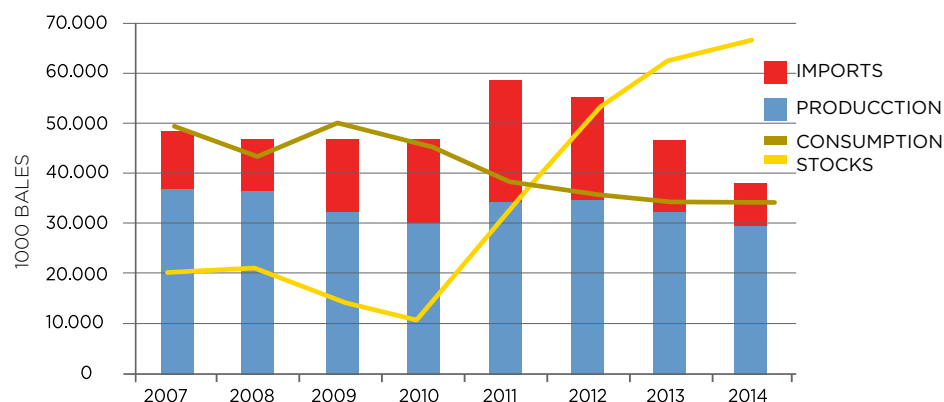
How relevant are non-tariff barriers?

As challenging as tariffs and subsidies can be, LAC exporters face an even tougher obstacle in dealing with the so-called non-tariff barriers (NTBs), which, because their different motivations, are discussed in two groups: technical and non-technical measures. The former include basically regulatory barriers such

technical standards (TBTs) and sanitary and phytosanitary measures (SPS). The latter covers state trading, tariff-rate quotas (TRQs) and price controls. As with the other barriers, agricultural goods are the most impacted and, therefore, are the focus of this analysis. There is enough evidence to suggest NTBs have been growing in importance over the last decade, certainly overtaking tariffs as the binding constraint for a significant number of LAC agricultural exports.

Figure 2 offers a general view of this trend. Whereas tariffs for agricultural goods experiences a sharp decline after the WTO accession and subsidies (excluding the VAT wedge) have stabilized around the 4% of agricultural output, the gap between domestic and international prices have been growing almost exponentially since 2008, a movements that can only be explained other measures of government intervention. Figure 3 offers a more detailed breakdown, with price gap and relevant NTB

FIGURE 5
CHINA'S COTTON PRODUCTION, CONSUMPTION, IMPORTS AND STOCKS



Source: IDB-INT with USDA data.

information on some of LAC most important commodity exports. As it can be seen, beef, pork and poultry are the most affected goods, with price gaps way above their import tariffs.

NON-TECHNICAL MEASURES

Over the last decade, China's imports of a small, yet relevant group of agriculture commodities and raw materials have been regulated by state trading enterprises (STEs) and TRQs, and have been subjected to price controls. Imports of grains (wheat, rice and maize), sugar, fertilizers and cotton are controlled by STEs and have TRQs; imports of wool are only subject to TRQs; and imports of tobacco, crude and processed oil are controlled by STEs and do not have TRQs. In addition, only crude oil and wool are not subject to any type of price control (see Table 2).⁶

These policies tend to harm LAC exports in at least three ways. First, state trading might allow STEs to behave as monopsonists, pushing down import prices. Second, whereas TRQs are less

distortive than outright import bans or simple quotas, they still can impose heavy losses to exporters (and consumers) depending on high the intra and extra quota tariffs are set, and on how the quotas (and rents) are distributed between importers and exporters and among export countries.⁷ Third, price controls may set domestic prices lower than the international level, discouraging imports.

As it happens with most TRQs regimes around the world, China's quotas are mostly underutilized. The only exceptions are cotton, sugar and wool (see Figure 4). Whereas underutiliza-

24

ACTIVE PROGRAMS
ARE IN CHINA RELATED
TO AGRICULTURAL
SUBSIDIES

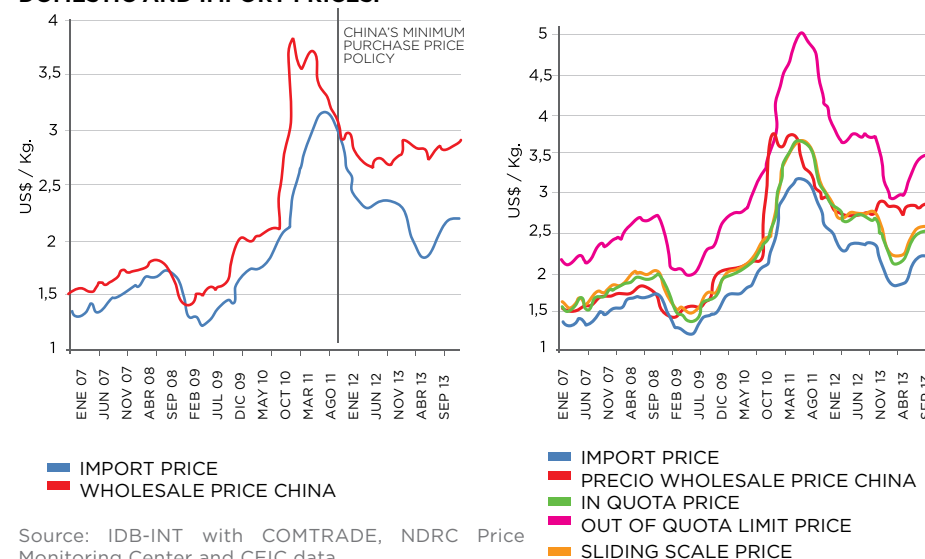
tion can be interpreted as evidence of a non-binding restriction, it might also be related to high in-quota tariffs and to the way the quotas are administered. In fact, some China's trade partners with agricultural interests have been raising concerns about "opaque management practices", particularly in terms of the amounts and the recipients of quotas.⁸ To determine exactly how much damage these practices have been imposing on LAC's export interests would require a complex and rigorous empirical analysis, which is beyond the scope of this report. Yet, a detailed analysis of one of LAC's important agricultural commodities—cotton --can help to shed some light on this issue.⁹

China's cotton imports have been systematically above the quota quantitative threshold, despite the punitive 40% out-of-quota tariff. More recently these imports experienced a boom as

a result of a minimum purchase price program launched in May 2011, amid a significant drop in cotton prices.¹⁰ The program has widened the gap between domestic and international prices, leading the government to accumulate huge reserve (60% of the world cotton reserves in 2014, according to the USDA) as spinning mills turned to the much cheaper and better quality imported cotton (see Figures 5 and 6).

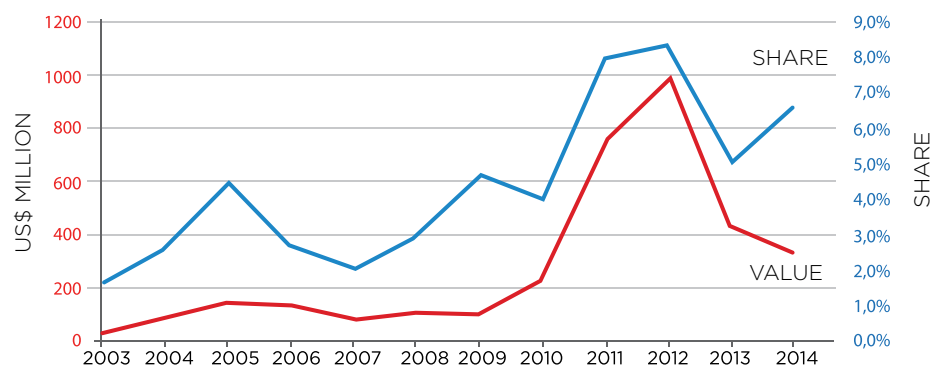
Ironically, this greater distortion introduced by the price support program has been instrumental in showing how much potential LAC's cotton exports have in China or how much they have been hampered by the TRQ. As show in Figure 7, imports from LAC took off after the price support program was introduced, particularly from Brazil and Mexico. It jumped from US\$ 103 million in 2008 to US\$ 984 in 2012, nearly tripling their market share to 8.3%. The boom, however, was short lived, as the

FIGURE 6
CHINA'S COTTON PRICE GAPS:
DOMESTIC AND IMPORT PRICES.



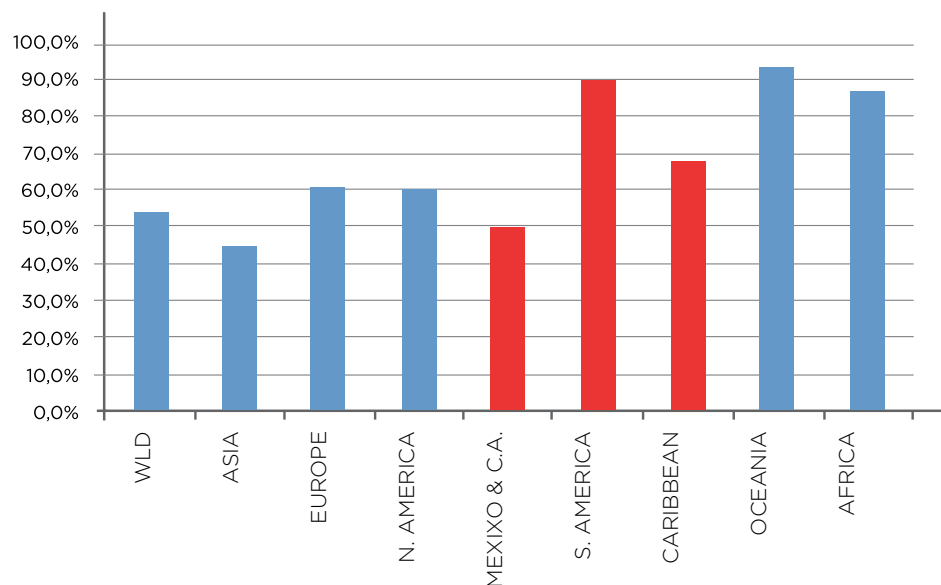
Source: IDB-INT with COMTRADE, NDRC Price Monitoring Center and CEIC data.

FIGURE 7
CHINA'S COTTON IMPORTS FROM LAC.
VALUE AND SHARE OF ALL IMPORTS, 2003-2014



Source: IDB-INT with COMTRADE.

FIGURE 8
SHARE OF CHINA'S IMPORTS SUBJECT TO AT LEAST ONE TECHNICAL MEASURE BY ORIGIN. 2011-2014 AVERAGE (%)



Note: The coverage measure is based on the compilation of technical measures (TM) at the tariff line, aggregated at the six digits of the Harmonized System. Each six digit is considered affected if there is at least one tariff line subjected to TMs

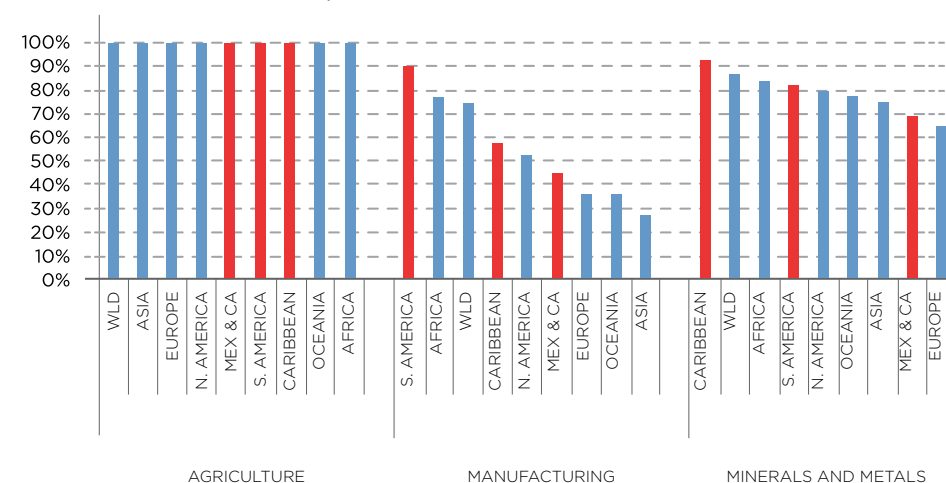
Source: IDB-INT with data from China's General Administration of Customs.

65%
IS THE AVERAGE
TARIFF ON AGRICULTURAL
PRODUCTS,
GREATEST OF
ALL SECTORS

government started in 2014 to sell their bloated state reserves through public auctions, incurring in deep losses.¹¹

Whereas non-technical measures such as TRQs have an unambiguous objective of protecting local producers and keep imports out, technical measures such as TBT and SPS are supposed pursue legitimate policy objectives, such as the protection of human health and safety, or protection of the environment. In practice, though, they can be discriminatory and create unnecessary obstacles to trade. Whether or not this is the case, it is an empirical question. The data does not suggest that LAC is unfairly targeted by these measures, but since the regula-

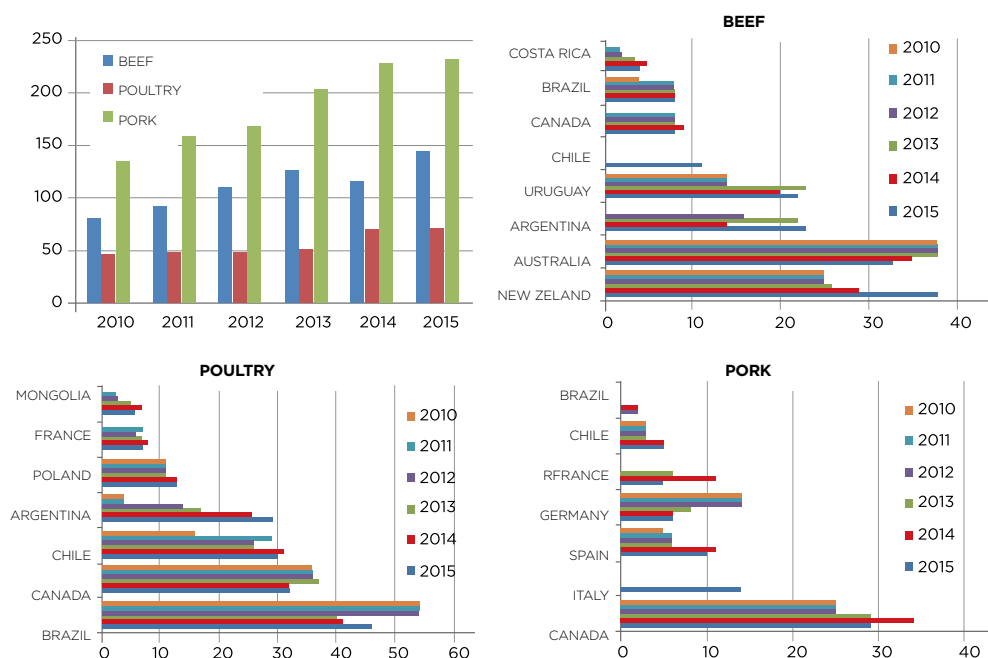
FIGURE 9
SHARE OF CHINA'S IMPORTS SUBJECT TO AT LEAST ONE TECHNICAL MEASURE: BY INDUSTRY AND ORIGIN, 2014 (%)



Note: The coverage measure is based on the compilation of technical measures (TM) at the tariff line, aggregated at the six digits of the Harmonized System. Each six digit is considered affected if there is at least one tariff line subjected to TMs

Source: IDB-INT with data from China's General Administration of Customs.

FIGURE 10
NUMBER OF FOREIGN EXPORT PLANTS APPROVED BY AQSIQ
(AS OF AUGUST, 2015)



Source: IDB-INT with data from AQSIQ Meat products inspection and quarantine access list - August reports (肉类产品检验检疫准入名单)

tory effort--in China and elsewhere--is mostly concentrated in agriculture and mining and since LAC's exports are so heavily concentrated in these sectors, they are more likely to pay their costs. That much can be seen in Figure 8, which shows that imports from South America, along other commodity-export regions, are more extensively affected; and in Figure 9, which makes it clear that this exposure comes from agriculture (or food-related manufacturing) and mining.

A review of the existing regulations and interviews with LAC exporters suggest that most of the difficulties are concentrated on agriculture exports and mostly related to opaque SPS rules

and long and uncertain waits to get the products certified. LAC's exports seem to be particularly hobbled by General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ)'s lengthy and sometimes opaque process of approval of processing plants and GMOs and by SPS measures that are often stricter than international standards. That has been particularly the case of meat, soybeans and maize exports, whose tribulations are discussed in more detail in the following paragraphs.¹²

Meats—AQSIQ's lengthy approval process has been of special relevance for meat exports, whose processing plants have to be certified. Until Au-

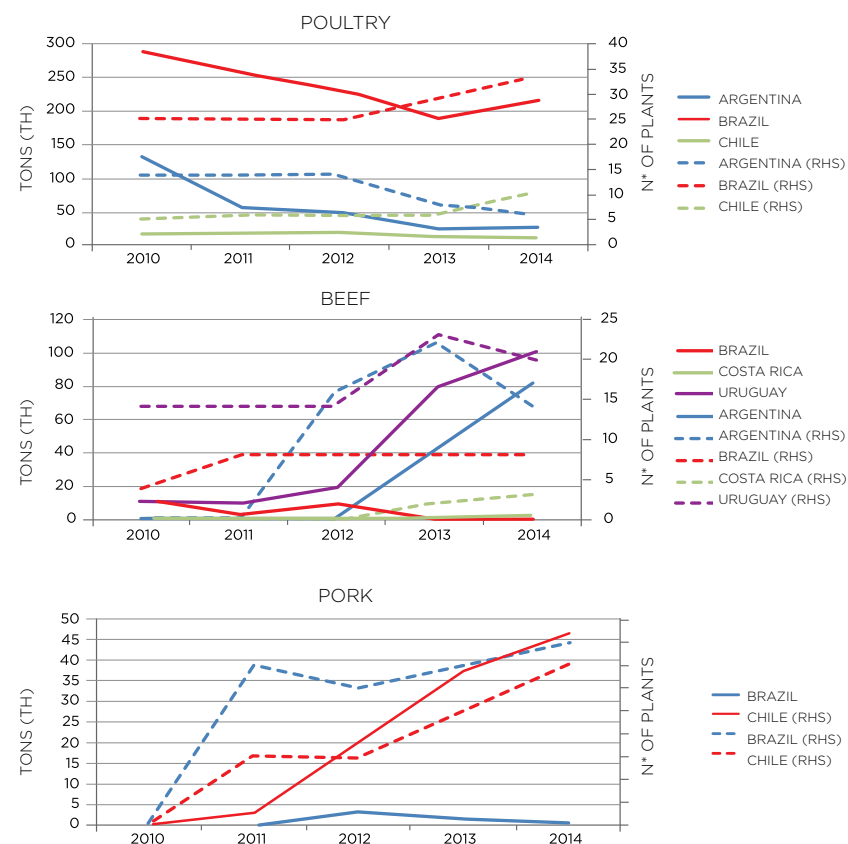
gust-2015, AQSIQ had approved 232 pork, 146 poultry and 71 beef foreign export plants.

At first glance, these numbers suggest that China is particularly strict over the approval of beef and poultry establishments. In the last four years, an annual average of 5.5 and 9.25 new poultry and beef plants received permission to export, respectively. By contrast, the pork segment has an average

of 23 new plants added per year (see Figure 10).

Figure 10 also indicate how difficult it is for LAC countries to expand their number of exporting plants, although there is a significant heterogeneity across countries. Brazil managed to add the most, with 14 poultry and 4 pork plants—still a fraction of its production capacity-- whereas Argentina had 8 beef and poultry plants suspended for

FIGURE 11
NUMBER OF FOREIGN EXPORT PLANTS APPROVED BY AQSIQ AND EXPORTED
QUANTITY FROM SELECTED LAC COUNTRIES



Source: IDB-INT with data from AQSIQ Meat products inspection and quarantine access list (肉类产品检验检疫准入名单)

unknown reasons.¹³

It is not clear how bidding these capacity constraints have been to LAC exports. Figure 11 shows that there is not a clear correlation between meat exports and the number of plants approved, suggesting that there are other supply, demand and regulatory factors at play.

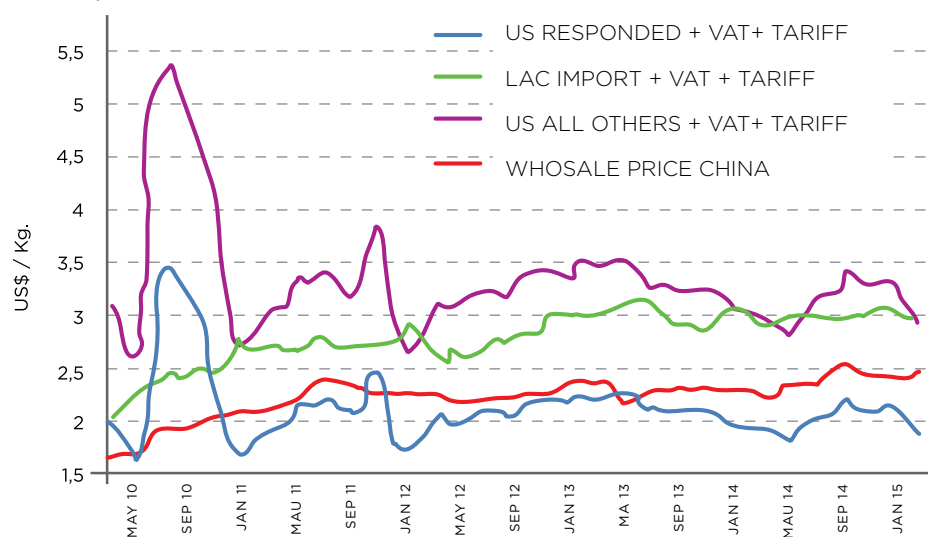
In the case of poultry, for instance, prices seems to be a major impediment as they have been systematically higher than that of U.S. exports and higher than the domestic wholesale price after accounting for the VAT and (specific) import tariff (Figure 12). The levy of antidumping and countervailing duties on U.S. exports in 2010 helped LAC to narrow and, in some cases, close the price gap with U.S., prompting a boom in its exports (Figure 13).¹⁴ But that would not have been possible if Brazil did not

have its initial batch of plants approved in December 2009.

The constraints imposed by the plant certification can perhaps be seen more clearly in the volume of LAC exports that take the Hong Kong (HK) route, which has a free trade agreement with the mainland, in an attempt to evade China's SPS controls. As shown in Figure 14, Brazil's exports to China caught up with those to Hong Kong after a critical mass of plants were certified in 2009, but they since remain comparable despite the huge difference in size between the two markets. That seems to reflect the fact that only 34 plants obtained certification of the 61 that have applied (CEBC, 2014). This sort of triangulation can also be observed in Argentina's and Chile's poultry exports when faced with SPS barriers.¹⁵

FIGURE 12

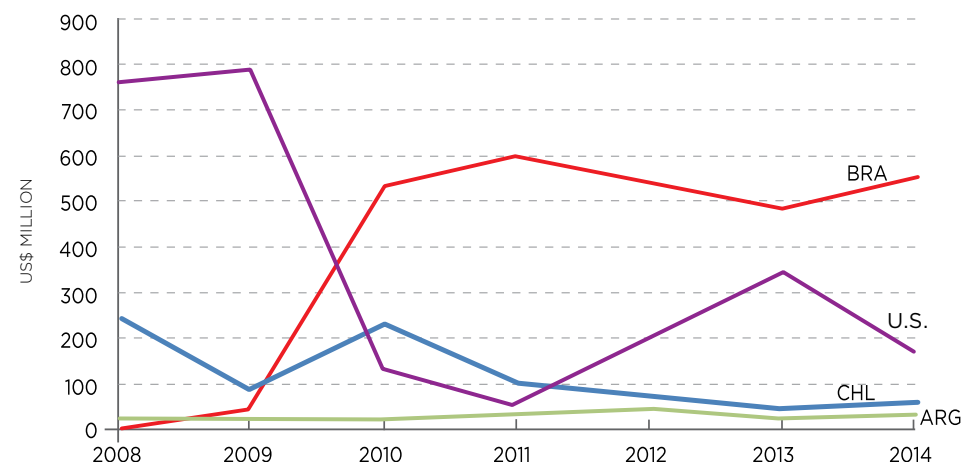
**CHINA'S DOMESTIC AND IMPORT PRICE OF POULTRY BY SLEECTED PARTNERS:
US\$/KG, MAY 2010-JAN 2015.**



Note: Import prices are based on average unit values. See footnote 11 for definitions of U.S. prices.
Source: IDB-INT with data from COMTRADE (trade) & AQSIQ (plants).

FIGURE 13

CHINA'S POULTRY* IMPORTS. SELECTED COUNTRIES, US\$ MILLION, 2008-14



* HS-6 020714, cuts and offal, frozen.

Source: IDB-INT with data from COMTRADE (trade) & AQSIQ (plants).

Although effective, the HK route does not come without a hefty cost. The use of a middleman raises transaction costs, forcing LAC companies to export for significantly lower prices. From 2013 to 2014, for instance, LAC export prices to HK were on average 60% lower than those of its exports to China and 39% lower than wholesale prices in the mainland, suggesting that a considerable share of the rents was being appropriated by the intermediaries.¹⁶

A TIME FOR A MORE ACTIVIST AND INFORMED TRADE POLICY

With the epic years behind us, further gains in LAC's relationship with China will depend on governments going beyond the past rhetoric and focusing on more mundane trade barriers, whose removal can make a difference in the quality of the relationship. This focus will

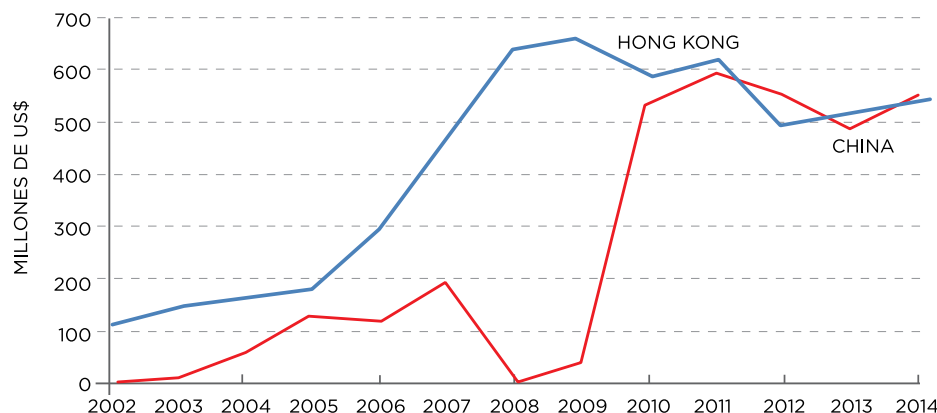
require a better understanding of these barriers and their impact on trade flows, an imperative that this article sought to begin to address.

This effort to close this knowledge gap can be more effective if there is a consistent collaborative effort between government, private sector, universities and think-thanks to identify the more relevant obstacles and better understand their impacts. That could be even more effective if it is done at the regional level since many LAC countries share commercial interests in similar products and they would all benefit from an improved trade intelligence and analysis.

Rather than heralding an era of growing trade conflicts, this more pragmatic focus on trade barriers should be seen as an imperative to expand and consolidate the past gains of a relationship, whose coming-of-age require more of a technical than political approach to its challenges. ■

FIGURE 14

**CHINA AND HONG KONG IMPORTS OF POULTRY* FROM BRAZIL.
US\$ MILLION, 2002-2014**



* HS-6 020714, cuts and offal, frozen.
Source: IDB-INT with COMTRADE-data

NOTES

¹Yu and Tian (2012)

²For a more detailed discussion about the VAT exemptions see Huang, Rozelle and Chang (2004) and USDA (2007).

³See Annex 3 of the agreement. https://www.wto.org/english/res_e/booksp_e/analytic_index_e/agriculture_02_e.htm#ann_3A1

⁴OECD Producer and Consumer Support Estimates Database. <http://www.oecd.org/tad/agricultural-policies/producerandconsumersupportestimatesdatabase.htm>

⁵That is, assuming that all local production of agricultural goods is exempted from the 13% VAT tax. The US\$ 11 trillion is obtained by multiplying the 2014 OECD estimate of agricultural output by the 13% VAT tax.

⁶See China's notification to the WTO for more details. https://docs.wto.org/dol2fe/Pages/FE_Search/DBFDocuments/22941/G/G/STR/N9CHNA1C1.pdf

⁷See, e.g., Li and Carter (2009).

⁸See, e.g., USTR 2014, p. 100.

⁹According to USDA data, Brazil was the third largest exporter of cotton in 2014, behind the U.S. and India. Argentina was in the 16th position and Mexico in the 26th. In terms of output, Brazil was in the top 6, Mexico in the top 11 and Argentina among the top 14. <http://apps.fas.usda.gov/psdonline/psdHome.aspx>

¹⁰The price program was an initiative launched by the NDRC alongside MOFCOM, the Ministry of Finance and five other ministries. For details on the regulation see: 发改委等联合发布今年起实行棉花临时收储制度 (Development and Reform Commission jointly issued the temporary storage of cotton this year to implement the system).

¹¹Ministry of Finance (2015). This process appears to have been far from smooth, with the auctions facing price and quality issues (see, e.g. Hornby, 2014 and China Cotton Association, 2014). For example, an auction organized

by the Xinjiang Production and Construction Corp, in August 2014, offered 12,322 tons of cotton and only resulted in the sale of 708 tons (5.7% of the total offer) due to poor cotton quality.

¹²In Circular n° 49 from the State Council (Several Opinions of the State Council on Strengthening imports), the Chinese government acknowledges that AQSIQ should be faster with its approval process. For more details, see: Commerce Department interpretation of the State Office Opinions on Strengthening imports (商务部解读国办关于加强进口的若干意见, 国办发[2014]49号)

¹³It appears that there were no relevant SPS reasons behind Argentine suspensions. AQSIQ's report does not specify the suspension motivations and there is no detailed information given by the agricultural department from the Argentine Embassy in Beijing.

¹⁴The antidumping (AD) and countervailing duties (CV) were adopted in February and October 2010, respectively. The AD duty was 53.4% for companies that responded to the investigation and 105% for the others. The CV duty was 12.5% and 30.3%, respectively. After a WTO decision in favor of the U.S., MOFCOM lowered the AD duty to 46.6% for companies that responded to the investigation and to 73.8% for all other companies. The CV duties were also cut 4.0% and 4.2%, respectively. For details see WTO-DS427: China – Anti-Dumping and Countervailing Duty Measures on Broiler Products from the United States.

¹⁵Argentina's exports to Hong Kong increased by a factor of 4 after China suspended eight Argentine export plants in March, 2013. Likewise, Chile's exports to Hong Kong increase by a factor of 7 in September 2013 after their exports to the mainland were suspended based on the presence a forbid chemical (dioxin) in their shipments (IDB-INT with COMTRADE data).

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INTEGRATION AND TRADE INFORMATION SYSTEM

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AN OVERVIEW OF SELECTED
FREE TRADE AGREEMENTS
WITH CHINA.

THE ROAD TO FLEXIBILITY

Renato Baumann
IPEA and Universidade
de Brasília ¹

AGREEMENTS ARE DISCUSSED
IN THIS PAPER: CHILE, PERU,
COSTA RICA, SINGAPORE, AUS-
TRALIA, SOUTH KOREA, NEW
ZEALAND AND ASEAN



CHINA HAS BEEN AN ACTIVE PLAYER IN NEGOTIATING PREFERENTIAL AGREEMENTS, HAVING SIGNED A NUMBER OF THEM WITH COUNTRIES IN DIFFERENT REGIONS. THERE ARE THREE AGREEMENTS ALREADY SIGNED WITH LATIN AMERICAN COUNTRIES – CHILE, PERU AND COSTA RICA – AND NEGOTIATIONS ARE GOING ON WITH COLOMBIA. IN THIS PAPER EIGHT OF THESE PREFERENTIAL TRADE AGREEMENTS ARE CONSIDERED (CHILE, PERU, COSTA RICA, SINGAPORE, AUSTRALIA, SOUTH KOREA, NEW ZEALAND AND ASEAN) AND THE COMPARATIVE ANALYSIS SHOWS THAT THEY PRESENT SOME COMMON FEATURES AT THE SAME TIME THAT SPECIFIC CHARACTERISTICS REFLECT THE ACTUAL INTERESTS OF CHINA IN EACH BILATERAL RELATION. THE BASIC STRUCTURE OF THESE AGREEMENTS SIGNED WITH CHINA IS THEN COMPARED TO AGREEMENTS SIGNED BY LATIN AMERICAN COUNTRIES WITH THE US AND THE EUROPEAN UNION. IT IS SHOWN THAT IF THE LATTER TWO OFTEN CORRESPOND TO PREVIOUSLY DEFINED TEMPLATES (‘ONE SIZE FITS ALL’) THE AGREEMENTS WITH CHINA ARE MORE ‘TAILOR-MADE’, TAKING INTO ACCOUNT SPECIFIC FEATURES THAT DIFFER AMONG PARTNERS.

La relación entre China y América Latina. The relation between China and Latin America goes back a long way. As is now well known, between the mid-XVIth century and early-XIXth century the so-called Silk Road via the Philippines had a quite intense flow of merchandises between China and the Americas. China exported not only silk, but also jewelry, gun powder, cotton cloth, arts and crafts and other products, and imported from Latin America food, soap, shoes, hats and other products².

This relationship acquired new dimension in the XIXth century, with the migration of Chinese workers to the Pacific coast of South and Central America, as well as to the railroad construction in North America.

Political turmoil by the mid-XXth

century of course led to a reduction of the relationship between China and the Americas, but since the beginning of the 1990s we see a gradual intensification of the economic links between the two, starting with a sharply increasing importance of China as a trade partner and more recently also as an important potential or actual investor in a number of Latin American economies³.

At the same time, an unprecedented phenomenon is taking place in Asia. Most countries in this region have traditionally resisted to signing preferential trade agreements. For several decades it was in Latin America (and in Africa) that one could find emphasis in the promotion of formal regional initiatives. Since the late 1990s, however, there has been a multiplicity of preferential agreements signed

by Asian countries, probably matching or even surpassing in number the amount of agreements signed by Latin Americans at the same time.

Part of the reasons for that has to do with the fact that the main economies in Asia are important producers and exporters of manufactured products and the production in this sector has become increasingly a fragmented process: the so-called ‘value chains’ require – almost by definition – free access to production goods, hence the need to provide a favorable trade environment⁴.

This is for sure only one of the reasons for the multiplicity of agreements. As will be shown in the coming sections other elements, such as, for instance, the need to regulate the bilateral treatment to investors or migrants and the conditions for disputes between economic agents and the State in other country are also present in this movement.

China has been an active player also in this area of preferential agreements, having signed a number of them with countries in different regions. There are three already signed with Latin American countries – Chile,⁵ Peru and Costa Rica – and negotiations are going on with Colombia. Hardly surprising, Chile, Peru and Colombia are members of the Pacific Alliance, and Costa Rica is

applying to join in. Chile and Peru are also APEC members as well as partners in the Transpacific Partnership (TPP). China has signaled, since the signing of the TPP, that it is aiming at compensating the effects of this Partnership by intensifying the signing of new preferential agreements as well as the initiatives related to its ‘One Belt, One Road’ strategy.

In this paper eight of these preferential trade agreements are considered (Chile, Peru, Costa Rica, Singapore, Australia, South Korea, New Zealand and ASEAN) and the comparative analysis shows that they present some common features at the same time that specific characteristics reflect the actual interests of China in each bilateral relation. Also, regional concerns – such as the conditions for labor movement – are present in the agreements signed with China’s neighbors, as different from those with Latin American countries. The basic structure of these agreements signed with China is then compared to examples of agreements signed by Latin American countries with the US and the European Union.

The appraisal of these documents suggests a few recommended aspects to be taken into consideration in further negotiations.



THE REALITY MAY DIFFER
IN A HUGE DISTANCE
FROM TEXTBOOKS

This article comprises seven sections. The next section presents a short set of considerations about how the subject of free trade area is dealt with by the trade theory and compares with these recent agreements meant to create free trade areas. This is followed, in the third section, by the identification of a number of features that are common to the reviewed agreements. The fourth section shows that apart from these common features some of the agreements present quite important specific characteristics, leading to the conclusion that they have a good deal of topics that are rather unique to some countries. The fifth section shows that the agreements signed by Latin American countries differ in some aspects to those signed by countries geographically closer to China in a number of aspects that have to do with this proximity. The sixth section compares this set of eight agreements with a few other treaties signed by Latin American countries with the US and the European

Union; as it comes out, there are some indications that the agreements with China seem to be more adaptive to the characteristics of the partner country. The seventh section brings a brief overview of the experience so far and suggests some implications for additional negotiations between Latin American countries and China.

II – A Brief Look at the Theory

We learn, from the textbooks on international economics, that a process of economic approximation between two or more countries has different levels. The most common listing was adopted by Bela Balassa (1961) and is known as the ‘Balassa taxonomy’.

According to this taxonomy a first level of more intense relation is the signing of preferential trade agreement. This comprises the reduction or elimination of import tariffs for a pre-defined set of products. It is often a limited set of items, and there is no need for additional measures other than informing customs staff in the countries involved in the process.

The following ‘stage’ is the formation of a free trade area. At this level most if not all the merchandises flowing between two or more countries are traded at very low or zero tariffs.

This raises the possibility that some agent might import a product from elsewhere and sell it at the partner country, given the full access to market. In order to avoid that it is required that the parties adopt as a criterion the amount of value that has been added in one of the participating countries. Only domestic production can be granted the possibility of full market access.

In order to have a better control over this process it is often considered that the formation of a free trade area is more likely to take place between neighboring countries.

Another condition is, of course, to avoid a situation where one of the partners benefits from systematic trade surplus in its relation with the other signatories of the treaty, given the condition of full market access. This is dealt with by coordinating the exchange rate policies of the participating countries.

This is textbook reality.

One basic characteristic of the agreements signed by China and reviewed here is that all of them are meant to create free trade areas. All of them have specific conditions regarding the proof of origin, as expected. But they refer to countries that are not neighbors⁶ and there is nothing related to the coordination of exchange rate policies, as might have been expected.

The onus of proof of the percentage of domestic value added is left to the trading agents, who have to submit annual certificates of origin of the products actually traded, and rely upon the specified conditions for dispute settlement established in each treaty.

This is not only a change in economic jargon. The agreements with China are also an outcome of a more ambitious relationship, going beyond simply trade in goods, often comprising disciplines in trade in services, in investment flows and in some cases also cooperation in policies for some sectors.

It remains to see to what extent the agreements signed with Latin American countries differ in substantive terms to those signed with countries elsewhere, and what recommendations stem from this comparison.

III – Common features of the agreements

Apart from being all of them concerned with the formation of free trade areas the revised agreements do present a few other common characteristics.

TABLE 1
BASIC STATISTICS
SELECTED CHINA AGREEMENTS

PARTNER	YEAR	NUMBER OF ARTICLES	NUMBER OF PAGES	NUMBER OF ANNEXES
CHILE	2004	23	275	3
PERU	2005	121	82	9
COSTA RICA	2008	214	121	14
ASEAN	2008	115	75	7
NEW ZEALAND	2009	201	123	12
SINGAPORE	2010	168	94	13
AUSTRALIA	2015	222	161	11
SOUTH KOREA	2015	305	216	14

Source: China FTA Network in www.fta/mofcom.gov.cn.

This section builds partially on the several articles published in Oliveira/Ratton (2013). The chapters in that volume present a detailed analysis of five treaties signed by China, comprising the three agreements with Latin American countries, plus the ones with New Zealand and Singapore. The present article adds three other agreements to that analysis and adopts a slightly different approach to the analysis of the texts.

In all the eight agreements reviewed here there is specific reference to the fact that all bilateral communications as well as the required documentation shall be written in English. This is a necessary condition, given the limited access to mandarin.

In all the agreements there is explicit concern with providing a maximum degree of transparency to policies as well as to specific decisions affecting bilateral relations.

In all but the agreement with Australia there is a specific provision where the parties agree to negotiate future acceleration of the process of reduction of bilateral tariffs and custom duties or the implementation of commitments.

In all but the agreements with ASEAN and Singapore there is careful consideration of national treatment and most-favored-nation treatment and market access conditions to both goods and services⁷. In some cases this refers also to investment, like in the agreements with Peru and Korea.

The two earliest agreements – those of China with ASEAN and Chile – are exceptions and make no reference to it, but every other text brings rather detailed treatment of agreed customs procedures, dealing with such aspects like the criteria for review and appeal, the need for cooperation/mutual consultation, the possibility of a party providing

THE EIGHT AGREEMENTS RELATE TO WTO RULES ON ANTI-DUMPING AND COUNTERVAILING DUTIES

advance ruling prior to the importation of a good, implementation, customs valuation procedures and the identification of competent authorities.

In general China links its agreements to the WTO rules. China's agreements regulate subsidies to trade in goods based on WTO-plus rules⁸ or by explicit references to the WTO Agreement on Subsidies and Compensatory Measures. All treaties reaffirm the intention to eliminate subsidies and forbid the adoption of subsidies in the bilateral trade between the parties. This is true for most of the reviewed agreements, with the single exception of the agreement China-South Korea. In this case there is reference only to subsidies to services. The WTO Agreement is only mentioned with regard to anti-dumping measures, countervailing duties and voluntary export restraint.

Except for the agreement with ASEAN, which refers to the WTO Agreement, all the others establish rules to deal with both global safeguards and bilateral/sector safeguard measures.

As far as the rules of origin are concerned all agreements present the same identification rules as those of WTO. The basic formula for the Regional Value Content (RVC) adopted in most agreements except the one with ASEAN is [(value of the good minus the value of non-originating material)/value of the good] times 100. The RVC should not be less than 40%. The agreements

TABLE 2
AGREEMENTS WITH THE EUROPEAN UNION

CHILE	PERU AND COLOMBIA
Part I - General and Institutional Provisions Title I - Nature and Scope of the Agreement Title II - Institutional Framework Part II - Political Dialogue Part III - Cooperation Title I - Economic Cooperation Title II - Science, Technology and Information Society Title III - Culture, Education and Audio-Visual Title IV - State Reform and Public Administration Title V - Social Cooperation Title VI - Other Cooperation Areas Title VII - General Provisions Part IV- Trade and Trade-Related Matters Title I - General Provisions Title II - Free Movement of Goods Chapter I - Elimination of Customs Duties Chapter II - Non-Tariff Measures Chapter III - Exceptions Title III - Trade in Services and Establishment Chapter I - Services Chapter II - Financial Services Chapter III - Establishment Chapter IV - Exceptions Title IV - Government Procurement Title V - Current Payments and Capital Movements Title VI - Intellectual Property Rights Title VII - Competition Title VIII - Dispute Settlement Chapter I - Objective and Scope Chapter II - Dispute Avoidance Chapter III - Dispute Settlement Procedure Chapter IV - General Provisions Title IX - Transparency Title X - Specific in Trade Matters of the Bodies Established under this Agreement Title XI - Exceptions in the Area of Trade Part V - Final Provisions	I - Initial Provisions Essential elements General Provisions Definitions II - Institutional Provisions III - Trade in Goods Market access for goods Trade remedies Customs and Trade Facilitation Technical Barriers to Trade Sanitary and Phytosanitary Measures Movement of Goods Exceptions IV - Trade in Services, Establishment and Electronic Commerce General Provisions Establishment Cross-Border Supply of Services Temporary Presence of Natural Persons for Business Purposes Regulatory Framework Computer Services Postal and Courier Services Telecommunication Services Financial Services International Maritime Transport Services Electronic Commerce Exceptions V - Current Payments and Movement of Capital VI - Government Procurement VII - Intellectual Property General Provisions Protection of Biodiversity and Traditional Knowledge Provisions Concerning Intellectual Property Rights Enforcement of Intellectual Property Rights Transfer of Technology Cooperation VIII - Competition IX - Trade and Sustainable Development X - Transparency and Administrative Proceedings XI - General Exceptions XII - Dispute Settlement Objectives, Scope of Application and Definitions Consultations Dispute Settlement Procedures General Provisions XIII - Technical Assistance and Trade-Capacity Building XIV - Final Provisions

TABLE 3
AGREEMENTS WITH THE US

CHILE	PERU AND COLOMBIA
I - Initial Provisions II - General Definitions III - National Treatment and Market Access for Goods National Treatment Tariff Elimination Special Regimes Non-Tariff Measures Other Measures Agriculture Textiles and Apparel Institutional Provisions Definitions IV - Rules of Origin and Origin Procedures Rules of Origin Origin Procedures Definitions V - Customs Administration VI - Sanitary and Phytosanitary Measures VII - Technical Barriers to Trade VIII - Trade Remedies Safeguards Antidumping and Countervailing Duties IX - Government Procurement X - Investment Investment Investor-State Dispute Settlement Definitions XI - Cross-Border Trade in Services XII - Financial Services XIII - Telecommunications XIV - Temporary Entry for Business Persons XV - Electronic Commerce XVI - Competition Policy, Designated Monopolies and State Enterprises XVII - Intellectual Property Rights XVIII - Labor XIX - Environment XX - Transparency XXI - Administration of the Agreement XXII - Dispute Settlement XXIII - Exceptions XXIV - Final Provisions	I - Initial Provisions and General Definitions Initial Provisions General Definitions II -National Treatment and Market Access for Goods National Treatment Tariff Elimination Special Regimes Non-Tariff Measures Other Measures Institutional Provisions Agriculture Definitions III - Textiles and Apparel IV - Rules of Origin and Origin Procedures Rules of Origin Origin Procedures V - Customs Administration and Trade Facilitation VI - Sanitary and Phytosanitary Measures VII - Technical Barriers to Trade VIII - Trade Remedies Safeguard Measures Antidumping and Countervailing Measures IX - Government Procurement X - Investment Investment Investor-State Dispute Settlement Definitions XI - Cross-Border Trade in Services XII - Financial Services XIII - Competition Policy, Designated Monopolies and State Enterprises XIV - Telecommunications XV - Electronic Commerce XVI - Intellectual Property Rights XVII - Labor XVIII - Environment XIX - Transparency XX - Administration of the Agreement and Trade Capacity Building XXI - Dispute Settlement Dispute Settlement Domestic Proceedings and Private Commercial Dispute Settlement XXII - Exceptions XXIII - Final Provisions

Source: www.sice.oas.org



+40%

IS THE REGIONAL
VALUE CONTENT (RVC)
ACCORDING TO THE RULES
OF ORIGIN STIPULATED IN
THE AGREEMENTS

with New Zealand and Peru specify also that the goods are to be considered in FOB value whereas the non-originating materials are in CIF value.

The agreement with ASEAN presents a similar but slightly different formulation, but the 460% of domestic value-added condition also holds: $RVC = [(value\ of\ produce\ originating\ from\ outside\ of\ the\ territory\ of\ a\ Party + value\ of\ materials\ of\ undetermined\ origin)/FOB\ price] \times 100 < 60\%$.

As far as anti-dumping measures and countervailing duties are concerned all the eight agreements also refer to the WTO rules. In general the agreements consider the possibility of adopting the WTO dispute settlement mechanism as an alternative mechanism to the one defined specifically in the agreement.

A similar acceptance is found in relation to trade in services. The articles that regulate access to market often follow GATS Article XVI. One peculiar feature of the agreements with China is that they tend to deal with market access with a positive list when it refers to services (even though the agreement with Australia refers to both positive and negative list in services) and a negative list in relation to goods.

The agreements signed by China reflect its position of resisting the expansion of intellectual property disciplines. In all the eight cases reviewed here, with the only exception of Singapore, the parties refer to the WTO TRIPS Agreement. They also make explicit that the parties must establish and maintain transparent international property rights legislation and procedures. It is remarkable that the expression 'intellectual property' is not even mentioned in the Agreement with Singapore, as much as the fact that the

agreement with South Korea explicitly mentions no less than 12 international agreements ruling intellectual property.

It is common to find in China's agreements reference to the importance of intellectual property as a means to promote economic and social development, as well as the need to reach an equilibrium between authors' rights and the 'legitimate rights' of consumers.

In all agreements specific issues – such as the adoption of technical barriers to trade by the parties – are to be dealt with by specific bilateral committees, with the identification of focal points made explicit in the treaties texts.

In all the agreements there are references to the WTO commitments regarding technical barriers and sanitary and phytosanitary measures, with explicit reference to the WTO Sanitary and Phytosanitary Agreement and concerns with transparency and cooperation between the parties.

Government procurement is mentioned in every agreement except the one with ASEAN, but with significant differences. Whereas the agreements with Australia and South Korea explicitly say that the parties will commence negotiations after China accession to the WTO Agreement on Government Procurement, in all the others this issue is mentioned either under 'cooperation', as in the agreement with Chile ('establish and develop mechanisms for government procurement') or as

stating that government procurement does not apply to the agreed conditions for investment and trade in services.

China incorporates the issue of competition in most agreements (except the treaty with ASEAN), but with different emphasis. It is either mentioned under intellectual property that may harm competitive conditions (Chile) or referred as an instrument against monopoly (New Zealand) whereas in other agreements this topic deserves a specific article or even – as in the agreement with Singapore – a whole chapter.

The agreements refer to the exchange of information as a means to make the regulation of competition more effective. The provision of tech-

nical assistance, exchange of experience and qualification of personnel are among the most important axis of the agreements, as far as competition is concerned.

Except the agreement with ASEAN in all others there are disciplines ruling bilateral investment, be it in a specific article, as in Chile and Costa Rica (in this case a reference to a previous bilateral agreement on investment) or as a whole chapter, in the other agreements. Rules often comprise both portfolio and direct investment and determine the free transfer of funds.

Last but not by any means the least, and as already mentioned, none of the agreements bring any reference to any

kind of macro policy coordination, as would be expected in the process of creating a free trade area.

IV – Some Relevant Differences

These agreements reviewed here were negotiated and signed by China in different periods starting in 2004, as shown in Table 1. A total of eleven years separate the first one, with ASEAN, from the last two, with Australia and South Korea.

It is hardly surprising that the structure of a given agreement can have some influence upon the negotiating process of subsequent treaties. As shown in the previous section, there are actually a number of aspects that are common to these texts. It is worrying, however – from the perspective of those countries that do not have free trade agreements with China – that the conditions established in the already signed agreements might become a ceiling for further negotiations, so that the latecomers might eventually be forced to accept a number of conditions that are not originally in their immediate interest.

A look at this table indicates that the time sequencing has not implied a linear increase in size of the agreements: they vary significantly in size and scope. If anything, it can be said that the more recent agreement have become more

detailed in terms of number of subjects, as reflected in the number of articles.

One aspect that comes out from the comparative analysis of the Chinese agreements is that even though there are a number of common points, as shown in the previous section, in general these agreements are mostly ‘tailor-made’, meaning that they present specificities that vary according to the partner country. There is hardly a ‘one size fits all’ approach.

One first, important, difference to emphasize is that it is only the China-ASEAN agreement that explicitly refers to the recognition of China’s Market Economy Status, a recurrent demand by China in its political relations with other countries, and an issue that does not immediately belong to a trade agreement. Missing references to this issue in the treaties that followed may be a consequence of either that some countries have already formally recognized that status or that some others consider this step far too sensitive politically and economically to accept.

As far as the consultations on subsidies are concerned it is only the agreements with Costa Rica, South Korea, New Zealand and Peru that make it explicit that if there is a suspicion that one party is adopting export subsidies the other party may request consultations on the basis of the specific mechanisms established in those articles of the agreement dealing with dispute settlement.

Other difference is found in how the various agreements deal with the issue of intellectual property. For Australia this is dealt with in quite detailed manner, with specific reference to public health, patents, trademarks, geographical indications, plant breeder’s rights and copyright. For Singapore there is simply no reference to this topic. South Korea is even more careful than Australia, with reference to 12 international

CUADRO 4
ACUERDOS DE CHINA CON CHILE Y SINGAPUR

CHILE	PERU AND COLOMBIA
I - Initial Provisions	II - Initial Provisions
II - General Definitions	II - General Definitions
III - National Treatment and Market Access for Goods	III - Trade in Goods
IV - Rules of Origin	IV - Rules of Origin
V - Procedures Related to Rules of Origin	V - Customs Procedures
VI - Trade Remedies	VI - Trade Remedies
Bilateral Safeguards	VII - Technical Barriers to Trade
Global Safeguards, Antidumping and Countervailing	Sanitary and Phytosanitary Measures
VII - Sanitary and Phytosanitary Measures	VIII - Trade in Services
VIII - Technical Barriers to Trade	IX - Movement of Natural Persons
IX - Transparency	X - Investment
X - Dispute Settlement	XI - Economic Co-operation
XI - Administration	XII - Dispute Settlement
XII - Exceptions	XIII - Exceptions
XIII - Cooperation	XIV - General and Final Provisions
XIV - Final Provisions	

Source: www.sice.oas.org.

95%
OF CHINESE
INVESTMENT WAS
CARRIED OUT IN ONLY
SEVEN COUNTRIES IN
THE REGION

agreements + 26 items concerning specific matters, such as broadcasting and communication to the public, trademarks protection, genetic resources, plant variety protection, industrial designs, copyright protection and others.

For New Zealand intellectual property is presented in general provisions, with specific reference to genetic resources, traditional knowledge and folklore. The agreement with Chile makes reference to two WTO Agreements, to public health, to promotion of social and economic development in the digital economy, as well as to intellectual property as a research tool. For Peru there is reference to WTO agreements and specific mention to genetic resources, traditional knowledge and folklore and to geographical indications. Finally, the agreement with Costa Rica refers to the TRIPS Agreement and mentions explicitly genetic resources, knowledge and folklore, public health, technical innovation and transfer of technology and geographical indications, with a positive list of items.

The possibility of electronic com-

merce is mentioned in some details in two agreements. The one with Australia establishes the commitment to not imposing customs duties on electronic transmission between the two countries, emphasizes transparency, respect for UNCITRAL Model Law of Electronic Commerce, the electronic authentication and digital certificates, online consumer protection, online data protection, paperless trading and cooperation in this area. The agreement with South Korea also forbids the adoption of customs duties on transmissions, electronic authentication and electronic signatures and stimulates the protection of personal information, paperless trading and cooperation.

Australia, South Korea, Peru and New Zealand are the most detailed agreements in terms of establishing customs procedures. These are the only four that explicitly give emphasis to paperless procedures by the use of automated systems.

There are differences also in terms of the degree of details for the dispute settlement mechanisms. The agreement

TABLE 5
CHINA AGREEMENTS WITH ASEAN AND NEW ZEALAND

ASEAN	New Zealand
I - Definitions	I - Initial Provisions
II - National Treatment on Internal Taxation and Regulation	II -General Definitions
III - Tariff Reduction and Elimination	III- Trade in Goods
IV - Transparency	IV - Rules of Origin and Operational Procedures Rules of Origin Operational Procedures
V - Rules of Origin	V - Customs Procedures and Cooperation
VI - Modification of Concessions	VI - Trade Remedies General Trade Remedies Bilateral Safeguard Measures
VII - WTO Disciplines	VII - Sanitary and Phytosanitary Measures
VIII - Quantitative Restrictions and Non-Tariff Barriers	VIII - Technical Barriers to Trade
IX - Safeguard Measures	IX - Trade in Services
X - Acceleration of Commitments	X - Movement of Natural Persons
XI - Measures to Safeguard the Balance of Payments	XI - Investment Investment Investor – State Dispute Settlement
XII - General Exceptions	XII - Intellectual Property
XIII - Security Exceptions	XIII - Transparency
XIV - Recognition of China's Market Economy Status	XIV - Cooperation
XV - State, Regional and Local Government	XV - Administrative and Institutional Provisions
XVI - Institutional Arrangements	XVI - Dispute Settlement
XVII - Review	XVII - Exceptions
XVIII - Annexes and Future Instruments	XVIII - Final Provisions
XIX - Amendments	
XX - Miscellaneous Provisions	
XXI - Dispute Settlement	
XXII - Depositary	
XXIII - Entry Into Force	

Source: www.sice.oas.org.

with Australia presents a rather detailed treatment of the role and working of arbitral tribunal, its rules of procedure, its report and implementation of the final report, compliance review, compensation, and other specific aspects. The agreement with Singapore establishes the role and working of the arbitral tribunal, its composition, and its proceedings, how to implement the decisions, how to compensate, and other aspects. South Korea and Peru focus instead on

the mechanism for conciliation and mediation, the establishment of panel, its composition, functions, the rules of procedure, the panel report, compliance review, code of conduct for panelists, etc. The agreements with New Zealand and Costa Rica establish the criteria for choice of forum, for the establishment of an arbitral tribunal, its composition, functions, rules of procedure, expenses, termination of proceedings, to the report to be presented in a 'reasonable



TABLE 6
CHINA AGREEMENT WITH COSTA RICA, AUSTRALIA AND PERU

COSTA RICA	AUSTRALIA	PERU
I - Initial Provisions	I - Initial Provisions and Definitions	I - Initial Provisions
II - Definitions of General Application	II - Trade in Goods Country Specific Tariff Quota Special Agricultural Safeguard Measures	II - National Treatment and Market Access for Goods National Treatment Tariff Elimination Special Regimes Non-Tariff Measures Other Measures Agriculture Institutional Provisions Definitions
III - National Treatment and Market Access for Trade in Goods National Treatment Tariff Elimination Special Regimes Non-Tariff Measures Other Measures Agriculture Institutional Provisions Definitions	III - Rules of Origin and Implementation Procedures Rules of Origin Implementation Procedures Certificate of Origin Declaration of Origin	III - Rules of Origin and Operational Procedures Related to Origin Rules of Origin Operational Procedures Related to Origin
IV - Rules of Origin and Related Operational Procedures Rules of Origin Related Operational Procedures	IV - Customs Procedures and Trade Facilitation	IV - Customs Procedures and Trade Facilitation
V - Customs Procedures	V - Sanitary and Phytosanitary Measures	V - Trade Remedies Global Safeguard Measures Bilateral Safeguard Measures Antidumping and Countervailing Measures Cooperation
VI - Sanitary and Phytosanitary Measures	VI - Technical Barriers to Trade	VI - Sanitary and Phytosanitary Measures
VII - Technical Barriers to Trade VIII - Trade Remedies Global Safeguard Measures Bilateral Safeguard Measures Antidumping and Countervailing Measures Dispute Settlement Cooperation	VII - Trade Remedies VIII - Trade in Services Scope and Definitions Scheduling Approach Financial Services	VII - Technical Barriers to Trade VIII - Trade in Services
IX - Investment, Trade in Services and Temporary Entry of Business Persons Investment Trade in Services Temporary Entry of Business Persons	IX - Investment Investment Investor-State Dispute Settlement Code of Conduct Service of Documents on a Party	IX - Temporary Entry for Business Persons
X - Intellectual Property	X - Movement of Natural Persons Specific Commitments on the Movement of Natural Persons China's Specific Commitments	X - Investment
XI - Cooperation, Promotion and Enhancement of Trade Relations	XI - Intellectual Property	XI - Intellectual Property Rights
XII - Transparency	XII - Electronic Commerce	XII - Cooperation
XIII - Administration of the Agreement	XIII - Transparency	XIII - Transparency
XIV - Dispute Settlement	XIV - Institutional Provisions	XIV - Administration of the Agreement
XV - Exceptions	XV - Dispute Settlement Code of Conduct Model Rules of Procedure for the Arbitral Tribunal	XV - Dispute Settlement
XVI - Final Provisions	XVI - General Provisions and Exceptions	XVI - Exceptions
	XVII - Final Provisions	XVII - Final Provisions

Fuente: www.sice.oas.org.



ONLY CHINA
-ASEAN AGREEMENT
MAKES EXPLICIT
REFERENCE
TO THE RECOGNITION
OF CHINA'S STATUS
AS A MARKET
ECONOMY

period of time`, etc.

Except the Agreement with ASEAN all the others have disciplines dealing with bilateral investment, and investment is considered as important enough so as to be the subject of whole specific chapters.

Investment is treated in various ways. The agreement with Australia has articles dealing with national treatment, MFN Treatment, non-conforming measures, denial of benefits, committee on investment, exceptions, future work program, investor-State dispute settlement. Differently, the agreement with Chile emphasizes the promotion of investment via communication on investment policy laws, exploring the possibility of establishing investment promotion mechanisms, providing national information for the potential investors, mining and industrial cooperation, mechanisms for cooperation, and specifies norms for dispute settlement.

The agreement with Singapore essentially refers to the ASEAN-China Investment Agreement. Quite different from all the others, in particular with the detailed treatment of this issue found in the agreement with South Korea: promotion and protection of investments, national treatment, MFN Treatment, minimum standard of treatment, access to the Courts of Justice, prohibition of performance requirements, transparency, expropriation and compensation, conditions to resource transfers, subrogation, settlement of investment dis-

putes between a party and an investor of the other party, special formalities and information requirements, security exceptions, denial of benefits, environmental measures, committee on investment, services-investment linkages, contact points to improve investment environment.

The agreement with Costa Rica is similar to the one with Singapore in that it essentially makes reference to the bilateral China-Costa Rica Agreement on the promotion and protection of investment.

The agreements with New Zealand and Peru are similar, establishing the conditions for national treatment, MFN Treatment, performance requirements, non-conforming measures, free transfer of all payments, fair and equitable treatment, compensation for losses, expropriation, transparency, contact points, subrogation, denial of benefits, committee on investment, promotion and facilitation of investment and investor-State dispute settlement. The Peruvian agreement adds taxation measures to this set of items.

In dealing with financial services, once again the agreement with Singapore is quite short, as it basically refers

TABLE 7
CHINA-SOUTH KOREA AGREEMENT

I - Initial Provisions and Definitions	Networks or Services
II - National Treatment and Market Access for Goods	Other Measures
Common Provisions	Definitions
National Treatment	XI - Movement of Natural Persons
Reduction or Elimination of Customs Duties	China's Specific Commitments
Special Regimes	Korea's Specific Commitments
Non-Tariff Measures	XII - Investment
Institutional Provisions	XIII - Electronic Commerce
Tariff Schedule of China	XIV - Competition
Tariff Schedule of Korea	XV - Intellectual Property Rights
III - Rules of Origin and Origin Implementation Procedures	General Provisions
Rules of Origin	Copyright and Related Rights
Origin Implementation Procedures	Trademarks
IV - Customs Procedures and Trade Facilitation	Patents and Utility Model
V - Sanitary and Phytosanitary Measures	Genetic Resources, Traditional Knowledge and Folklore
VI - Technical Barriers to Trade	Plant Variety Protection
VII - Trade Remedies	Undisclosed Information
Safeguard Measures	Industrial Designs
Anti-Dumping and Countervailing Duties	Enforcement of Intellectual Property Rights
Committee on Trade Remedies	Other Provisions
VIII - Trade in Services	XVI - Environment and Trade
IX - Financial Services	XVII - Economic Cooperation
X - Telecommunications	General Provisions
Access to and Use of Public Telecommunications Networks or Services	Agro-Fisheries Cooperation
Obligations Relating to Interconnection Provided by Suppliers of Public Telecommunications Networks or Services	Industrial Cooperation
Additional Obligations Relating to Major Suppliers of Public Telecommunications	Government Procurement
	Other Areas for Cooperation
	XVIII - Transparency
	XIX - Institutional Provisions
	XX - Dispute Settlement
	XXI - Exceptions
	XXII - Final Provisions

Source: www.sice.oas.org.

to GATS Annex on financial Services. The same applies to the agreement with Peru, but there it is added the condition that a Party shall not be prevented from taking measures relating to financial services for prudential reasons. The agreement with Costa Rica essentially

refers to this subject to make it explicit that the agreement on trade in services does not apply to financial services.

Different from these, the agreement with Australia establishes that a Party shall not be prevented from adopting or maintaining reasonable measures

84%

PANAMA'S
IMPORTS,
INTERMEDIATE
DESTINATION, COME
FROM CHINA

for prudential reasons, gives emphasis to regulatory transparency and defines mechanism for dispute settlement, via a committee on financial services. The agreement with South Korea is even more detailed, as it stresses national treatment, market access for financial institutions, treatment of certain information, transparency, payment and clearing systems, recognition of prudential measures, establishes a committee on financial services, dispute settlement, and prior consultation for investment disputes in financial services.

The issue of Investor-State dispute settlement is dealt with in a rather careful manner in the agreement with Australia, with detailed treatment of conditions, the constitution of a tribunal, the conduct of arbitration, transparency of arbitral proceedings, expert reports, etc). The agreements with New Zealand, Peru and South Korea basically include this topic as one to be dealt with in the guidelines for future negotiations. Costa Rica refers to the bilateral China-Costa Rica agreement on the promotion and protection of investment.

Australia and Chile present a specific model of the Certificate of Origin in the very text of the Agreement, as different from the others, where only the essential terms are presented, such as in the agreements with South Korea, New Zealand and Costa Rica, or in specific Annexes, as in the agreement with Singapore.

The issues of expropriation and

compensation are considered in various agreements. Australia postpones the subject of expropriation to a 'future work program', whereas South Korea, New Zealand and Peru deal with it in explicit articles. At the same time, in the agreements with ASEAN, Chile, Singapore and Costa Rica compensation is only mentioned with regard to the adoption of safeguard by the other party.

The agreement with Singapore is the only one to refer to state trading enterprises.

The agreement with Australia is also unique in dealing with the possibility of special agricultural safeguard measures (on beef and milk). China may apply such measure to specific products when the annual volume of imports from Australia exceeds the trigger level for the products in that calendar year.

The agreement with Costa Rica is unique in making reference to the management of natural disasters.

The agreement with Peru is unique in preserving its Price Band System.

There is often reference to cooperation in some sectors. For Peru this set comprises research, science and technology, information technologies, education, SMEs, mining and industry, tourism, traditional medicine, labor, social security and environment, forestry, fishery and agriculture. For Costa Rica there shall be cooperation in SMEs, innovation, science and technology, export promotion and attraction of investment, culture, sports and recreation activities, agriculture and management of natural disasters. The agreement with South Korea gives priority to cooperation in fishery, forestry, industry, SMEs, textiles, communication technology, food security, energy, science and technology, maritime transport, tourism, culture, pharmaceuticals, medical devices and cosmetics.

THE AGREEMENT
WITH COSTA RICA
IS THE ONLY ONE
THAT REFERS
TO HOW TO ACT
IN CASE OF NATURAL
DISASTERS

TABLE 8
LATIN AMERICA - TRADE WITH CHINA - 2005-2013

	EXPORT		IMPORT	
	2005	2013	2005	2013
ARGENTINA	9,5%	7,9%	4,6%	11,9%
BOLIVIA	1,1%	2,3%	2,2%	5,7%
BRAZIL	8,4%	22,4%	6,6%	15%
CHILE	11,9%	27%	6,5%	16,6%
COLOMBIA	1%	6,2%	4,4%	11,5%
COSTA RICA	12,9%	41,5%	2,5%	5,1%
DOMINICAN REPUBLIC	0,5%	3,6%	3,9%	5,9%
ECUADOR	0,4%	3,1%	4,9%	11%
GUATEMALA	1,8%	1,7%	4,5%	8,4%
HONDURAS*	1,1%	5,3%	3%	12,2%
MEXICO	1%	2,7%	2,5%	7,6%
NICARAGUA	1,6%	2%	4,5%	9,5%
PANAMA	2,3%	5,2%	75,8%	84,4%
PARAGUAY	3,5%	0,6%	7,7%	11,2%
PERU	13,3%	20,1%	4,9%	14,3%
URUGUAY	5,1%	27,2%	7,3%	20%
VENEZUELA	2,2%	14,9%	4,2%	13,5%

(*) 2005 and 2012
Source: UN/COMTRADE Database.

Some agreements also deal with the issue of domestic competition in the Parties. For Australia there should be cooperation to improve competition.

South Korea stresses the divulgation and improvement of competition laws, law enforcement, transparency, cooperation in law enforcement, consultation, exchange of information and dispute settlement. For Costa Rica the emphasis is in the implementation of enforcement mechanisms and the exchange of experiences and for Peru there should be exchange of information and experiences.

Within the realm of competition policy the agreement with Peru establishes further that the Parties will encourage cooperation in traditional medicine.

These points seem quite indicative that the agreements with different countries have peculiar treatment of some specific aspects. Some of the differences are also related to regional dimensions, as shown in the next section.

V - Regional Differences

Proximity to China, with huge contingent of people, naturally raises the issue of the risk of massive migration, in particular when differences in per capita income are taken into account. This has led to specific reference and discipline of the movement of natural persons. There is detailed treatment of this subject in the agreements with Australia, New Zealand, Singapore and South Korea. In the agreements with Peru and Costa Rica this is only mentioned under the basic conditions for trade in services.

The agreement with South Korea makes reference to China-South Korea Industrial Complexes and Parks, whereas the agreement with Singapore mentions the facilitation of 'go global' efforts of Chinese enterprises.

Singapore goes even further, in stressing its participation in China's regional development, by reinforcing the

role of the bilateral provincial business councils as an important mechanism, plus encouraging the participation in regional trade fairs in China, apart from cooperation in tourism.

The agreement with South Korea makes explicit reference to telecommunications. It refers to the conditions for access and use, the obligations relating to interconnection provided by suppliers of public telecommunication networks or services, to submarine cable systems plus a number of obligations relating to major suppliers of public telecommunications networks or services.

It goes without saying that these are good examples of specific regional characteristics that only make sense in treaties involving geographically close Parties. These are subjects that can hardly be expected to be found in agreements signed between, say, China and Latin American countries. Geography matters.

VI - China's FTAs as compared to US and EU FTAs

How peculiar are the agreements signed by China? Are they different from what Latin Americans have negotiated with other countries? This section tries to provide answers to these questions by comparing a few treaties signed by Latin American countries with the US and with the European Union in comparison to the ones reviewed in the previous sections.

This is made in a rather elementary way, by simply comparing the structure of each agreement, in terms of the main subjects considered and the chapters of each treaty. It goes without saying that it is beyond the present purposes to compare specific articles and even less the Annexes in each document. For the European Union the two agreements considered are the ones signed with Chile and jointly with Peru and Colombia. Table 2 presents the basic structure of both documents.

The agreement signed by the EU and Chile in 2002 is rather lengthy and detailed (206 Articles, divided into Parts, Titles, Chapters and Sections). Its purposes go well beyond trade facilitation; it aims at promoting 'sustainable social and economic development' and stresses the political dialogue, questions of security and social dimension. Its part dealing with bilateral trade is, however, strictly comparable to the corresponding points of the texts reviewed here, as well as the EU agreement with Colombia and Peru.

If we can think of a 'standard' model of trade preference text the EU agreement with Colombia and Peru seems to fit nicely into this description. Its chapters deal with the usual topics, essentially related to providing a friendly environment to a freer bilateral trade relation. Proof of it is the existence of a whole chapter setting the disciplines on trade in textiles and apparel, whereas in the agreements reviewed here sector references would be mostly associated to cooperation and/or competition.

Table 3 presents two examples of agreements signed with the US: those by Chile and Colombia. The structures of the two documents are quite similar and very close to the 'standard' model represented by the agreement between the European Union and Colombia and Peru. The US 'model' comprises additionally other seven subjects, namely: sanitary and phytosanitary measures, technical barriers to trade, investment, financial services, telecommunication, labor and transparency. Hence, even though both texts refer to the creation of a free trade area, they essentially establish the conditions for freer bilateral trade flows.

Table 4 shows two 'early harvest' agreements with China, those by Chile and Singapore. According to Table 1 they were signed in 2005 and 2008,

respectively. Both present a rather 'standard' structure, essentially focused on the creation of favorable conditions for bilateral trade. With a few exceptions – strongly linked to regional characteristics, as shown in the previous section (such as reference to state trading and to bilateral provincial business council) – in the case of Singapore, the structures of the two treaties are rather 'traditional' in essence. And as shown in previous sections there are a number of aspects included in the more recent agreements, which are simply not considered in these two treaties.

Similar conclusion holds for the agreement with ASEAN and New Zealand, on Table 5. Both are among the first treaties signed by China: in 2004 and 2008, respectively. The former is rather generic, as it reflects the position by a group of countries and hence avoids reference to specific items. It comprises, in any case, disciplines to deal with State, regional and local governments, as well as the recognition of China as a market economy. The latter is the first one to mention intellectual property in genetic resources, traditional knowledge and folklore, as well as detailed customs procedures. But other than that both are very close to a more generic model of treaties.

Table 6 shows three more recent agreements. Peru signed it in 2009, Costa Rica in 2010 and Australia (the most recent one) in 17th June, 2015. When compared to the agreements shown in previous tables these three present a far more detailed structure, with more items and a bigger number of chapters. The three agreements are quite detailed with regard to the disciplines regulating access for trade (including trade remedies) as well as to customs administration.

By and large the biggest, most detailed agreement of the set of texts



TABLE 9
FDI FROM CHINA INTO LATIN AMERICA (US\$ MILLION)

	2005-2010	2011-2014
BRAZIL	609,6	2.501,1
PERU	847,5	935,5
MEXICO	264,4	546,9
ARGENTINA	96,6	803,9
ANTIGUA	,0	500,0
JAMAICA	2,3	444,8
CUBA	226,7	,0
GUYANA	166,7	86,8
VENEZUELA	154,9	100,0
COSTA RICA	108,9	,0
PANAMA	,5	5,9
CHILE	5,3	19,5
NICARAGUA	,0	76,0
PARAGUAY	,7	57,7
TRINIDAD & TOBAGO	,0	,0
COLOMBIA	20,2	9,8
CAYMAN ISLANDS	25,9	,0
URUGUAY	16,7	11,6
ECUADOR	11,8	1,1
HAITI	,0	5,8
HONDURAS	,0	3,2
BOLIVIA	,5	,0
TOTAL	2.559,2	6.109,6

Source: fDiMarkets, Financial Times.



AGREEMENTS WITH AUSTRALIA AND SOUTH KOREA ARE GOOD EXAMPLES TO CONSIDER

reviewed here is the China agreement with South Korea, signed just two weeks before China signed its agreement with Australia, but being almost one-and-a half times bigger. Table 7 shows its structure.

Specific chapters deal with subjects not found in other texts, such as telecommunications, environment and trade and economic cooperation. This agreement differs from others signed by China by the detailed treatment to a number of issues, be it market access for goods, intellectual property or economic cooperation.

What the tables presented in this section suggest is that most trade preferential agreements comprise a minimum set of items, directly linked to improving the conditions for bilateral trade.

The examples considered here of agreements signed by the US and the European Union with Latin American countries basically follow this path, with minor adjustments.

This is also true for the earliest agreements signed by China with Latin American countries.

There is, however, indication that over time the Chinese strategy has evolved in the direction of making the latest agreements more 'tailor-made', meaning by that the incorporation of specific conditions in each case that are not found elsewhere. Even though there remain a number of common characteristics the number and significance of

the different features are remarkable. This apparently reflects a more pragmatic approach than is observed in the cases of the US and European Union.

It remains to infer what does this mean in terms of a Latin American strategy for the approximation with China. The next section brings some thoughts in this regard.

VII - Some Implications for Latin America

Latin American countries in general have intensified their trade links with China in recent years, both as a destination for their exports as well as – and even more remarkably – a source for their imports. Table 8 shows the percentage importance of China for both trade flows in two points in time for 17 countries.

In all the countries except Argentina, Guatemala and Paraguay exports to China have increased their relative weight in total exports. The increase has been remarkable in particular for Brazil, Chile, Costa Rica and Uruguay. For these four countries, as well as for Peru and Venezuela the share of total exports absorbed by China is a two-digit figure, indicating the importance of this relationship.

At the same time, China became more important as a provider of imported products for all the 17 countries in Table 8. The most significant increases in participation took place in Honduras, Peru, Uruguay and Venezuela. According to

Table 8, for 11 out of the 17 countries the participation of Chinese products in total imports is a two-digit figure.

It turns out that as far as trade flows are concerned there is little doubt that the relation with China is now a significant item in the international agenda for most of the region.

The history of China shows, as one of its main characteristics, a central concern with consolidating the boundaries of its territory. The Great Wall is, of course, the clearest evidence. But if one keeps in mind that the idea of the Middle Empire is linked to the Chinese view of center of the world where the emperor or empress is, and takes into account also the frequent territorial conflicts that China has had over the years with its neighbors, one comes to the conclusion that as a matter of fact the traditional Chinese perspective has predominantly been linked to its own territory.

Since China's accession to the WTO it has changed the intensity of trade relation with most economies in the world. More recently the wealth it has accumulated over the years has stimulated an unprecedented movement towards investing elsewhere. Initially in its neighborhood, but now increasingly also in other continents. Latin America is no exception. Perhaps a latecomer in this process, but definitely a destination for increasingly significant amounts of direct investment by Chinese enterprises.

Table 9 shows some indications. Figures therein correspond to productive projects in 22 Latin American and Caribbean countries; hence they are strictly indicative of direct investment, as different from Balance of Payment figures, which may comprise also disguised financial flows.

Comparing the second half of the previous decade with the first four years of the present decade it turns out

that the total amount invested by China in these economies has doubled in a few years, surpassing US\$ 6 billion in the second period.

Even though this database indicates a fall in the amount invested in nine of these 22 countries, for most of the others the increase has been significant. Table 9 also shows that these investment flows are rather concentrated: 95% of the total invested corresponds to projects in only seven countries, where investment flows in 2011-2014 surpassed US\$ 100 million, in each case.

Be it as it may, nobody can question the increased importance, for Latin America, of the economic relationship with China, both in terms of merchandise trade and in investment flows. Needless to mention the upward forecasts, in terms of future growth of production and consumption, for the Asian region as a whole, proving it to be an important source of business opportunities.

The fact that some countries in the region have already signed preferential trade agreements with China, coupled to the characteristics indicated in previous sections, which lead, in some cases, to a much broader context than only trade flows, imposes on the other countries the challenge of having to face less preferences in the access to the Chinese market or opting for start negotiating new agreements with that country.

This article has aimed at contributing to the latter strategy. It has shown that China has gradually adapted its preferential agreements by broadening the specter of subjects covered in each case, in order to make the treaties more effective in different circumstances.

Latin American latecomers should take into account the characteristics of the more recent agreements signed by China and consider as good examples those signed with Australia and in

particular with South Korea: careful, detailed account of how to deal with market access, lengthy specification of how to deal with intellectual property, detailed information on how to design cooperation in selected sectors, as well as explicit procedures in dealing with consultation on subsidies, customs procedures, dispute settlement mechanisms, treatment of bilateral investment and financial services, among others, are all lessons that Latin American countries other than Chile, Costa Rica and Peru can learn from the conditions that China has already accepted in bilateral negotiations.

It might turn out that even the agreements already signed by Chile and Peru may require some additional negotiation. As already mentioned, the two countries are parts of the Pacific Alliance. One of the main policy targets for this Alliance is the uniqueness of origin, meaning that parts produced in one of the Alliance members and used in the production process in other member should be considered as national production in the latter, hence affecting the percentage indicated in its certificate of origin. To the extent that this comprises a value chain to facilitate exports to China it might be expected that this will have to be formally accepted as such by the Chinese.

Examples of recommended procedures are plenty, as shown here. It remains for the economies in Latin America to identify clearly how they pretend to participate in the international economic scenario.

If that participation comprises negotiating preferences with China the identification of clear purposes (such as the format and rhythm of bilateral market opening, the way to deal with intellectual property issues, the possibilities of exploring bilateral cooperation in specific sectors, the specificities of technology transfer or joint technological initiatives, the disciplines regulating bilateral direct investment flows, among others) is a pre-condition to be able to identify in the available information those issues that matter most in each case. There are now a number of good examples to follow or bad steps (such as adhering to pre-designed templates that do not allow for the specific treatment of issues of specific interest for a given country) to avoid.

It is expected that this article might have contributed in this regard by presenting in a systematic way the main features of the agreements already signed that important economy. ■

NOTAS

¹ IPEA and Universidade de Brasília. The opinions herein are personal and might not correspond to the official positions of these two institutions.

² Menzies (2008), L. Qingxin (2009)

³ Rosales/Kuwayama (2012)

⁴ Baumann, Ng (2012)

⁵ Wise (2012).

⁶ As will be seen, the new FTAs are creatures of technological progress:

e-commerce and electronic facilities for the exchange of data help to some extent to overcome the geographical limitations present in the original formulation.

⁷ The agreement with Chile only refers to trade in services as something that should be the object of future negotiations.

⁸ That is, rules that either refer to a topic that is not dealt with in already agreed WTO rules, or deals with a topic in a way that goes beyond what has been agreed upon in the WTO system.

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CHINA IN THE WTO

TRADE POLICY AND MARKET ECONOMY STATUS

THE CHINESE ECONOMY HAS UNDERGONE SIGNIFICANT OPENING SINCE ITS ACCESSION TO THE MULTILATERAL TRADING SYSTEM. HOWEVER, TARIFFS IN THE PRIMARY SECTOR ARE ALMOST DOUBLE THOSE IN OTHER ECONOMIC SECTORS. WHAT ARE THE IMPLICATIONS OF THE ASIAN GIANT'S EXTERNAL STRATEGY FOR LATIN AMERICA AND THE CARIBBEAN (LAC) AND HOW TO ACHIEVE GREATER INSERTION INTO THE WORLD'S LARGEST MARKET?

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IDB-INTAL Consultant
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IN 2001, AS PART OF A THOROUGHGOING PROCESS OF REFORMS PUT IN PLACE FOR DECADES AGO, CHINA JOINED THE WORLD TRADE ORGANIZATION (WTO), WHERE IT HAS PARTICIPATED IN THE DOHA ROUND TALKS AND HAS BEEN THE DISPUTE SETTLEMENT SYSTEM'S MOST ACTIVE MEMBER AFTER UNITED STATES AND THE EUROPEAN UNION (EU). IT HAS SINCE DISPLAYED GREAT DYNAMISM, MAKING IT THE LARGEST EXPORTER AND SECOND LARGEST ECONOMY AND IMPORTER ON A GLOBAL SCALE.

THIS ARTICLE EXAMINES CHINA'S ROLE IN THE MULTILATERAL TRADING SYSTEM (MTS). IT PROVIDES AN OVERVIEW OF THE ASIAN COUNTRY'S ROLE AND ITS LINKS WITH THE REGION; IT LOOKS AT THE EVOLUTION OF ITS ROLE IN THE WTO IN LIGHT OF COMMITMENTS MADE, ITS PARTICIPATION IN THE DISPUTE SETTLEMENT SYSTEM, ITS STATUS AS MARKET ECONOMY, AND FEATURES OF ITS TRADE POLICY. LAST, IT RAISES SOME THOUGHTS ABOUT THE IMPLICATIONS FOR LATIN AMERICA, EMPHASIZING THE NEED TO NEGOTIATE AGREEMENTS THAT FAVOR GREATER DIVERSIFICATION OF THE EXPORT SECTOR.

In the context of profound reforms, China showed great dynamism in the last two decades, making it the largest exporter and second largest economy and importer on a global scale (after United States). This leading role was reflected in more active participation in international negotiating forums. In 2001, China joined the World Trade Organization (WTO), where it has been involved in the Doha Round negotiations and has been the most active member in the dispute settlement system after United States and the European Union (EU), as both claimant and respondent.

On the one hand, its accession to the WTO strengthened the negotiating capacity of developing countries (DGCs), which initially generated expectations of better results than those achieved for DGCs in the Uruguay Round.

On the other hand, while China is a DGC, it differs from many economies in this group in terms of its sheer size,

its competitiveness in several sectors (notably manufacturing), and state intervention in all areas of the economy. This—and other conflicts of interests within the WTO—explains the difficulty of concluding the Doha Round talks. For example, some developed countries (DDCs) claim that China and other major emerging economies are assuming deeper commitments than the other DGCs in the liberalization of trade in manufactures.

China has also signed various trade agreements with Asian and extraregional partners, including several from Latin America (LA). Among its current negotiations is the Regional Comprehensive Economic Partnership (RCEP), which involves the major economies of Asia-Pacific.

In this context, the article aims to examine China's role in the multilateral negotiations and its impact on LA. The first section provides a brief overview

CHINA IN THE WTO

of China's role in the world economy and trade, and its links with the region. The second section looks at its role in the WTO in light of commitments made, its role in the negotiations and the dispute settlement system, its status as a market economy, and some features of its trade policy. The third section sets out some reflections on the implications of this for LA and the main questions for the future.

PROMINENCE IN THE WORLD ECONOMY

Since its accession to the multilateral system in 2001, China has become the most dynamic actor in world trade and the global economy. Its gross domestic product (GDP) has grown rapidly (9.9% p.a. between 2001 and 2014), from the world's sixth largest economy to its second largest, after United States.

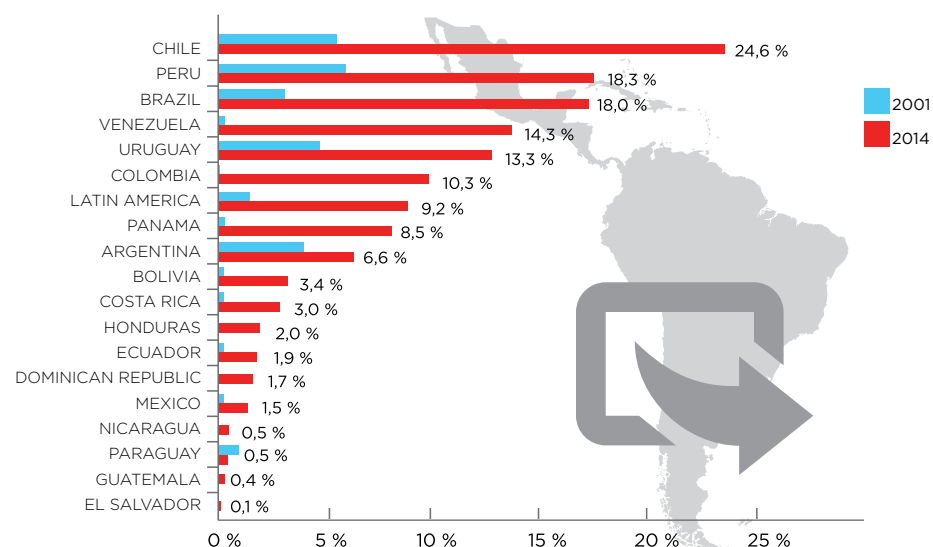
To a large extent, China's growth has been based on the dynamism of its foreign shipments, and its demand has also driven the rest of the world. Chinese exports thus expanded at an average rate of 18.2% p.a. between 2001 and 2014, while imports grew 17.4% p.a. over the same period. In this period, the Asian country went from being the sixth largest in world trade to being the largest in sales (its share going from 4.3% of the total to

18.2%

WAS THE AVERAGE
GROWTH RATE
OF CHINESE EXPORTS
BETWEEN
2001 AND 2014

FIGURE 1
CHINA'S SHARE IN LATIN AMERICAN TRADE, 2001 & 2014

A. AS EXPORT DESTINATION



12.3%), and the second largest in external purchases (from 3.8% to 10.3%). It thus rapidly became the leading partner for many economies across the world. This evolution was accompanied by the diversification of its trade relations: the participation of the DDCs as partners fell away, while that of DGCs rose. The momentum of South-South trade developed along two main lines.

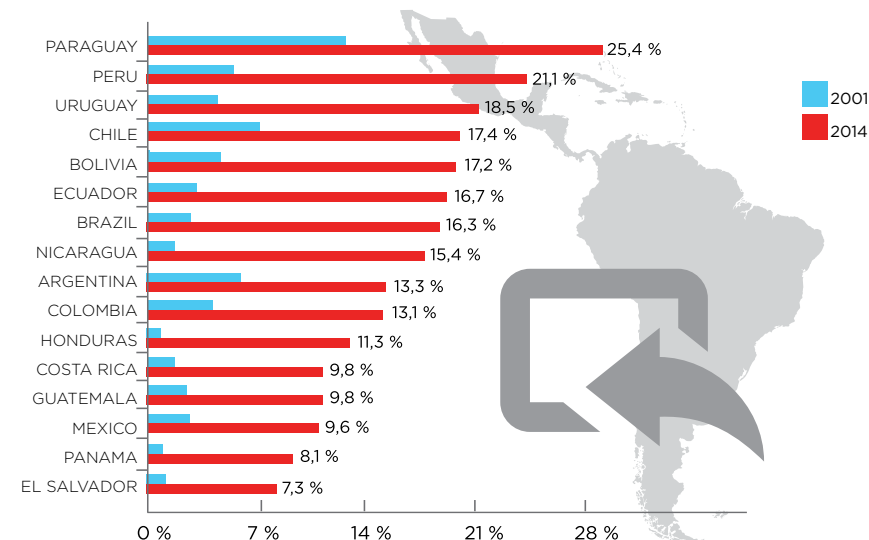
On the one hand, China consolidated its position as a key player in global value chains (GVCs), notably with its Asian partners, which together formed what is known as "Factory Asia." China's share in world trade in intermediate goods is a good measure of this success: China exports 10.8% of the total and imports 13.7% and is outperformed only by the EU. It is the main regional market for intermediate goods, assembled parts, and parts imported from the region's other economies, and produces final goods, which it mainly exports to the EU and United States. Foreign components, moreover, account for almost a third of China's export value, far exceeding the

global average (24.1%).

On the other hand, Chinese growth has significantly boosted the demand for natural resources, and this has posi-

9.8%
WAS THE AVERAGE
TARIFF IN THE
TRANSITION PERIOD,
WELL BELOW THE 43.2%
OF THE EARLY 1990S

B. AS IMPORT ORIGIN



Fuente: Elaboración propia con datos de DataINTAL.

tively impacted on countries specializing in the production of these goods, including several in LA during the commodity price boom.

Latin American countries took advantage of this source of growth in world demand and intensified their trade relations with the Asian country, in a process characterized by a growing trade deficit and interindustry trade flows: LA exports natural resource-based products—mainly from South America—and imports manufactured goods of varying technological intensity.

On the one hand, Latin American exports to China grew 15-fold between 2001 and 2014, and the Chinese market went from absorbing 1.6% of the region's sales to being their third largest destination (9.2% of the total) after United States and the EU. The Asian country became an important market for sales of such South American countries as Chile, Brazil, and Peru (Figure 1a). As a market, China is less relevant for Ecuador, the Central American countries, and Mexico. In the latter two

cases, manufacturing exports—designed mainly for United States—are concentrated in areas in direct competition with Chinese production.

One important feature of LA's external sales is their focus on natural resource-based goods. These make up 75% of South American sales to China (agricultural products, iron ore, non-ferrous minerals, and crude oil) and 45% of Mexico's sales (non-ferrous minerals, followed by iron ore and crude oil), while Central America exported 60% of its intermediate goods to China up to 2014, through the sale of electronic components from Costa Rica, before the closure of Intel (ECLAC 2015a). Thus, the situations of Central America, and of Mexico and South America are different. While the South American countries specialize in agricultural products, minerals, metals, and energy, Central America and Mexico's sales are mainly substitutive for Chinese exports (textiles and manufactured goods), and Central America in particular is a net demander of natural resources (like oil).

On the other hand, between 2001

and 2014, Latin American imports from China rose 13-fold to become the second largest origin of the region's external purchases (Figure 1b). LA—in particular Mexico and Central America—has a trade deficit with the Asian country. The entry of Chinese manufactured goods poses major challenges for some branches of industry in Latin American countries, due not only to the loss of market share in the national markets, but also to the displacement suffered in third markets. The main threat to all countries in the region is, therefore, concentrated in this sector.

CHINESE TRADE POLICY

In 1979, China set in motion a gradual and far-reaching transformation, involving an opening that affected all

dimensions of its economy, including international relations, and trade and investment. In this framework, it submitted its request July 10, 1986, to again become a contracting party to the General Agreement on Tariffs and Trade (GATT) (it had been one of the GATT's 23 original signatories in 1947, but left shortly after), while it submitted a formal request for access to the WTO in November 1995. A year before, China had launched an ambitious reform package that included, among other things, changes in the tax structure, the exchange system, banking regulation, general investment and financial regu-

lation, foreign trade, property rights, and price setting (WTO, 2001). After lengthy negotiations, China became the 143rd member of the WTO, December 11, 2001.

China's process of accession to the WTO was the most complex and challenging in the organization's history. This was due to the fact that it is a large economy in transition from a socialist system to a market economy, with high levels of state intervention and a huge labor force with relatively low wages in comparison with the rest of the world, enabling it to produce a wide variety of goods at very competitive costs.

On the one hand, China had to make profound reforms to achieve a legal system consistent with WTO rules, including the repeal, amendment, or enactment of 3,000 laws and regulations at the central government level, and 190,000 laws in the local government field (Xiaozhu, 2011). China also significantly reduced tariff and non-tariff barriers on international trade. The average tariff on imports thus fell from 43.2% in the early 1990s to 9.8% at the end of the transition period (Zhenyu, 2011).

China's protocol of accession to the WTO included several unique provisions that go beyond the usual requirements of other countries forming part of the agency. It is worth noting the provisions on transparency, foreign investment, the Transitional Review Mechanism, the non-designation of China as a market economy during the first 15 years, and the partners' right to apply special safeguards during the first 12 years in the event of damage or threat of damage to national production as a result of Chinese imports. Of particular note were

AS OF DECEMBER 2016,
THE BURDEN OF PROOF
WILL BE REVERSED:
IMPORTERS WILL HAVE TO
DEMONSTRATE THAT
DUMPING OF CHINESE
PRODUCTS HAS
TAKEN PLACE

China's commitment to allowing market forces to determine prices in almost all sectors, and its commitments regarding ventures of state ownership and investment (Urdínez & Masiero, 2015).

On the other hand, many WTO members faced difficulties competing with China due to factors such as an undervalued exchange rate, constraints on investment, inadequate access to certain markets, shortcomings in the enforcement of intellectual property rights, government subsidies, and so on (Kennedy, 2011).

This largely explains why China became the main recipient of trade defense measures and one of the most challenged countries in the WTO's Dispute Settlement Body (DSB). Since its admission to the organization, China has been the main destination of anti-dumping duties (AD) and countervailing duties (CD) imposed by the other members, with 51.7% and 40.7% of total respectively (973 AD and 72 CD). Most of these duties affected imports originating in China of base metals and base metal articles, chemicals, machinery, and textiles and clothing. In several industries, Chinese exports were subject to more AD and/or CD than the other WTO members taken together. China's sales to its partners were also affected by 38 bilateral sanitary and phytosani-

TABLE 1
SELECTED PRODUCTS AND COUNTRIES (CHINA AND LA)
2014

PRODUCT	CHINA		SELECTED COUNTRIES OF LATIN AMERICA		
	POSITION	SHARE (%) IN WORLD IMPORTS	COUNTRY	GOOD'S SHARE (%) IN EXPORT BASKET	CHINA'S SHARE (%) AS GOOD'S DESTINATION
CRUDE OIL	3	13%	MEXICO	9%	1%
IRON ORE	1	61%	BRAZIL	11%	48%
SOYBEANS	1	65%	ARGENTINA	6%	81%
COPPER	1	39%	CHILE	27%	43%

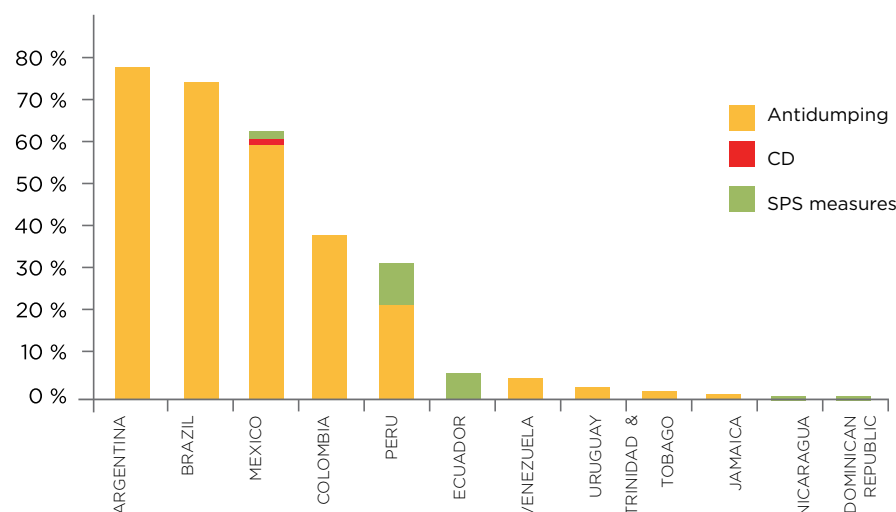
Source: Based on COMTRADE and DataINTAL data.

TABLE 2
MAIN ORIGIN OF CHINA'S IMPORTS IN SELECTED PRODUCTS (LA SHARE)
2014

PRODUCT	MAIN ORIGIN	MAIN ORIGIN'S SHARE IN CHINA'S IMPORTS OF GOOD	LA'S SHARE AS ORIGIN OF GOOD
CRUDE OIL	SAUDI ARABIA	16%	10%
IRON ORE	AUSTRALIA	58%	22%
SOYBEANS	UNITED STATES	41%	58%
COPPER	CHILE	36%	42%

Source: Based on COMTRADE data.

FIGURE 2
RESTRICTIONS IMPOSED BY LA ON IMPORTS ORIGINATING IN CHINA
 BILATERAL AD, CD, AND SPS APPLIED BETWEEN 11/12/2001 AND 31/12/2014



Source: Based on WTO Integrated Trade Intelligence Portal (I-TIP) data.

tary (SPS) measures.

LA has made active use of these restrictions on Chinese products. Indeed, the region applied half of the bilateral SPS affecting China, as well as 28% of AD. The Latin American countries that resorted most to these instruments were Argentina, Brazil, Mexico (the only one that also applied CD), Colombia, and Peru (Figure 2). It is no coincidence that the countries imposing most restrictions on China were the largest economies, with more diversified productive structures that have difficulty competing with Chinese manufactured goods. For its part, the Asian country only applied AD on imports originating in Mexico and Brazil.

It is important to note that China's role in the WTO has altered considerably since it joined the organization. Its

role during the first few years was relatively passive. On the one hand, having made major concessions for accession, at the start of the Doha Round it had fewer tools to negotiate trade liberalization than countries that had not reduced their tariffs after the conclusion of the Uruguay Round (Gao, 2011). Furthermore, China was less interested than other countries in the issues that dominated the agenda of opening debate of the Doha Round (investment, competition, transparency in government procurement, cotton subsidies, etc.) and only started to display a more offensive position around 2008. Among the conditions imposed at the time of its accession and the shift in its negotiating position, China's current commitments go beyond those of many other states. The Asian country has bound all its tar-

iffs, its applied aliquots are around the same levels as those bound, and it has not only signed the WTO's multilateral agreements—mandatory for all member countries—but is also a signatory to the Information Technology Agreement (ITA), an observer of the Agreement on Trade in Civil Aircraft and the Government Procurement Agreement (GPA) (in the process of incorporation), and is one of the 51 countries already to have ratified the Trade Facilitation Agreement (TFA).

DISPUTE SETTLEMENT

This change in China's participation was also reflected in the DSB. Since it joined the organization, the Asian country has been a complainant in 13 cases,

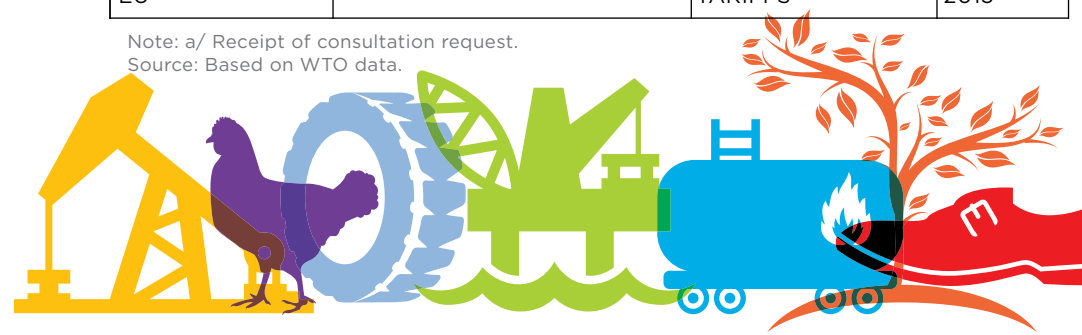
a respondent in 33, and has been a third party in 127 disputes.

As can be seen in Table 3, China made just 2 claims at the WTO in its first 6 years as a member. Gao (2011) stresses that, up to 2006, the Asian country played a passive role, behaving as a "rule-taker" and concentrating its efforts on understanding the operation of the dispute settlement system; as a result it was involved in most disputes as a third party. As of 2006, it began to behave as a "rule-shaker," adopting a more aggressive stance, in particular when legally justifying the use of the measures challenged by its partners. This offensive position intensified as of 2008: since then, China has been a more active user of the dispute settlement system, even seeking to change the rules

TABLE 3
CHINESE CLAIMS IN THE WTO'S DISPUTE SETTLEMENT SYSTEM

RESPONDENT	SECTOR	MEASURE	START A/
UNITED STATES	IRON AND STEEL	SAFEGUARDS	2002
UNITED STATES	PAPER, WOOD, PULP	AD AND/OR CD	2007
UNITED STATES	IRON AND STEEL, TIRES	AD AND/OR CD	2008
UNITED STATES	POULTRY AND/OR POULTRY MEAT	SPS	2009
EU	IRON AND STEEL	AD AND/OR CD	2009
UNITED STATES	TIRES	SAFEGUARDS	2009
EU	FOOTWEAR	AD AND/OR CD	2010
UNITED STATES	SHRIMP, SAW BLADES	AD AND/OR CD	2011
UNITED STATES	VARIOUS	AD AND/OR CD	2012
UNITED STATES	GENERAL	AD AND/OR CD	2012
EU, ITALY, GREECE	RENEWABLE ENERGY GENERAL	DOMESTIC CONTENT REQUIREMENTS	2012
UNITED STATES	POULTRY AND/OR POULTRY MEAT	AD AND/OR CD	2013
EU		TARIFFS	2015

Note: a/ Receipt of consultation request.
 Source: Based on WTO data.





15.2%

IS THE AVERAGE
TARIFF OF THE
AGRICULTURAL SECTOR
IN CHINA, FAT IN EXCESS
OF OTHER HEADINGS

(“rule-maker”), especially those relating to the provisions of its accession to the WTO. So far, China's claims have only been addressed to United States and the EU (in one case, two members individually as well), mainly through the application of CD and/or AD in different sectors, notably iron and steel products.

Since 2005, 33 claims have been filed against China with the WTO's DSB (Table 4). Most of these involved subsidies to various different sectors or measures having an equivalent effect such as restrictions on exports of raw materials and inputs, as well as trade-related investment measures (TRIMs) and restrictions on trade in services. United States and the EU have been the most vigorous challengers of Chinese trade policy, presenting joint claims on several occasions. They are followed by Canada and Mexico. Another Latin American country to have filed claims against China is Guatemala.

TARIFFS AND TRADE BARRIERS

Although China carried out a significant process of opening before joining the WTO, there are still significant barriers to trade, many of which are concentrated in sectors of interest to LA.

First, tariffs are higher than the world average. If they are low in comparison with other emerging economies, like Brazil and India, they significantly ex-

ceed those of the developed countries, with tariff peaks reaching 65% in the agricultural sector and 50% elsewhere (Figure 3).

Second, China has bound all its tariffs in the WTO (unlike India, for example, which has only bound three quarters of its tariff universe) and its bound aliquots are similar to those applied (10% and 9.6% respectively). This is relevant for two reasons. On the one hand, it offers partners greater predictability because China has little room to increase tariffs arbitrarily, since it cannot exceed the bound levels without negotiating with the parties concerned. On the other hand, given that commitments to reduce tariffs in multilateral negotiations are calculated on the basis of bound levels, any agreement would involve a reduction of protection in China considerably greater than that of economies with more “water” in tariffs.

Third, tariffs on sectors of most interest to certain Latin American countries are higher. As in the rest of the world, the agricultural sector in China is more secure than other activities, with average most-favored-nation (MFN) tariffs of 15.2% and 8.6% respectively (Figure 3). This is partially explained by the particular nature of the sector, where many countries prioritize food self-sufficiency over the benefits of specialization such as may occur in other sectors. The highest average tariffs are on sugar and confectionery products, beverages and tobacco, and cereals and their derivatives, headings with the highest tariff peaks (65%). Even the agricultural sectors with the lowest tariffs (10.4% in fats, oils, and oilseeds) have higher-than-average aliquots for man-

TABLE 4
CLAIMS AGAINST CHINA IN THE WTO'S DISPUTE SETTLEMENT SYSTEM

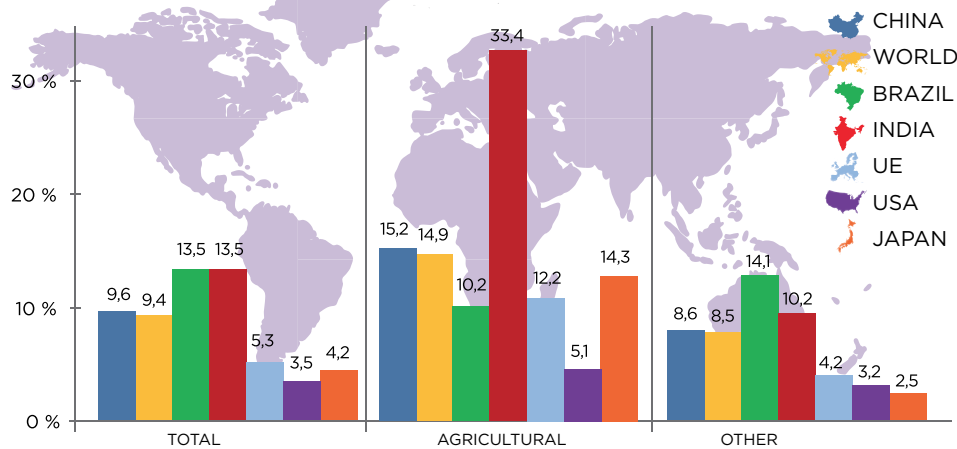
CLAIMANT	SECTOR	MEASURE	START A/
UNITED STATES	INTEGRATED CIRCUITS	TAXES	2005
EU	AUTOMOTIVE	TRIMS. SUBSIDIES	2006
UNITED STATES			2006
CANADA	AUTOMOTIVE	TRIMS. SUBSIDIES. RULES OF ORIGIN	2006
UNITED STATES	GENERAL	TRIMS. SUBSIDIES	2007
MEXICO			2007
UNITED STATES	GENERAL	INTELLECTUAL PROPERTY	2007
UNITED STATES	AUDIOVISUAL	RESTRICTIONS RELATED TO SERVICES	2007
EU	FINANCIAL INFORMATION SERVICES	RESTRICTIONS RELATED TO SERVICES	2008
UNITED STATES			2008
CANADA			2008
UNITED STATES	GENERAL	SUBSIDIES	2008
MEXICO			2008
GUATEMALA			2009
UNITED STATES			2009
EU	RAW MATERIALS	RESTRICTIONS ON EXPORTS	2009
MEXICO			2009
EU	IRON AND STEEL	AD AND/OR CD	2010
UNITED STATES	ELECTRONIC PAYMENT SERVICES	SERVICES RELATED RESTRICTIONS	2010
UNITED STATES	IRON AND STEEL	AD AND/OR CD	2010
UNITED STATES	RENEWABLE ENERGIES	SUBSIDIES	2010
EU	X-RAY MACHINES	AD AND/OR CD	2011
UNITED STATES	POULTRY AND/OR POULTRY MEAT	AD AND/OR CD	2011
UNITED STATES	RARE EARTHS	EXPORT RESTRICTIONS	2012
EU			2012
JAPAN			2012
UNITED STATES	AUTOMOTIVE	SUBSIDIES, DUMPING	2012
UNITED STATES	AUTOMOTIVE	SUBSIDIES	2012
MEXICO	TEXTILES AND CLOTHING	SUBSIDIES	2012
JAPAN	IRON AND STEEL	AD AND/OR CD	2012
EU			2012
CANADA	PAPER, WOOD, PULP	AD AND/OR CD	2014
UNITED STATES	GENERAL	SUBSIDIES	2015

Note: a/ Receipt of consultation request.
Source: Based on WTO data.



IT WILL BE MORE DIFFICULT TO PROVE DUMPING

Figure 3
TARIFFS IN SELECTED COUNTRIES
SIMPLE AVERAGE OF APPLIED SPS TARIFF:
TOTAL, AGRICULTURAL SECTOR, AND OTHER ACTIVITIES



Source: WTO.

ufacturing (Figure 4). There are also quantitative restrictions in the trade in wheat, rice, sugar, tobacco, corn, and cotton wool. State owned trading companies are allocated between one third (cotton) and the total quota (tobacco) (Baez et al., 2015). While higher protection corresponds to agriculture, some of the remaining headings with higher tariffs also correspond to sectors of interest to the region, such as fuels and fish (Figure 4).

Fourth, the agricultural sector in China enjoys different types of support (e.g. tax incentives, direct subsidies, price support, preferential financing conditions, etc.) with the aim of achieving a 95% level of self-sufficiency in grain production, increasing rural producers' income, and so on. In 2012, subsidies to producers represented 2.3% of GDP (OECD, 2013) and approximately 9% of the value of agricultural production (Gale, 2013). The products benefiting most are rice, wheat, corn, sugar cane, soy milk, rape, cotton, and pork (Baez

et al, 2015).

Fifth, China levies taxes and/or applies quantitative restrictions on exports of various primary and processed natural resources, such as lead, aluminum, steel, copper, iron, nickel, zinc, tin, phosphorus, iron, silver, corn, rice, tobacco, cotton, wheat, tea, livestock, flour, and oil (WTO, 2014). Taxes, quotas, and other limitations on exports of tungsten, molybdenum, and rare earths (key inputs in the electronics industry) were dismantled in 2015 after the WTO ruled them incompatible with commitments made within the framework of the organization. The claimant, United States, had argued that the purpose of these measures was not to avoid the exhaustion of non-renewable natural resources—as argued by China—but to favor the Asian country's production by reducing the price in the internal market.

Finally, China has signed 22 FTAs, mostly with Asia-Pacific partners. Outside the region, it has agreements with

Under WTO rules, when investigations are conducted to determine the existence of dumping or subsidies, the foreign sale value is compared with the market value (MV) in the exporting country or based on a construction of its production costs. In China's case, the conditions are different. Since it is in transition from being a socialist economy, the WTO accession protocol stipulated that China would not be considered market economy (ME) for the first 15 years. This means that the price comparability analysis to determine the existence of dumping or subsidies on exports enables the MV to be estimated on the basis of data from a third country that is an ME, unless the Chinese producer proves that it is operating under market conditions.

The possibility of using an alternative methodology has significant consequences. Chinese exporters must show that the price was determined under market conditions. If they cannot and the MV is established using data from third countries where costs and/or prices are higher, the probability of verifying unfair practices rises, and it is possible to apply higher AD or CD duties (Sica & Lico, 2014).

To counter this situation, China has endeavored to be recognized as an ME by other WTO members. Its main trading partners—United States and the EU—have not granted it this status, but, in 2014, China already had agreements in place as an ME with 66 economies, including several in LA (Antigua & Barbuda, Argentina, Barbados, Belize, Brazil, Colombia, Chile, Costa Rica, Ecuador, Guyana, Jamaica, Peru, Trinidad & Tobago, Venezuela). In many cases, recognition of this status is guaranteed under the free trade agreements (FTAs). This is the case with Chile, Costa Rica,

and Peru, who not only committed to using data from China to estimate the MV, but also to not applying the transitional safeguard for specific products. In other cases, the memoranda granting China the status of ME are unregulated and there are no tools to guarantee compliance. For example, the Argentine and Brazilian parliaments have never passed legislation recognizing China as an ME, so investigations have continued to view it as not being one (Urđinez & Masiero, 2015).

Under the provisions of its WTO accession protocol, China would be considered an ME as of December 11, 2016. This means that, as of that date, the normal conditions of AD, subsidies, and CD agreements will apply: the burden of proof will be reversed (it will no longer be the Chinese exporter that needs to show that market conditions prevail, but the importer who has to prove that are not being met) and then the conditions used to determine the MV in each case will be defined (Tietje & Nowrot, 2011).

To summarize, for countries that do not consider China as an ME, the situation will change as of December 2016. If they decide that market conditions do not prevail in China, they will have to prove it and, if they are unsuccessful, it will be more difficult to prove the existence of dumping or subsidies; if they are successful, the difference between the foreign value and the MV will be narrower, and the AD or CD applied will be lower. This may also lead to a review of the foregoing processes that established these instruments (Sica & Lico, 2014). This new scenario poses a major challenge for Latin American countries that have turned to these instruments to limit the impact of Chinese competition on domestic manufacturing production, notably Argentina, Brazil, and Mexico.

two European partners (Iceland and Switzerland) and three Latin American countries (Chile, Costa Rica, and Peru). Some of these FTAs—mainly those of highly competitive countries in the agricultural sector, such as New Zealand (in force since 2008) and Australia (signed in 2015, but not yet in force)—place the exports of certain Latin American countries at a disadvantage coming up against partners with preferential access. China is also negotiating several FTAs, notable among which is the RCEP, which involves 16 Asia-Pacific countries (including India, Japan, and several of those that already have with FTAs with China).

A HETEROGENEOUS EFFECT

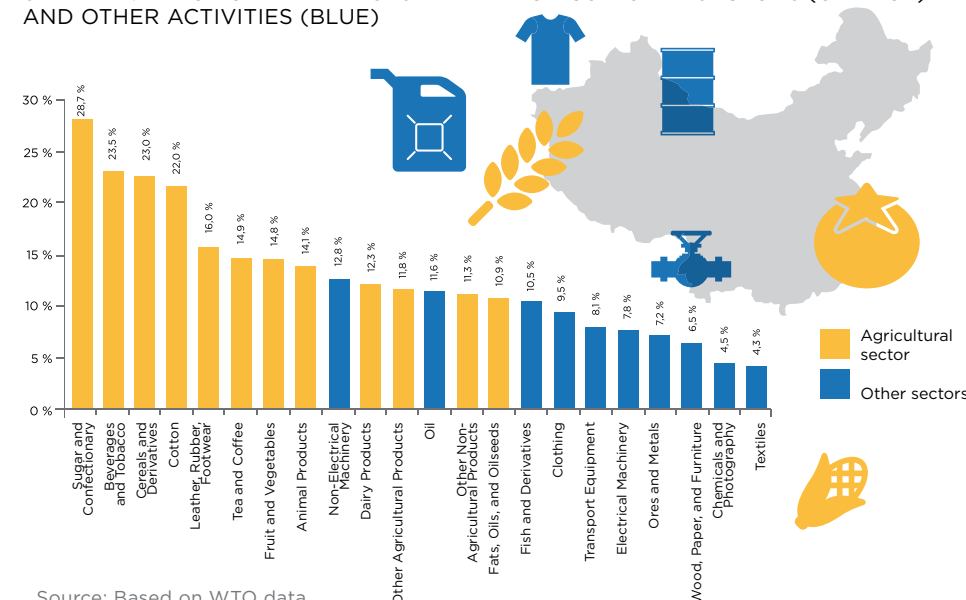
China is undergoing major changes in its growth pattern. On the one hand, the pace of expansion is slower than in recent decades, when GDP rose at rates close to 10% per annum (p.a.). Although it will remain one of the most dynamic economies, the government envisages an expansion of around 6.5% p.a. over

the next few years. This is to say, it will continue driving the global economy, but with less impetus. On the other hand, the driver of China's aggregate demand is shifting from investment and exports to private consumption (ECLAC 2015a).

The “China effect” is heterogeneous across the region's countries, depending on their export specializations. Countries that sell mainly natural resources and their derivatives will continue to benefit from Chinese demand. Although at a slower pace than in 2003–2011, due to a certain slowing of growth and investment, China will continue to import hydrocarbons, metals, and non-metallic minerals to supply its industry and construction.

In the case of food, Chinese purchases will continue to be driven by increasing urbanization, the expansion of middle-class consumption, and the end of the single-child policy. These phenomena stimulate increased demand for food and a qualitative change in diet, with more space for proteins and processed foods. In this regard, successfully placing more highly processed

FIGURE 4
CHINA: SECTORAL TARIFF PROFILE
SIMPLE AVERAGE OF APPLIED SPS TARIFF: AGRICULTURAL SECTORS (ORANGE)
AND OTHER ACTIVITIES (BLUE)



Source: Based on WTO data.

foodstuffs in the Chinese market constitutes an opportunity requiring the creation of productive capacities for new exportable products and services in the agriculture, food, and agroindustry sectors.

However, this is limited by two main factors. On the one hand, despite the significant opening of its market since it joined the WTO, China still maintains high tariff levels on certain agroindustrial products, which are precisely the headings of interest to many LA exporters. On the other hand, China promotes self-sufficiency while, at the same time, diversifying its sources of supply and its network of trade agreements. This may generate trade diversions and puts some Latin American countries at a disadvantage in the face of competition from Australia, New Zealand, and the

Asian countries.

In this context, LA must aim to improve competitiveness through product differentiation that enables value to be added by improving quality. At present, China already imports certain products from the region, with the potential for such differentiation, including poultry, vegetable oils, fresh fruits (especially grapes), frozen fish and shellfish, fruit and vegetable juice, wine, and processed timber (Rosales & Kuwayama, 2012).

For LA to better exploit its comparative advantages in natural resources, it is necessary to strengthen and coordinate the sector's linkages with the entire network of related activities, including technological development, inputs and capital goods used in the production, logistics, marketing, distribution,





quality, brand, and so on. In many cases, this involves knowledge-intensive services that not only incorporate value, but generate quality employment. It is also necessary for LA to establish cooperation alliances with Chinese companies, with the aim of strengthening its position within China.

Unlike its natural resource-based activities, LA's manufacturing industry is more vulnerable to Chinese competition. This brings with it greater risks for the larger countries, which have larger manufacturing sectors threatened by Chinese production, which is highly competitive and enjoys very significant state support. That is why, since the end of 2008, imports originating from China have been the subject of numerous antidumping investigations initiated in Argentina, Brazil, and Mexico in the steel, chemical, textile, footwear, appliance, and tire sectors. The main risks for Argentina and Brazil are concentrated in the domestic market. In the case of Mexico, the difficulties are seen in the US market, where Central American manufacturing exports in value chains like yarns-textiles-clothing are also threatened.

Where trade negotiations are con-

cerned, Latin American countries have no common strategy in their commercial links with China. The largest, most diversified economies, like Argentina, Brazil, and Mexico, take up a defensive position that will come up against greater difficulties when China is considered as an ME. Mexico has adopted a more progressive liberalizing strategy, which includes participation in the Trans-Pacific Partnership (TPP) Agreement, backed by United States, to strengthen the links with the Asia-Pacific region and ultimately negotiate with China (Sica & Lico 2014). Also participating in this agreement are Chile and Peru, which, like Costa Rica, have gone a step further and signed FTAs with China individually.

In the case of the MERCOSUR countries, it would be desirable for them to develop a coordinated strategy with the objective of promoting better insertion in the Chinese agrifood market, with an emphasis on the export of differentiated products or more highly processed goods. Given that the protection of the agroindustrial sector in China is tighter than many of the world's major economies, trade negotiations that enable MERCOSUR to improve its access to the

Chinese market for these products should become an external agenda priority.

In the scope of the WTO, the conclusion of the Doha Round would imply a higher reduction of trade barriers in China than in other markets due to its bound levels of support and protection—on the basis of which commitments are made—are very similar to levels applied. An agreement will thus force a sharper reduction in tariffs or subsidies than in countries where the difference between bound and applied levels (“water”) is wider. However, the realization of a substantive multilateral agreement is not likely to take place in the short term.

Nonetheless, Latin American countries can take greater advantage of the WTO's procedure against trade disputes by using a coordinated strategy like that adopted by other countries filing joint claims against China. In spite of its limitations, the WTO's dispute settlement system is a useful tool to promote compliance with commitments made and puts smaller countries on a more even footing than they are in bilateral dispute settlement. Furthermore, for countries that have not made active use of this system, it would be desirable for them to participate more

frequently as interested third parties in disputes that compromise their interests in order to familiarize themselves with the procedures and the workings of the system, and to acquire the experience needed to deal with future disputes in the WTO. They can also form partnerships with developed countries, a strategy that has generally produced more positive results than when Latin American countries have acted in isolation (Biggs, 2005).

In general, attention has been drawn to China's threat to the manufacturing sector in the regional market and third markets. However, protection in its own agroindustrial sector remains high, even higher than in other economies such as the European Union, Japan, and United States, with the aim of achieving self-sufficiency and food self-sufficiency. Nonetheless, it has signed some trade agreements and is negotiating others with highly competitive agricultural producers, who might threaten the exports of some Latin American economies. While several Latin American countries will still have advantages in agroindustrial goods, they must continue negotiating to improve their insertion in Chinese markets, especially more highly developed and differentiated ones. ■

ABBREVIATIONS AND ACRONYMS

AD / Anti-dumping
c.a. / Cumulative annual
CD / Countervailing duties
DDC / Developed countries
DGC / Developing countries
DSB / Dispute Settlement Body
EU / European Union
FTA / Free Trade Agreement
GATS / General Agreement on Trade in Services
GATT / General Agreement on Tariffs and Trade
GDP / Gross domestic product
GPA / Government procurement agreement

GVC / Global value chains
LA / Latin America
ME / Market economy
MERCOSUR / Southern Common Market
MFN / Most Favored Nation
MV / Market Value
RCEP / Regional Comprehensive Economic Partnership
SPS / Sanitary and phytosanitary standards
TBT / Technical barriers to trade
TPP / Trans-Pacific Partnership Agreement
TRIMs / Trade-related investment measures
TRIPS / Trade-Related Aspects of Intellectual Property Rights
WTO / World Trade Organization

STRATEGIC PARTNERSHIP

DYNAMICS OF TRADE RELATIONSHIP BETWEEN CHINA AND LAC, 2014

TRADE BALANCE WITH CHINA US\$ MILLIONS, LAC SELECTED COUNTRIES, 2014



13%

OF LAC EXPORTS
GOES TO CHINA

3

FREE TRADE AGREEMENTS
HAS CHINA WITH LAC:
CHILE, COSTA RICA AND PERU

US\$ 58
BILLIONS

WAS THE TRADE
DEFICIT WITH
TE REGION

NOTAS

¹ Its size has grown seven-fold, from US\$1.3 billion to US\$10.4. Source: IMF.

² Source: WTO.

³ Source: WTO. 2012.

⁴ The value added of exports stands as a measure of how well inserted the country is in GVCs: the global average stands at 24.1%, whereas in China's case it is 32.6%. Source: WTO. 2012.

⁵ Excluding Venezuela and Dominican Republic, for lack of data.

⁶ The objective of the Transitional Review Mechanism (TRM) is to ensure the transparency of China's trade regime. It enables the other WTO members to better understand and assess the progress made by the Asian country in the implementation of and compliance with commitments made. To this end, eight annual reviews on various topics are stipulated (tariff quotas, quotas and other non-tariff barriers, export restrictions, safeguards, licensing, technical barriers to trade, trade-related investment measures (TRIMs), public procurement, regulations on trade in services, Trade-Related Aspects of Intellectual Property Rights (TRIPS), State-owned entities),

and a final review after ten years.

⁷ See Box 1.

⁸ Only bilateral SPS were considered, not including those affecting all members. Since AD and CD duties are trade defense measures designed to counter unfair trade practices, they are naturally bilateral. Data for the period, 11/12/2001 to 31/12/2014.

⁹ Period: 11/12/2001 to 31/12/2014.

¹⁰ Considerably higher tariffs than the average.

¹¹ The consolidation of a commitment with the WTO establishes the maximum level of protection or support that a country can grant a given product. For example, if China consolidated a 10% tariff on a good, it is free to apply aliquots of between 0% and 10% on the import of that good. If it wished to impose tariffs above that level, however, it would have to negotiate with the parties concerned. The objective of consolidation is to ensure the transparency and predictability of trade measures. Yet, in many countries, the difference between the applied and consolidated levels of protection and support (usually called "tariff water") is high, providing greater scope to increase them.

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Foreign Investment and Exports

Two Sides of
THE SAME
coin

THE COUNTRIES RECEIVING MOST FOREIGN DIRECT INVESTMENT (FDI) FROM CHINA WERE THOSE WITH A HIGHER DEGREE OF TRADE COMPLEMENTARITY. DESPITE WHAT IS SUGGESTED BY THE TRADITIONAL LITERATURE, THE QUALITY OF THE INSTITUTIONS BEARS VERY LITTLE RELATION TO THE VOLUME OF CAPITAL INFLOWS.

Qianru Song y
Rodrigo Wagner
University of Chile





SEVERAL STUDIES HAVE SHOWN THAT COUNTRIES WITH LOW INSTITUTIONALITY LEVELS TEND TO HAVE LOWER FOREIGN INVESTMENT. HOWEVER, CHINESE INVESTMENT APPEARS NOT TO FOLLOW THIS PATTERN. THIS PAPER SUMMARIZES RESEARCH BY SONG & WAGNER-BRIZZI (2014) ARGUING THAT THE FACTOR ASSOCIATED WITH CHINA'S TRADE COMPLEMENTARITIES IS MORE IMPORTANT THAN INSTITUTIONALITY. THE EVIDENCE SHOWS THAT FDI RECIPIENT COUNTRIES ARE THOSE WITH HIGH EXPORTS TO CHINA. THE TEXT DISCUSSES EXAMPLES AND POLICY IMPLICATIONS FOR LATIN AMERICA.

The importance of strong institutions and well-defined property rights has been widely discussed as a determining factor for the entry of foreign investment to countries. By way of example, Wei (2000) and Alfaro, Kalemli-Ozcan, & Volosovych (2008) blame weak institutions for blocking the flow of capital from rich to poor countries. Unfortunately, institutions are hard and slow to change. Against this background, it is useful to explore alternatives to promoting foreign direct investment (FDI) in the medium term, as long as the institutions cannot be directly improved.

Recent cases seem to suggest that China follows a different investment pattern to the one explained in the traditional literature, where institutional quality matters less than economic complementarity. Credible trade sanctions that would affect the exports of the FDI recipient could function as a kind of guarantee and a green light to Chinese companies to invest in countries less stable in the rules of the game. In the cases studied, there were relevant investments in non-tradables (infrastructure, roads, highways, financial ser-

vices), which can be efficiently operated by foreigners.

While China still represents a small fraction of global FDI, it is growing at an annual rate of two digits, three times faster than global FDI itself and twice as fast as China's GDP, according to FDI Markets. The main destinations for Chinese investment have been Venezuela, Argentina, and Ecuador, countries with a low sovereign credit rating, but that export a growing and important fraction of their output to China.

The empirical findings of Song & Wagner-Brizzi (2014) show that significant Chinese investment is accompanied by a high percentage of exports to China by the recipient countries. Quantitatively, it can be seen that a country sending 25% of its exports to China can have over 2 additional percentage points of FDI, almost twice the global average for Chinese FDI. Moreover, Chinese projects FDI are 50% larger compared with other investors in the same destinations and industries.

From the point of view of Song & Wagner-Brizzi (2014), the interaction between institutions and trade with



2%
OF ADDITIONAL
FDI RECEIVES
A COUNTRY
WHICH SENDS 25%
OF ITS EXPORTS
TO CHINA

China makes increased FDI from China a viable alternative. These conclusions arise beyond the multinational vertical integration theories posited by Antràs (2003), who is geared only to tradable goods, unlike the Chinese FDI studied.

There is a significant literature that has explored the role of trade sanctions on these ties. Eaton & Engers (1990) present a model where credibility plays a central role in transactions between a recipient and an investor. Dixit (2007) demonstrates that these considerations of credibility are equally important in contexts of de facto penalties, quite apart from what a State does or what it says in a law.

Other authors posit specific sanction schemes. Dooley, Garber, & Folkerts-Landau (2007), for example, hold that since China has its reserves in New York, this discourages the Chinese Government to expropriate American investments in China, because, as they argue, United States could leave it without reserves should China, in extreme circumstances, decide to expropriate. This is, in a way, similar to what is suggested in Song & Wagner-Brizzi (2014), in that

there is a threat of sanction in another market, distinct from the one expropriated. But the idea of Dooley et al. (2007) too is quite different to Song & Wagner-Brizzi (2014), because United States' sanction of China does not seem so credible. For one thing, the expropriation of Chinese reserves would paralyze the global financial market, which would be highly detrimental to United States and, for another, both being large countries, it could lead to an escalation of unnecessary violence. However, in the case under study here, China being a large country against a small one that exports a great deal to it, the trade sanction relationship is one-way and unlikely to escalate into violence or other diplomatic problems.

Other authors, such as Maurer (2013), have discussed some mechanisms to avoid potential expropriation, such as insurance against political risk and international investment dispute systems. The mechanism described for Chinese FDI can be understood as an additional complement to insurance when there is a great temptation to expropriate on the part of the reci-



pliant country, coupled with difficulty operating compensation or arbitration mechanisms in organizations such as International Center for Settlement of Investment Disputes (ICSID).

The rest of the work is structured as follows: Section 2 details the theoretical framework; Section 3 sets out the data and empirical evidence; and Section 4 rounds off with some conclusions.

INSTITUTIONAL QUALITY

China has a way of punishing potential contract breaches, which offers a comparative advantage in FDI in countries where rules fluctuate abruptly. This is apparent from the predictions about the model in Song & Wagner-Brizzi (2014), which we review below.

This becomes more important the greater the investment's risk of expropriation or the lower its recovery rate following expropriation. For example, Maurer (2013) explains how the Peruvian Government had to compensate the mining expropriations made at the start of 1970, because the companies affected were filing claims against purchasers of exported metals, meaning that purchasers of Peruvian ore were paying lower prices for those exports. As Maurer (2013) explains, this was also a decisive factor in Chile's compensation of US mining companies like Anaconda

in order to export copper without being sued by the 1971 expropriation.

That form of penalty is not available for non-tradable goods, where only local legislation is effective. The exceptions would be the reputational penalties and ICSID verdicts. It is not that halting an expropriation in the non-tradable sector is impossible, but it is more difficult.

In the model we present, the small country chooses the investors who carry out FDI and subsequently decides whether or not expropriation is applicable after the investment has been made. This decision is anticipated by the investing country, either a developed or a developing country like China. Once the investment has been made, the multinational investment firm can benefit from a potentially large penalty by the capital's country of origin, deterring any potential expropriation.

However, to be steep enough this penalty requires negotiating power as an importer of goods from the recipient country, thus threatening to penalize by blocking a good deal of a country's exports. The model presupposes coordination among Chinese agents (investors, importers, and Government) to allow them to act more smoothly as a single agent and to easily compensate any internal losers from the penalty.

As mentioned above, it also requires

negotiating power involving high dependency on the Chinese market. The model predicts that the fraction of Chinese FDI in a country will be higher the larger the trade link and the lower the perception of compliance with the laws given by the international community.

EMPIRICAL EVIDENCE

The data used is from fDi Markets (a subsidiary of the Financial Times Group). These are contrasted with data

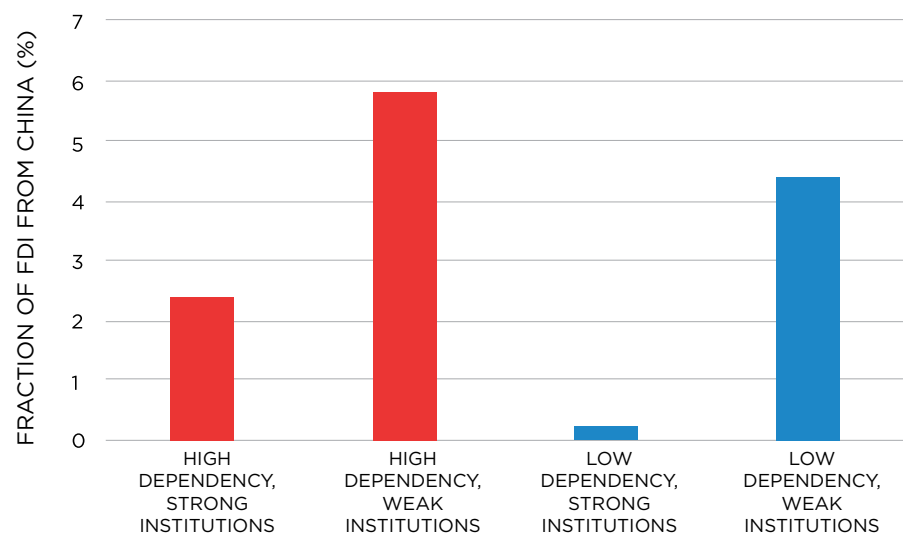
from the Chinese Ministry of Commerce, using FDI data at project level, covering a broad set of sectors and countries, and distinguishing between new projects and capital expansions. Mergers and takeovers are not considered, only so-called "green field FDI." The fraction of exports to China is also calculated, using the World Bank's World Trade Indicator, as is the institutional quality, using the World Governance Indicators' rule of law index, based on Kaufmann, Kraay, & Mastruzzi (2009).¹ Additional

TABLE 1
DESCRIPTIVE STATISTICS OF MAIN VARIABLES

VARIABLES	SAMPLE SIZE	MEDIA	STANDARD DEVIATION	MIN.	MAX.
FRACTION OF CHINESE FDI	143	0,029	0,106	0	0,998
FRACTION OF EXPORTS TO CHINA	143	0,04	0,093	0	0,751
INSTITUTIONAL QUALITY	143	0,068	0,976	-1,691	1,951
GDP (NATURAL LOGARITHM)	143	24,17	2,119	19,96	30,16
DISTANCE (NATURAL LOGARITHM)	143	8,987	0,539	6,862	9,868

Note: The data cover the sample period 2003-2007. Institutional quality is an index of World Governance Indicators rule of law. GDP is measured in millions of dollars and is obtained from the IMF's World Development Indicators. Distance represents physical distance as the crow flies, between Beijing and the capital of the country of destination, and is available on the CEPII's GeoDist database. The fraction of FDI from China is obtained from fDi Markets and the Financial Times, and represents the fraction of incoming FDI represented by Chinese FDI. The fraction of exports to China is the fraction of exports to China from the recipient country and is obtained from the World Bank's World Trade Indicators.

FIGURE 1
FRACTION OF FDI FROM CHINA (CONDITIONAL AVERAGES)



Note: Data from the sample of 143 countries. High dependency and strong institutions are defined as being equal to or above average; on the contrary, low dependency and weak institutions are defined on the basis of being below average. Hence, the values are conditional averages. Dependency corresponds to the fraction of exports to China.

controls from other sources are used, with variables such as GDP, culture, and distance between the recipient country and China. Table 1 shows the descriptive statistics.

On the basis of the theoretical analysis in Section 2, high export levels to China are associated with a greater comparative advantage of China as a foreign investor, quite apart from the position the country ranks in the rule of law indicator.

As preliminary evidence, the sample countries are divided into those with above- or below-average institutional quality, and those with above- or below-average trade dependency on China (high or low dependency respectively), and the fraction of incoming FDI represented by capital from China is calculated. This empirical comparison is set out in Figure 1, which shows how China is a more important investor in countries with lower-than-average institutional quality, especially if the recipient coun-

try also has high export dependency on China. The average difference is almost 2 percentage points between those with high and low trade dependency, given the recipient country's low institutional quality.

The above analysis is consistent with the hypothesis that China has advantages in precisely those countries that meet the two conditions of dependency in China: being a client and having weak institutions. However, it must be recognized that the analysis presented does not control for other factors that may be confusing the hypothesis with other explanations. We, therefore, now show a regression analysis that controls for other factors.

VARIABLE-CONTROLLED REGRESSION ANALYSIS

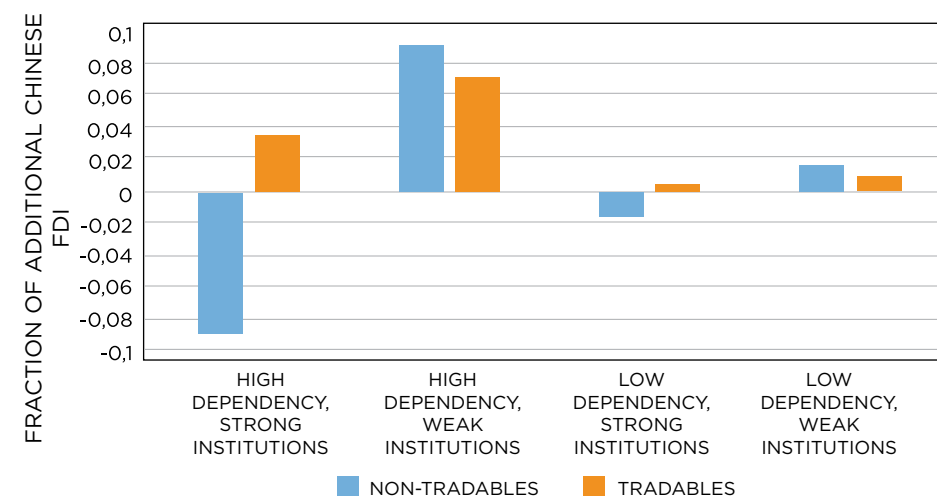
To this end, a linear regression analysis is carried out, where the fraction of Chinese FDI in each country is

explained by the institutional quality, the fraction of exports to China, and the interaction between the two variables, but other determinants of FDI, such as geographical and cultural distance, or the size of the country of destination's GDP and population (the last four in a natural logarithm) are also controlled. A distinction is also made between FDI in tradables and non-tradables. To simplify the explanation of the results, a simple experiment is carried out, simulating four countries according to their level of exports to China and their institutional quality, including the aforementioned control variables. An additional exercise was conducted, adding the geographical region and the income group at country level as control variables.

The results are shown in Figure 2 and again confirm that the comparative advantage of Chinese FDI is geared to countries with high dependency and low institutional quality on average, albeit in investment relating to the tradable goods sector.

Until now, our analysis has dealt with the importance of Chinese FDI with regard to FDI from other destinations in countries with weak institutions and high trade dependency on China; however, it has not addressed the intensive margin of FDI, i.e. the size of Chinese FDI projects. Therefore, an estimate is made similar to the one originally suggested in Song & Wagner-Brizzi (2014), but this time explaining the logarithm of the size of the projects, as

FIGURE 2
ADDITIONAL FRACTION OF CHINESE FDI, CONTROLLED BY REGIONAL EFFECT AND INCOME LEVEL (SIMULATION BASED ON ESTIMATED DATA)



Note: Based on estimated results in Table 4 of Song & Wagner-Brizzi (2014), dividing countries by their dependency on exports to China (High or Low) and institutional quality (Strong or Weak). A country is considered as having high dependency on China if 70% of its exports go to the Asian country, and low dependency if 10% of its exports are to China. Institutions are considered weak if the rule of law indicator equals -1, and strong if it equals +1. The data are simulations based on the results of linear regressions explained by institutions, dependency, and the interaction between the two variables, taken together with regional effects and income groups. Only specific estimators are taken into account, not confidence intervals.



THE DETAILED MODEL

The model deployed by Song & Wagner-Brizzi (2014) to quantify the phenomenon is based on Schuler (1998) and the literature about how the flow of trade can be used as a source of political power.

It is a static partial equilibrium model in which capital cost is not defined by FDI, but occurs exogenously. It is assumed that there are many small countries j , each one of which has a predetermined legal framework and levels of exports x_{ij} to one of the countries i . Unlike in Antràs (2003), the type of exported goods is not related to the FDI received by the country.

The set of perfect symmetrical information has three periods: 0, 1, 2, which, for simplicity's sake, does not include a time discount. Investment decisions are condensed in the period $t = 0$, while an extreme institutional event, such as an expropriation, takes place in the period $t = 1$, and any penalties are implemented in the period $t = 2$.

In every small country, there are opportunities for investment that cannot be financed by domestic investors and that can only be realized with investment by a large country. Small country j is composed of a single agent, the Government, which can take two decisions:

(i) choosing which foreign investor it prefers to implement the FDI project and (ii) deciding whether to change the rules (e.g. whether or not to expropriate the investment) once the investment has been made.

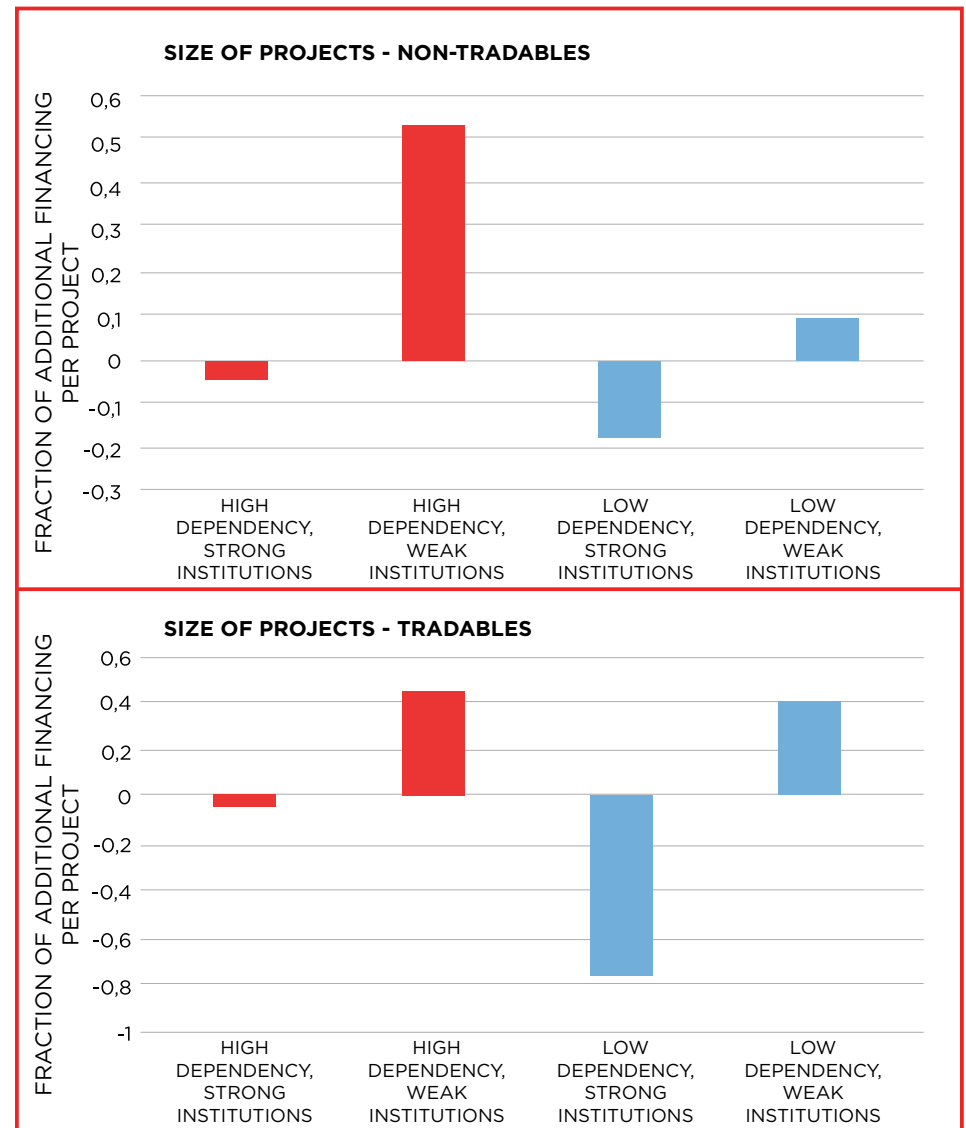
Thus, country j faces the following problem:

$$\max_{i, \text{exprop}} u_j = \max_i \{b_{ij}^i\} + \text{exprop} [e_j - \tilde{e}_j^i]$$

where b_{ij}^i is the offer that country i is willing to pay to carry out the project, exprop is a dummy variable defining whether or not to expropriate the FDI, $[e_j - \tilde{e}_j^i]$ is the net profit of the decisions taken by the Government of e_j represents the temptation to break the rules (inversely proportional to institutional strength), and \tilde{e}_j^i is the maximum penalty country i can inflict on j in the event of any rule-breaking. The penalty can be a proportion s of the purchases i makes from j . Thus: $\tilde{e}_j^i = (1 - \rho \cdot s \cdot x_{ij}^i) \tau$

where τ measures the dependency of j 's exports from i and ρ measures the potential premium of these exports for i . Thus, the greater the importance of exports for j , the greater the penalty.

FIGURE 3
ESTIMATED ADDITIONAL PERCENTAGE SIZE PER PROJECT (ESTIMATORS)
ACCORDING TO TYPE OF GOODS



Note: Based on estimated results in Tables 5 and 6 of Song & Wagner-Brizzi (2014). The figures correspond to the estimator of the effect of the dummy variable taking the value 1 if the FDI is from China and 0 otherwise, to explain the amount invested per project.

controlled by GDP and distance (both in a natural logarithm), and variables at the level of recipient country and industry. The results in Figure 3 show that, in the case of Chinese FDI for non-tradables, investment projects are 50% larger in countries with weaker institutions,

provided there is high dependency on China as an export destination.

The evidence would, therefore, confirm that China invests more in countries with weak institutions and high export linkage with the Asian country. This effect is mainly located in investments

50%

LARGER ARE CHINESE INVESTMENT PROJECTS IN COUNTRIES WITH STRONG TRADE TIES



in non-tradables, where there could be a greater propensity for expropriation by the country receiving the investment.²

EXPORTING FOR CAPITAL

Unlike what is suggested by the traditional literature, institutional quality is not a condition for Chinese investment, provided recipient countries of the investment have a close trading relationship with the Asian giant.

In this article, we have summarized the evidence of Song & Wagner-Brizzi (2014), arguing that this oligopsony on

China's part, coupled with the rapid response capacity in cases of trade sanctions, is an effective way of protecting investments, and that it would be even more noticeable in the non-tradable sector.

Naturally, this may be a strategy to reduce political risk in the region, perhaps investing in joint ventures with China that would mitigate the chances of such risk. It may also be interesting for countries that do not trade a lot with China and that, by increasing their flows, could receive higher levels of FDI or loans from the Asian country. ■

NOTAS

¹ The rule of law index is a standardized rating between -2.5 and +2.5, reflecting the perceptions of agents¹

²For a closer analysis of robustness, see Song & Wagner-Brizzi (2014).

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Chinese Tourists offer a great opportunity for the Caribbean

By 2020, 100 million Chinese tourists will seek destinations in the world to make expenditures of US \$120 billion. The big bet is to make Caribbean tourism an attraction for Chinese investment. In recent years, investments from the Asian giant helped create modern sports stadiums and buildings, and to finance infrastructure projects. Richard Bernal, counselor at the Inter-American Development Bank (IDB), is one of the men in the region who knows more

Caribbean trade dynamics. According to Bernal, there is no single strategy in the Caribbean Community (CARICOM) in relations with China. Trade flows and investments depend on diplomatic relations.

How have diplomatic relations between China and the Caribbean changed the over the past decade?

China has significantly expanded and deepened its diplomatic relations



US\$ 500 MILLIONS is foreign investment received by the region



Ambassador Dr. Richard Bernal. Executive Director-Caribbean, Inter-American Development

small developing countries in the Caribbean during the last decade. There has also been a substantial increase in Chinese development assistance to those countries that recognize the People's Republic of China instead of Taiwan. China has funded and constructed several stadiums, prestigious buildings and infrastructure projects. President Xi Jinping has visited the region twice and nearly every Caribbean prime minister/president has been received in Beijing. There have been Chinese delegations to the Caribbean countries no matter how small. China has established embassies in all Caribbean countries that adhere to the One China Policy. China has increased the number of scholarships for study in China and established several Confucius Institutes in the region.

Which are China's strategic interests in the Caribbean?

China's strategic interest is primarily over the rivalry for diplomatic recognition between the PRC and Taiwan. As a superpower China feels the need to have a global diplomatic presence to support its exports and investment opportunities.

How have trade and business relations evolved during the last decade?

The major feature has been the increase in development aid and loans to those countries that recognize the People's Republic of China. These funds have been used to for construction projects executed by Chinese firms. The growth of China's exports to the region has outpaced that of the Caribbean and hence there is a widening trade deficit. There is the beginning of a slight increase in FDI.

How is this relationship different from other countries in Latin America?

The primary difference is the rivalry between the People's Republic of China and Taiwan over diplomatic recognition. Of the 26 countries that recognize Taiwan, eleven are in Central America and the Caribbean but this is not a major issue in South America where only Paraguay recognizes Taiwan.

China's economic presence in the Caribbean does not exhibit the same characteristics that it does in South America and Central America. For example, exports of agricultural products from Latin America to China have grown dramatically in recent years but



exports of agricultural commodities are not significant for the Caribbean.

What are the main characteristics of Chinese foreign direct investment in the Caribbean? Which countries are receiving the greatest investments?

China's foreign direct investment in the Caribbean countries is very small, both as a share of China's FDI and as a share of the stock of FDI in the Caribbean. Chinese FDI is still small compared to traditional sources of FDI such as Canada, the United States, and the United Kingdom. The sectors in which there has been Chinese FDI are agriculture, tourism, minerals and energy. Based on data for the period 2005–2013 the stock of FDI in the Caribbean (not including Cuba) is estimated to be US\$500 million.

There are large deposits in the banking systems of The Bahamas, the Cayman Islands and the British Virgin Islands which are often incorrectly referred to as foreign investment or foreign direct investment.

What has been the development of Caribbean exports to China in the last decade?

Caribbean exports to China have shown very little growth.

Where are the greatest opportunities for the Caribbean countries in terms of trade and investment? And the biggest challenges?

China is forecasted to become the world's fourth largest source of tourists by 2020, generating 100 million outbound tourists each year with an anticipated expenditure of \$120 billion annually. This is an opportunity for the already well established world class tourist industry of the Caribbean.

A lot more has to be done to break into the tourism market in China and establish the Caribbean as a desirable destination. Products and marketing programs have to be specifically designed and mounted to garner tourists from China.

What is CARICOM's strategy towards China?

There is not a single united CARICOM strategy towards China because some countries have diplomatic relations with the People's Republic of China and others recognize Taiwan. China does not have diplomatic relations with countries that recognize Taiwan. Relations between the Caribbean countries and China are conducted on a bi-lateral basis. ■

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COMPLEMENTARY ECONOMIES

THE DEMAND FOR COMMODITIES BY CHINA AND FOOD PRODUCTION GENERATE AN ALMOST NATURAL LINK BETWEEN BOTH REGIONS. HOWEVER, THE CHALLENGE OF A MORE DIVERSIFIED ECONOMY STILL REMAINS. HOW CAN

WE ADD VALUE TO EXPORTS, AND HOW CAN THE REGION GAIN PARTICIPATION IN GLOBAL VALUE CHAINS. THE PRODUCTIVITY AND THE STRATEGIC PERSPECTIVE FOR MEDIUM AND LONG TERM.

The future of food demand

Martin Piñeiro,
Eduardo Bianchi
Grupo Ceo

Food for 50% of the world population

Brf / Food

"We want to deepen cooperation with mercosur and the pacific alliance"

Yang Wanming
Ambassador
of the People's
Republic of
China
in Argentina

Can the show go on?

**Iacob Koch
Weser**
U.S. Department
of Commerce

Red gold in the heart of Los Andes

Codelco/Mining
Nelson Pizarro

How to beyond complementarity

Tang Jun
Director of ILAS at ZISU

"We have more funding available for infrastructure"

Andrew Sheng
Distinguished Fellow,
Fung Global Institute

THE FUTURE OF FOOD DEMAND

HOW TO ADD VALUE TO PRIMARY EXPORTS TO CHINA

THE SLOWDOWN IN THE CHINESE ECONOMY HAS HAD A POWERFUL IMPACT ON THE PRICE OF PRIMARY COMMODITIES AND ON THE SHORT-TERM EXPORT POTENTIAL OF THE MAJORITY OF THE REGION'S COUNTRIES. WHAT ARE THE MEDIUM-TERM PROSPECTS FOR THE AGRIFOOD PRODUCTION SYSTEM AND HOW TO INCORPORATE VALUE TO EXTERNAL SALES.

Martín Piñeiro
Grupo CEO

Eduardo Bianchi
Grupo CEO y IUEAN



OVER THE PAST TWO DECADES, CHINA EXPERIENCED A REMARKABLE ECONOMIC GROWTH TOGETHER WITH A RAPID INDUSTRIALIZATION AND URBANIZATION. SUCCESSFUL POLICIES OF INCOME DISTRIBUTION GENERATED A SIGNIFICANT INCREASE IN THE DEMAND FOR FOOD. THIS ARTICLE DESCRIBES THE DYNAMICS OF FOOD EXPORTS FROM LATIN AMERICA TO CHINA, AND RELATES THE PRESENT AND FUTURE DEMAND FOR CHINA WITH ITS AGRICULTURAL POLICY. ALSO IT ANALYSES THE MAJOR CHALLENGES FOR COUNTRIES IN THE REGION TO INCREASE THEIR INTEGRATION INTO THE FOOD MARKET OF CHINA, AND PRESENTS A SET OF IDEAS TO SEIZE THE OPPORTUNITIES OF TRADE, PRODUCTION AND TECHNOLOGICAL INTEGRATION BETWEEN CHINA AND THE REGION.

Over the past two decades, China has experienced extraordinary economic growth which, together with rapid industrialization, significant urbanization, and successful income distribution policies, has generated a significant expansion in the demand for food. This article describes the dynamics of Latin American food exports to China and relates China's present and future demand to its agricultural policy. It also poses major challenges for the region's countries, when it comes to increasing their insertion in the Chinese food market, and sets out some ideas to take advantage of the opportunities for trade, production, and technology integration between China and the region's countries.

While China's agricultural production has also risen considerably in recent years, it has not been enough to meet the rising food demand, thus prompting a rapid increase in food imports.

The greater volume of purchases has been met by a significant number

of countries, notably Australia, Canada, New Zealand, United States, and Latin America. Our region has contributed about 24% of total food imports, with pronounced concentration in terms of exporting countries and products.

China's increased food demand has been expressed in both quantitative and qualitative terms, i.e., increased consumption of animal protein.

This concentration of food exports from Latin America to China in a handful of products and a handful of countries can be viewed as a deficit in the region's trade with a huge country in population terms. Yet, at the same time, it creates the possibility of opportunities for expansion in terms of both products and countries. Furthermore, given that exports from Latin America account for less than a quarter of China's total food imports and that the region is highly competitive in many traditional and non-traditional agricultural products, there is also the possibil-



24%

OF FOOD
IMPORTS
FROM CHINA COME FROM
LATIN AMERICA
AND THE CARIBBEAN

ity of increasing market share in some of these. While China's economic expansion has slowed in recent years, its annual rate of GDP growth remains significant, suggesting therefore that its food demand and import requirements will continue to increase rapidly. Latin America and especially the Southern Cone countries, which have high potential for expanding agricultural production, will play an important role as suppliers of this demand.

It should be remembered that most of China's current demand directed at the region is concentrated in primary products with very little added value. The challenge for the Latin American countries is also then how to increase the value added content of these sales. So far the strategy followed by China has been to import primary goods and maintain processing activities within its borders.

Recent Chinese policy of investing in foreign companies, in both primary food production, and in food processing and marketing, could mean a shift in its strategy and in its terms of trade. This shift could result in the need for our countries to define new negotiating strategies and linkages with China. In this context, the greatest challenge for Latin America is how to achieve greater productive and technological coordination and collabora-

tion with China. That will require public policies and negotiating capacity, which can be certainly be enhanced with greater coordination and productive integration within Latin America and, in particular, the Southern Cone countries.

EXPORTS TO CHINA: THE STATE OF PLAY

The significant growth of trade in general, and of the agrifood industry in particular, between Latin America and China during the first decade of the twenty-first century has been widely documented and commented on. In 2014, trade between the two countries totaled approximately US\$260 billion (Casanova et al., 2015). A crucial feature of this trade is that exports from Latin America to China are composed

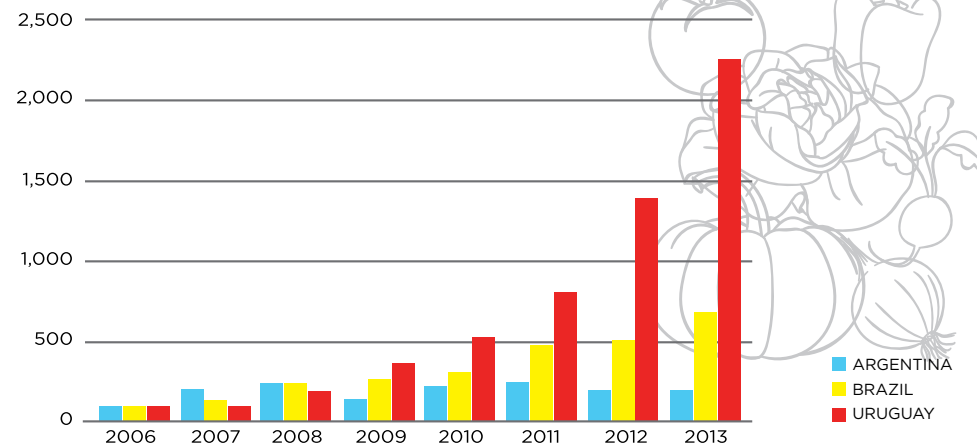
of primary products, while imports are mainly concentrated in manufacturing.

This trade pattern has been explained in terms of comparative advantages, with Latin America being rich in natural resources, while China is relatively abundant in unskilled labor. Spectacular economic growth, rapid industrialization, improvement in income distribution, and high rates of urbanization have made China a voracious demander of raw materials and food. In the framework of the different factor endowments, part of this demand for natural resources was channeled to Latin American countries. China's share as a destination for total Latin American exports has thus risen from 1.7% in the 1990s to 9.4% in recent years, to around US\$130 billion in 2014 (Casanova et al., 2015). During the first decade of this century, the region's exports to China developed great momentum, with an average annualized increase of 24% (Perrotti, 2015). This resulted not only in greater demand, but also in a significant increase in the price of primary goods, substantially improving many countries' terms of trade in the region (Piñeiro & Bianchi, 2012).

US\$ 90 BILLION

WAS THE LEVEL
OF BRAZILIAN FOOD
EXPORTS TO CHINA
BETWEEN 2006
AND 2013

FIGURE 1
FOOD EXPORTS TO CHINA. 2006=100



Source: Based on COMTRADE database, taking as foods the products in Chapters 01-24 of the HS.

In addition to this significant dynamism, exports from Latin America to China show three other basic characteristics. First, they exhibit remarkable concentration in terms of the basket of goods, since just four of them account for almost 80% of the region's total exports to China: soybeans, crude oil, iron ore, and copper. Second, our region's export basket is in open competition with those of Australia, Canada, New Zealand, and United States, which allows China to considerably diversify its sources of supply.

Last, analyzing Latin American ex-

ports to China by country, sharp differences are seen, especially between Central America and the Caribbean, on the one hand, and South America, on the other. Abundant in natural resources, South America benefited more, while the rest of the region was generally less favored, their exports competing with China's while also being net importers of natural resources. Jenkins (2011) distinguishes the following beneficiary countries: Bolivia, Chile, and Peru as ore exporters; Ecuador, Mexico, and Venezuela as oil exporters; and Argentina and Brazil as food exporters.

In line with the above and in order to analyze the current structure of the region's food exports to China, we will focus on Argentina and Brazil, together with Uruguay for reasons outlined below. So as not to draw our observations from a particular year, we have considered the three countries' exports to the world and to China during an eight-year period, from 2006 to 2013, using as a source the United Nations' COMTRADE database.

Figure 1 shows the evolution of the three countries' food exports to China. Brazil's exports are the most significant, displaying a clear tendency over the period toward growth, from US\$3.3 billion in 2006 to US\$22.6 billion in 2013 and US\$90 billion in our period. Next

in terms of value come Argentine sales, with an erratic evolution: US\$2.2 billion in 2006, almost US\$4.5 billion in 2013, and US\$34 billion in our period. Last is the steady and significant growth of Uruguayan exports, which fell from US\$50 billion in 2006 to US\$1.1 billion in 2013, with US\$2,800 million in the period under consideration.

Figure 2, for its part, shows the share of food exports to China in each country's total external sales of these products. Consistent with the above developments, China's share displayed growing importance in both Brazil and Uruguay's case, rising from peaks of 9% to 27%, and of 2% to 19% respectively; in the period, China's share in Brazilian total food exports stood at 18%, and 9% in the case of Uruguay. In Argentina's case, against an erratic background, China's share showed a downward trend, from 16% in 2007 to 11% in 2013, with a 12% share in the period analyzed.

On the other hand, the food basket that each country exported to China during this period in all three cases shows a marked concentration, mainly in beans and soybean oil, as shown in Table 1. In Argentina's case, beans accounted for 68% of food sales to China, and soybean oil 21%; the two products together made up 89% of Argentina's food exports to China. It should be noted that China accounts for 80% of Argentina's total soybean exports to the world, and 22% of soybean oil. Moreover, in the years under consideration, no other food exceeds 1% of Argentina's total food exports to China.

Brazil's exports to China also show a concentration in the case of soybeans, though lower than in Argentina's case. Soybeans accounted for 71% of the total and soybean oil for 5%, together totaling 76% of total food sales to China. In both cases, China is an important

destination for Brazil's exports of both products. The Brazilian export basket to China is completed with products from the beef chain (7% of the total), poultry meat (6%), and raw sugar (5%). All these products together accounted for 94% of exports to China in the period under consideration.

Last, Uruguay has the lowest concentration in soybeans. Soybeans exports accounted for 56% of the total, with no sales of soybean oil to China being recorded. The Uruguayan export basket to China is completed with frozen beef (17% of the total) and other products from the beef chain (16%), totaling 33%. If we add dairy products (4%) and fish (4%) to these products, the group accounts overall for 97% of Uruguay's food exports to China.

SUPPLY POLICIES

The concentration in a small number of products displayed by the Latin American countries that export food to China, as demonstrated in the last section, is closely bound up with China's policies regarding the supply of these products. These policies, to a large extent, determine its current demand and will also influence its demand in the future.

Like many countries that have ex-

perienced food crises, with significant portions of the population suffering from hunger, basic food self-sufficiency has been state policy in China, from the time of Mao until today. It should be remembered that just 13% of the China's total surface area is arable land. This deficit in a basic resource for farming has been partly offset with the adoption of high-yielding seed varieties, the use of chemical fertilizers and major public investments in irrigation, which have led to the growth of agricultural production based on rising productivity.

In this framework, agricultural production is structured to satisfy, first, grain consumption by part of the population and, second, other agricultural products. China is thus the world's largest producer of rice and wheat, around which the population's diet is centered. It is also a significant producer of coarse grains like maize, used predominantly in animal feed for poultry meat, swine, and beef production. At the same time, China has highly-diversified labor-intensive fruit and vegetable production, leading world production in several of these products.

These results in agricultural production have been driven by the Chinese Government's policies aimed at self-sufficiency, as reflected in various official documents. By way of example, in

1996, the Government established "The Grain Issues" and then, in 2008, the "Long Term Security Plan 2008-2020," in both cases with the aim of achieving 95% self-sufficiency in grain. In 2014, the self-sufficiency targets were reformulated, establishing the objective of 100% self-sufficiency in rice and wheat consumption, and 80% in the cereals and oilseeds group.

The changes occurring in China in the past two decades have implied higher consumption of meat, fish, vegetable oils, dairy products, fruits and vegetables, and processed foods. Accordingly, the increased demand for and diversification of food has led to China to have a significant presence in international markets, making it the second largest food importer in the world. China began to participate in international trade at the end of the 1990s, after a set of reforms reducing its levels of trade protection in the agricultural sector. After joining the WTO in 2001, its food imports grew continuously to become a net food importer by 2003. Agrifood

80%

OF ARGENTINA'S
SOYBEAN
EXPORTS GO
TO CHINA





imports thus exceeded US\$100 billion by 2013, amounting to nearly US\$485 billion dollars in the period 2006-2013. In 2006, China accounted for 3% of world food imports, a figure that rose to 8% in 2014. For its part, China accounts for 14% of the rise in world food imports between 2006 and 2014; while world food imports grew by 76% in these two years, food purchases from China grew by 350%.

It is interesting to note that, despite these scales in the value of external food purchases, they accounted for just between 4-5% of China's total imports, being concentrated in just a handful of products. Table 2 shows that, in 2014, 60% of China's food imports were concentrated in 10 products, with soybeans representing 37.4% of the country's food imports. Analysis of imports of

these products by supplier country also highlights a significant concentration, as shown in Table 4. Brazil and United States thus account for 87% of Chinese soybean imports; New Zealand for almost 80% of milk powder imports, Malaysia and Indonesia for 100% of palm oil purchases, and Russia and United States 55% of frozen fish imports. Similar levels of concentration by supplier are recorded in the other 6 main products.

As mentioned above, higher income and diversification of diet have expanded the range of imported food. The consumption of more sophisticated foods, like fresh fruit (grapes, cherries, and apples), cheeses, vegetables, wines, and animal proteins, is increasing dramatically. For example, the urban population consumes twice as much meat per

capita than the rural population. On the other hand, the increase in per capita income also drives other cultural changes that result in higher consumption of processed foods like noodles, crackers, pastries, snacks, and prepared meals. These trends, together with higher levels of consumption outside of the family unit—e.g. in restaurants—have a major impact on the development of the food industry and in shaping longer, more complex value chains, and require highly sophisticated technologies.

Local production could accompany this increase in the demand for food in the case of labor-intensive production, like fruits and vegetables, but it would have greater difficulty in the case of animal proteins, particularly in the case of beef and dairy products, since both require a larger amount of land and water per product unit. For example, during the period 2006-2013, meat imports doubled and dairy imports quadrupled. Per capita consumption of animal proteins will thus continue to rise in the future, as it has in other more developed countries and regions, generating significant additional demand.

The changes projected in food habits will favor the possibilities of increasing trade in products with higher added value. For example, higher fruit consumption will create favorable conditions for countries like Costa Rica and Chile, which export these products. These trends will be positively affected by the trade agreements signed in recent years by these two countries and by Peru. These agreements grant various different trading advantages and facilitate authorizations in health issues. It should be remembered that

13%

OF CHINA'S LAND
IS ARABLE,
A DEFICIT OFFSET
BY HIGH-YIELD
SEEDS

China regulates its food imports mainly through tariff quotas and phytosanitary measures. These policies are relaxed when government authorities deem that imports are necessary, either due to a shortfall in the supply of a product or to combat price rises.

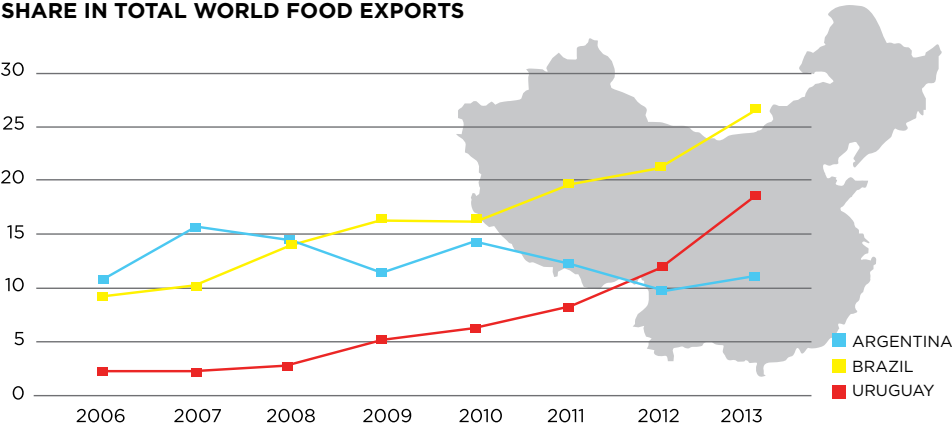
In this way, Latin America's ability to insert itself in the Chinese market will be hampered by China's trade agreements with New Zealand, Australia, and the ASEAN countries, which are also producers and exporters of fruits and vegetables, and, in New Zealand and Australia's case, meat and dairy products, through which it grants them fairly significant tariff concessions. The average tariff applied by China for agricultural products is higher than the one levied on industrial manufactures, not to mention tariff escalation, which encourages the import of raw materials and discourages purchases of more highly-processed agricultural products.

INSERTION IN THE
CHINESE MARKET

In this tricky
but manage-



FIGURE 2
FOOD EXPORTS TO CHINA
SHARE IN TOTAL WORLD FOOD EXPORTS



Based on COMTRADE database, taking as foods the products in Chapters 01-24 of the HS.

able context for increasing agrifood exports, and particularly those with higher added value, two great challenges clearly emerge for Latin America. First, the enormous importance of reaching trade agreements that help to level up the tariff advantages granted to competitor countries and to establish conditions that facilitate trade, including health agreements. In this respect, the lack of interest expressed by some Latin American countries, in particular the members of MERCOSUR, is a significant handicap.

Second, it should be understood that self-sufficiency has ceased to be the only option for the Chinese government, which is currently developing a strategy that combines local production with external supply. China is thus seeking to increase its agricultural pro-

duction, while implementing offensive actions of direct procurement in food-producing countries, a strategy known as “two-markets, two natural resources.”

This strategy has been based, in principle, on the purchase of land or land rights in developing countries. This investment policy—implemented mainly in Africa, but also in Latin America—has had negative political repercussions. Neither has it been very successful in productive and economic terms: in recent years transnational investments in China have not concentrated on the acquisition of land rights, but on the acquisition of companies in the agri-food chain, with the objective of having greater control over food supply to its domestic market and over food prices. Some analysts have pointed out that an important objective of this strategy is to

TABLE 1
SOY EXPORTS TO CHINA 2006-2013

		BEANS	OIL	BEANS + OIL
ARGENTINA	US\$ MILLONES	23.339	7.205	30.544
	% OF TOTAL EXPORTS TO CHINA	68	21	89
	% OF TOTAL PRODUCT EXPORTS TO THE WORLD	80	22	49
BRAZIL	US\$ MILLONES	64.047	4.670	68.717
	% OF TOTAL EXPORTS TO CHINA	71	5	76
	% OF TOTAL PRODUCT EXPORTS TO THE WORLD	63	34	59
URUGUAY	US\$ MILLONES	1.592	-	-
	% OF TOTAL EXPORTS TO CHINA	56	-	-
	% OF TOTAL PRODUCT EXPORTS TO THE WORLD	27	-	-

Source: Based on the COMTRADE database.



CHANGES
IN EATING
HABITS WILL FAVOR
THE CHANCES
OF BOOSTING
TRADE IN
HIGHER-ADDED-VALUE
PRODUCTS

obtain flexibility with regard to United States, China’s main supplier of agricultural produce.

One example of this strategy is China’s growing interest in competing through China National Cereals, Oils and Foodstuffs Corporation (COFCO), its main cereal trading company, with the main transnational corporations trading in cereals and oilseeds, the six sisters: ADM, Bunge, Cargill, Dreyfus and Nidera. As part of this strategy, COFCO bought Nidera at the end of 2014. This acquisition positioned China differently in the grains market. Indeed, given that Nidera’s activity in seed production is significant, China is also present in that sector, which is highly dependent on other countries for its supply of genetically improved seeds, mainly from United States, Canada, Europe, and the Southern Cone countries.

This new positioning of China’s in food supply chains at global level alters trade relations with exporting countries, which are its main suppliers. It is no longer a marketplace where exporting countries interact with importing countries in transparent markets. The new architecture is based on the organization of transnational chains, in which trade is, in reality, an intrafirm activity, and where prices and the appropriation of surpluses are governed by different logics to the traditional ones. This is a

new structural situation that has to be carefully considered in Latin America countries’ design of trade strategy.

TRADE INTEGRATION, PRODUCTION,
AND TECHNOLOGY

Trade integration is the main objective sought through trade agreements, be they bilateral or regional. However, the experience of recent years suggests that, with increasing globalization and the formation of global value chains, trade integration is accompanied, necessitates, and develops important synergies with productive and technological integration to complement and underpin the trade relationship. Examples of integration processes that include important components in the productive sectors are certain high-tech industries, such as the automotive, electronic, and IT. On the contrary, these characteristics have only manifested mildly in the agroindustrial sector, including the food industries, where global value chains tend to be shorter and trade in commodities, which are major



inputs, presents serious difficulties due both to sanitary barriers and to other paratariff measures, which many countries impose quite arbitrarily.

TABLE 2
**MAIN CHINESE FOOD
IMPORTS IN 2014**

N	PRODUCT	MILLIONS US\$	% TOTAL FOODS
1	Soy Beans	40.266	37,4
2	Milk Powder	4.460	4,1
3	Palm Oil	4.383	4,1
4	Frozen Fish	3.601	3,3
5	Rape Seed	2.800	2,6
6	Manioc	2.113	2,0
7	Malt Extract	2.109	2,0
8	Flour and Pellets	1.700	1,6
9	Cane Sugar	1.494	1,4
10	Soy Oil	1.092	1,0
	Subtotal	64.018	59,5
	Total Foods	107.601	
	Total Imports	1.958,167	

Source: Based on COMTRADE database, taking as foods the products in Chapters 01-24 of the HS.

To analyze the opportunities for expanding trade, and trade and productive integration between Latin America and China, it is useful to keep in mind the three axes along which agroindustrial trade could be expanded: a) greater involvement in products already traded; b) market opening in products not currently traded; and c) export of products with higher added value, including specialty-linked market niches.

The possibility of boosting existing market share is closely tied in with three specific instruments: (i) the availability of greater supply; (ii) competitive prices where potential competitors are concerned; and (iii) the establishment of special bilateral agreements. In addition to the country's natural agricultural conditions, the first instrument is defined by the economic and technological policies implemented. The second instrument, the competitiveness in the market, also depends on the economic and technological policy applied by the country, and on the bilateral and regional agreements that China signs with major competitors such as United States, Australia, or New Zealand. As mentioned earlier, these agreements exist and could hinder efforts to expand exports in certain

products currently exported by Latin America.

Last, the third instrument is an area as yet little exploited by some of the region's countries. For example, Argentina is an important trading partner for China in the soybean agroindustrial complex, and more partially in corn and poultry giblets. For its part, China has a sourcing strategy in which the state takes an active part, either directly or through state companies. Faced with the high volatility in the international market and its highly negative consequences for the Chinese economy, it would seem reasonable to try to establish long-term trade agreements aimed at ensuring the supply and at stabilizing price expectations. A bilateral trade agreement would be a step in this direction. However, trade agreements have not in general included more specific components in which long-term commitments could be made in relation to the supply of preestablished quantities.

The implementation of these agreements is complex, and there are not many previous experiences. Moreover, it would also require agreements between governments, and between the exporting country's government and private sector, which would be the one to carry out the export operations.

The possibility of entering new markets is wide open. In previous sections, we pointed to the high concentration of Latin American agroindustrial exports to China in a small number of products. These few products represent just a small portion of the much wider range of food products imported by China from the rest of the world. Altering this state of affairs requires attention to two complementary instruments: on the one hand, the joint development of an active export promotion policy by the public and private sectors. Export promotion agencies, both at national and subnational levels, have an important role to play. The carrying out of trade missions



AN ACTIVE
EXPORT
PROMOTION
POLICY NEEDS
TO BE JOINTLY
DEVELOPED BY
THE PUBLIC AND
PRIVATE SECTORS



and a clear campaign to disseminate information on products produced in Latin America are central elements of this policy.

A second instrument is the development of trade agreements with China, both bilaterally and as a region. Participation in these trade agreements must seek the granting of trade concessions if it is to match or even improve on the preferences granted to the main competitor countries. However, some of the region's major food-exporting countries have been sluggish, both in regional and bilateral negotiations. On the other hand, in the particular case of China, certain countries have prioritized the financial and political relationship, and have not defined a long-term strategic position regarding the trading relationship, a work area that requires careful attention.

Exporting higher-added-value products, for its part, is a difficult challenge, but extremely necessary to improve the region's export profile. The difficulties stem not just from the need for a competitive and technologically advanced agribusiness sector, but also from the logistics costs imposed by the geo-

graphical distances and China's barriers on trade in food, such as the tariff escalation, for example. China is likely to keep up this policy in the future and to complement it with its recent supply policy via the acquisition of international-sized agroindustrial companies. Mindful of this situation, Latin American countries should consider how to implement a comprehensive investment and technology transfer strategy in both directions, to promote productive integration across both Latin America and China.

The objectives pursued through China's investments in Latin America in the agroindustrial sector should be mainly linked to the use of the low-cost, high-quality raw materials produced in the region. The promotion actions that should be undertaken by Latin American countries to bring about these investments are: a) favorable foreign investment regimes; b) trade facilitation and health agreements for the transport of these raw materials in the region to provide access to large volumes; c) development of physical infrastructure to the same end; and d) agreements facilitating both technological research

and development, and the access to this technology.

At the same time, Latin American investments in China should target market access as their main objective. To facilitate and promote these investments, the Latin American countries should concentrate efforts on: a) developing bilateral agreements that grant facilities to these investments in terms of regulations relating to investments, and technology transfer and protection; b) developing actions to understand Chinese

food culture and to find market niches for special products; and c) providing public funding for these ventures.

ECONOMIC SURPLUS

In closing, the slowdown in China's economic growth, alongside the devaluation of the yuan, have generated significant volatility in international markets. Despite the potentially bleak outlook for the state of the Chinese economy, the projections by international agen-

TABLE 3
CHINA'S MAIN FOOD IMPORTS AND SUPPLIERS IN 2014

PRODUCT/ COUNTRY	MILLIONS US\$	%
SOY BEANS		
Brazil	18.724	46,5
United States	16.332	40,6
Argentina	3.362	8,3
Uruguay	1.367	3,4
Others	481	1,2
TOTAL	40.266	100

MILK POWDER		
New Zealand	3.540	79,4
United States	217	4,9
Australia	163	3,7
Uruguay	63	1,4
Argentina	61	1,3
Others	416	9,3
TOTAL	4.460	100

PALM OIL		
Malaysia	2368	54
Indonesia	2.015	46
TOTAL	4.383	100

FROZEN FISH		
Russia	1.223	33,9
United States	776	21,5
Chile	113	3,1
Uruguay	11	0,3
Others	1.478	41
TOTAL	3. 601	100



Source: Based on COMTRADE database.



cies and the Chinese government itself estimate that food consumption and imports will continue to grow at significant rates.

In this framework, and taking into consideration China's new food supply strategies, the Latin American countries have great challenges and opportunities ahead in their quest for greater integration and diversification in the Chinese food market. As we have suggested, achieving a high level of productive integration in the agribusiness sector is of enormous importance to the region. Exporting only low-added-value raw materials will result in low appropriation of economic surpluses by our countries

**US\$
485.000**
MILLION AGRIFOOD
IMPORTS TOTALED
BETWEEN 2006
AND 2013

and, consequently, low capacity for growth and development based on the region's comparative advantages in the sector of renewable natural resources. ■

NOTAS

¹ Throughout the work we refer to "China" rather than "The People's Republic of China." Also, by "Latin America," we intend "Latin America and the Caribbean."

² Some of these countries—particularly Mexico—also had to face competition from China in the U.S. market.

³ Paraguay shows rising levels of food exports, in excess of US\$5 billion in 2013. Similarly, its sales to China are also increasing, particularly in products from the soya and beef chains, although these have not yet reached significant levels.

⁴ Counting products in Chapters 01 to 24 of the Harmonized System as food.

⁵ The increase in soya and beef exports from Uruguay to China in recent years has been so remarkable that, going by the figures for 2014, Casanova et al. (2015) argue that, in both products, Uruguay demonstrates China's increased dependence across Latin America.

⁶ Half of the daily per capita calorie consumption comes

from a mixture of rice and wheat.

⁷ The chance to forge trade agreements with China would enable greater access to its food market. A case in point is United States, China's main food supplier, which has achieved greater insertion in the Chinese market through negotiations with Chinese regulatory authorities. In spite of this, USTR (2014) holds that the Chinese market is among the least transparent and predictable in the world, due mainly to phytosanitary regulations based on questionable scientific principles and an "opaque" regulatory regime. USTR (2015), for example, outlines U.S. difficulties exporting beef, poultry, and swine to China.

⁸ China has free trade agreements with several countries, including Latin America (Chile, Peru, and Costa Rica), as well as New Zealand and Asian countries. The dates of entry into force for these agreements are relatively recent, and it is therefore not yet possible to ascertain their impact.

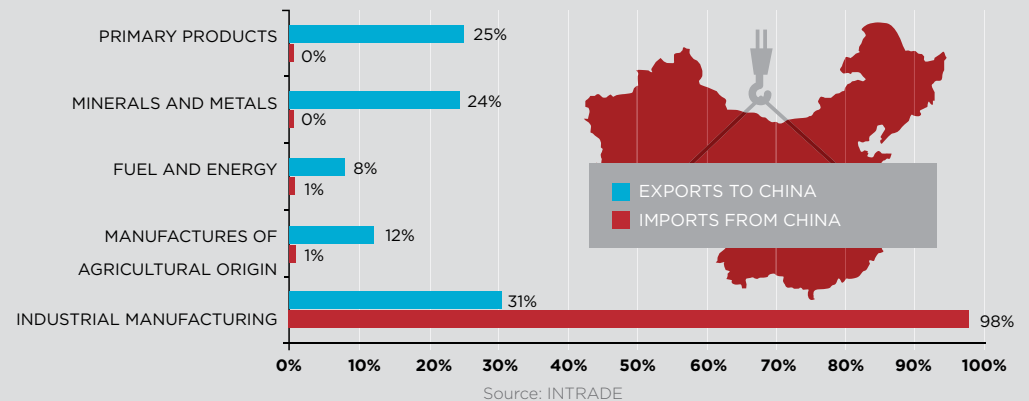
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EXPORT DIVERSIFICATION

TRADE WITH CHINA, ECONOMIC SECTORS (TOTAL SHARE, 2003-2014) MILLIONS IN US\$



EXPORTS	SHARE
IRON ORES	15%
REFINED COPPER AND ALLOYS	13%
COPPER ORES	9%
SOYBEANS	18%
RAW OIL	8%
SOY OIL	2%
IRON ORES	2%
FLOURS, MEALS AND PELLETS, OF MEAT, FISH, CRUSTACEANS, MOLLUSCS AND OTHERS.	2%
WOOD PULP (NON-CONIFEROUS)	2%
WASTE AND SCRAP OF COPPER	1%
CUTS AND OFFAL, FROZEN POULTRY MEAT	1%
UNREFINED COPPER	1%
LEAD ORES	1%
WOOD PULP (CONIFER)	1%

IMPORTS	SHARE
ELECTRICAL TELEPHONIC OR RADIOGRAPHIC APPARATUS	8%
RADIO AND TV PARTS	5%
PARTS AND ACCESSORIES TYPEWRITERS	4%
MAGNETIC OR OPTICAL READERS AND MACHINES FOR TRANSCRIBING DATA	5%
INTEGRATED CIRCUITS AND MICROASSEMBLIES	2%
LASERS AND OTHER OPTICAL EQUIPMENT AND INSTRUMENTS	2%
PRINTED CIRCUITS.	1%
TOYS	1%
ELECTRICAL TRANSFORMERS AND COILS	1%
BUTTONS FOR FORMS AND OUTLINES	1%
MOTORCYCLES	1%
ARTICLES FOR FUNFAIR GAMES	1%
MACHINERY FOR PRINTING	1%
TRANSMISSION APPARATUS FOR RADIOTELEPHONY, RADIOTELEGRAPHY, RADIO OR TELEVISION	1%

CONCENTRATION 80%
OF THE EXPORT BASKET IS MADE UP OF THE 20 PRODUCTS

DIVERSIFICATION 35%
OF THE IMPORT BASKET IS MADE UP OF 20 INDUSTRIAL PRODUCTS

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BRAZIL



BRF



FOOD

Food for 50% of the world population

Businesses in Asia are not made from one day to the other. It is necessary to establish contacts, find suppliers, learn the habits, identify distribution channels, understanding the logic of each country. This is the task that the giant Brasil Foods (BRF) instructed Marcos Jank, vice president of Business Development and Corporate Affairs for Asia. Currently, BRF is the seventh company of the world's largest food listed on the New York Stock Exchange and is among the hundred most innovative and sustainable companies in the world.

In its expansion strategy, Jank warns difficulties related to trade barriers presented by different nations, particularly for the food category, and recommends a business model that enables integration with food chains and transfer technology to find greater receptiveness in importing countries.

What is the company's experience of internationalization and in which country are you operating right now?

BRF was born in 2011 officially, the merge started in 2008, and the main reason is because it was the merge of the two largest companies in this area, in Brazil, which are Sadia and Perdigão. So these two big companies they used to be competitors and then they merged. The process started in 2008, it completed in 2011. This process was very related to the difficulties of the companies after the crisis. So they merged at that

time. The original companies, one has 70 years, the other has 80 years, so they are very traditional companies in Brazil, both companies that originated BRF.

Is BRF one of the most most innovative companies around the world?

Yes. BRF today is the 7th largest food company in the world, it is number 7 in terms of market value. It has a lot of other characteristics. We are also listed in New York, we are now a triple B company so we are above the investment rate, and we just got a new step in this process from one of the agencies and we are also among the 100 most innovative companies and also the most sustainable companies in the world. So we have prizes in both areas: innovation and sustainability.

Is this innovation policy important to compete in the Asian market?

Let me talk to you a little bit about the internationalization, then you are going to understand. The company has been exporting commodity products for a long time. Approximately half of the revenue of the company comes from exports to 125 countries in the world. We are the 4th largest exporter of Brazil, the number 4 company in Brazil exports, and we reach 125 countries with our products. But basically the model until the formation of BRF was adding value in Brazil, so reaching final consumers in Brazil, and we really reached a lot of

10

times you can multiply the value of primary exports in the production process

Marcos Jank. Before directing the business unit in Asia, he was Director of Corporate Affairs of BRF and president of UNICA, the association of sugar companies in Brazil.

consumers in Brazil because we reached 150.000 points of sales every day in Brazil, so we covered the whole country and we have brands that are very well recognized in Brazil. But our experience in terms of internationalization was restricted mostly for the area of basic products such as whole chickens, or chicken parts, or pork parts sold to importers in other countries. But since the creation of BRF we've been investing a lot to reach end consumers in other countries. So the big challenge of the company today is moving from business to business view, to a business to consumers view, which means we want to... not only to export traditional commodities such as whole chicken, but also moving to brands and moving to distribution and moving to production in other countries. That is why last year we launched a brand new plant in Emirates covering with products the whole golf countries, the Middle East. Because traditionally our main market are the Middle East countries, the golf countries, there we also have the Sadia brand very strong, but we were just exporting products from Brazil and now we are exporting raw materials from Brazil and we are producing local products in the Emirates close to Dubai and re-exporting these products to the region, to all the traditional countries of the region. So we are now a local company based in Middle East. And

this is our challenge in Asia too, so in Asia we have a challenge of innovation because the products are different, we have a challenge of joint ventures, new plants and also buying companies here. We started with an operation this year here in Singapore, a joint venture here in Singapore. We are now standing the possibility to do more operations in the region, in many senses, not only having distribution or having further processing in industries here in the region but also reaching end consumers, doing marketing, doing supply chains, developing our brands in Asia. So this is one of the big challenges and that's why today we are focusing so much in having talents here in Asia.

Why do you base your business in Singapore and not in another country in Asia?

This is a good question. We have basically in this company, we have been developing end consumer products in Brazil, in Latin America because we also have a big operation in Argentina but we export also to other Latin American countries. So we have end consumer products in Latin America and very especially in Brazil. And we have also in Middle East. But if you look at the world, one of the most challenging regions is Asia. Why? Because Asia has more than 50% of the global population but has a lack

of natural resources. So for example Asia has less than 20% of the water and represents also a very small part of the arable land, which means that the movement of imports in Asia is increasing. If you look Latin America to Asia, we are seeing a lot of exports of grains, for example soy beans to Asia. But still in the area of meat, of animal protein, many countries in Asia are closed to Latin America and to Brazil. So there are a lot of restrictions yet to enter in several countries in Asia. Half of the countries, half of the population in Asia has no access to our products, absolutely no access, because this population lives in countries that make it impossible for us to export. That is why we are trying to develop joint ventures and operations here in Asia, trying to be also a local player in this region, like we are today doing here in Singapore. So being in Singapore is a very interesting hope for us because we can reach a region that has a lot of potential which is South East Asia, there are six hundred million people in South East Asia. But also we can access China, we can access from here Japan. So our headquarters are here in Singapore. We have commercial offices in Shanghai, in Seoul, in Japan. Our main market in Asia is Japan, but Japan is already a very mature market, and if we look the big challenges are South East Asia and also China.

Do you already have some operations in China?

We've been exporting B2B [business to business] products to China for a long time, more than ten years, but now we are starting an operation of B2C [business to consumers] in China. So we just launched in just a few cities in China products to end consumers. But it's very interesting because the products that are more popular in China are products that are not very popular in Latin America. For example chicken feet, there is a big market for chicken feet in China, but chicken feet are not very consumed in Latin America.

Do you think that with time you can cross these barriers and become a big player in China?

I think it is more difficult than in the Middle East because we have been exporting a lot to Middle East because there are no farmers or there are very little farmers in Middle East. So Middle East needs to import because of the natural conditions. When it comes to Asia, Asia is very developed and has been growing a lot in the urban areas but most of the countries in Asia still have a very large agricultural population and in Asia the size of the farms are very small compared to what we have in Latin America. Most of the countries in Asia, especially the big countries, they have a very important concern in terms of the livelihood of the small farmers and the urbanization process. Because in Latin America we are already urbanized, 90% of the people in Latin America already live in cities. But in Asia it is still around 50% in cities and 50% in rural areas. So there's a lot of population living in small farms in rural areas which makes a pressure against the opening of the economy to imports. But when you position yourself as a local player which means we are not only interested in exports but we are also interested in bringing to the countries in Asia integrated food chains, productivity, quality, safety of products, investment, technology, then the countries are more interested in our presence. So I think the big challenge for us here today, there is still the challenge to open the market but what we want to do is to position ourselves as a company that will help the countries in Asia to give high quality, affordable products to the consumers.

What is the difference between doing business in Latin America and doing business in China?

I think that the big challenge in China, we are pretty sure, we are completely sure that we need to be in Asia and Chi-

na and in the region. But the issue is not if we need to be here, but it is how, what is the best way to participate. What we are learning here is that for example the issue of finding right partners to do the business, the links used to governments, the cultural and linguistic differences makes the challenges much more complex, because culturally, in terms of languages, in terms of population, in terms of food habits, there are a lot of differences and most likely we need to take time to find the right partners to develop the business especially when we move from a contact with importers to a contact with end consumers because this is what we want to do. We are developing a Brazilian brand, a Latin American brand in Asia, in countries where the history is very different of ours, the products are different, the way people prepare the products, the way people buy the products, the channels of distribution. So there is a lot of differences that we need to really understand. So it takes time, and we need a lot of contacts, a lot of studies, a lot of conversations to understand each country.

Another point that is very important is that even if we talk about Asia as only one continent but the differences between the fifteen countries that form Asia are huge. For example, I'm living here in Singapore, which is a country where the per capita income is 55.000 dollars per year. And just across to Singapore we have Myanmar, Burma, which is 800 dollars per year. So there is a huge difference not only between per capita incomes, but also in terms of languages, religions, a big diversity of religions, climate, the size of the economy, infrastructure, the capacity to do business. So we cannot say that Asia is a homogenate strategy, in every region in Asia we need to think about a different strategy.

Let me make a final point. We really believe that the integration of Latin America and Asia is a big challenge and a big opportunity. People someti-

mes see China and Asia as competitors, as a threat to Latin America. But in our case what we learnt is that there is much more complementarity than threat. So there is much more opportunity than a threat to our countries, to our economies. In fact many few countries in Latin America have been developing long term ties with Asia because our culture made us much more close to the US and Europe than to Asia, so I really think that the work that IDB is doing in terms of putting together businesses in these two regions and trying to advocate for trade agreements, I think this is extremely important for companies like ours.

How can latinamericans firms add value to their exports?

This is very interesting because for example when you look to a company like ours. We are controlling the whole food chain. We are for example the largest buyer of corn and soy bean in Brazil and we are producing high value added products from chicken and pork from the soy and the corn that we buy in Brazil. So when we export chicken and pork, we are moving from 500 dollars per ton of grains to products where the value is 2.000 to 5.000 dollar, so it's 4 to 10 times more value if I export chicken and pork instead of just exporting soy beans or corn. But when we make investments in Asia this is the real value added because then we are reaching end consumers with our brands, with our people, with the integration of the food chain. And I believe this model of being a multinational company, a Latin American company in Asia, represents a model where there is a win-win situation with the countries in terms of maximizing the food chain, the whole food chain, integrating the food chain, growing beyond the idea that we are only going to export traditional commodities to do the feed of the animals. We are talking here to reach final consumers together in partnership with players in Asia. ■

“

**We want
to deepen
cooperation
with
MERCOSUR
and the Pacific
Alliance**”

YANG WANMING

Ambassador of
the People's Republic of China
in Argentina

The Chinese Ambassador in Argentina, Yang Wanming, not only speaks perfect Spanish, but is among those with most diplomatic experience of the region. He has held important posts in his country's Ministry of Foreign Affairs, and in the Chinese embassies in Mexico and Chile. In this interview, he describes China's strategy in Latin America, his country's intention to strengthen trade and financial links, to facilitate trade and promote diversification to provide a broader exchange of technology-based products and services.

What will be the keys to the relationship between China and the region in the future?

In the last ten years, economic relations between China and Latin America have made huge progress, especially since 2014, when Chinese president Xi Jinping, together with leaders of the Latin American countries, set out the China-Latin American Comprehensive Cooperative Partnership, characterized by equality, mutual benefit, and joint development. Xi suggested the new "1+3+6" substantial cooperation framework and, in 2015, Prime Minister Li Ke-qiang proposed the new "3Đ3" production capacity cooperation model. All this contributes to the gradual shaping of an arrangement with positive interaction, in which cooperation between China and Latin America in the areas of trade, investment, and finance is mutually supportive and develops along balanced lines. In 2015, during the First China-Latin America and the Caribbean Ministerial Meeting, President Xi Jinping announced the anticipation of US\$250 billion direct investment in the region over the next ten years. Looking to the future, I believe that both parties could deepen cooperation in various areas.

WE ENCOURAGE
MUTUAL DEVELOPMENT
IN OIL AND GAS,
AGRICULTURE,
MINING,
TELECOMMUNICATIONS,
SPACE SECTOR, AND
CLEAN ENERGY AND
OTHER SECTORS

What are the priority economic sectors in this relationship?

We have to take advantage of comparative advantages. First, we are willing to improve the mechanisms for the construction of a free trade zone and investment protection by promoting trade facilitation. At the same time, we encourage export diversification and welcome more value-added Latin American products in the Chinese market. We support mutual investment in such sectors as oil and gas, agriculture, mining, telecommunications, manufacturing, aerospace, and new energy, with the aim of deepening strategic business partnerships. We also actively promote deep financial cooperation in the credit and monetary area to contribute to the real economy. Second, we intend to strengthen the coupling of industrial policy and cooperation in industrial chains, to promote the construction of projects such as the Bioceanic Railway and the Bioceanic Tunnel, and thus promote the modernization of bilateral economic and trade relations. Third, both sides should take advantage of such mechanisms as the G20, BRICS, and the China-CELAC Forum for closer policy coordination, and raising the voice and influence of the emerging countries in global economic



US\$
500,000
MILLIONS

WILL REACH CHINESE
INVESTMENT IN THE REST
OF THE WORLD

and financial governance. We are ready and willing to explore and deepen cooperation with regional organizations such as CELAC, MERCOSUR, and the Pacific Alliance, to inject positive energy into Latin American integration and Asia-Pacific cooperation.

What obstacles to greater trade integration do you encounter?

In recent years, bilateral trade between China and Latin America has slowed due to the external context, falling growth in global trade, and low commodity prices. At the same time, this reflects a flaw in the bilateral trade structure. Exports from China and Latin America are concentrated respectively in manufacturing and raw materials, and leave a lot of room for interindustry trade and services. Latin American countries are currently facing difficulties on different levels, while the Chinese economy is in the process of transformation and adjustments. In this context, promoting bilateral trade inte-

gration contributes not only to raising levels of economic and commercial cooperation, but to fostering the growth of each of our national economies via overseas markets. We are willing and able to work together to renew the trade cooperation model. By synchronizing the inspection and quarantine of goods, energy consumption standards, and the accounting and environmental standards.

What impact do you think new treaties such as the Trans-Pacific Partnership Agreement (TPP) will have?

China has always strongly supported global economic integration and the multilateral trading system, and maintains an open stance on regional trade arrangements favorable to Asia-Pacific economic integration. It also advocates that trade arrangements should respect WTO and Doha principles. Where the impact of the TPP is concerned, China's institutions will the text of the agreement comprehensively and systematically. In general, we work on the conviction that, based on equal participation, openness, and inclusion, the region's free trade agreements offer renewed vitality to the global economy. China has been developing an open economy and promoting free trade arrangements with the rest of the world. To date, we have signed four-

teen Free Trade Agreements (FTAs), involving 22 countries and regions around the world, including Chile, Peru, and Costa Rica. The feasibility study of the FTA with Colombia is also under way. The Chinese Government recently issued its free trade zone strategy, in which it suggested setting up free trade zones with most emerging economies and developing countries, and with the main regional economic groups. Trade cooperation is important in the South-South relationship. China is open to initiatives that are favorable to economic integration and general prosperity, and is willing and able to dialog and negotiate with the region's countries or organizations regarding systematic arrangements in the field of investment and free trade.

Is it possible to promote technology transfer to accelerate learning in the field of innovation?

The Fifth Plenary Session of the Eighteenth Central Committee of the Communist Party of China mooted concepts regarding innovative, coordinated, green, open, and shared development, and enlisted scientific and technological innovation as the top priority in the next five-year development plan. During the Thirteenth Five-Year Plan, China will seek more forcefully to implement the innovation-driven

WE HAVE
ENCOURAGED
FREE ZONES
WITH MOST
EMERGING COUNTRIES
AS A WAY TO
BOOST TRADE

development strategy, encouraging entrepreneurship and innovation. Cooperation between China and Latin America in this area, therefore, is in a promising strategic era. Alongside the exchange of young scientists, which we are already doing, it is key to promote the joint construction of binational laboratories.

What financing opportunities does China offer the private sector?

Until the end of 2014, the stock of Chinese non-direct financial investment in Latin America was in excess of US\$100 billion, or 12% of China's total foreign investment. Over the first eleven months of 2015, Chinese investment in the region and the number of projects contracted grew by 43.8% and 31.7% respectively, the high point of economic cooperation and bilateral trade. To meet the goals we have key instruments, such as the China-Latin

YANG WANMING

YANG WANMING WAS BORN IN 1964 AND STARTED HIS CAREER IN THE GENERAL DIRECTORATE FOR LATIN AMERICA OF THE MINISTRY OF FOREIGN AFFAIRS IN 1989, AGED JUST 25 YEARS. FROM 1993 TO 1995, HE SERVED IN ARGENTINA AS THE EMBASSY'S THIRD SECRETARY. BETWEEN 2001 AND 2003, HE WAS A COUNSELOR AT THE CHINESE EMBASSY IN MEXICO, AND THEN HELD A SERIES OF DIFFERENT PUBLIC OFFICES IN HIS COUNTRY. BETWEEN 2012 AND 2014, HE WAS AMBASSADOR EXTRAORDINARY AND PLENIPOTENTIARY OF THE PEOPLE'S REPUBLIC OF CHINA IN CHILE.



VISIT TO THE INTAL-LAB

AMBASSADOR YANG WANMING, ALONGSIDE CHINESE ACADEMICS, OFFICIALS, AND NEGOTIATORS FROM THE REGION, TOOK PART IN THE INTERNATIONAL SEMINAR "THE ECONOMIC RELATIONS BETWEEN CHINA AND LATIN AMERICA AND THE CARIBBEAN: A PROSPECTIVE VISION," HELD AT THE INTAL-LAB IN NOVEMBER 2015.

ALL THE PRESENTATIONS ARE AVAILABLE ON INTAL'S WEBSITE.

America Cooperation Fund, the Special Loan Program for China-Latin America Infrastructure, and the Sino-Latin American Production Capacity Cooperation Investment Fund. We must also explore tools such as bank group credit, project mortgages, and investment portfolios, in order to provide more flexible political support to priority bilateral cooperation projects.

What is your assessment of the specific relationship between China and Argentina in recent years?

High-level exchanges are frequent, mutual political trust has been consolidated, and an intense collaboration over such fundamental international and regional issues as global economic governance and UN reform has held firm. China features as Argentina's second largest trading partner, the top destination for its agricultural products, and its third largest source of foreign investment. Our substantial bilateral cooperation in the areas of energy, mining, agriculture, finance, and infrastructure is making steady progress. Consensus has also formed over the importance of relations with

China in local society.

Do you believe Chinese demand for commodities will hold up in spite of the slowdown in growth?

Since 2015, despite the challenges arising from global economic weakness and multiple domestic contradictions, the Chinese economy has generally been stable, with an annual growth of 6.9%. The total value of commodity imports is still rising: iron ore and hydrocarbon imports, for example, grew at an annual rate of 2.2% and 8.8% respectively. The size of the Chinese economy is considerable and has good resilience, great strength, and sufficient room for maneuver. In the next five years, the higher consumption levels of its more than 1.3 billion inhabitants will make it the market with the highest demand in the world, requiring goods imports of more than US\$10 trillion and foreign investment of more than US\$500 billion. China will adapt to the new economic normalcy and continue to provide more opportunities for markets, growth, investment, and cooperation for the rest of the world, including Latin America. ■

ANALYSIS

CAN THE **SHOW** GO ON?

**CHINA-LAC RELATIONS
IN THE MINING AND ENERGY SECTORS**

Jacob Koch-Weser
U.S. Department of Commerce





MINING AND ENERGY ARE INTEGRAL TO ECONOMIC RELATIONS BETWEEN CHINA AND LATIN AMERICA AND THE CARIBBEAN (LAC). AS COMMODITY PRICES SLUMP AND CHINA'S INDUSTRIAL GROWTH SLOWS, WILL THESE SECTORS BECOME LESS SIGNIFICANT? I BEGIN BY ANALYZING THE LONG-RUN IMPACT OF CHINA-LAC RESOURCE TRADE ON THE REGION'S ECONOMIC DEVELOPMENT, AND EXAMINE PATTERNS OF CHINESE INVESTMENT AND LENDING. I FIND THE LAC REGION IN

THE 2000s BENEFITED FROM A NUMBER OF CONDUCIVE FACTORS IN THE

GLOBAL ECONOMY THAT ELEVATED RESOURCE PRICES, EVEN AS THE LAC RELATIONSHIP WITH CHINA CAME TO CENTER ON A NARROW BASKET OF COMMODITIES AND COUNTRIES. CHINA HAS BEEN WILLING TO MAKE RISKY INVESTMENTS IN UPSTREAM HYDROCARBON PROJECTS, AND HAS ISSUED LOANS TO LESS-THAN-CREDITWORTHY BORROWERS, A PATTERN THAT MAY BE UNSUSTAINABLE. I PROCEED TO COMPARE LAC-CHINA TRADE TODAY TO LAC-JAPAN TRADE FOUR DECADES AGO, WHEN THE END OF A PROLONGED COMMODITY BOOM PRECIPITATED A DECLINE IN ECONOMIC INTERACTION ACROSS THE PACIFIC. DUE TO CHINA'S SHEER SCALE, ITS FINANCIAL EXPOSURE TO THE LAC REGION, AND STRATEGIC CONCERN WITH RESOURCE SECURITY, I CONCLUDE THAT IT IS UNLIKELY TO FOLLOW IN JAPAN'S FOOTSTEPS. FINALLY, I CONSIDER HOW POLICY SHIFTS IN CHINA MAY AFFECT DEMAND FOR LAC RESOURCES. CHINA HAS ADOPTED AN AMBITIOUS SET OF REFORMS TO ACHIEVE BALANCED, SUSTAINABLE GROWTH, WHICH COULD REDUCE THE COUNTRY'S RESOURCE INTENSITY. HOWEVER, I QUESTION CHINA'S ABILITY AND COMMITMENT TO CARRY OUT MEANINGFUL REFORM TO RESOURCE CONSUMPTION. I ALSO ARGUE THAT RESOURCE DEMAND IS LIKELY TO ARISE FROM OTHER SEGMENTS OF ITS ECONOMY, SUCH AS HIGH-TECHNOLOGY INDUSTRIES AND THE UTILITY SECTOR. I CONCLUDE THAT A KEY CHALLENGE FOR LAC POLICYMAKERS IS TO EMBRACE CHINA'S EFFORTS TO IMPROVE RESOURCE EFFICIENCIES, AND TO EXPLORE WAYS TO DIVERSIFY CHINA-LAC TRADE BEYOND MINERALS AND ENERGY.

In the new millennium, China has propelled economic growth in the LAC region. The world's second-largest economy is now LAC's second-largest trading partner. Its sovereign loans to the region exceed those of the Bretton Woods institutions. At the first ministerial-level forum between China and the Community of Latin American and Caribbean States (CELAC) in January, President Xi Jinping pledged \$250 billion in direct investment to LAC over the next decade.¹

And yet, the LAC-China relationship is built on a narrow foundation. Commodities in 2012-2014 accounted for 73% of LAC exports to China, versus 42% to the world (UN ECLAC 2015). Half of China's

sovereign loans have gone to Venezuela, the region's largest oil producer (Gallagher and Myers 2014). Nearly 90% of estimated Chinese investments to LAC in 2010-2013 went to natural resources (UN ECLAC 2015).

As China's economy decelerates, the challenges of resource-driven trade are becoming apparent. Commodity prices have fallen, in conjunction with a slump in LAC export and GDP growth. China, of course, is not an isolated factor in a weak global economy. Still, criticism of China-LAC trade is mounting. In May, the Economic Commission for Latin America and the Caribbean (ECLAC) warned that China is causing a "worrying export reprimarization" in



the LAC region, and called for "progress in productivity, innovation, infrastructure, logistics, and training and capacity-building" (UN ECLAC 2015).

Has the China-LAC relationship reached a critical juncture? It may be compelling to point to new areas of cooperation, such as farm goods, automotive assembly plants, and transcontinental railways. Mining and energy, however, remain central to China's engagement in the LAC region, with macroeconomic and strategic implications.

In this article, I draw on my previous research for the Inter-American Dialogue. I begin by describing the economic impact of China-LAC resource trade and analyze trends in Chinese investment and lending. I then consider the current market downturn, drawing historical comparisons between China today and Japan four decades ago. Finally, I provide insights into China's domestic policies and conclude with policy challenges for the LAC countries.

THE ECONOMIC IMPACT OF CHINA-LAC RESOURCE TRADE

The years 2000 to 2013 marked a boom period in LAC resource shipments to Asia. The value of mining and energy exports increased fivefold, to some \$50 billion. During the same period, China displaced Japan as Asia's principal con-

sumer of LAC resources. In 2000, Japan still accounted for 48.9% of Asia's mineral imports and 42.8% of Asia's energy imports from the LAC region. By 2013, China accounted for 62.4% and 44.1%, respectively. The composition of resource exporting countries also shifted. Peru and Brazil benefited most from the mining boom, raising their share of LAC mineral exports to Asia by 20 percentage points. In the energy sector, the bulk of LAC exports to Asia now originate in Venezuela, Colombia, and Brazil, rather than Ecuador and Mexico (Espinosa, Marchan, and Sucre 2015).

LAC exports to China are very concentrated, not only in terms of their commodity focus, but also geographically. In the 2012-2014 period, four countries – Brazil, Chile, Venezuela, and Peru – comprised over 80% of LAC exports to China, while Mexico – a manufactures-based economy – accounted for 77% of the region's trade deficit in goods with China (UN ECLAC 2015). Gallagher and Ray (2014) illustrate the true extent of export concentration: among the LAC commodities shipped to China in 2012, 86% of iron ore originated from Brazil; 92% of refined copper from Chile; 83% of copper ore from Chile and Peru; and 75% of crude petroleum from Venezuela and Brazil.

How this concentrated, resource-driven trade impacts LAC economies is much debated. Certainly, the surge in LAC exports to China in the 2000s coincided with higher global commodity prices, thus improving LAC terms of trade and the balance of payments. The causes behind this trend were complex, however.

- China's robust demand for resources was driven in part by ill-advised investments in infrastructure and heavy industry.

- Global commodity prices were inflated by financial speculation and the high price of oil.

- In the case of iron ore, the bargaining asymmetry between major mining

companies and China's fragmented metallurgy industry created a "seller's market," in which Chinese buyers were forced into costly supply agreements and spot market purchases (Economy and Levi 2014).

- LAC economies benefited from exchange rate dynamics. China's central bank deliberately undervalued the yuan to boost industrial exports, while making foreign exchange reserves available to finance resource imports. In parallel, LAC currencies appreciated as a function of monetary inflows, which lowered the cost of imports and stimulated domestic consumption.

In view of the above, it is hard to accept the notion that LAC countries simply exploited their "comparative advantage" in extractive industries. Indeed, critics argue that resource-focused trade has reduced LAC competitiveness. Jaramillo, Lehman and Moreno (2009) identify co-movement between LAC GDP growth, commodity prices, and China's industrial output. Cunha et al. (2011) find that Brazil's trade with China in the 2000s was inter-sectoral rather than intra-sectoral, effectively hindering supply chain integration. No less, trade statistics demonstrate that Chinese exports have crowded out LAC manufactures in third markets. The implications of this last finding are contested, however, since industrial inputs from China may lower costs for LAC manufacturers and effect an overall increase in trade (see Montenegro, Pereira & Soloaga, 2011).

CHINESE CAPITAL FLOWS INTO THE LAC RESOURCE SECTOR

Energy Investment

Outbound investment from China is hard to measure at the aggregate level.³ Nonetheless, on a deal-by-deal basis, Chinese FDI into the LAC region



has been substantial, especially in the energy sector (Palacios 2011). As early as 1993, China National Petroleum Corp. (CNPC) signed an EOR service agreement with the Peruvian Ministry of Energy and Mines, marking the company's first overseas oil and gas operation (CNPC 2015). Since 2006, China's four national oil companies (NOCs) – CNPC, Sinopec, CNOOC, and Sinochem – have concluded over a dozen large oil and gas acquisitions in the region, the cumulative value approximating \$50 billion. Some were divestments by Western energy firms Repsol YPF, Galp Energia SA, Emerald Energy, Statoil, and Total.⁴ Others were purchases from LAC-based energy companies, such as Encana, Petrobras, Bidas, and PanAmerican Energy.⁵

While China's NOCs have taken advantage of divestments by cash-strapped competitors, they have also shown a keen interest in unconventional and offshore exploration. Brazil's discovery of the pre-salt offshore fields in 2006 offered a timely opportunity to acquire upstream energy assets. The Brazilian Congress's decision in 2010 to accord national oil company Petrobras a mandatory stake in all pre-salt fields, combined with onerous royalty and local content requirements, discouraged investments by international oil companies (IOCs). Unperturbed, China's oil majors CNPC and CNOOC joined the

sole consortium to bid in the 2013 Libra auction round.

At \$20 billion, the Libra investment was China's largest to date in the LAC region, but some analysts were surprised that CNPC and CNOOC were content with 10% stakes in the consortium. Petrobras, Royal Dutch Shell, and Total now exercise majority control. A plausible explanation is that China's NOCs are more interested in capacity-building than profit-making. By working alongside IOCs, they can acquire technical know-how, to be applied in future offshore drilling projects in the South China Sea and elsewhere. They are pursuing a similar strategy in the North American shale segment. Further, Libra is just one component of a long-term partnership between China's NOCs and Petrobras, which already comprises supply agreements and projects to build a gas pipeline and a fertilizer plant (Mendoza 2014).

Mining Investment

In the mining sector, China's investments have been small on average. Owing to China's fragmented mining industry, the investors are heterogeneous, including steel-makers and specialized miners, central state-owned and provincial enterprises.

Peru receives a disproportionate share of China's mining FDI. Though the volume of its mineral exports to China ranks well behind Chile and Brazil, the

US\$ 50,000 MILLIONS

IS THE VALUE
OF MINING AND
ENERGY EXPORTS
FROM THE REGION

Andean nation accounted for one-third of China's LAC-bound FDI in 2012-2013.⁶ In fact, Peru's open investment climate has attracted Chinese firms for over 20 years.⁷ In 1992, China's state-owned steelmaker Shougang purchased Hierro Peru, the iron miner privatized by the Fujimori government. In recent years, China's largest acquisitions in Peru have been in the copper sector; last year, a consortium of Chinese firms spent \$5.85 billion to purchase the Las Bambas copper mine from Glencore, the Swiss multinational commodity trading and mining company.⁸ In contrast, China does not have meaningful investments in Brazil and Chile, opting instead for long-term supply agreements with national miners Codelco and Vale do Rio Doce (Asset 2015) (see Textbox).

Chinese mining investors have been criticized for their irresponsible treatment of workers, local communities, and the environment. For example, a large body of scholarship has uncovered

red poor practices at Shougang's Hierro Peru project (Gonzalez-Vicente 2013). And yet, there are signs that China's corporate practices evolve over time. Kotschwar, Moran, and Muir (2012) find that the aluminum producer Chinalco, which entered Peru at a later date than Shougang, has adapted better to local governance standards by establishing a social fund, investing in infrastructure, and holding public hearings with the local community.

Lending

According to the China-Latin America Finance Database, China has provided more than \$119 billion in loan commitments to Latin American countries and firms since 2005. Table 1 shows the distribution of these loans across sectors and countries. Similar to the goods trade, China's sovereign loans are concentrated in resource-producing economies: Venezuela and Ecuador, the region's seventh- and eighth-lar-

gest economies, have received 56.5% of China's loans; Mexico, the region's second-largest economy, has received a mere 2%.

Officially, energy and mining account for less than a third of China's loan commitments. However, many loans in the infrastructure and "other" categories are indirectly tied to the resource trade. Venezuela is a case in point – Beijing's disbursements to Caracas are essentially oil-for-loans deals, but China has tried to ensure that the proceeds go toward specific projects such as infrastructure, often involving procurement of Chinese goods and services. The arrangement differs from China's energy loans to Brazil, which are directly negotiated with Petrobras (Downs 2011).

China has disbursed generous loans to countries that, owing to poor credit ratings, have difficulty borrowing from international financial markets. As Gallagher, Irwin, and Koleski (2012) have noted, China employs several tools to



CHINA'S NEW NORMAL

In the Western media, the term "new normal" has become synonymous with the end of China's rapid growth era. A closer reading of its official usage suggests additional meanings. "New normal" came into usage in 2014, as China's leadership began to reconsider its practice of setting annual GDP targets. In the past, the GDP target served to reassure markets about the government's commitment to growth, and China almost never missed the target. When the National People's Congress convened in March 2014, however, the newly appointed Minister of Finance Lou Jiwei expressed less interest in meeting a rigid target.³² Two months later, during a visit to the interior province of Henan, President Xi Jinping reportedly stated for the first time that China should "adjust to the new normal," urging his countrymen to "depart from the characteristics of the current stage of economic development."³³

In a widely publicized speech to foreign officials at the Asia-Pacific Economic Cooperation conference in November 2014, President Xi expounded on the meaning of the "new normal" to imply three transitions in China's development: (1) from a high rate of growth

to a medium-to-high rate of growth; (2) from factor- and investment-driven to innovation-driven growth; and (3) optimization and upgrading of the economic structure. He described the "new normal" as an opportunity to develop rather than a means to manage expectations about the economy. He defended China's economic track record in 2014, noting that in the first three quarters, consumption had outpaced investment, services had outpaced manufacturing, and high-technology manufacturing had outpaced overall industrial activity. He also noted progress in reducing resource intensity and better managing urbanization, agricultural modernization, and the transition to the digital age. To illustrate that China was giving freer rein to market forces, he cited the 60% year-on-year increase in the number of new enterprises, which he attributed to recent reforms to the enterprise registration system. No less, President Xi argued that the new normal marked a turning point in China's regional cooperation efforts; going forward, China would provide more public goods, including the \$40 billion Silk Road Fund to finance infrastructure in Asia.³⁴



manage the risks. First, China's largest lenders are policy banks; unlike commercial banks, these institutions do not have private depositors and are backed by sovereign debt guarantees. Second, loan interest rates may be issued on a floating basis, indexed to the price of oil shipped to China by the borrowing country. Third, a Chinese line of credit to a LAC borrower may actually be a credit line to a Chinese firm carrying out a contracted project, meaning that the funds will effectively stay in China.

At the same time, it is worth emphasizing that China's loans are not as preferential as often depicted. Gallagher, Irwin, and Koleski (2012) find that that China Export-Import Bank offers interest rates only slightly lower than those of the U.S. Export-Import Bank. China Development Bank offers mostly commercial interest rates that exceed World Bank rates.

ASSESSING THE COMMODITY MARKET DOWNTURN

The Impact in Latin America

Global commodity values have fallen sharply over the past three years. According to the International Monetary Fund (IMF), the price per metric ton of copper decreased from \$7,958 in 2012 to \$5,833 in June 2015. Iron ore prices fell from \$129 to \$62 per ton.⁹ A barrel of Brent crude, priced at over \$100 in July 2014, hovered at \$50 in the fall of 2015.¹⁰ The knock-on effects of low commodity prices are being felt in China-LAC trade. In spite of growing shipments, the value of LAC exports to China increased by just 1.4% in 2013-2014, compared to a compound annual rate of 29.1% in the preceding ten years.¹¹

The market downturn, of course, does not affect all LAC resource producers equally. To compensate for low commodity prices, incumbent producers may increase turnover, cut costs, or acquire undervalued assets. Importantly, they may also take advantage of



2%
OF CHINESE
SOVEREIGN LOANS
IN THE REGION
HAD MEXICO
AS DESTINATION

cheaper shipping costs to expand market share in Asia (thanks to low oil prices and surplus freight capacity).¹² Particularly vulnerable, on the other hand, are new extractive projects that entail large upfront capital and high operating costs. An offshore oil field may be profitable when the barrel of oil is priced at \$100 but fail to break even at \$50 per barrel. This partly explains why neither China's



Brazil's Vale do Rio Doce is one of the "Big-3" iron mining companies along with Australia's BHP Billiton and Rio Tinto. In Brazil, the company controls vast reserves of high-quality ore, as well as rail and port infrastructure. However, in the 2000s, international

shipping became Vale's Achilles heel, as its Australian competitors benefited from closer proximity to the China market and long-distance shipping costs trended upward. To overcome this problem, Vale in 2008 ordered shipyards in China and South Korea to begin cons-

VALE DO RIO DOCE DEAL WITH CHINA

truction on over a dozen very large ore carriers, to be owned and chartered by Vale itself. At 400,000 plus deadweight, the "Valemax" is about 40 percent bigger than the largest vessel that can leave an Australian iron ore port and can reduce freight costs by about 25 percent.²⁸

The first of the Valemax vessels were delivered in 2011. However, China's Ministry of Transport in 2012 banned the mega-ships from docking in Chinese ports, placing Vale's plan in jeopardy. Although the ministry cited safety concerns, China was also concerned that the Valemax would compete with Chinese shipping companies.²⁹

In 2014, Vale and China reached an

historic compromise. China's Ministry of Transport lifted its three-year ban on the Valemax ships, and China's two largest shipping lines, COSCO and CMES, agreed to purchase Valemax vessels. In exchange, Vale signed long-term freight contracts with these shipping companies, and also agreed to issue orders with their Chinese shipyards to build additional Valemax vessels.³⁰ Another important element of the deal is a loan from China to help finance Vale's expansion of S11D, the biggest iron ore project in the world. The project is planned to begin full production near the end of 2016. It is likely that China will secure a favorable supply agreement in exchange for the loan.³¹



IN THE ENERGY
SECTOR,
LATIN AMERICA
AND THE CARIBBEAN
HAS TODAY A BIGGER
GEOSTRATEGIC
WEIGHT TO CHINA
THAN JAPAN
EVER HAD

NOCs nor the IOCs expressed much interest in Brazil's October 2015 auction of exploratory oil blocks, or in Mexico's efforts to find bidders for deep-sea projects.¹³

Whatever the situation at the industry level, the macroeconomic effects have been felt across the region.

- Hardest hit is Venezuela, which depends on a high price of oil to service its debts and balance its budget (EMIS 2015b). In November 2014, China loosened repayment terms on the nearly \$50 billion in loans it has granted Venezuela since 2007, and Caracas launched efforts to secure a new round of Chinese loans.¹⁴

- Brazil is in a much stronger position than Venezuela, but is also experiencing a protracted period of negative growth and high inflation (EMIS 2015a). Of note, in the first quarter of 2015, the nominal value-added of mineral extrac-

tion in Brazil declined by 36.5% year-on-year, compared to 6.5% nominal expansion for the economy as a whole.¹⁵ The oil and mining conglomerate of billionaire Eike Batista filed for bankruptcy in 2014, causing Chinese steelmaker Wuhan Iron and Steel to incur losses on a \$400 million investment it made in 2009.¹⁶ Meanwhile, oil major Petrobras' \$170 billion debt burden is becoming costlier to service as investors lose confidence and the real depreciates.¹⁷

- Chile has fared better in the face of low copper prices. As of August 2015, the country's Economic and Social Stabilization Fund (ESSF) was valued at over \$14 billion. Chile withdrew \$499 million from the ESSF in 2014 and a further \$464 million in the second quarter of 2015, the largest withdrawals since the global financial crisis in 2009.¹⁸ The consulting firm EMIS forecasts Chile's real GDP to grow at a respectable 2.5% in 2014-2016 (EMIS 2015c). Nonetheless, the Bachelet government has recently come under pressure from the International Monetary Fund to wind down its stimulus program.¹⁹ Citing weak demand from China, copper miners have laid off hundreds of workers.

86.8%

OF THE INCREASE
IN GLOBAL STEEL
PRODUCTION
IN THE PERIOD
2000-2013
CAME FROM CHINA

TABLE 1
CHINA'S LOANS TO LATIN AMERICA BY COUNTRY AND SECTOR



Unit: US\$ millions	Infrastructure	Energy	Mining	Other(1)	Country Total	Country share (%)
Venezuela	\$28.400	\$6.000	\$2.400	\$19.500	\$56.300	47,4%
Brazil	\$800	\$12.200	\$1.400	\$7.500	\$21.900	18,4%
Argentina	\$14.000	\$4.900	\$-	\$60	\$18.960	16,0%
Ecuador	\$392	\$8.400	\$-	\$2.000	\$10.792	9,1%
Bahamas	\$2.900	\$-	\$-	\$-	\$2.900	2,4%
Mexico	\$1.400	\$1.000	\$-	\$-	\$2.400	2,0%
Peru	\$100	\$-	\$2.000	\$150	\$2.250	1,9%
Jamaica	\$1.200	\$-	\$-	\$189	\$1.389	1,2%
Bolivia	\$300	\$60	\$-	\$251	\$611	0,5%
Costa Rica	\$-	\$-	\$-	\$401	\$401	0,3%
Honduras	\$-	\$298	\$-	\$-	\$298	0,3%
Chile	\$150	\$-	\$-	\$-	\$150	0,1%
Guyana	\$130	\$-	\$-	\$-	\$130	0,1%
Colombia	\$75	\$-	\$-	\$-	\$75	0,1%
Uruguay	\$-	\$-	\$-	\$10	\$10	0,0%
TOTAL	\$49.900	\$32.900	\$5.800	\$30.100	\$118.700	100,0%
Sector share (%)	42,0%	27,7%	4,9%	25,4%	100,0%	
Number of loans	31	21	6	18	76	
Loan average	\$1.610	\$1.567	\$967	\$1.672	\$1.562	

(1) Other types of loans include government bonds, trade financing, a small and medium-sized business development loan in Uruguay, satellite development in Bolivia, those related to the China-Venezuela Joint Financing Fund, and home construction in Venezuela.
Source: Adapted from Gallagher, Kevin P. and Margaret Myers (2014) "China-Latin America Finance Database," Washington: Inter-American Dialogue.

CHINA AND JAPAN: HISTORICAL PARALLELS?

It is compelling to view the current downturn, and its effect on China-LAC trade, as a case of history repeating. The 1960s and 1970s saw rising commodity prices and Japan's emergence as the world's second-largest economy. Yet in the 1980s, Japan suddenly scaled back its commerce with the LAC region. Then as now, the global economic outlook was unfavorable - the U.S. Federal Reserve's decision to raise benchmark interest rates between 1979 and 1982 affected global liquidity and precipitated the Latin American debt crisis.

Commodity prices would remain flat for the next two decades. Japan's turn to a less resource-intensive, export-oriented growth model accelerated the decline in Japan-LAC trade.

COULD CHINA FOLLOW IN JAPAN'S FOOTSTEPS?

Notwithstanding the parallels, there are clear differences between China today and Japan four decades ago. For one, China's resource demand is on a different scale because the country is simply much larger, in terms of population, territory, and industry, than Japan was in 1980. Even assuming this were

CHINA'S CENTRAL BANK
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ACTIVE SINCE
SEPTEMBER 2014
REDUCING INTEREST
RATES AND
ALLOWING THE
DEVALUATION
OF THE YUAN

not the case, the reality is that China is invested in the LAC region to a degree that Japan never was. Just as China is "locking up" LAC resources through long-term supply agreements and equity investments, it is also being "locked in" for the long haul. China's lenders must ensure that billions in loan commitments are repaid in cash or through resource shipments. Multi-billion dollar projects such as Las Bambas and Libra will require time and additional investment to reap dividends.

Furthermore, in the energy sector, the LAC region holds greater geostrategic significance for China today than it once did for Japan. The world's top oil importer, China now sources over half its crude from the Middle East and North Africa, regions susceptible to war and instability. Whereas Japan did not harbor military ambitions in the 1980s, China today must factor in the eventuality of major armed conflict; in such a scenario, energy shipments from the

Gulf could be intercepted by adversarial navies at maritime chokepoints, such as the Straits of Malacca. China has successfully engineered a continental pipeline strategy for Eurasian gas shipments, and in April 2014 signed a landmark agreement with Russia to secure future gas supplies. However, pipelines are unlikely to provide a viable alternative to maritime oil shipments. Increasing pipeline-based oil supplies could require China to finance risky ventures in the Arctic and Siberia, on Russian soil. China and Russia have a fraught history of negotiating and upholding energy supply agreements. In practice, China's NOCs are already working actively to improve maritime shipping infrastructure through coastal storage units, domestic and overseas refineries, and an expanding fleet of state-controlled oil tankers.

Historically, LAC oil shipments to Asia were not an attractive option, given the long shipping routes and the difficulty of refining heavy crude oil from Venezuela. But the situation is much changed today. According to a 2014 study by the Oxford Institute for Energy Studies, crude imports from Latin America to China rose to their second-highest level ever in September 2014.

Importantly, the rise was owing not to Venezuela, where output is declining, but instead from new supplies coming on-stream in Colombia, Ecuador, and Brazil. Petrochina's Liaohe refinery processed Colombian crude for the first time on record, supporting the rise. Latin American producers are also offering attractive pricing in order to gain a foothold in the Asian market.²⁰

POLICY DEVELOPMENTS IN CHINA

The Xi Administration's Reform Agenda

Numerous factors may explain the current downturn in global commodity markets, but China is front and center. Officially, its economy achieved 7% real expansion in the first two quarters of 2015, at or around the official target. Actual growth, however, appears much weaker in alternative metrics such as housing starts, power consumption, car sales, industrial activity, and business confidence surveys. Of imminent concern for resource markets are China's excess capacities in the steel and non-ferrous metal sectors, as well as in downstream industries such as machinery, renewable energy equipment, and shipbuilding.

The Xi administration appears to have accepted that China's rapid-growth era is ending. In 2014, it began to use the term "new normal" to describe China's next phase of development (see

Textbox 2). The "new normal" followed on the heels of the Third Plenum of the 18th Party Congress in December 2013, at which the Party leadership adopted a market-oriented reform agenda for the medium term. One of the government's top priorities is to reduce resource intensity and protect the environment. Several policy initiatives are underway:

- China's Environmental Protection Law was amended in April 2014, laying the basis for more stringent and enforceable environmental regulations.

- In December 2014, the Ministry of Finance shifted from an ad quantum to an ad valorem resource tax on coal, a fiscal reform that could eventually raise the cost of coal-generated electricity (Koch-Weser 2014b). In June 2015, China also issued a draft environment tax law which proposes targeting air, water, noise and solid waste pollution through levies on polluters.²¹

- To mitigate the impact of climate change, China has incorporated energy and carbon intensity targets into its five-year plans, beginning with the 11th Five-Year Plan (2006-2010). In 2015, several municipalities announced a goal of capping carbon emissions by 2020. China is pursuing this objective through a combination of state-mandated targets and market instruments, such as indexed energy prices. Undeterred by the Fukushima incident, China's planners are building over two dozen nuclear reactors across the country with state-of-the-art technologies. Through subsidy and procurement programs, the government is also ramping renewable energy capacity, with a growing focus on smaller, distributed projects amenable to grid integration.

- China over the past two years has developed a "three rates policy" that requires mining and energy companies to improve the efficiency of resource extraction. As of 2015, 22 major minerals

36.5%

WAS THE DROP
OF THE NOMINAL
VALUE OF MINING
IN BRAZIL



are covered, including coal, crude oil, natural gas, iron ore, copper, and bauxite. To monitor and enforce the policy, the Ministry of Land and Resources is creating a comprehensive database of China's mines and oil and gas fields.²²

The Prospects for Resource Demand

Reform initiatives, coupled with slower economic growth, suggest China could relinquish its dominant position in global commodity markets. And yet, there are a number of countervailing forces. First of all, it will take years for China to scale back its heavy industries. After a period of industrial restructuring in the 1990s, China in the 2000s reverted to capital-intensive form of industrialization. Steel was at the heart of this transformation – China accounted for 86.8% of the increase in global steel output in 2000-2013, raising its production share from 15.1% to 49.8%.²³ China achieved similar gains in the primary aluminum sector, where it now accounts for half of global output.²⁴ In addition, China developed a massive chemical industry that now supplies much of the world's plastics, rubber, glass, and composites.

The National Development and Reform Commission, China's chief industrial planner, has sought to curtail excess capacities for the better part of a decade. But many operations run by local governments fail to close, or simply relocate to China's interior regions, closer to sources of cheap land and electricity. A perverse effect of low commodity

GOVERNMENT
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ty prices is that they lower the cost of oil and coal-fired electricity and induce stockpiling of imported commodities. In April 2015, the government even opted to cut the resource tax for iron ore in order to support domestic miners.²⁵

Second, it is doubtful to what extent the Xi administration will carry out reforms at the cost of short-term growth. China's central bank, the People's Bank of China (PBOC), has been unusually active since the fall of 2014, cutting benchmark rates, reducing bank reserve requirements, and allowing the yuan to depreciate.²⁶ The Ministry of Finance announced a 10.6% increase in public spending in 2015, directed mainly toward rail, infrastructure, and affordable housing – segments that stimulate demand for mining and energy products. An important motive behind China's New Silk Road strategy is to generate demand for Chinese industrial goods in neighboring countries.

Finally, as China's economy matures, resource demand will shift to new types of products. For example, the West-

SYNERGIES IN MINING AND ENERGY



TABLE 2
FORECAST OF CHINA'S MINING PRODUCTION FOR SELECT METALS

	YEAR-ON-YEAR (%)								CAGR (%)*
	2012	2013	2014	2015f	2016f	2017f	2018f	2019f	2012-2019f
BAUXITE	4,4	(2,0)	2,2	3,8	2,5	2,1	2,2	2,6	1,9
COAL	3,8	4,6	(2,5)	(5,2)	(2,4)	(1,3)	0,1	1,0	(0,9)
COPPER	24,4	(1,8)	1,3	2,0	2,5	3,0	2,5	2,5	1,7
GOLD	10,8	17,6	4,7	4,0	3,0	1,5	0,9	0,3	4,4
IRON ORE	(1,5)	10,7	3,5	(12,0)	(10,0)	(5,0)	(3,0)	(1,0)	(2,7)
LEAD	19,2	3,6	1,7	0,0	0,2	0,5	0,3	0,2	0,9
NICKEL	3,9	1,8	5,3	3,0	2,9	2,8	2,6	2,4	3,0
TIN	(8,3)	0,0	13,6	6,0	4,5	4,0	3,5	3,0	4,9
ZINC	13,7	2,0	0,0	0,1	1,5	2,7	1,8	0,2	1,2

Source: Forecast by BMI. Data adapted by author to calculate 2012-2019f CAGR.

East Electricity Transfer project, which aims to transport electricity generated in the sparsely populated western regions to population centers further east, is increasing demand for copper and special alloys in ultra-high-voltage power lines.²⁷ In five-year and industry-specific plans, China's key government ministries – led by the State Council, the NDRC, and the Ministry of Industry and Information Technology – have laid out blueprints to integrate upstream mi-

neral assets with downstream production of cutting-edge products, such as electric car batteries, specialty steel for nuclear power facilities, and high-speed rail components. In the energy sector, natural gas is becoming an important substitute for coal in heating and power generation.

More vexing is the supply-side of the equation. Given that China is a large mineral producer in its own right, its demand for raw material imports varies by product and over time (see Table 2). High rates of depletion at major mines suggests increasing demand for imports. Set against this is the growth in China's scrap metal markets, which serve to reduce demand for metal ores. In the energy sector, a looming question is to what extent China can revive domestic petrochemical production to reduce import demand. This is not strictly a technical challenge, since many of the best offshore fields in the East and South China Seas are subject to sove-

AS A RESULT
OF THE STAGNATION
OF THE DOHA ROUND,
PREFERENTIAL
TRADE COULD BE
AN IMPORTANT
MECHANISM



50%

OF GLOBAL
ALUMINUM
PRODUCTION
IS CONCENTRATED
IN CHINA

reignty disputes between China and its neighbors.

Challenges for LAC Governments

In the mining and energy sectors, LAC governments face two formidable challenges: China's outsized influence, and the unforgiving nature of commodity markets. While bilateral resource deals tend to entail long-term commitments, the markets that underpin these deals are subject to short-term fluctuation. China not only directly impacts the LAC region through goods and capital flows, but through its domestic policies also shapes aggregate demand in the global economy.

Under President Xi, China's government is undertaking ambitious reforms, from modifying the tax code to cracking down on illegal mining. Maintaining this reform agenda could be difficult if the negative outlook for China's economy persists. A key challenge for LAC policymakers will be to welcome China's structural reforms, even if this results in a decline in commodity demand and a deterioration in the balance of payments.

At the same time, LAC governments must balance the benefits of resource

investment – on less stringent terms than Brazil's pre-Salt bidding regime – with policies that ensure Chinese investment adds value to local communities and does not replicate China's environmental practices. Recent improvements in China's corporate culture, exemplified by Chinalco's engagement with local stakeholders in Peru, provide room for optimism. Moreover, State Grid's deepening presence in Brazil's power transmission sector is an example of a new form of energy engagement, as are the Chilean wind farms supplied by Goldwind, China's largest wind turbine maker.

The rise of agricultural trade could also contribute to a more balanced basket of resource exports. At present, LAC agriculture shipments to China are primarily soybean shipments from Brazil and Argentina, which are converted into feed for livestock. In the face of a stalled Doha Round, preferential trade could become an important mechanism to diversify China-LAC agriculture trade into higher value-added products. Chile's food shipments to China increased markedly after the China-Chile free trade agreement (FTA) came into effect in 2007. China also lowered tariffs on farm goods exports in its FTAs with Australia and New Zealand. In lieu of a multilateral agreement in the Doha Round of the WTO, these preferential agreements, along with the recently concluded Trans-Pacific Partnership, provide an alternative pathway to free trade in farm goods. ■

NOTES

¹ "China, CELAC to Map Out Cooperation Plan over Next Five Years: Xi," January 8, 2015.

² See Koch-Weser (2014a) and Koch-Weser (2015).

³ For example, statistics provided by China's Ministry of Commerce do not align with those published by recipient countries. For further discussion, see Koch-Weser and Ditz (2015).

⁴ Sinopec acquired minority stakes in the Brazil units of Repsol YPF (40% stake, 2006) and Galp Energia SA (30% stake, 2011), and Sinochem purchased 40% of Statoil's stake in Brazil's Peregrino offshore oil field. Sinochem purchased all of Emerald's assets in Colombia and Peru (2009) and Total's entire Colombian oil and pipeline unit (2012). HSBC (2013).

⁵ CNOOC has aggressively targeted the Argentine energy sector with majority stakes in Bidas (50% stake, 2010) and PanAmerican Energy (60% stake, 2010). Petrobras sold its entire Peru subsidiary to CNPC in 2013. The same year, it also attempted to sell 30% of Brazil's BC-10 oil field to Sinochem, but the deal was preempted the field's co-owners, ONGC and Shell. HSBC (2013).

⁶ Data from UN ECLAC (2015). Author's calculations.

⁷ For a detailed study of Peruvian policies toward mining investment, see González-Vicente (2013).

⁸ Wall Street Journal. "Glencore Xstrata Sells Las Bambas Mine to Chinese Consortium," April 13, 2014; Financial Times. "China's Chalco Buys Peru Copper for \$840m," June 12, 2007.

⁹ Data from International Monetary Fund. Table 3. Actual Market Prices for Non-Fuel and Fuel Commodities, 2012-2015. <https://www.imf.org/external/np/res/commmod/Table3.pdf>. Author's calculations.

¹⁰ Data from Energy Information Administration. Petroleum and Other Liquids: Spot Prices. http://www.eia.gov/dnav/pet/pet_pri_spt_s1_m.htm. Author's calculations.

¹¹ Data from IMF DOTS. Author's calculations.

¹² According to the journal Steel Business Briefing, the freight rate spread between Brazil's and Australia's iron ore shipments to China peaked on September 19 2013, when the freight rate from Brazil's Tubarão port to Qingdao in China was \$30.30 per wet metric ton, compared with a \$12.20/wmt rate between Australia's Port Hedland and Qingdao, a spread of \$18.10/wmt. By June 2, 2015, however, the Tubarão-Qingdao rate stood at \$10.65/wmt, while the Port Hedland-Qingdao rate was \$5.10/wmt, giving a narrower spread of \$5.55/wmt. Steel Business Briefing, "Freight Factors Could Disadvantage Australian Iron Ore: MVS," June 4, 2015.

¹³ Wall Street Journal. "Mexico Strains to Lure World's Oil Giants," September 29, 2015; Wall Street Journal. "Brazil Sees

Light Demand for Oil Block Auction," October 7, 2015.

¹⁴ Wall Street Journal. "China Loosens Debt Terms for Venezuela," November 24, 2014.

¹⁵ Data from the Brazilian Institute of Geography and Statistics, via EMIS database. Author's calculations.

¹⁶ "Brazil's Iron Ore Giant MMX Seeks Bankruptcy Protection," October 16, 2014.

¹⁷ Forbes. "Petrobras' Debt Burden Getting Costlier," March 6, 2015.

¹⁸ The ESSF August 2015 report is available at <http://www.hacienda.cl/english/sovereign-wealth-funds/economic-and-social-stabilization-fund/monthly-reports/monthly-report-august-2015/pdf-version.html>.

¹⁹ Reuters. "IMF Says Chile Reforms Have Hurt Economy, Advises Reining in Spending," August 6, 2015.

²⁰ Oxford Energy Institute (2015), p. 11.

²¹ Reuters. "China Issues Draft Environment Tax Law," June 10, 2015.

²² Information on the policy is available on the website of the China Ministry of Land and Resources.

²³ Data from World Steel Association. Author's calculations. <https://www.worldsteel.org/dms/internetDocumentList/statistics-archive/production-archive/steel-archive/steel-annually/steel-annually-1980-2013/document/steel%20annually%201980-2013.pdf>

²⁴ Data from World Aluminum. Author's calculations. <http://www.world-aluminium.org/statistics/#data>.

²⁵ Reuters. "China to Cut Iron Ore Tax in New Blow to Glut-hit Prices," April 9, 2015.

²⁶ Nikkei Asian Review. "Supercycle's End Ominous for Resource-based Economies," August 13, 2015. <http://asia.nikkei.com/magazine/20150813-THE-SCARS-OF-WORLD-WAR-II/Markets/Supercycle-s-end-ominous-for-resource-based-economies>.

²⁷ See Woodrow Wilson Center (2013).

²⁸ The Australian Financial Review. "China Backs Brazil's Game-Changer," May 21, 2015.

²⁹ The Australian Financial Review. "Vale China Deal Puts Rio, BHP on Notice," February 17, 2015.

³⁰ SNL Metals & Mining Daily. "Report: Vale in Talks to Build Another 50 Giant Bulk Carriers," May 1, 2015; The Australian Financial Review. "Vale China Deal Puts Rio, BHP on Notice," February 17, 2015.

³¹ Business News Americas. "Vale's Costs Closing in on Australian Rivals," May 22, 2015.

³² Reuters. "China's 7.5 Percent GDP Growth Target Is Flexible: Finance Minister," March 6, 2014.

³³ The Henan speech is available in Chinese at http://www.gjxf.gov.cn/2014-11/10/c_133777752.htm.

³⁴ The APEC speech is available in Chinese at http://www.gjxf.gov.cn/2014-11/10/c_133777752.htm.

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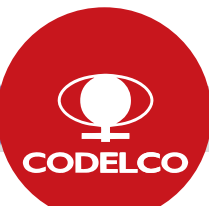
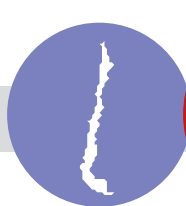
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CHILE



MINING

Red gold in the heart of Los Andes

If mining is the heart of the Chilean economy, the National Copper Corporation of Chile (CODELCO) is its main artery. With annual sales in excess of US\$13 billion, the state-owned company has become the largest mined copper producer in the world.

The firm's numbers are impressive whichever way one looks at them. To highlight some relevant data, its assets run to US\$35.257 billion, it concentrates 9% of global copper reserves, and its personnel totals more than 19,000 employees.

At the helm of the Chilean giant is Nelson Pizarro, CODELCO's Executive Chairman, a civil mining engineer and one of the most experienced men in the sector.

Lower Chinese demand today has forced Pizarro to seek an appropriate geographical balance between North and South America, Europe and Asia, and so reduce the economic and geopolitical risks entailed by the dependence on a single market. For Pizarro, Chinese demand for copper will be maintained despite a degree of volatility in the global macroeconomic context.

What are the recent developments in China's demand for copper?

According to figures published by the World Bureau of Metal Statistics, China's refined copper consumption over the past decade fell from 3.3 million fine metric tonnes to 11.4 million fine metric tonnes, with an average annual growth rate of 13%. In the same period, refined copper imports rose at an average annual rate of 12%, while blister copper and concentrates imports rose respectively at an average annual rate of 18% and 15%. In the last three years (2012-2014), China's refined copper consumption continued to soar, at the same average annual rate of 13% recorded in the decade 2005-2014.

13%

WAS THE ANNUAL
AVERAGE GROWTH OF
CHINESE
DEMAND IN THE
LAST DECADE

What effect has the China-Chile FTA had on copper exports?

Copper is Chile's main export product to China. Since the metal was already tariff-free before the Free Trade

45%

of World
copper
consumption
takes place
in the Asian
giant



Nelson Pizarro. Before taking the helm at CODELCO, he was General Manager of SCM Minera Lumina Copper. He is also a lecturer on the MBA course at the University of Chile.

Agreement's entry into force in 2006, the FTA is not considered to have had a relevant effect in terms of boosting copper exports.

Can China's economic slowdown affect copper demand?

China is the largest consumer of refined copper in the world, representing 45% of the world total in 2014. The moderation of its economic growth forecasts could lead to less dynamic copper consumption. Regarding the red metal's price, commodity prices as a whole have displayed a downward trend as of 2011. Copper is no exception, although it has been less affected than other raw materials. The causes of this behavior are linked to the evolution of the world economy and to the particular dynamics of the copper market. Where the world economy is concerned, the dynamism of China and other emerging countries has been—and, in coming years, is likely to continue to be—below the expectations we held until recently. This comes on top of significant strengthening of the dollar, speculation regarding the hike in interest rates in United States, and uncertainty stemming from the crisis in Greece and corrections to



stock exchanges in China. Regarding the fundamentals of the copper market, while stocks on metal exchanges have risen and the market could enter a slacker phase in terms of production and consumption balance sheets, all this at a time when commercial refined copper stocks measured in weeks of consumption are well below their historical average.

What are the main difficulties you have in your business linkage with China?

As a result of the dynamic economic growth experienced by China in recent decades, copper has become one of the raw materials most in demand, due mainly to its high consumption in infrastructure, construction, and the manufacture of electrical products. This has made China a significant market, accounting for about 40% of our total sales. We have no difficulties in terms of our commercial ties with China, and our sales have not fallen due to the recent developments in its economy. Nor have we limited contracts to the Chinese market, since we sell mainly in regular annual contracts, which are tailored to our customers' supply needs in the framework of long-term relationships.



What is copper exportation's contribution to the country as a whole?

China is the main destination for Chile's exports of copper and by-products, representing 37% of the total in 2014. The export values of copper and by-products in China in the past ten years have brought Chile more than US\$107.4 billion. China's relevance aside, copper mining has been, is, and will be a significant lever for Chilean development. To give you example, between the nationalization of copper in 1971 and 2014, CODELCO's deposits and operations generated a surplus to the tune of US\$115.4 billion. Thanks to the high copper price, more than 60% of that was generated in the period 2004-2014, resulting in contributions equivalent to 12% of the Treasury's total income. Copper mining further contributes to the country's development through a great number of production chains. In the case of CODELCO, the consumption of goods and services in 2014 amounted to US\$8.321 billion. Finally, mining activity also contributes to the development of personal talent, and the incorporation of technology in the economy and world-class management practices.

What are the company's main goals for the next few years?

CODELCO has a huge commitment to the Chilean state. It's the largest contributor to Chilean development. In this context and on the basis of what this means, our obligation is to consolidate

12%

OF THE CHILEAN TREASURY'S
TOTAL REVENUE COMES FROM
RED METAL EXPORTS

world leadership in copper production, with secure and sustainable mine plans that safeguard the stability needed in times of major price fluctuations. Our structural projects will be the foundations of the future we're building and with them we're trying to extend the company's lifespan by at least 50 years. CODELCO's major changes are linked to the development of its structural projects, initiatives that overall will extend the Corporation's lifespan by between 50 or 70 years. Through them, CODELCO is working to modernize its main operations and to generate more resources to ensure its position as the world's leading copper-producing company and the biggest contributor to the Chilean state. Under its 2015 Business and Development Plan, the investments planned by the Corporation in the period 2015-2019 are in excess of US\$25.1 billion. ■

Alliance **INTAL LATINOBAROMETRO**

WHAT LATIN AMERICANS
THINK ABOUT
REGIONAL AND GLOBAL
INTEGRATION



INTAL  **LAB**
www.iadb.org/intal/latinobarometro

WHAT WE THINK ABOUT CHINA

With more than twenty thousand surveys conducted in eighteen countries in the region, the INTAL-Latinobarómetro initiative keeps permanent track of citizens' opinions on the most sensitive issues for government policy, democracy, regional integration, living conditions, infrastructure, services, and much more in order to ascertain what we Latin Americans and Caribbeans actually think.

In recent years, as the links between Latin America and the Caribbean, and China have deepened, the region's citizens formed an opinion on the world's second largest economy and its ability to contribute to the development of local economies.

In terms of the relationship between the region and China, the surveys show that 49% of the region's population have a very good or good opinion of the Asian giant, while 22% have a bad or very bad opinion, and 29% have no strong opinion on China. The

high rate of ignorance in this regard (almost a third of the population) shows the need for progress on strategies to make the bulk of the population aware of the consequences of trade with China.

Some of the countries with the best image of China are Costa Rica, Venezuela, Guatemala, Peru, and Honduras, all above the 55% good or very good mark, while countries with a more negative image of China are Panama, Ecuador, Colombia, and Venezuela, with the (bad or very bad) negative assessment standing round 30%. In the case of Venezuela, there is a polarization of views, with the country topping both positive and negative responses. This is due to the fact that it is also the country where fewest people do not know or prefer not to respond on the issue (with just 11% of the total).

Chinese investments have been relevant in several countries in the region and

THE INSTITUTE FOR THE INTEGRATION OF LATIN AMERICA AND THE CARIBBEAN (INTAL) AND LATINOBARÓMETRO CONDUCT A SURVEY OF THE VIEWS OF THE REGION'S CITIZENS ON KEY ISSUES, SUCH AS EXPECTATIONS REGARDING THE RELATIONSHIP WITH THE SECOND LARGEST ECONOMY IN THE WORLD.

the increase in trade with Asia has favored production and employment in a variety of sectors. Do we have expectations that foreign powers will help us to solve our problems? In the case of China, just 36% of citizens expressed confidence that it will contribute greatly or somewhat to solving the problems of Latin American countries, while 45% responded that they have little or no confidence in this, and 19% said they did not know or chose not to respond. Unlike the previous question, negative responses here outweigh the positive. In other words, despite a positive assessment of China on average, the majority of Latin Americans and Caribbeans do not believe that the relationship with the Asian country is a fundamental piece in solving regional problems.

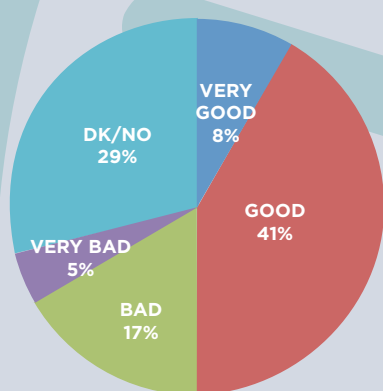
The countries that have most confidence in China to solve domestic problems are, in first place, Venezuela, followed by Costa Rica, Chile, and Peru. On the other hand, the

least optimistic regarding China turned out to be Guatemala, Paraguay, and Colombia. It is important to stress that, in addition to Venezuela (with whom China has strengthened trade ties in recent years), the most optimistic countries were the three who signed Free Trade Agreements (FTAs) with China: namely, Peru, Costa Rica, and Chile. For these countries, the positive responses outweigh the negative, perhaps reflecting existing expectations over the agreements.

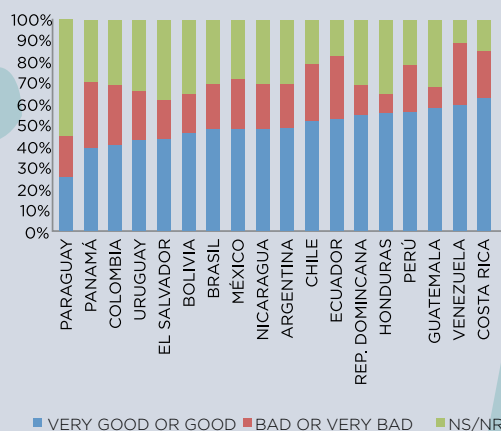
These are just some of the results of the joint venture that INTAL and Latinobarómetro, in direct conjunction with the region's states, launched in 2015, giving shape to a Regional Public Good and a series of documents that also enable the comparison of the opinion surveys with objective indicators provided by the countries themselves, available in INTRADE, the most complete database on regional trade and integration.

OPINION ON CHINA. REGIONAL TOTAL IS YOUR OPINION ABOUT CHINA VERY GOOD, GOOD, BAD, OR VERY BAD?

REGIONAL TOTAL

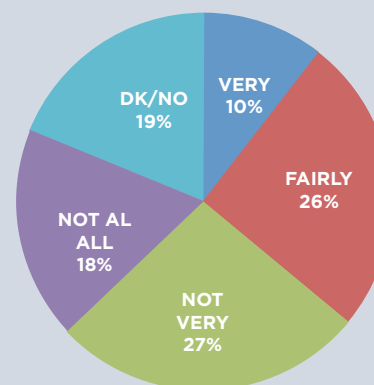


TOTAL BY COUNTRY

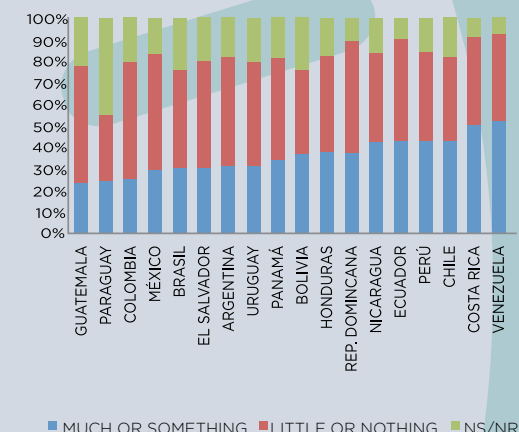


OPINION ON CHINA. TOTAL BY COUNTRY IS YOUR OPINION ABOUT CHINA VERY GOOD, GOOD, BAD, OR VERY BAD?

REGIONAL TOTAL



TOTAL BY COUNTRY



¹For 2015, 20,250 surveys were conducted with multistage, probabilistic samples representative of 100% of the population at the national level, with between 1,000 and 1,200 cases, through a harmonized questionnaire. The margin of error is around 3%. The fieldwork was carried out between January 15 and February 15, in Argentina, Bolivia, Brazil, Colombia, Costa Rica, Chile, El Salvador, Guatemala, Honduras, Nicaragua, Panama, Paraguay, Peru, Dominican Republic, Uruguay, and Venezuela. In Mexico, it was carried out between November 8 and 24, 2014, and in Ecuador, between August 10 and September 2.



ANALYSIS

How to beyond complementarity

The future of China
and LAC relationship
in the new economic
context

Tang Jun
Director of ILAS at ZISU



SLOWING GROWTH IN CHINA RAISES QUESTIONS ABOUT THE FUTURE OF THE RELATIONSHIP WITH LATIN AMERICA AND THE CARIBBEAN. THIS ARTICLE DESCRIBES WAYS TO ADVANCE A COMPLEMENTARITY THAT IS NOT BASED EXCLUSIVELY ON TRADE OF PRIMARY PRODUCTS, BUT ALSO IN A DEEPER AND SUSTAINABLE COOPERATION, INCLUDING THE TRANSFER OF KNOWLEDGE TO INCREASE PRODUCTIVITY, FINANCIAL COOPERATION AND ALSO ASSOCIATIVITY TO BUILD LARGE INFRASTRUCTURE PROJECTS. IT PRESENTS THE RESULTS OF TWO INDEXES THAT MEASURE THE DEGREE TO WHICH THE CHINESE AND LATIN AMERICAN ECONOMIES ARE COMPLEMENTARY.

Since the conception of “New Normal” was introduced to define the slow recovery process of the American economy after the financial crisis in 2009, it has been a common knowledge to understand the changing economic context in China and the world. Mr. Xi Jinping, the President of China, proposed that China should adapt to the new normal in an important period of strategic opportunities in May 2014. Since then, the new normal word has appeared frequently in the Chinese leaders’ speeches, government documents and research literatures.

There are three main characteristics in China’s economic new normal. The first one is the economic growth speed will fall from high to the middle-high. The annual growth rate of China’s GDP has decline to 7.7% in 2014 and 6.9% in 2015. The second one is economic structure has upgraded, meaning the third industry will exceed the first and second industry. The third one is drive force of economic growth will transform from the elements, investment to innovation.

China’s economic new normal will exert an extremely influence on the

economic and trade relations between China and Latin America and Caribbean (LAC). Alicia Barcia, executive secretary of CEPAL, predicted that every 1 percentage of China’s economic growth will directly drive 0.5 percentage of LAC’s economy growth. In the context of china’s economic new normal, the demand and capacity of china’s import raw materials from LAC will gradually decline in the future. At the same time, China will pay more attention to innovation and the development of tertiary industry which are the weakness of LAC. It means LAC’s growth momentum from China’s economic will continue to weaken.

0.5%
GROWS
LATIN AMERICA’S
GDP FOR EACH POINT
OF GROWTH OF
THE CHINESE
ECONOMY

HOW TO BEYOND COMPLEMENTARITY

17

COUNTRIES
IN THE REGION
TOTALLED AT LEAST
\$ 1,000 BILLION
TRADE WITH
CHINA IN 2014

THE NEW NORMAL OF THE ECONOMIC AND TRADE RELATIONS BETWEEN CHINA AND LAC

After the rapid development in the beginning thirteen years of the 21st century, the economic and trade relations between China and LAC has entered into a period of three phase superposition, that including the shift of the growth rate, structural adjustment and early development digestion, subsequently showing a new features with growth deceleration, structural imbalance and investment block.

GROWTH DECELERATION

From 2000 to 2013, trade between China and LAC has achieved a rapid growth with the annual rate of over 30%, which is much higher than growth of China foreign trade and economy in the same period. China has become the second largest partner of Latin America’s since 2010. this growth miracle is described as trade feast by some scholars.¹

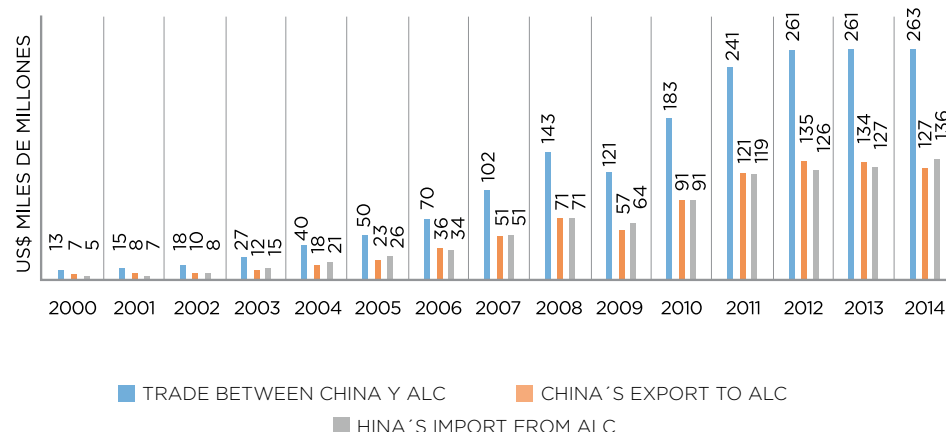
As a crisis often hide behind in a high development, it is beyond imagination that the trade between China and LAC can quickly recover the negative growth from the financial crisis in 2009, but fell into a very low growth cycle since 2012. The relative annual growth rate dropped to 0.1% (2012), 1.05% (2013),

32.8%

OF LAC
TRADE WITH
CHINA IS
CONCENTRATED
IN BRAZIL



FIGURE 1
TRADE GROWTH BETWEEN CHINA AND LAC FROM 2000 TO 2014



Source: China's customs statistics.

0.791%(2014).² In fact, it could be negative growth in these three years if the exchange rate and inflation are taken into account. Growth deceleration has become an indisputable fact.

STRUCTURAL IMBALANCE

There is serious imbalance in trade between China and LAC in the view of the country and product structure.

In the view of country structural, the trade partner in LAC with China mainly concentrated on seven countries including Brazil, Mexico, Chile, Venezuela, Colombia, Peru and Argentina. For example, in 2014, there are 17 LAC countries whose trade volume with China exceed \$1 billion. Among them, above-mentioned seven countries are China's primary trade partner over \$10 billion. The proportion of total trade volume between China and the primary seven partners accounted 85 percent to the whole amount of China and LAC. China's exports to the country accounted for 82 percent of China's exports to Latin America, China imports from the seven countries accounted for 89% of China imports from Latin America.

From the angle of the product structure, the exports from China to LAC basically concentrates on low technology content of manufactured goods, while imports from Latin America are mainly the raw materials and resource products. In 2013, the export of primary products from LAC to China accounted for 73% of total exports to the world, while low, medium and high technology manufacturing products accounted for 6% in the total exports to China. Furthermore, the proportion of technology manufacturing products that LAC's imports from china accounted for up to 91%, by contrast only 69% in imports from other areas in the world. Therefore, trade structure between China and LAC is basically model of exchange raw materials to manufactured goods.

INVESTMENT BLOCK

Since 2000, China's government has vigorously encouraged investment to overseas markets by going out strategy. LAC has attracted more and more investment interest from Chinese companies and capital in recent years. The

**US\$
263,600**

MILLION WAS TRADE
WITH LAC IN 2014
ACCORDING TO
STATISTICS FROM
CHINESE CUSTOMS

total stock of Chinese non-financial direct investment accounted to US\$98.9 billion, mainly distributed in the industry of gas pipelines, power plants, roads, port dredging, housing, communications facilities, etc.

However, a series of investment risks lurks behind the impressive achievements. Owing to LAC's stagnant economy and poor governance in recent years, investment environment was worsened. Many Chinese investment projects in LAC are faced with a huge risk of loss. For example, the suddenly cancel of Mexico high speed rail project in 2013 caused huge losses to the Chinese enterprises. Due to the severe political and economic crisis in Venezuela, oil loan projects in Venezuela also faces the hitherto unknown risks. A tourism investment project in the Bahamas proposed by Chinese capital was declared bankrupt. In addition, Many Chinese companies in Latin America have occupied a more serious loss, causing to the business are difficult to maintain.

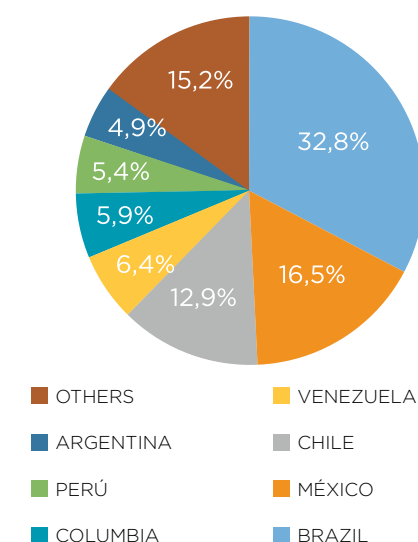
THE COMPLEMENTARITY OF RELATIONSHIP BETWEEN CHINA AND LAC

Complementarity is the basic element in international trade, is full of contradictions and disputes in China-LAC trade. On the one hand, the rapid development of bilateral trade between China and LAC in the past 10 years should thanks to complementary. LAC's advantages in the nature resources and primary products, which is the essential material for the rapid develop-

ment of China, is one of the key factors to maintain economic prosperity in Latin America in the past ten years. Meanwhile, more and more critics from Latin America focus on trade structure. Complementarity is consider to answer for the distortion of economic development the Latin American. Although Latin America countries have been benefit the trade from China, they often launch measures against trade protectionism.

Hubness Measurement Index (HM Index)⁴ and Trade Competiveness Index (TC index)⁵ are popularly used to measure complementarity in international trade theory. We calculate these two Index on the data from UN Comtrade Database (see Figure3). We can find the trade dependence between China and LAC keep continue rising trend from 2004 to 2012, but appear gradual decline in the trend since

FIGURE 2
COUNTRY STRUCTURAL OF TRADE
BETWEEN CHINA AND LAC (2013)



2012. As a whole, trade dependence between China and LAC is very weak beyond imagination. By contrast, the change of TC Index is much more complicated. It's very interesting that the complementary between China and LAC have become much closer since 2012, although the annual growth rate of bilateral trade declined rapidly.

A proposal of beyond complementarity in the trade relationship between China and LAC have recently proposed recently, but complexity of this problem is obviously underestimated. In the past 10 years, Latin American countries have been accustomed to expand production of raw materials in the form of a malignant path dependence rather than investment and innovation. As the world's largest industrial manufacturing base, China will remain great potential demand of Latin American energy, mineral resources and raw materials. Furthermore, under the pressure of multiple difficulties in China and Latin American economic and trade relations, how to beyond complementarity need more practical approaches.

THE FUTURE OF CHINA AND LAC RELATIONSHIP

China government attaches great importance to the development of relations with Latin America. President Xi Jinping advocated the establishment of a new "1+3+6" framework for cooperation⁶ in 2014. China's Initiatives for establishment of China-LAC Forum had obtained a positive response from LAC countries, hence the first ministerial conference was held in Beijing on January 8-9, 2015. Three main documents,⁷ as an implementation prior to China's series of initiatives, are considered a boost that promote overall cooperation to a new level. In the first visit to Latin America in May 2015, China's



Premier Li Keqiang sponsored a New Model of "3 x 3" International Capacity Cooperation.⁸ Subsequently, China has set up two joint venture (China-LAC Cooperation Fund & China-LAC Capacity Cooperation Fund) to provide financial support for cooperation between China and LAC.

New Model of "3 x 3" International Capacity Cooperation, which means China will be more proactively looking for international capacity cooperation instead of the traditional complementarity trade model, will promote investment in capacity cooperation to enhance the level of trade.

INTERNATIONAL CAPACITY COOPERATION

China will actively participate in infrastructure construction in LAC through international capacity cooperation. The Pacific-Atlantic Railway Project has already started among China, Peru and Brazil, which will provide more convenient transportation for goods trade and boost the economic growth of the region along the railway. Nicaragua canal is another major infrastructure project between Chinese private enterprises and Latin America. If successful, it will be another great project similar to the Panama Canal. In addition, China will continue to sup-

**US\$
98,900
MILLION**

**WAS CHINA'S TOTAL
NON-FINANCIAL DIRECT
INVESTMENT
IN THE REGION**

port the improvement of infrastructure in Latin American countries through government loans, cooperation fund and other forms. Equipment trade related to Infrastructure will become a new growth point in the trade between China and LAC.

China will actively participate in Latin American reindustrialization through international capacity cooperation. It's an important window period for Latin America to update model by reindustrialization in the world economic adjustment context over the next five years. China's capital and technology can promote Latin American industrialization level and improve

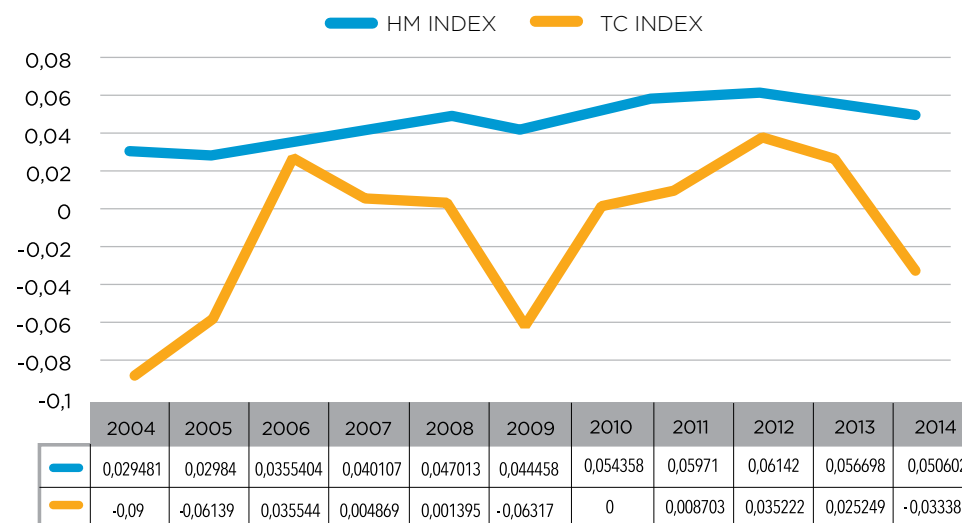
HOW TO BEYOND COMPLEMENTARITY

its position in the global value chain. China's experience in industrial zone can also be grafted to Latin America. Latin America should adapt to modify the foreign investment restrictions and improve the quality of public services in order to attract more Chinese enterprises to invest and build factories.

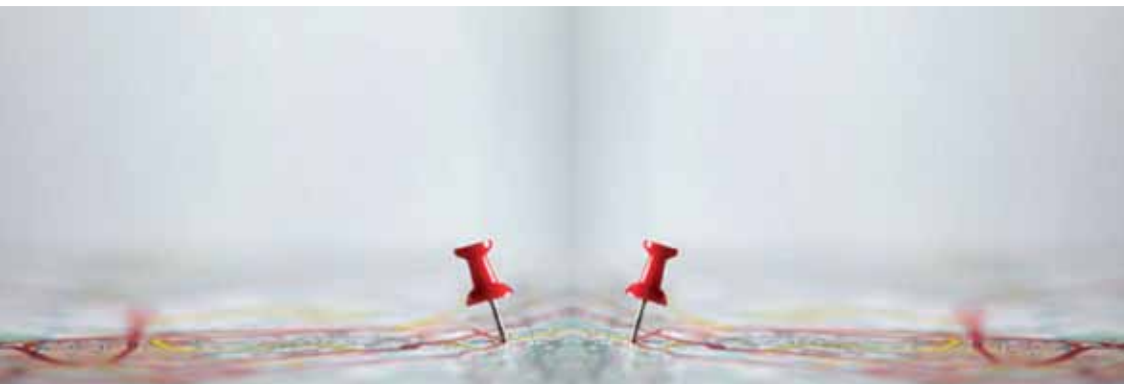
FINANCE COOPERATION

Financial cooperation between Chinese and Latin America will become a new bright spot in the future. Now China has the second economic scale, the largest foreign trade and foreign exchange reserves in the world, so that internationalization of the RMB has become inexorable trend. The successful creation of international finance institute such as Asian Infrastructure Investment Bank and the BRIC Development Bank Shows China's ability and influence to participate in global economic governance. 2015 IMF has absorbed

FIGURE 3
THE HM INDEX AND TC INDEX OF CHINA-LAC TRADE (2004-2014)



Source: author calculate.



RMB into the SDR basket.

The expansion of bilateral trade settlement currency and currency swap between China and LAC has become common aspirations and key areas in the overall cooperation. For example, Brazil and Argentina signed the currency swap agreement with China, greatly improving the level of internationalization of the RMB in LAC. China will promote more FTA, currency swap and settlement currency cooperation in LAC, to help the stability of financial markets and promote the development of the real economy in the region. More and more Chinese banks will launch and set up branches in Latin American countries to better service for trade and economic development.

Insurance cooperation will play a more important role in the economic and trade relationship between China and Latin American. The rising risks of exports and investment under the current economic situation is disadvantage to the relationship between China to Latin American. Therefore, China will further improve the export insurance mechanism in order to maintain the confidence and reduce export risks. In addition, the insurance

can also enter into production cooperation, equipment leasing and investment business.

HUMANITIES EXCHANGES COOPERATION

The humanities exchanges between China and LAC have become increasingly frequent. China has promised to provide more places for Latin American students to study in China. The 2016 years has been identified as a cultural exchange year in Latin America. Brazil will be the Olympic Games (Rio 2016) host that attract Chinese people very much. Exchange of education, science and technology, culture, tourism, finance and other aspects will directly promote the service trade and related industries.

China and LAC should be positive to facilitate the creation of a variety of conditions for cultural exchanges. There have been an upsurge of learning Spanish and Portuguese and boost of think tank, books, film and television works on Latin American. However, it is too difficult for Chinese people to study or tour in Latin America to obtain the visa. Maybe Latin American countries should improve relevant policies in the facilitation of entry.

CONCLUSION

Obviously, economic and trade relations on the complementary between China and LAC is facing great challenges because the rapid development in the trade and investment between China and LAC since the beginning of the 21st century has moved toward a new pattern with dominant character of growth decline, structural imbalance and investment block. However, it is disturbing that the complementary nature continues to grow through the analysis above. This is means great challenge to both China and Latin America. Some adjustments to the current economic and trade relations between China and Latin America will be mutually beneficial, but also the common responsibility.

How to establish a new economic

and trade relationship between China and Latin beyond complementary? China's answer is overall partnership. First, Latin America will be a whole regarded as the partner of China. That is to say China will pay attention to all the Latin American countries, not only limited to the close countries. Second, China-LAC relationship will be all round containing political sincerity and mutual trust, win-win economic and trade cooperation, cultural mutual exchange, close collaboration in international affairs, mutual promotion between overall cooperation and bilateral relations. International capacity cooperation will be the key in the economic and trade relations with the new engine of financial cooperation and cultural exchanges. ■

NOTAS

¹Yue Yunxia. "Corporation between China and LAC: New Normal need New strategy", International Business, 2015-2-15.

²Source: China's customs statistics.

³Source: CEPAL statistics, 2015.

⁴HM index=(EXab/EXa)*(I-IMab/IMb), EXab means country a exports to country b, EXa means country a export to the world, IMab means country a import from country b, IMb means country b import from the world. The scale of HM index should be [0, 1]. When HM index is more close to 0, country a has a lower dependence to country b, when HM index is more close to 1, country a has a higher dependence to country b.

⁵TC index= (EXab-IMab)/(EXab+IMab). EXab means country a exports to country b. IMab means country a import from country b. The scale of HM index should be [-1,1]. When TC index is more close to -1, country a has higher complementary to country b, when HM index is more close to 1, country a has a lower complementary to country b.

⁶The "1" is "one plan", that is to achieve "Cooperation Plan (2015-2019) between China and LAC". The "3" is

three engine ", that is trade, investment and financial cooperation as the driving force to push the comprehensive development of pragmatic cooperation to achieve the goals of US \$500 billion trade volume and \$250 billion investment stock within 10 years, as well as promote the expansion of bilateral trade settlement currency and currency swap. The "6" is the six areas, namely energy resource, infrastructure construction, agriculture, manufacturing, technology innovation, information technology as the focus of cooperation.

⁷Three main documents are "The Beijing Declaration of the First Ministerial Conference of China-LAC Forum", "Cooperation Plan (2015-2019) between China and LAC" and "The Mechanism and Running Rules of China-LAC Forum".

⁸The New Model of "3 x 3" International Capacity Cooperation was sponsored by Premier Li Keqiang in his speech in China-Brasilia Business Summit on May 19, 2015, that is to co-build three channels (logistics, electricity and information), to implement benign interaction among three bodys (enterprise, social and government); to develop three financing ways (fund, credit, insurance).

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A portrait of Andrew Sheng, a middle-aged man with grey hair and glasses, wearing a dark suit, white shirt, and a yellow patterned tie. He is seated and looking directly at the camera. The background is a plain, light-colored wall.

INTERVIEW

“
We have
more funding
available
for
infrastructure
”

ANDREW SHENG

Distinguished Fellow,
Fung Global Institute

As chief counsel of the Banking Regulatory Commission of China, Andrew Sheng knows the details of the Chinese complex financial system. For Sheng, Latin America and the Caribbean should learn from China the advantage of a long-term planning. He also ensures that the new international financial architecture will result in a world with greater competence to grant credits and reduce the risks of shadow banking.

What are the characteristics of this new normal in China?

I think two things need to be understood. The first is the Chinese economy is no longer a small economy that can have fast growth. When you are a ten trillion dollar economy, other than the European Union, already second largest economy in the world, growing at 12% is technically extremely difficult. So for us a slowdown of around 6 to 7%, is a more normal situation, this is the first issue, the scale issue. The second issue is that too fast growth has many negative side effects. And I think the Chinese realized that to push at that sort of speed you need to slow down a little bit to consolidate your gains and get rid of some of the excessive capacities, inefficiencies, corruption, and all these issues. So moving to that level is actually not a bad idea.

The implications on Latin America are going to be quite interesting. The first point is that the days of very large demand on commodities probably are over. I think China is moving away from a high resource consumption economy towards a more knowledge-based, services-based economy. This doesn't mean that the commodities cycle is finished, it just means that there will be a phase of consolidation, just like there is a phase of consolida-

220%

OF THE GDP
REPRESENTS
THE BANKING SYSTEM
IN CHINA

tion going on in the oil industry, oil and gas industry. Chinese policymakers are very keen on reducing the energy wastage, resource inefficiencies, and moving towards high value-added production. So the mix of Chinese products will become very different, it will be less a hardware, hard product production economy towards a more services-oriented economy. Now that does mean that the mixture of trade in Latin America will change. It will change because you will probably get even more Chinese tourists, you will probably get more Chinese investments, not necessarily just commodity type investments, but in areas where Latin America has comparative advantages. Latin America has a lot of skills in biotechnology, bioenergy, food production, all these sort of areas where China does not necessarily have comparative advantages.

In your last article you talked about a Lehman banking crisis possibility in China because of the shadow banking. Do you think China is getting closer to this kind of crisis?

In my latest book, called "Shadow Banking in China", which I co-authored with a group of colleagues, we studied the problem. We think that in a Lehman tax situation risks are not that high, but the risks of shadow



banking, which is really due to lack of clarity in property rights, and the emergence of technology on traditional banking, needs to be managed and faced in very, very carefully. One reason is that Lehman Brothers is a too big to fail, too connected to fail institution. China is a much less sophisticated economy. The requirements of the shadow banking system are really due to the outdated regulations, policy constraints, and lack of price liberalization issues, which the central bank is dealing with. It is moving towards an exchange rate liberalization, allowing the exchange rate to fluctuate more, allowing the market to begin to determine first the deposit rates and then the lending rates. Sorry, the other way around: first the lending rates, and then the deposit rates. So to a large extent, China has already begun to address some of these issues.

Do you agree with the central bank measures to deal with the shadow banking problems?

I think the central bank has been extremely flexible, and quite innovative in releasing the liquidity back to the market. People tend to forget, outsiders think that what happens outside China will happen in China, not recog-

35%

OF THE GDP
IS THE VALUE OF
CHINESE STOCK
MARKET

nizing that China is quite a complex, actually fairly sophisticated economy, even though the financial system is not that sophisticated by western standards, it has Chinese characteristics which you need to understand. China had a very large chunk of trapped liquidity. The foreign exchange reserves had to be sterilized, otherwise it would lead to inflation. So the central bank sterilized it. But in the transition to a new economy, the demand for liquidity is higher than is realized. So to give you a simple illustration, before 2007-2008, it was the foreigners who in some sense financed the ex-





**600
MILLION**
OF CHINESE LEFT
POVERTY BEHIND
OVER THE PAST THREE
DECADES

porters. After 2008, when the foreign importers ran into liquidity problems, the Chinese exporter has to finance the foreign buyers. The result of which is that the liquidity flips over, right? If you see what I mean. Previously, if I get an export order from Walmart, I can go to the bank and I can get money. But now if my buyer will pay me only in three months or in six months, I need extra financing, right? So the liquidity demand during this transition period is much more complicated than people realize.

How can you relate this new phenomenon to the new Asian financial architecture that you also proposed?

There are two elements of the Asian financial architecture. The first one is that the Asian financial system is too bank-based. So for example in China the banking system is 220% of GDP. And the stock market was about 35% of GDP at the end of 2013, with the bond market roughly about the same. Of course with the rise in the stock market, the stock market is now

90-95% of GDP and the bank assets is around 240% of GDP. But the leverage situation has changed. So this is one aspect about financial architecture. Not just China but Asia needs to be much more capitals market-based, not short-term biased, longing at more equity, so that you have more equity to cushion the economy in a very much more volatile world, the external variables will become much more volatile, much more uncertain. This is point number one.

Point number two is that with the creation of the Asian Infrastructure Bank (AIB) and the Silk Road Fund and the New Investment Bank which is the BRICS bank, we actually now have more funding available for infrastruc-

ture and long-term investments than was available previously. As you know, the AIB had said that just Asia alone is short of one trillion dollars' worth of infrastructure funding, every year to at least 20-25. It's a lot of money by any standards and then of course, China is providing that funding now, not all of it but part of it. So in complementarity with IDB, the World Bank, these funds will now help infrastructure investments, not just for India, ASEAN, South Asia, and Central Asia. It will propel also funding for Latin America.

So can we now speak about a new global financial architecture?

I know that the Ben Bernanke attributed the creation of the AIB to the reluctance of the US Congress to ratify the IMF. Of course he is not completely wrong, the lack of the increasing capital, the quarter system for IMF, which was all agreed by the US administration and G20, meant that at a time when the world needs more liquidity (Greece, Ukraine), the World Bank, all the multilateral institutions are constrained by lack of capital. So the frustrations of not just the Chinese but all the surplus economies like Saudi, like Middle East economies, who is willing to contribute to this long-term funding through a multilateral channel, is not realized. Which is why I think it caught everybody by surprise that 57 members suddenly put their hands up and say we will join the AIIB. It is good news and everybody wished that the Americans and the Japanese would

6%

OF ECONOMIC
GROWTH WOULD
BE A MORE NORMAL
SITUATION

join in because this is a multilateral effort, it is not about factional issues, but it does mean that the center of gravity has moved even further away of the unipolar system towards a multipolar situation.

What about the loans of these new institutions? Are they coming with no conditions?

My view is I don't think that the AIIB and all these loans will not come with conditionality. I think the conditionality that must be it will be run professionally, but it will not come with the conditionalities that speaking as a former member... I used to work in the World Bank, it will not come with what I call a 'Christmas tree' type of conditionality, I want everything, you cannot do this, the conditionality must be very focused on what is most important for the country that has asked for the loan. So for example if you want a bridge to be built, a railway to be built, if you add in the fact that, I am not saying that this is not right, but the conditionality cannot be attached to the need to build this loan. So if for example I say that the road is to be built but I want the conditionality that there will be certain social requirements for protection

ANDREW SHENG

SON OF CHINESE AND MALAYSIAN-BORN IMMIGRANTS, SHENG IS A FELLOW OF THE FUNG GLOBAL INSTITUTE, A THINK TANK BASED IN HONG KONG. IN 2013, TIME MAGAZINE INCLUDED HIM AMONG THE 100 MOST INFLUENTIAL PEOPLE IN THE WORLD. HIS LATEST BOOK IS "BRINGING INTO THE LIGHT SHADOW BANKING: OPPORTUNITY FOR FINANCIAL REFORM IN CHINA"



of certain rights, somewhere else, that protection of minority rights will have to be considered in a different political context, relevant to that political context, rather than whether that bridge or road is to be built, if you see what I'm saying. Now this is a trade-off issue, if the road is not built, the country cannot progress, the poor cannot progress, yes the rights of some individuals or even animal rights, so for example you protect the species, these are very important, but if you don't get the economy going you do not have the cake to distribute, to make all the reforms, to take care of the rights that you want. So one must be much more focused. I have seen as a former staff of the World Bank that because of so many conditionalities some of these emerging country governments cannot cope with them, so the result is the project is not implemented. And so we have to be much more realistic on what we need to do. I believe that having more competition even in the multilateral lending field it will be for a good. I do not see a situation where you can simply say that the AIIB will be lending without strings. There is no bank in the world that lends without strings.

Are you in favor of multilateral or country to country negotiations?

I think the Chinese have been extremely diplomatic and quite flexible in negotiations between country to country. You have seen that in a lot of transactions, if I recall correctly the amount of loans and FDI to Ecuador, which is a relatively small country, is pretty large. And yet in some of the larger countries, China has not tended to lend or invest in these countries, it depends on the conditions. I think recently China self-volunteered this ar-

gument that it wants to be a responsible global stakeholder. Which means that the fact that the contributions on the AIIB, etc. is the provision of global public goods. In fact the fact that it's willing to give these global public goods with less conditions is actually normal I think. So in my view there are different ways of negotiating with China, you can negotiate either as a group or as an individual. It will be only channel discussions if I may put it this way, you never use one instrument. China is a very large country, you may not necessarily be dealing with one type of institution, you can be dealing with a central government institution, you can be dealing with a provincial government. What is happening now in China is you can see city to city partnerships. A city in China partners with a city in America, and say 'look, you have certain advantages that we don't have, and we want to learn from you how do you deal with green technology, how do you deal with local education'. All these can be done at many different levels, it can be private company. As you know, some Chinese companies are giants, the balance sheet of a single company in China could be larger than several countries put together. So I don't believe that there's a simple formula for dealing with China, you can use many multilateral means of dealing with very different parts of China.

If you had to give an advice to a policymaker in South America, what would be your advice?

My advice is to get to know each other much better. I think there is very little, relatively little understanding of China by Latin America for historical reasons, and there is a relatively low understanding of China of Latin Ame-

rica. The very fact that trade has grown something like 20 plus times in the last 10 years is a miracle by itself. People would never dream that it is possible but it is now possible. President Xi Jinping has promised to invest 250 billion dollars in Latin America, which is not a small sum. Foreign direct investments have been taking off very, very fast. There are problems, there are no doubt many problems because as I said, there are cultural differences, there are aspirational differences. But I think the increasing trade and investment and increasing cultural ties is a win-win for both sides. I think there is quite a lot that the Latin Americans can learn from the Chinese growth experience. I give you an illustration. I think Latin Americans learn very well from the Anglo-Saxon school: monetary policy, fiscal policy, very well-trained macro-economists. But as we've seen in 2007-2008, it was much more theoretical. The theory is getting very, very problematic. And the reason why the theory is getting very problematic is that it has not taken into consideration the politics and the institutional side of the reforms. In these two areas it is very clear in my mind that the Chinese have learnt how to improvise, how to experiment, the process of development is a continual experimentation, search, piloting, implement, review, and then advance again. You continuously learn from your mistakes, and you adjust your institutions. It is not the Soviet-type planning, it is not the indicative planning, it is highly diversified evolution to different cities, to different regions to experiment. And continuously it is very forward looking, it makes mistakes, but the minute it makes its mistakes it reassesses it, reverses, and then advances again. So for example the conventional macro-

economic theory has not been able to explain the speed of Chinese development. How in 30 years, 35 years they took six hundred million people out of poverty. And people used to say this is a backward country. And then you go to China and you will see infrastructure that is 21st century by any standards. Not to say that there is no corruption, there is no pollution, but it succeeded because the KPI (key performance indicator), the objective was GDP, so they produce high GDP but very low side effects. Now they are saying no, we are not going to go for the high GDP, we are changing the KPI towards a China dream, well-being index, middle level income but high technology, service-oriented, knowledge-oriented, less pollution, better healthcare, better education, more science and technology, everything to do with the internet, etc. It's a very different game. So I think in this regard, the conventional let's adjust interest rate, let's adjust exchange rate, it's 20th century, it's 19th century, if I may say so.

So what we need to understand is how they are looking at the problem. There are huge problems in China, but they have a system that seems to be able to deal with this on a very broad front. And where it can be applicable, one should attack before your own conditions. Because every country has its own differences. I'm not even talking about the political system, I'm talking about how they organizationally and technologically deal with these issues.

How can Latin American rate of growth gain strength?

I think after 2007-2008, it has become very clear the whole problem is that when we think in if I may again say the Anglo-Saxon approach it is

about incremental fine tuning the basic assumption that you will revert actual equilibrium. We are no longer in that world, everything is volatile, after QE the game has changed completely, after the internet everything has changed completely, with social media, technology, the game is changed because the whole metrics of measuring GDP is we know inadequate. So we are no longer in Kansas, we are no longer in the 19th century, we really need to think about how we deal with 21st century challenges: huge unemployment, the impact of technology, the pollution, climate change, the resource deterioration, the human biodiversity. All these issues are structural issues, every single one of them you cannot fix in six months, every one of them is a 10-20 year journey, every single one of them. You cannot fix your education overnight. So to say 'I need to adjust my fiscal deficit 2.5 to 2.7%', or 'I need to print more money 1%', it's incremental, we're dealing with stochastic change, we're dealing with black swans that we thought was one in 400 years, it is now happening every year, with huge shifts. Conventional theory, traditional theory does not guide us anymore. In this regard, it is better to have much more humility, much more understanding that you need to make mistakes, you will make mistakes. And then you will notice you have a situation that you are afraid of pain, you are afraid of adjustment, because those people that have no pain, they will have no gain. So in my view, the lessons from Asia, not just China, is that you need to take a much longer view, you need to learn how to have social consensus, to live with these structural adjustments that are going on. And in some sense we look back

at the Asian crisis, it was very helpful then, it forced us to make very painful adjustments. We actually took the orthodox medicine that the IMF told us to take which was not applied in Europe, as you know. We raised interest rate, we devalued, we did all the fiscal adjustments and in a sense looking back actually it's not like that, it forced us to make some key choices. But now we are learning if you can have QE, so can I, and the result is we are postponing the adjustments. I am much more personally radical because I think that the old way of thinking is no longer applicable in this new normal of high volatility, structural changes that are going on, we must have structural adjustments to deal with structural problems, we cannot solve more complexity with more complex rules. And the simplicity actual issue is let's get back to basics. What are the basic problems that we are dealing with. And if it is painful for us to deal with it now, let us adjust it now because if we don't deal with it now it will be even more painful later on. That is a political question, the question of pain adjustment issue. But I'm a great optimist; I believe that every society finds its own way to deal with these issues. There is no 'one size fits all' solution. If you look at what is happening in China you will really worry if they become so natural resource efficient that they don't need it anymore (Laugh). The true life is both a plus and a minus, everything is like that. That's what I was trying to say, China is likely in absolute terms to be still needing natural resources from Latin America. But no longer at the speed, at the scale that happened in the last five, ten years. So I think we have to be much more realistic to deal with these issues. ■

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INTANGIBLE INNOVATION

TECHNOLOGY AND CREATIVITY WERE FUNDAMENTAL FOR THE DEVELOPMENT STRATEGY OF CHINA. NEW PROCESSES AND PRODUCTION TECHNIQUES GENERATES GROWTH OF ELECTRONIC COMMERCE AND ONE INTERNET SALES. IN A FEW YEARS, TECHNOLOGY COMPANIES

HAVE BECOME GLOBAL LEADERS IN AREAS WHERE BEFORE HAD LESS OR NONE PARTICIPATION. HOW CHINA PLANNED TO BECOME A KNOWLEDGE SOCIETY. HOW CAN LATIN AMERICAN COMPANIES SUCCEEDED IN A SUI GENERIS AND REGULATED MARKET.

Intangible innovation

Eric Warner
RAND Corporation

"China's greatest legacy was to create a model of inclusive development"

Gary Gereffi
Duke University

Leading-Edge Food Security Technology

Biogénesis Bagó / Biotechnology

The Transition to the Knowledge Society

Pamela Aróstica
Free University of Berlin

Cellular Telephony Accessible to all

Huawei / Communications

Think tanks & Unmissable Reads

CHINESE INNOVATION

ITS DRIVERS AND
LESSONS

INTANGIBLE
INNOVATION
AS AN ENGINE OF
DEVELOPMENT

Eric Warner
RAND Corporation*



CHINESE SCIENCE AND TECHNOLOGY PROWESS IS GROWING RAPIDLY, BUT WHAT IS CAUSING THIS? IN THIS ARTICLE THE DRIVERS BEHIND CHINA'S RAPID GROWTH IN INNOVATIVE INPUTS (E.G., R&D) AND OUTPUTS (E.G., PATENTS AND RESEARCH PAPERS) ARE EXAMINED. A REVIEW OF RELEVANT LITERATURE REVEALS THAT POLICIES INCENTING INNOVATIVE INPUTS AND MARKET FORCES ARE KEY DRIVERS OF CHINESE INNOVATION. CONVERSELY, CHINESE POLICIES TO MOTIVATE THE PRODUCTION OF PATENTS ARE LARGELY INEFFECTIVE. HOWEVER, THE MOST INNOVATIVE ADVANCEMENTS CHINA HAS MADE ARE NOT MEASURED BY THE NUMBER OF PATENTS OR RESEARCH PAPERS. INSTEAD DIFFICULT-TO-MEASURE INNOVATION HAS EMERGED IN CHINA, INCLUDING INNOVATION THAT IS INCREMENTAL, MODULAR, OR INVOLVES NEW PRODUCT OR PROCESS ARCHITECTURE (ERNST AND NAUGHTON 2007; BREZNITZ AND MURPHREE 2011; NAHM AND STEINFELD 2014). I CONCLUDE WITH SUGGESTIONS FOR OTHER DEVELOPING COUNTRIES TO FACILITATE THESE FORMS OF INNOVATION IN THEIR COUNTRIES.

The process of technological transformation in China has accelerated over the last decade. As part of China's national plan to become a world leader in science and technology, this transformation has prioritized a shift from government to business research and from foreign technology adoption to an "indigenous innovation" model (MOST 2006; McGregor 2010). There are three primary drivers of innovation in China: market competition, policies that promote the production of innovative inputs, and policies that incent the production of innovative outputs (Warner 2015).⁵

China has moved from a centralized innovation system to a network of innovation policies that focuses on stimulating business research to improve commercialization of new technologies (Cao, Suttmeier et al. 2006; Liu, Simon et al. 2011). Dependent historically upon incorporation of foreign technology, China has recognized its weakness in

developing new commercial technologies and has laid out plans to overcome this deficiency by promoting indigenous innovation (Cao, Suttmeier et al. 2006). This policy initiative promotes domestic development of new technologies and replaces previous policies which focused on incorporating foreign technologies (Cao, Suttmeier et al. 2006). These innovation policies are designed to drive China to its goal of becoming a world leader in technology, as measured by the production of patents and research articles (MOST 2006).

This ambitious plan for science and technology development was preceded by forms of innovation that evolved organically. These forms of innovation, which are not easily measured, focus on lower cost, speed to market, modular technology, or product architecture (Ernst and Naughton 2007; Breznitz and Murphree 2011; Nahm and Steinfeld 2014). Chinese firms have accomplished this by integrating segments of

the research and development spectrum, manufacturing, and product design elements (Ernst and Naughton 2007; Nahm and Steinfeld 2014). Unlike disruptive or radical product innovation (Christensen 1997), these other forms of innovation are more attainable for most nations, and builds on the strengths of a nation's economic conditions and level of technical prowess.

This paper is divided into three sections: indicators of Chinese innovation and international comparisons, the drivers of this innovation, and lessons for other countries.

CHINESE TECHNICAL PROGRESS

MEASURABLE INNOVATION

The phenomenon of innovation is difficult to measure. As the Organization for Economic Co-operation and Development (OECD) noted, there are two broad categories of innovation metrics—input and output measures (OECD 2002). Examples of input measures include research and development (R&D) funding and the number of full-time equivalent researchers. Patents, trademarks, and copyrights are all examples of innovative outputs.¹

Chinese innovative inputs – R&D. Chinese innovative inputs have been

34%

IS THE INCREASE
IN ANNUAL
AVERAGE PATENT
APPLICATIONS
IN CHINA

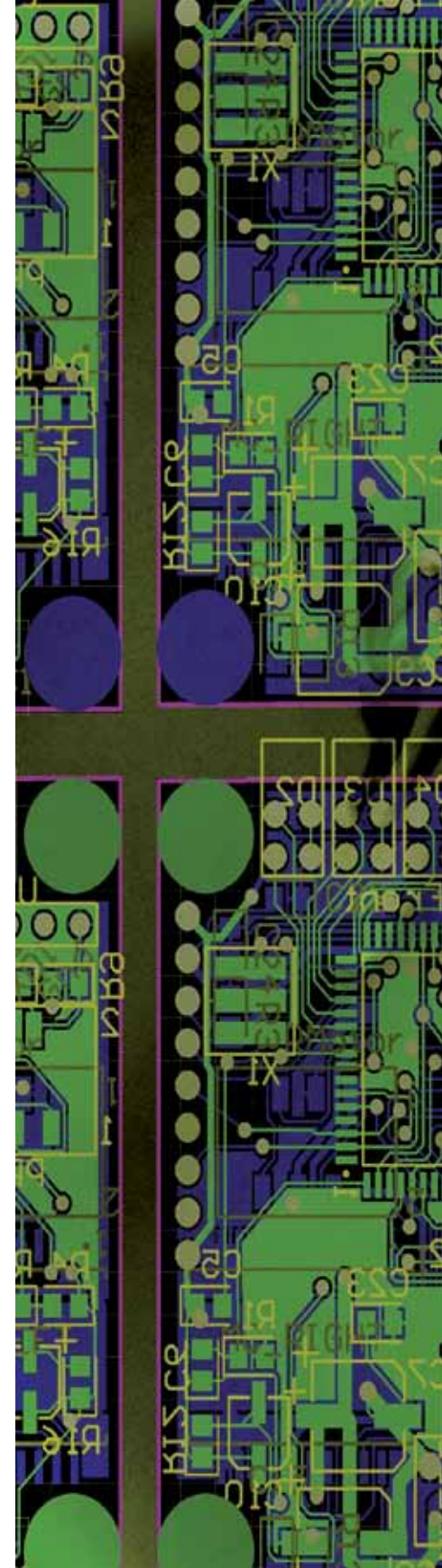
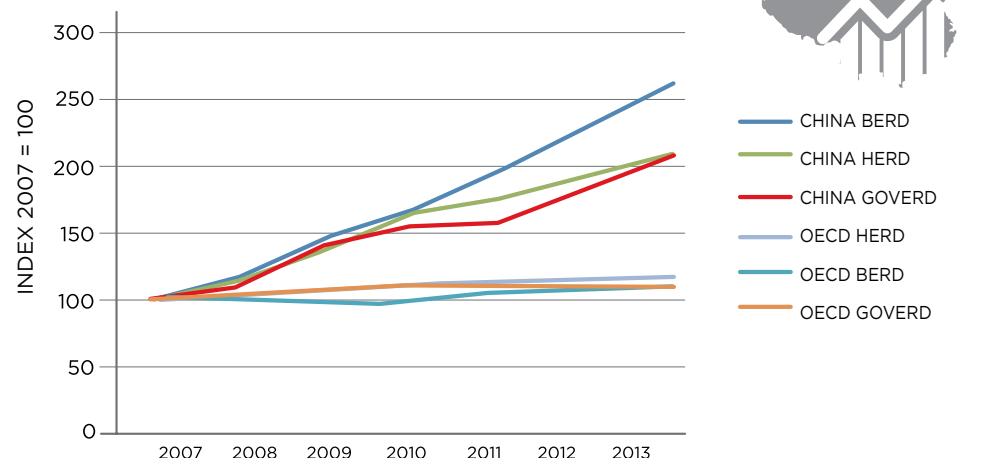


FIGURE 1
CHINESE R&D GROWTH



Source: (OECD 2013)

growing rapidly, particularly investments in R&D. As shown in Figure 1, three categories of Chinese research and development—Gross Domestic Expenditure on R&D (GERD), Higher Education Expenditure on R&D (HERD), and Business Enterprise Expenditure on R&D (BERD)—have grown rapidly. Two trends are readily apparent in Figure 1. First is the rapid growth of Chinese R&D spending since 2007, particularly when compared to more advanced OECD nations. Second is that the growth of BERD outpaces the growth of all other forms of R&D, which is an important trend in Chinese technological development. Although growth is rapid, Chinese R&D investments lag behind other leading countries and OECD nations (Figure 2).

Examining R&D intensity, or the ratio of R&D expenditures to a firm's revenue, reveals the importance of R&D to maintain or improve firm competitiveness. As shown in Figure 2, the importance of R&D to Chinese firms has been growing rapidly, and nearly matches that of OECD countries. This trend highlights Chinese firms' growing need to conduct R&D as they increasingly compete in the world market.

Chinese innovative outputs – patents. Chinese innovative outputs have

been growing even more rapidly than inputs. The number of patent applications (including invention and utility patents, explained below) received by the State Intellectual Property Office (SIPO) has grown dramatically since the late 1990s, with yearly increases averaging 34% (Figure 4). Beginning in 2011, more patents have been filed annually in China than in any other country (UN December 11, 2012).

China has also made rapid gains in the number of difficult-to-obtain patents, like Patent Cooperation Treaty (PCT) patents.² These patents are more objective measures of technical progress, and aid in the comparison of innovative progress in China to other nations (Warner 2015). As shown in Figure 5, a comparison of Chinese PCT patenting levels to those of other nations shows China has recently outpaced Korea, but still lags behind other countries in terms of innovative content.

China, like other developing Asian nations, has historically produced large numbers of utility patents (Figure 6) (Maskus and McDaniel 1999). Compared to invention patents, utility patents generally contain less inventive content and require less review to be approved (Moga 2012; Warner 2015).³ The vast majority of these utility patents are filed

INTANGIBLE INNOVATION



4.2%

OF GDP IS
THE INVESTMENT
IN R & D IN
SOUTH KOREA,
THE HIGHEST IN ASIA

by resident Chinese inventors (Warner 2015).

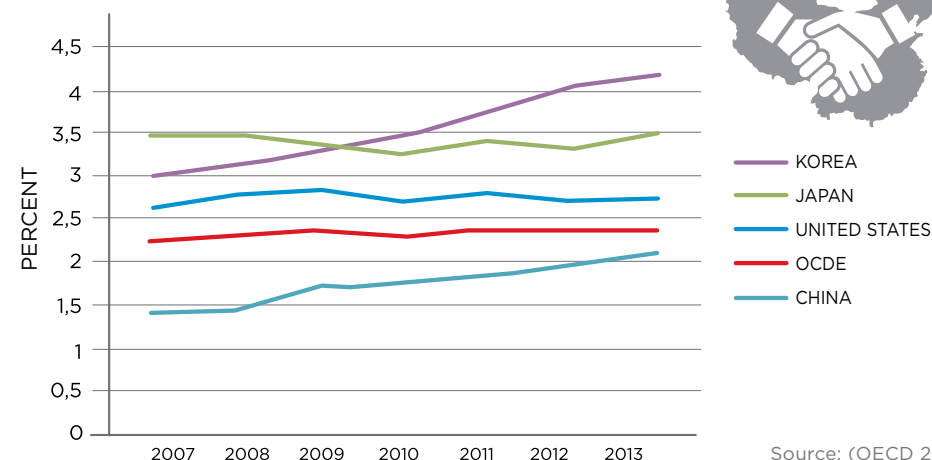
Despite their lower inventive content, utility patents can be useful. As Maskus and McDaniel (1999) pointed out, utility patents have been used in

other countries as an intermediate step to advanced levels of innovation, as is the case in Japan. Utility patents also protect a form of IP that is likely incremental or derivative in nature (Brack 2009; Moga 2012). More importantly, publication of these utility patents allows for wider dissemination of the details of these incremental innovations, helping propel economic growth (Maskus and McDaniel 1999).

Unmeasurable innovation

Despite indicators that show China produces lower quality patents (Liang 2011), Chinese firms have been incredibly innovative, albeit in areas that are difficult to measure. China has been innovating in areas that are appropriate for current technical levels and economic conditions. Breznitz and Murphree (2011) suggested China has advanced its ability to innovate with business processes, models, and procedures, rather than through radical new product innovation. These are unmeasurable innovations, which are at technical levels that are easily integrated with current technologies (Breznitz and Murphree 2011).⁴

FIGURE 2
R&D AS A PERCENTAGE OF GDP



Source: (OECD 2013)

Most Chinese innovative activity falls closer to the development end of the research to development spectrum. A range of successful Chinese firms have emerged that specialize in the development of existing technologies and processes with a focus on improved speed to market and reduced price. The most exemplary of these is Huawei. As described by multiple authors, Huawei has won market share by developing existing technologies and quickly bringing them to market at low prices in a highly competitive global industry (Fan 2006; Nakai and Tanaka 2010; Fan 2011)) (See Box 1).

These innovations eschew traditional focus on product and disruptive innovation (Christensen 1997), and instead focus on other forms of innovation, namely, incremental, modular, and product architecture innovation (Henderson and Clark 1990; Ernst and Naughton 2007; Nahm and Steinfeld 2014). Ernst and Naughton (2007) described incremental innovation as innovation that focuses on decreasing time-to-market and cost of products, and modular innovation as

innovation that combines a new component technology within existing system architectures. Nahm and Steinfeld (2014) described product architecture as the makeup of the subcomponents in a product, rather than the design of the overall product. These types of innovation are more likely to integrate technologies with processes and business models rather than be purely technologically innovative.

Chinese industry is replete with examples of these other forms of innovation. Brandt and Thun (2011) showed

how modular innovation by Chinese cell phone manufacturers created temporary advantages for Chinese firms. Ernst and Naughton (2007) observed the same pattern in the information technology equipment industry. These authors described this sector as “highly flexible, internationally open, and entrepreneurial” (p. 40) and more likely to produce incremental or architectural innovations. In 2012, Ernst and Naughton identified the presence of architectural and modular innovation among Chinese integrated circuit design firms. They found that these firms reduce overhead by purchasing IP from abroad and subcontracting circuit manufacturing to specialized semiconductor foundries (Ernst and Naughton 2012). This allowed these firms to “better focus on speed-to-market and reduce R&D cycles, enabling them to respond faster to the required yearly changes in IC design” (Ernst and Naughton 2012). That is, they used advances in modularity to provide incremental innovation, or improvements in time to market. Of note, these forms of innovation are not directly targeted by government support, unlike other initiatives such as indigenous innovation

+1 MILLION

APPLICATIONS
FOR NEW PATENTS
RECEIVES EVERY
YEAR THE INTELLECTUAL
PROPERTY OFFICE

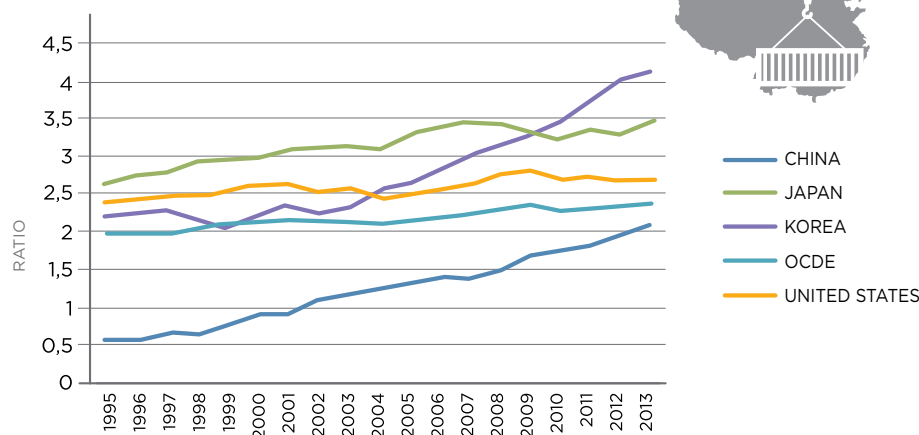
(Ernst and Naughton 2012).

What drives Chinese innovation?

Three drivers have been shown empirically to increase innovative inputs and outputs: market competition, policies that promote the production of innovative inputs, and policies that motivate the production of innovative outputs (Warner 2015).

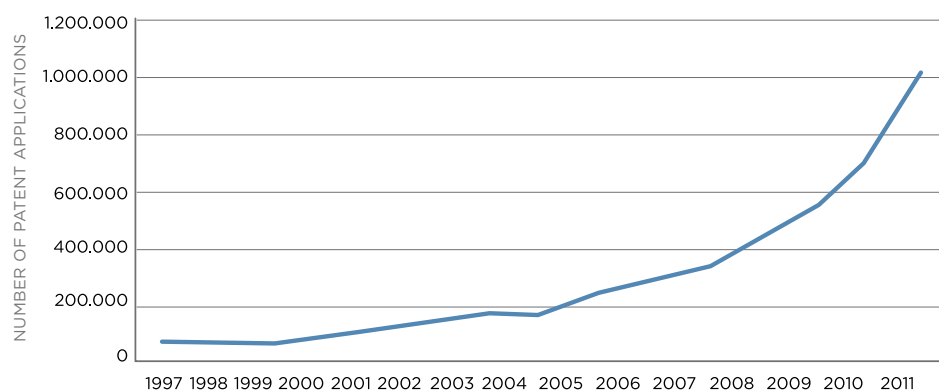
Market effects and escape competition. Over the past decade there has been a shift towards private Chinese R&D and patenting, and as a result of this shift market forces play a larger role in driving innovation. Economic theory explains the incentives created by the market. Recent work in endogenous growth theory was characterized by Aghion, Bloom et al. (2005) and Aghion and Howitt (2005), who showed that market competition affects innovation based upon

FIGURE 3
R&D INTENSITY BY COUNTRY



Source: (OECD 2013)

FIGURE 4
TOTAL RESIDENT PATENT APPLICATIONS AT SIPO



Source: (WIPO 2014)

firms' level technical advancement. Their research showed empirically that firm competition facilitates innovation by forcing firms to attempt to "escape competition": with new ideas or innovations (Aghion, Bloom et al. 2005; Aghion and Howitt 2005). However, too much competition can also limit innovation, particularly if firms are significantly behind the leading technology frontier (Aghion and Howitt 2005).

Two empirical papers showed that escape competition effects exist in China. Du and Chen (2010) used R&D data to show that competition and innovation follow the same pattern outlined by Aghion and Howitt (2005). Using international patenting data from foreign firms operating in China, Hu (2010) directly identified the relationship between competition and innovation outputs. Hu showed that 36% of the yearly increase in foreign firms' patenting results from competition, providing empirical evidence that competition is a major driver of Chinese innovation.

Researchers have shown that competition is growing in China, which could drive more firms to "out-innovate" their peers. Data released by the OECD showed competition has increased across a range of industries (OECD 2010). Recent research by Bai, Mao, and Zhang (2014) also showed that compe-

tition has increased in many industries, albeit not as much as originally estimated by the OECD.

Other evidence also supported the concept that the growth of competition drives Chinese innovation. Researchers have shown that increased innovation among Chinese state-owned enterprises is partly due to these firms' entry into more competitive markets (Jefferson and Rawski 1994). Wang and Yao (2002) found that privatization of, and competition among, small-scale firms provided the primary incentive for firms to innovate in the 1990s.

Policy: A driver and a deterrent. Policy motivates Chinese innovation, albeit with mixed effects. Chinese policies generally incent the supply of innovative inputs, but distort incentives for innovative outputs. There are also a number of other policies that motivate innovation indirectly. These include industrial policies and anti-monopoly regulations, among others.⁶ I choose not to include these in my analysis because, as Liu, Simon et al. (2011) noted, "industrial policy alone seems to be insufficient to promote innovation" (p. 918).

The core policy document orchestrating these policies is "The National Medium- and Long-Term Plan for Science and Technology Development (2006-2020)," the provisions of which

65%

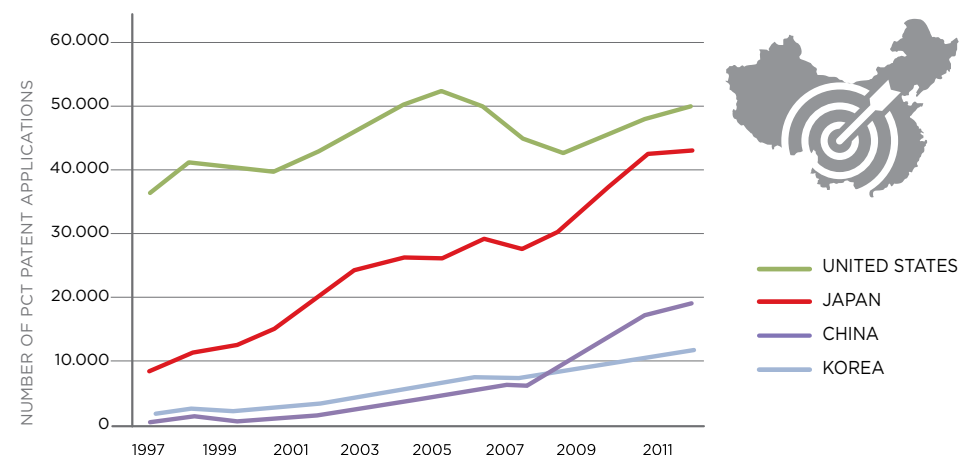
IS THE SHARE
OF THE DOMESTIC
MARKET IN THE
HANDS OF HUAWEI
AND ZTE

were enacted in 2006. This document lays out several key goals, including:

- increasing the ratio of R&D investment to GDP from 1.7% in 2013 to 2.5% in 2020, and
- achieving a top five ranking for China in academic article citations and global patent applications (MOST 2006).

The first policy category is supply side policies, which incent the supply of innovative inputs such as R&D funding. Examples of these include tax exemptions on R&D and related activities, and High New Technology Enterprise status exemptions (Garcia, Yang et al. 2014). As Garcia et al. (2014) pointed out, the former provides an R&D "super deduction" of 150% on qualifying activities. The latter is designed to promote firms that will then develop leading technologies in targeted technical areas. This program offers a 10% corporate tax

FIGURE 5
PCT PATENT APPLICATIONS



Source: (OECD 2013)

break, but requires a high concentration of R&D and scientific personnel as well as ownership of Chinese intellectual property (Garcia, Yang et al. 2014).

Other examples of policies that are important inputs to innovation are those directed at the development of new research and researchers from universities. In 2006, China was ranked 5th in the world in scientific publications, but grew to 2nd behind the U.S. as of 2013 (Zhang, Patton et al. 2013). One of the most prominent policies driving growth of higher education research is the 985 Policy (Zhang, Patton et al. 2013). This policy is designed to allocate subsidies to selected universities in an effort to promote higher education development (Li, Whalley et al. 2011). Research by Zhang, Patton et al. (2013) showed that the 985 Project increased the rate of production of publications at all universities. They suggested that the 985 Project helped create a more competitive academic environment for all universities by increasing publication rates at lower-tier universities.

Policies that create incentives for innovative outputs, or demand-side policies, are key policy tools used by the Chinese government to promote innovation. The primary mandate in this family of policies is indigenous innovation, which promotes innovation by domestic researchers so that China can become an established technological leader by 2020 (MOST 2006; McGregor 2010). There are three key components of these demand-side policies that create demand for innovative outputs



(Warner 2015):

- patent quotas,
- patent subsidies, and
- indigenous innovation policies to promote ownership of Chinese IP.

Patent subsidies and quotas. The Chinese government uses quotas and subsidies to incent patent production. Chinese patent quotas specify patent production targets for local governments. Subsidies, or rewards for granted domestic or international patents, are also used. Both have been shown to increase Chinese patenting. Li (2012) explained that a large amount of Chinese patenting can be explained by these policies. However, Lei, Sun et al. (Lei, Sun et al. 2012; 2013) believed that these policies motivate the generation of a larger number of low-quality patents. They found this policy incents inventors to act strategically by spreading out inventive content among multiple patents, essentially diluting the innovative content of patents, rather than producing higher quality inventions.

Policies to promote ownership of Chinese IP. Representative of these policies is the Indigenous Innovation Policy (National Indigenous Innovation Product Accreditation Work and Catalog), which was a short-lived policy to promote the ownership of Chinese IP (MOST 2009; Warner 2015). This policy gave preference in government procurement decisions to firms that own Chinese patents, copyrights, and trademarks. Originally proposed in 2006, this policy was enacted in provincial and municipal jurisdictions throughout China and became national policy

in 2009 (MOST 2009; McGregor 2010). Although the national policy was dismantled in 2011, local versions of the policy still exist (Prud'homme 2013). Empirical research has shown that this policy has had no effect on motivating new innovation (Warner 2015).

WHAT CAN OTHER COUNTRIES LEARN FROM CHINESE INNOVATION?

An examination of innovation in China reveals several important trends. Chinese policies to promote R&D and

the training of researchers have been successful and are a likely driver of increased Chinese innovation. Conversely, although patent policies of the type promoted by the Chinese government can help inflate numbers, they do not necessarily increase the quality of inventions.

Market forces, if carefully promoted and used in conjunction with policies to promote innovative inputs such as R&D investment, can help drive innovation. Market competition is a key promoter of innovation, but its effects are limited. As previous research has shown, too much competition can limit innovation, particularly among technologically backward firms (Aghion and Howitt 2005). There may be a role for policy to promote innovative inputs, lifting firms' innovativeness to levels where competition can become the primary incentive for innovation. Competition impels firms to use their available resources to attempt to escape competition. This leads to the unmeasurable types of innovation that

36%
IN THE INCREASE
IN PATENTS IS DUE TO
THE IMPACT OF INCREASED
COMPETITION IN THE
MARKETS: COMPETITION
STIMULATES
INNOVATION



THE CHINESE SWITCHING EQUIPMENT MANUFACTURING SECTOR

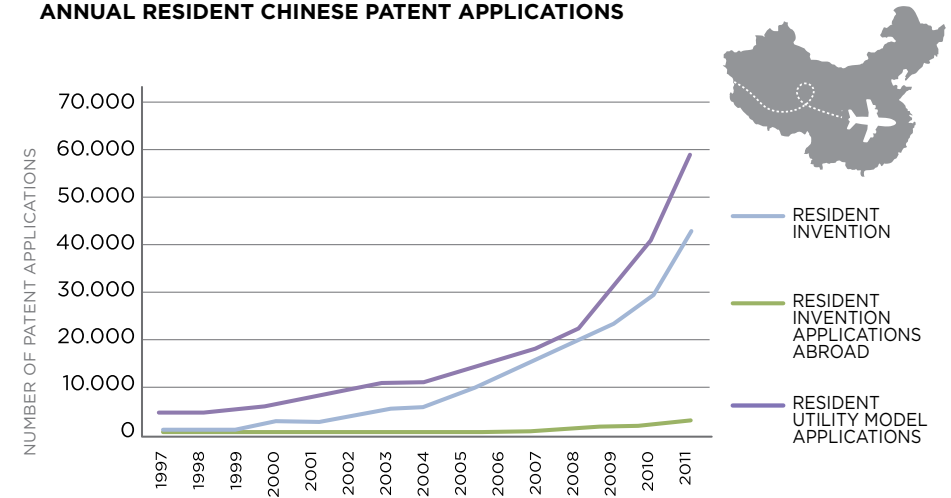
China's two most innovative and financially successful firms, Huawei and ZTE, built their success on incremental and product architecture innovations (Fan 2006; Fan 2011). These two firms have filed more patents than any other Chinese organization, and are among the most prolific PCT patent filers in the world (World Intellectual Property Organization 2013; Warner 2015). As of 2012, these two firms comprise approximately 65% of domestic market share and are major exporters of telephony products (IBISWorld 2012). The entire switching equipment manufacturing sector competes primarily on price and speed to market, rather than differentiating products or quality (IBISWorld 2012), and Huawei and ZTE produce primarily technologies that are already mature (Fan 2006; Nakai and Tanaka 2010; Fan 2011).

Huawei and ZTE have benefited from a number of policies and government plans. These include industrial plans for the telecommunications industry, a close relationship with the government, and other policies that incent development. Huawei exemplifies these types of connections. Gilley showed that as early as 1996 Huawei was named a national champion company by both the government and military (as cited in (Ahrens 2013)). It quickly amassed a large number of local clients and funding from large Chinese banks, both of which were critical to its

growth (Ahrens 2013). Even its founder, Ren Zhengfei noted: "Huawei was somewhat naïve to choose telecommunications equipment . . . the rivals were internationally renowned companies with assets valued at the tens of billions of dollars. If there had been no government policy to protect [nationally owned companies], Huawei would no longer exist."⁷ Due partly to this support Huawei was able to slash prices and expand international sales. In 2012 Huawei became the world's largest switching equipment manufacturer by revenue (Economist August 4, 2012).

The growth of Huawei and ZTE, although not necessarily replicable in other nations, followed a defined development trajectory: confirmation of national champion status, as well as protection and preferential access to an ecosystem of domestic clients and financing, which provided learning and financing opportunities to produce more innovation (Naughton 2010; Ahrens 2013). This is a strong strategy to promote a business, but not necessarily technical innovation. Indeed, the technical innovation that Huawei produces is underwhelming, and may actually be falling behind its competitors (Warner 2015). Such a strategy is tenable, but only for countries with the necessary policy tools, financial resources, and sufficiently long time horizons to allow these firms to develop.

FIGURE 6
ANNUAL RESIDENT CHINESE PATENT APPLICATIONS



Fuente: OMPI (2014).

have driven Chinese firms to success.

Other developing countries with burgeoning innovation capabilities may also benefit from mimicking unmeasurable forms of innovation: incremental, modular, and product architecture. The following strategies help facilitate these forms of innovation.

- Develop "tempo" (Steinfeld and Beltoft 2014). Facilitate quick-to-market capabilities for products with incremental advantages (lower cost, new features or functionality) (Steinfeld and Beltoft 2014). Steinfeld and Beltoft (2014) showed that due to tight competition among firms imitating each other's products, speed to market is key to capturing profits.

- Reduce all unnecessary costs from a product (Steinfeld and Beltoft 2014). Steinfeld and Beltoft (2014) show this form of incremental innovation includes mirroring other products closely while optimizing supply chains to remove all costs that may impact a company's profits.

- Identify and specialize in market niches while promoting modularity with other firms' services and technologies (Nahm and Steinfeld 2014; Steinfeld and Beltoft 2014). This specialization may also facilitate firms' participation in multi-firm networks, which Nahm and

Steinfeld (2014) point out facilitates learning and could create a virtuous cycle of innovation.

- Focus on facilitating small, incremental innovations that are suitable for local economic conditions and consumer preferences, or those in similar nations. Nahm and Steinfeld (2014) stressed that the know-how driving these innovations must exceed basic imitation and be proprietary in nature. Ideal markets for these products are domestic segments and export markets for products that either mirror or are incremental steps from current technical capabilities.

Finally, focus on combining technical advancements with business model and process innovation in specific sections of the value chain while maintaining long-time horizons for success. China has captured export scale in innovative industries like solar photovoltaics due partially to its manufacturing prowess (Nahm and Steinfeld 2014). This is the most recent innovative step from China. Before leading in solar panels, China first captured large export share in lower value-added industries by providing certain labor-intensive segments of the value chain, such as assembly. Only much later, while these firms enjoyed significant government support, were

innovative manufacturing capabilities in advanced fields developed (SEE BOX 2).

It is easy for policymakers in other nations to look at China's ambitious scientific plans and rapid and record-breaking science and technology statistics and believe that heavy government involvement and funding for industries is required for technological success. What is not as apparent is the rapid innovation in the non-state-supported sector that is changing Chinese innovation (Ernst and Naughton 2012; Steinfeld and Beltoft 2014).

These national plans to become a global technological leader are the most recent step in an evolving technical en-

vironment. The "Medium to Long Term National Plan for Science and Technology" was released in 2006 after much of the basic incremental, modular, and product architecture innovation, as well as aggregation of basic foreign technology, was already accomplished. Only then did Chinese policymakers decide China would strive to become a leading independent producer of innovation by relying primarily on the engine of business research and development. Other countries can also rapidly scale up domestic innovation, but must allow private firms to lead, while facilitating their connections with global markets and specialization in unique services, functions, and technical fields.

THE CHINESE SOLAR PHOTOVOLTAIC SECTOR

Like other commercially successful Chinese sectors reviewed in this article (see Box 1), the Chinese solar photovoltaic manufacturing sector produces relatively advanced products at low cost. This sector captured a large export share while benefitting from government policies. However, based on outputs, it does not appear to be highly innovative. Although they do not produce leading edge solar technologies, these firms have successfully innovated in manufacturing methods (Nahm and Steinfeld 2014) and meet a specific market need for a relatively high-quality/low-cost product.

Unlike other successful Chinese high tech industries, the Chinese solar photovoltaic sector is not highly concentrated. As of 2012, there were 786 firms in this industry which generated \$72 billion in revenue combi-

ned, but the top three firms held only 8% of market share (IBIS 2012). Like other successful Chinese firms these companies are historically export-driven, and held over 60% of worldwide market share of solar panels in 2012 (IBIS 2012; EPI 2015). Growth of the Chinese solar panel sector relied on the same policy playbook as other industries in China – a combination of industrial, technology, and tax incentives. These were especially prevalent at the provincial and local level, and included subsidies, tax breaks, and access to loans (Ball June 7, 2013). Examining the innovative data from these firms, however, reveals relatively weak performance. Using patents as a measure, in 2011 the top 3 Chinese firms had 88 solar photovoltaic-related patents. In comparison, First Solar, A US-based competitor, held 54 patents alone in 2011 (Clearview 2011).

NOTES

¹ Affiliations: Adjunct Policy Researcher, RAND Corporation; Associate Economist, Visa Inc. The author would also like to thank Alejandro Ramos Martinez for feedback on this work.

² V For a full list of innovative inputs and outputs see OECD (2002). Frascati Manual 2002: Proposed Standard Practice for Surveys on Research and Experimental Development, OECD.

³ The Patent Cooperation Treaty is an international patenting treaty which allows a patent to be filed and protected in 148 countries worldwide. These patents are hard to obtain because of high thresholds of inventive content required, and indicate higher levels of originality than other patent types.

⁴ From the Chinese definition of patent types: "'Invention' means any new technical solution relating to a product, a process or improvement thereof; 'Utility model' means any new technical solution relating to the shape, the structure, or their combination, of a product, which is fit for practical use. 'Design' means any new design of the shape, the pattern or their combination, or the combination of the colors with shape or pattern, of a product,

which creates an aesthetic feeling and is fit for industrial application" (Ministry of Commerce 2014).

⁵ The applicability and usefulness of new technologies depends on domestic levels of technology and market applicability. See the concept of absorptive capacity in Cohen, W. M. and D. A. Levinthal (1990). "Absorptive capacity: a new perspective on learning and innovation." *Administrative science quarterly*: 128-152.

⁶ Drivers of Chinese patenting included in this article are adapted from my previous work: Warner, E. (2015). "Patenting and Innovation in China."

⁷ Other examples of policies not covered include policies promoting education, particularly in the fields of science, technology, engineering, and mathematics; and policies promoting foreign technology transfer, among others. Please note the coverage of policies in this section is meant to be representative, rather than exhaustive.

⁸ Xiao, W. (2002) *Enterprise Leaders that Influence China's Economy* Shengyang Press Ltd, Shenyang, China (2002) (in Chinese) as reported in Fan, P. (2006). "Catching up through developing innovation capability: evidence from China's telecom-equipment industry." *Technovation* 26(3): 359-368.

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A portrait of Gary Gereffi, a middle-aged man with grey hair, smiling. He is wearing a dark suit, a light green shirt, and a colorful striped tie. He is standing in front of a large bookshelf filled with books. The background is slightly blurred, focusing on the man.

INTERVIEW

“China’s
greatest legacy
was to
create
a model
of inclusive
development”

GARY GEREFFI

Professor at Duke University

With a long-term strategy, increasing productivity, following export goals and objectives, China has achieved in a few decades the internationalization of its industry and became competitive in leading sectors and technologies. Gary Gereffi, a professor at Duke University and one of the world's leading experts in value chains, analyzes the importance of long-term planning, innovation, the role of regional integration and public policy, while examining the teachings the region can draw from the Chinese experience.

How will impact the fall in commodity prices?

The growth rate of China will decline from 10% or 11% to 7%. This means that China can not continue to produce many industrial goods and, therefore, imports of primary products required for industrial production will decrease. The commodity boom periods are always cyclical. China has greatly improved the quality of life of its workforce, partly through increases in the minimum wage carried on in the past five years. You can divide the commodity boom according to two categories of products: minerals and oil, which are used for industrial production in China, on one hand, and agricultural products, which can also be used to satisfy food consumption, on the other. In both categories, prices are falling and most of China's direct investment abroad is destined to minerals. China indeed wants to continue import-

CHINA'S GROWTH
WILL BE LOWER
AND WILL IMPACT
IN LATIN AMERICA.
THE COMMODITY
BOOM PERIODS
ARE ALWAYS
CYCLICAL

ing as much commodities as possible. China is very sensitive in the food and consumption areas, and is very concerned about the nourishment quality of its population. Perhaps because its imports of agricultural products do not match exactly those of minerals, with many investments in Africa, especially in sub-Saharan Africa, which has been the largest regional destination for Chinese foreign investments- it is likely that China favors imports of mineral commodities not originated in Latin America but in other regions.

How can you encourage industries to compete globally?

If the goal is to produce exports for global industries, the biggest problem that regional integration schemes such as Central America and, perhaps, even the MERCOSUR have, especially in its relations with smaller economies, it is to be able to manufacture not only the

REGIONAL
INTEGRATION
SHOULD FOCUS
ON PRODUCTIVE
INTEGRATION
IN ORDER TO
STRENGTHEN
VALUE CHAINS IN
THE REGION

end-product but also a number of key inputs towards the final product. They must produce clothing, but also textiles. This applies to any Central American exporter country and, to some extent, also to Mexico. Since they do not produce all the textiles they need, they have usually had to import them from Asia. With regional integration schemes that do not lose sight of the productive integration within the region, as with Central America, where some countries produce clothing and other, textiles or fibers, integration in a regional context could be greater. A good example is that of Costa Rica and medical equipment.

What is the strategy that Latin American companies should follow to join the global value chains as happened with Asian firms?

They must learn to adapt, have the ability to be flexible as to what are the next steps in relation to the value chain. This is a global issue. Industries must be dynamic regarding what investors are focusing in and what countries are capable of producing. China's greatest legacy is that it has established

throughout its society a type of inclusive development model, beyond the set of policies used for this purpose. The teaching that China leaves us is that it has created development strategies aimed at high, medium and low sectors and has even promoted strategies in intensive labor industries. The process took place despite the many contradictions and disagreements among the different levels of government.

What is the role of regional integration in the export diversification processes?

One of the legacies of export-oriented growth is that, over thirty or forty years, many countries around the world became more able to diversify their exports. This means that domestic companies that export can carry out a much more integrated manufacturing process than in the past. The commitment to the domestic market, of many Chinese and Brazilian companies is also, in a way, a byproduct of export-oriented growth. The export-oriented industrialization was an important positive factor for the smaller scale economies. Korea, Taiwan, Singapore and Hong Kong, East Asian economies, could become extremely successful in their exports by focusing on human capital and local capacity to meet the growing demand in export markets, since they didn't have to deal with large domestic markets. Regional integration implies that many of the necessary links for scaling can take place within the region and that the focus must be on specific industries. You

GARY GEREFFI

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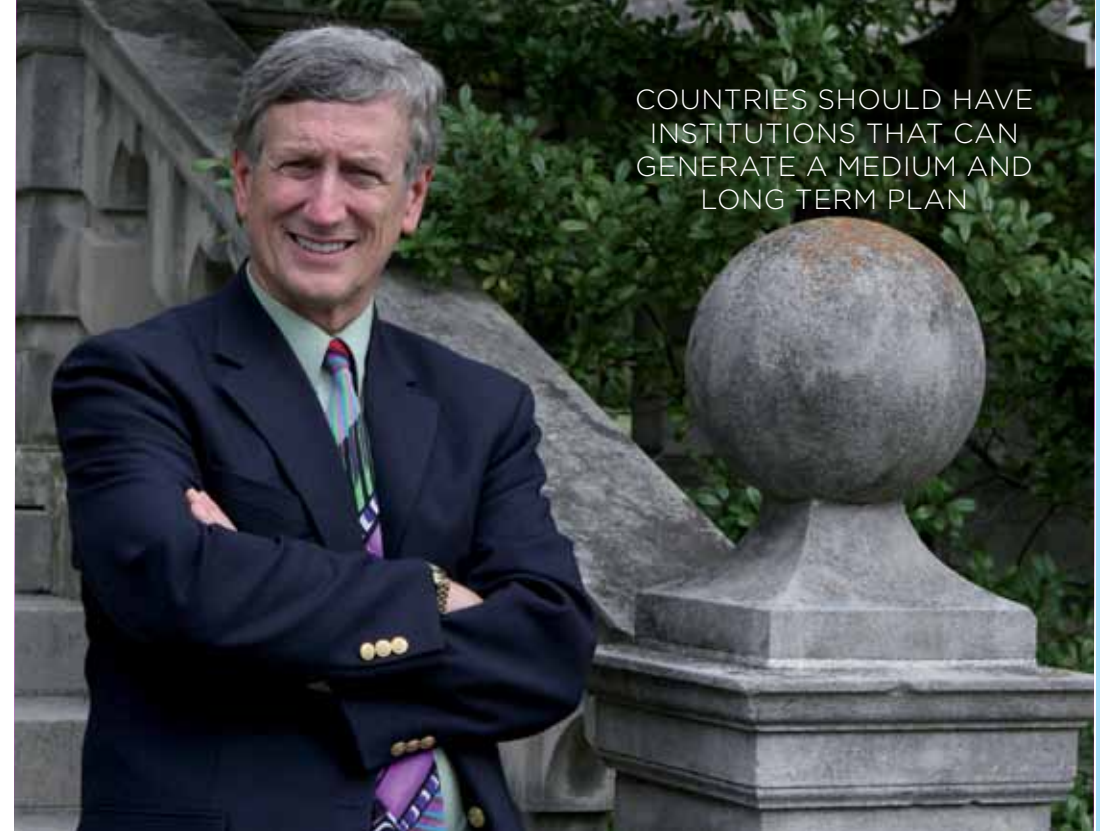
have to really get to know the industry that you are trying to build, where global competition is and what are the big companies in order to redefine a development strategy that can adapt to changes such as the falls in exports primary products prices or the inward bound of Chinese or Asian production.

What should be the role of public policy?

Governments should have official organizations that can develop a strategy or plan for the next five or ten years, a

long-term economic strategy for the country. This type of organization can work together with different groups in the private sector or foreign investors with a focus in identifying the kind of investment that are really necessary then, perhaps, turn to groups like the Inter-American Development Bank or other regional donors for additional sources of funding. Countries that are able to develop from a strategy from medium to long term can articulate the various factors needed; they have a vision, political will and skill that can then link to other sources of investment, both multinational and national, as well as training institutions, among which the participation of universities may be included. There is a whole set of institutions that

CHINA'S EFFORTS HAVE SUCCEEDED IN RAISING THE LIVING STANDARDS OF THE POOREST STRATA OF THE POPULATION. THE STARTING POINT WAS THE CREATION OF EXPORT INDUSTRIES IN THE SOUTH OF THE COUNTRY



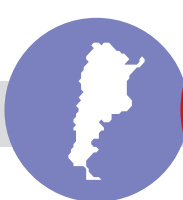
COUNTRIES SHOULD HAVE INSTITUTIONS THAT CAN GENERATE A MEDIUM AND LONG TERM PLAN

are part of the local innovation system and could make a great contribution. Countries need to get, somehow, resources to create agencies focused on planning; we can find many examples in Asia, where countries have proceeded historically in this direction. But you can not simply copy what was done elsewhere: you have to find your own sources of strength. In China there are numerous public agencies, all interested in development, and often with different priorities

What lessons Latin America can learn from China?

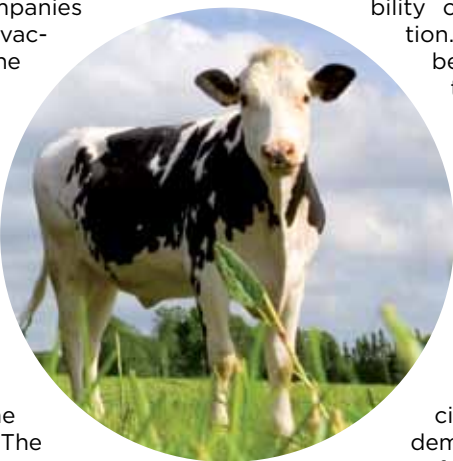
One of the most important achievements of the Chinese model has been to raise the general level of income. By bringing many people out of extreme poverty or a situation where they make one or two dollars a day, China has achieved, in general, the great task of increasing dynamism across the country. During the last fifteen years, the efforts of China and India have been very

successful in raising the living standards of the poorest strata of the population. By virtue of their size, these two countries have made great improvements with its broad development strategies. The starting point was the creation of export industries in southern China, which initially was a very poor region, but located closer to the ports. But as these industries were becoming successful, the country was moving intensive labor industries from the coastal provinces to the interior. And today, in many cases, it is exported to regions outside of China, and the same is being done with more technological industries. The idea was to climb the steps of a sort of technological ladder and formulate policies according to which the regions could be seen as an ascending the ladder; from apparel, toys and footwear to higher value services, such as financial. This strategy has been part of China's five-year plans, since the country has employed clear planning tools to develop economic strategies that can be informed to the entire country. ■



Leading-Edge Food Security Technology

To keep in step with population growth, world meat production must rise 70% by 2050. The challenge is not exclusive to the primary sector; biotechnology too has a window of opportunity in meat processing. This is the case with companies that produce animal vaccines. Like many of the region's large companies, Biogénesis Bagó is a family company born 80 years ago in Argentina. In recent decades, it has expanded its activities worldwide, but it was not until recently that it decided to bet strongly on the Chinese market. The task is not an easy one, warns Esteban Turic, the firm's Innovation Director: Argentina's regulations mean that firms have to move with care and seek out local partners. In 2016, it intends to open an industrial plant in China, where, using Latin American technology, it will produce a foot-and-mouth (FMD) vaccine for the local market.



What are the company's main products?

Biogénesis Bagó is a biotechnology leader on the American continent, committed to the development of solutions toward the health and sustainability of livestock production. For 80 years, it has been contributing to the development of livestock in Latin America, making significant progress in terms of increased productivity, lower animal mortality rates, and the eradication of FMD in countries with the continent's vaccination. Its history demonstrates its concern for innovation, always mindful of livestock producers' needs, working together with government organizations, veterinary doctors, and scientists. At the same time, it is a token of the company's understanding of the global context and its integral view of health. Faced with exponential population growth around the globe, its solutions represent opportunities

80

years of
experience has
the firm in the
sector



Esteban Turic. Doctor of Veterinary Sciences and clinical and industrial bacteriologist. Before becoming the Director of Innovation at Biogénesis Bagó, he was Project Manager for Southern Hemisphere at Virbac.

for livestock producers to improve their productivity in order to expand markets and position the region as a leading global supplier of animal protein-derived foods. In 2011, Bagó became the first foreign company in the U.S. authorized to provide its FMD vaccine to the country in the event of a health emergency. In 2013, it started the most ambitious project known to date for a Latin American veterinary pharmaceutical company. In 2016, a pioneering FMD vaccine production plant will come into operation in the People's Republic of China.

What strategy is being followed to enter the Chinese market?

With its background and track record in the production of a vaccine against FMD—one of the diseases that most seriously limits swine and cattle production in China—the Chinese Government has sought Biogénesis Bagó's presence in its country. We are moving forward in a joint venture with a local company specializing in the production of swine and poultry vaccines: HILE Biotechnology. Through this joint venture, the two companies have started working with the two governments, and the project has been declared of binational interest due to the impact this creates in controlling the disease, technology and knowledge transfer, and the economic development of the Chinese livestock sector.

How great is China's potential in biotechnology?

50%
OF THE WORLD
SWINE POPULATION
IS IN CHINA





110 MILLIONS

HEAD OF CATTLE
NEED THE VACCINE
MANUFACTURED
BY BAGÓ

China contains 50% of the world swine population (700 million head), a third of Latin America's cattle population (110 million head), and 300 million sheep and goats, three times more than Australia and New Zealand put together. This makes China a very attractive market, in which everyone would like to be present. Yet we should be careful with business estimates because it's an ultra-regulated country, legally, technologically, and commercially. This ultra-regulation is familiar to the Chinese: they always use it to their own advantage, and it also has a cultural flavoring, which almost always differs from Latin tastes. In summary, it is a very attractive market, but hard to access and costly to enter.

What technological innovations are you developing to adapt to this market?

In this particular case, the technology we apply to the production of our vaccine for Latin America is in itself an innovation for the Chinese market, as is everything involved in its development, such as the process engineering, or our antigen control and quality assessment systems. Biogénesis Bagó has patented methods to prepare and purify antigens, and to control the purity of these antigens, which are totally new and unique in the global development of FMD

vaccine. The plant's design was also a Bagó contribution, incorporating brand new designs of areas and equipment, and cutting-edge automation systems, with the objective of further standardizing the production systems for this type of vaccines. In addition to all this, there is Biogénesis Bagó's customary high levels of scientific and technical support, which can only be achieved with experience and history.

How is the company organized to operate in China?

We have a local partner that knows the Chinese market and is currently operating in it. Biogénesis Bagó has more than 65 years' business experience in the FMD vaccine segment. We are always focused on the health of production animals, linking up with veterinarians, producers, and scientific institutions and the Government. That's how we like to work: it's a method that has allowed us to achieve our development and growth targets throughout our history. ■



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AND FUTURE OF
INTEGRATION AND TRADE



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THE TRANSITION TO THE KNOWLEDGE SOCIETY

CHINESE CULTURAL INFLUENCE AND EDUCATION POLICIES

COOPERATION IN EDUCATION POLICIES CAN BE ONE OF THE PILLARS OF TRADE BETWEEN LATIN AMERICA AND THE CARIBBEAN (LAC), AND CHINA. WHAT IS CHINA'S DIPLOMATIC STRATEGY FOR EXPANDING ITS CULTURE AND INVESTING IN HUMAN CAPITAL? HOW TO COORDINATE ACTIONS TO PROMOTE TECHNOLOGY TRANSFER AND BUILD MOMENTUM FOR SCIENCE AND INNOVATION IN THE REGION?



CHINA HAS SET ABOUT CLOSING THE GAPS WITH THE TRADITIONAL POWERS IN THE INDUSTRIAL, TECHNOLOGICAL, AND SCIENTIFIC FIELDS IN ORDER TO ACHIEVE HIGHER LEVELS OF DEVELOPMENT IN THE TWENTY-FIRST CENTURY. ITS POSITIONING IN THE INTERNATIONAL SYSTEM HAS BEEN LINKED TO ITS MOMENTUM IN EDUCATION AND, IN PARALLEL, HAS GENERATED A STRATEGY INTENSIFYING ITS CULTURAL INFLUENCE IN REGIONS THAT HAVE RENEWED IMPORTANCE FOR ITS INTERESTS, SUCH AS LATIN AMERICA AND THE CARIBBEAN (LAC). THIS WORK SETS OUT TO ANALYZE THE POLICIES IN EDUCATION, RESEARCH, AND DEVELOPMENT ADOPTED BY CHINA ON ITS ROAD TO THE KNOWLEDGE SOCIETY, AND THE CONNECTION THIS PROCESS HAS WITH THE DEPLOYMENT OF ITS CULTURAL SOFT POWER IN THE REGION.

The scientific and technological advances of the last few decades have demonstrated that knowledge is a substantial source of wealth in the most dynamic and competitive economies in the world. In traditional powers like United States, Germany, and Japan, and in emerging powers like China, there is an inexhaustible motivation to invest in high-tech and innovation research. But how to make innovation possible? "Education, education, education."¹

In the competitive war for knowledge at the global level, the link between economics and education is strong. The triangle of innovation, education, and qualification is therefore gaining in relevance, and China has set out to be part of that triangle, with a gradual transition to the knowledge society.

The notion of knowledge society was first used by Peter Drucker (1969) and was deepened in the 1990s by a series of studies published by Nico Stehr (1994) and Robin Mansell (1998). The concept of knowledge society is related with the studies on the information society and based on the development

of new technologies. From the 1960s to the 1990s trilogy by Manuel Castells (1996), the notion of information society encapsulated the transformations glimpsed by the first researchers on the subject.

But the difference between information society and knowledge society lies in the fact that the former is based specifically on technological progress, while the latter includes comprises much broader social and political dimensions (UNESCO, 2005).

Today, the notion of knowledge society has become a necessary framework for reflection in most developed countries in the Organisation for Economic Cooperation and Development (OECD) and in emerging economies like Brazil, Russia, India, and China too. The relevance of education shows that, in the task of building knowledge societies, the focus on technological media should not background the key role schools, technical training institutes, and universities.

In this context, after the foundation of the People's Republic of China, the promotion of education became

a key goal for the Government. Before 1949, 80% of the population was illiterate; a process of educational reforms was therefore embarked upon, and the total volume of the student sector was increased. As of 1978, with the process of reform and opening, education saw rapid growth and was one of the hubs in the success of socioeconomic development of the last few decades.

The Chinese Government has progressively increased its investment in the education sector,² 2010 being equivalent to 1.5% of GDP. Chinese universities are gradually preparing to compete with the best universities at global level, the number of universities having doubled in just under a decade, from 1,071 in 1999 to 2,263 in 2008, so China is building the largest higher education sector in the world. In this scenario, it is expected that, with the Chinese universities' rare of progress, they could rank among the top universities worldwide within the next 25 years (Ryan, 2010; Morgan & Wu, 2011).

In this regard, the Academic Ranking of World Universities (ARWU) or Shanghai Jiao Tong Ranking, put together by Shanghai Jiao Tong University since 2003, came into being as a tool to gauge Chinese universities' degree of progress against the world's leading universities. Interestingly, in its data from the year 2008, no Chinese university ranked among the top 100 in the world, but the country had 18 in the top 500.

2%

OF CHINA'S
GDP GOES TO R&D,
FOUR TIMES HIGHER
THAN THE REGION'S
LEADING ECONOMIES



+220,000

FOREIGN
STUDENTS
WERE CHINA IN 2008.
IN 1950, THERE
WERE JUST 33

While, in 2015, no Chinese university featured in the top 100 at global level in this ranking, Table 1 shows that China has four universities in the world's top 101-150, with three in the 151-200 range and six among the 201-300 top universities at the global level, which demonstrates substantive progress compared to 2008.

In this measurement, six indicators are used to rank the world's universi-

ties: 1) The total number of the alumni of an institution winning Nobel Prizes and Fields Medals (Alumni); 2) the total number of the staff of an institution winning Nobel Prizes in Physics, Chemistry, Medicine and Economics and Fields Medal in Mathematics (Award); 3) the number of Highly Cited Researchers in 21 subject categories (HiCi); 4) the number of papers published in Nature and Science between 2008 and

2012 (N&S); 5) the Total number of papers indexed in Science Citation Index-Expanded (SCIE) and Social Science Citation Index (SSCI) in 2012 (PUB); and 6) the weighted scores of the above five indicators divided by the number of full-time equivalent academic staff (PCP).

As can be seen in Table 2, according to these indicators (Alumni, Award, HiCi, N&S, PUB, and PCP), the highest scoring institution is assigned a score of 100, and other institutions are calculated as a percentage of the top score. Should the distribution of data for each indicator present any significant distorting effect, standard statistical techniques are used to adjust the indicator if necessary. Universities are ranked by weighting scores for each indicator: the highest score reached by a university is 100, and the other universities' scores are a proportion of that maximum score. Over 2,000 universities have been considered in this ranking, of which 1,200 have been evaluated, the world's top 500 being published (Academic Ranking of World Universities (ARWU), 2015).

Comparatively with other rankings, China's economic efforts to become a world power in higher education are producing their first results. This can be

seen in the QS World University Rankings, developed and published on the Internet since 2011 by the Quacquarelli Symonds group. Seven indicators are used, the first two being the most important, with 50% of each university's score depending on them. These indicators are: 1) the institution's reputation among other international universities (Academic reputation: 40%) and 2) the university's reputation among the companies that employ their graduates (Employer reputation: 10%). To measure these parameters, QS conducts a mass survey among more than 50,000 academics and 13,000 employers throughout the world.

The other five indicators represent 10% each: 3) the student-to-faculty ratio; 4) the number of lecturers with doctorates; 5) scientific research; 6) publication in specialist journals (measured in the number of papers citing the university and the amount of research done by each academic); and 7) the university's webpage is assessed to gauge whether this research is available online (QS world university rankings, 2015).

Four Chinese universities have consolidated their position among the world's top 100 universities 2015-2016 in the QS World University Rankings, China's best performance in this rating to date. Furthermore, in total, seven Chinese universities feature among the world's top 200. This headway is due to stronger performance in engineering and technology, and its impact on research.

As can be seen in Table 3, in the period 2015-2016, all Chinese universities on the list saw a significant climb in the rankings. The top-rated universities were: Tsinghua, in 25th place (up 22 places); Peking University in the 41st (up 16 places); Fudan University, in 51st (up

TABLE 1
ACADEMIC RANKING OF WORLD UNIVERSITIES (ARWU) 2015
MAIN UNIVERSITIES IN CHINA AT GLOBAL LEVEL

NATIONAL RANKING	INSTITUTION	WORLD RANKING
1-4	PEKING UNIVERSITY	101-150
1-4	SHANGHAI JIAO TONG UNIVERSITY	101-150
1-4	TSINGHUA UNIVERSITY	101-150
1-4	ZHEJIANG UNIVERSITY	101-150
5-7	FUDAN UNIVERSITY	151-200
5-7	SUN YAT-SEN UNIVERSITY	151-200
5-7	UNIVERSITY OF SCIENCE AND TECHNOLOGY OF CHINA	151-200
8-13	BEIJING NORMAL UNIVERSITY	201-300
8-13	HARBIN INSTITUTE OF TECHNOLOGY	201-300
8-13	HUAZHONG UNIVERSITY OF SCIENCE AND TECHNOLOGY	201-300
8-13	JILIN UNIVERSITY	201-300
8-13	UNIVERSITY OF NANKING (A.K.A. JINLING UNIVERSITY)	201-300
8-13	XI'AN JIAOTONG UNIVERSITY	201-300

Source: Academic Ranking of World Universities (ARWU) (2015).

20 places) and the Shanghai Jiao Tong University in 70th (up 30 places). The improvement in positions is in comparison to the previous rating.

Both the ARWU and the QS World University Rankings reveal a significant improvement in Chinese universities. This is explained by the success of the C9 League initiative,³ created May 4, 1998, by the Chinese Government with the aim to move forward in the higher education system and promote Chinese universities by channeling serious investment in nine Chinese elite universities in a bid to achieve and maintain their status at global level. (Xinhua, October 26, 2009).

It is, however, important to look closely at these nine elite universities in China and their position in the main world rankings, as set out in Table 4. Their positions vary, according to the different criteria used in each measurement.

What is relevant from a long-term perspective is that schools and univer-

+1,000
NEW UNIVERSITIES
HAVE BEEN
CREATED IN CHINA
IN RECENT YEARS

sities have started a gradual process of reform in their education systems in order to steer students toward the market and the competitiveness espoused by China. The reforms tend to make students focus on science, technology, and mathematics after high school. On the other hand, given the increase in levels of higher education investment, reform in the higher education system has created better conditions for universities' academic staff. The Government has also set out to promote activities attracting foreign talent to work in Chinese institutes and universities.

The overall picture of higher edu-

CRITERION	INDICATOR	CODE	VALUE
Quality of Education	1. Alumni as Nobel Laureates & Fields Medalists	Alumni	10%
Quality of Faculty	2. Staff as Nobel Laureates & Fields Medalists	Award	20%
Research Output	3. Highly cited researchers in 21 subject categories	HiCi	20%
	4. Papers published in Nature and Science	N&S*	20%
	5. Papers indexed in Science Citation Index-expanded and Social Science Citation Index	PUB	20%
Per Capita Performance	6. Per capita academic performance of an institution	PCP	10%

* For institutions specializing in the Humanities and Social Sciences, the N&S criterion is not taken into account, and the value is proportionally redistributed among the other indicators.

Source: Methodology: Ranking Indicator System in Academic Ranking of World Universities (ARWU) (2015).

TABLE 3
QS WORLD UNIVERSITY RANKINGS 2015-2016
MAIN CHINESE UNIVERSITIES AT GLOBAL LEVEL

INSTITUTION	WORLD RANKING
Tsinghua University	25
Peking University	41
Fudan University	51
Shanghai Jiao Tong University	70
Zhejiang University	110
University of Science and Technology of China	113
University of Nanking (a.k.a. Jinling University)	130
Beijing Normal University	232
Wuhan University	273
Nankai University	277
Harbin Institute of Technology	291
Sun Yat-sen University	307
Xi'an Jiaotong University	331

Source: QS World University Rankings (2015).

cation in China has changed, especially in the last two decades. In 2008, there were more than 220,000 foreign students in China, and about 180,000 Chinese students abroad: a considerable difference considering that, in 1950, there were 33 foreign students in China, and 35 Chinese students abroad (Xinhua, September 29, 2009).

China's progress in economic development over the last few decades is, therefore, also closely linked to its development in education. Then, in 2010, China overtook Japan to become the world's second largest economy. In parallel, the intensity of its Research and Development (R&D) has multiplied six-fold (UNESCO, 2010).

At the same time, within the country a growing debate is taking shape

about the quality of and approach to education, particularly seeing that a growing number of students want to enter secondary school and university. Last, the challenges for China over the next decade will be to improve collaboration with Western scientists, heighten influence in international publications, and provide a better education for students in rural areas.

ASYMMETRIES IN R&D

In recent years, China has implemented key policies to become an innovation-driven nation by the year 2020. And, despite United States and European Union (EU) still being the R&D investment leaders at international level

80%

OF CHINA'S POPULATION
WAS ILLITERATE
UNTIL THE
MID-TWENTIETH
CENTURY

up to 2015, the competitiveness of the emerging countries is also relevant, with China leading the pack. For example, the number of researchers from developing countries rose from 30% in 2002 to 38% in 2007, with two thirds of this increase due to the momentum of China. Meanwhile, the number of publications produced by China in the same period more than doubled, from 5.2% to 10.6% (UNESCO, 2010). According to Table 5, based on a 2015 study by UNESCO, the-

re are four indicators that show China's steady headway in: increasing its world percentage of GDP, Gross Domestic Expenditure on R&D (GERD), researcher numbers, and number of publications.

However, as can be seen from Table 6, the asymmetries in Chinese R&D compared to Latin American regional powers like Brazil, Argentina, and Mexico, reveal a major gap, which is even widening.

In 1995, China announced that it would apply the strategy of "making the country flourish by promoting science

TABLE 4
POSITIONS OF TOP NINE CHINESE UNIVERSITIES (C9 LEAGUE)
IN MAIN UNIVERSITY WORLD RANKINGS, 2015-2016

	ARWU World (2015) (1)	QS World (2015/16) (2)	THE World (2015/16) (3)	CWTS Leiden (2015) (4)
TSINGHUA UNIVERSITY	101-150	25	47	250
PEKING UNIVERSITY	101-150	41	42	379
FUDAN UNIVERSITY	151-200	51	201-250	389
SHANGHAI JIAO TONG UNIVERSITY	101-150	70	301-350	514
ZHEJIANG UNIVERSITY	101-150	110	251-300	456
UNIVERSITY OF SCIENCE AND TECHNOLOGY OF CHINA	151-200	113	201-250	569
UNIVERSITY OF NANKING (A.K.A. JINLING UNIVERSITY)	201-300	130	251-300	438
HARBIN INSTITUTE OF TECHNOLOGY	201-300	291	501-600	447
XI'AN JIAOTONG UNIVERSITY	201-300	331	501-600	602

Sources:
(1) Academic Ranking of World Universities (ARWU) (2015).
(2) QS World University Rankings (2015).
(3) Times Higher Education (THE) (2015).
(4) CWTS Leiden Ranking (2015)

TABLE 5
PERCENTAGE DISTRIBUTION OF CHINA'S GDP, GERD, RESEARCHERS, AND
PUBLICATIONS WORLDWIDE, 2009 AND 2013 (%)

INDICATOR	2009	2013
GLOBAL % OF GDP	13,4	16,1
GLOBAL % OF GERD	13,8	19,6
GLOBAL % OF RESEARCHERS	16,7	19,1
GLOBAL % OF PUBLICATIONS	11,1	20,2

Source: Based on UNESCO (2015) data.
Report notes: For Gross Domestic Expenditure on R&D (GERD) (US dollars in PPP) and the number of researchers: estimates from the UNESCO Institute for Statistics, July 2015; for GDP (US dollars in PPA): World Bank World Development Indicators, April 2015; for Thomson Reuters Web of Science publications: data processing by Science-Metrix.
* This data belongs to the period 2014.

and education" in order to achieve more balanced economic growth and, in the Medium- to Long-Term Plan for the Development of Science and Technology (2006-2020), established the following objectives (UNESCO, 2010 and 2015):

- To encourage companies to invest more in innovation.
- To invite Chinese researchers abroad to return to China (of the 1.4 million students who have returned since the start of the 1990s, almost half did so after 2010).
- To integrate 2,000 foreign experts in the coming years to work in laboratories, leading companies, and research institutes, as well as different Chinese universities (a "brain gain" policy).
- To raise the GERD:GDP ratio from 1.5% to 3% by 2020.

In Latin America—and specifically in Argentina, Brazil, and Chile—policies have been implemented to promote innovation. However, while various types of instruments are being implemented in the region to support science and technology policies, national innovation systems remain weak. In the case of Latin American countries, such as those mentioned above, which promote policies in this area, the main challenge is to overcome the disconnect between the various different actors in the national innovation systems.

For example, bridges need to be built to connect with the sound research emanating from the local aca-

demie sector, so that it can be collected and used by the local productive sector. At the macro level, it is necessary: a) to increase R&D investment in the region, which remains low; b) to improve the efficiency of organizations promoting R&D; and c) to train and form a critical mass of highly qualified professionals to develop R&D policies.

CULTURAL SOFT POWER

Alongside China's transition to the knowledge society and its challenge to compete with countries already consolidated in it, such as United States, Japan, and some EU countries, like Germany, UK, and France, a growing Chinese cultural influence is also being seen in Latin American societies, closely related to the country's positioning in the international system.

Said Saddiki points out that cultural diplomacy is a cornerstone of public diplomacy, which puts the emphasis on longer-term exchanges among nations. Both concepts are related to "soft power," a concept introduced by Joseph Nye (2004), who defined it as follows: "What is soft power? It is the ability to get what you want through attraction rather than coercion or payments. It arises from the attractiveness of a country's culture, political ideals, or policies." (Saddiki, 2009: 109-110) The main objective of cultural diplomacy is to positively influence a foreign State's public and elite opinion (Saddiki, 2009).

154

CONFUCIUS
INSTITUTES
HAVE BEEN SET UP
IN 17 COUNTRIES
IN THE AMERICAS

TABLE 6
R&D EXPENDITURE (% OF GDP),
2012

SOUTH KOREA*	4.04
ISRAEL	3.93
FINLAND	3.55
JAPAN*	3.39
SWEDEN	3.41
DENMARK	2.98
GERMANY	2.92
AUSTRIA	2.84
SLOVENIA	2.80
UNITED STATES	2.79
FRANCE	2.26
BELGIUM	2.24
ESTONIA	2.18
NETHERLANDS	2.16
SINGAPORE	2.10
CHINA	1.98
BRAZIL*	1.21
ARGENTINA*	0.65
MEXICO*	0.43
URUGUAY*	0.43
CUBA*	0.42

Source: Based on World Bank (2015) data.
* Data for 2011.



Against this background, the policy of projecting Chinese culture at international level as part of the country's soft power strategy has been gaining relevance under the Hu Jintao administration. China, therefore, began to develop programs to inform or influence public opinion in other countries through publications, tourism, sport, media, and the promotion of Chinese language teaching and cultural exchange.

The main means of China's deployment cultural soft power at international level has been the Confucius Institutes. The first was founded in Seoul in 2004. By December 2014, 475 Confucius Institutes and 851 lounges Confucius had been set up in a total of 120 countries worldwide: 103 spread across 32 Asian countries, 42 across 21 African countries, 159 across 39 European countries in, 154 across 17 American countries, and 17 on 3 Pacific islands (Autonomous University of Yuca-tán, 2015).

In Latin America, the first Confucius Institute was founded in Mexico in 2006, and, by 2012, there were 25 Confucius Institutes and 10 Confucius Classrooms across 12 Latin American countries (Han-ban, 2012).

The media play an important role in China cultural deployment, most notably the television channel CCTV 9 and the Xinhua and People's Daily news agencies, whose Latin American headquarters are located in Mexico City (Méndez, May 14, 2010).

China has been expanding its me-



THE WHITE PAPER FOR EDUCATION

China's White Paper for Latin America is a government document published in 2008 of great relevant for the future development of relations between China and the region in that it offers a political-institutional framework to accompany the growing economic and trade links.⁵

The report represents a model on which the future prospects of the political, economic, and social environment between China and the region are projected, and analyzes the way China seeks the fulfilment of the objectives proposed by President Hu Jintao in 2004 for Sino-Latin American relations.

This document discusses various fields but, specifically at the level of soft power, it mentions the field of cultural education and proposes the following objectives:

- China expresses its concern to promote scientific, technological, and educational cooperation with the countries of Latin America.

- To intensify the areas of common interest, prioritizing aeronautics and aerospace technology, biofuel, the environment and marine resources, among others.

- To disseminate and apply leading-edge technology tested by both parties, such

as energy-saving technology and techniques, digital medicine, and mini-hydroelectric plants.

- It offers to develop technical training and services, and technological models.

- To take advantage of the bilateral and multilateral cooperation mechanisms to foster Sino-Latin America exchanges.

- To make efforts to implement the signing of agreements for the mutual recognition of academic qualifications.

- To raise the number of scholarships for Latin American students.

China states that cooperation should be broadly understood by the Latin American countries, including cultural and educational aspects, and science and technology development. It should not be forgotten, however, that its strategy toward the region links issues of cultural cooperation to economic and trade issues, and is a response to such interests.

This document is relevant because China concedes its determination to extend and strengthen ties with Latin America in promoting education. Seven years after the publication of the White Paper, just a few governments in the region have given an official response to this report.⁶



3%

OF GDP
IS EXPECTED TO BE
INVESTED BY THE ASIAN
GIANT IN R&D
IN 2020

dia influence in the region since 2012, by supporting Latin American publishing companies and media, through, for example, the Observatory of Chinese politics (OPCh). The 2010 report "Winds from the East: How the People's Republic of China Seeks to Influence in the Media in Africa, Latin America, and Southeast Asia," published by the Center for International Media Assistance (CIMA), asserts that, while China's economic, military, and political programs are spread across Latin America, the Chinese media is focused mainly on Venezuela, Bolivia, Nicaragua, and Ecuador. The main tools used by China to interact with the media sector in Latin America are:

- Collaboration in the funding and launch of communications satellites to provide to beneficiary countries with greater capacity and, in turn, extend the influence of the Chinese media in Latin America.
- Subsidies for Latin American journalists to travel to China.
- Opening of Confucius Institutes throughout the region.
- Visits by senior Chinese officials seeking to promote joint work in the field of the media (CIMA, 2010).

Cultural issues, then, are closely bound up with economic issues. This is no coincidence, being an integral part of China's strategy for the region. In

other words, the tools for cultural diffusion are instrumental to its economic and trade negotiations with the chosen country. This becomes clearer when we analyze some of the objectives of the Confucius Institutes Latin American Regional Center (CRICAL):

a) "To enable Latin American Confucius Institutes to play a strategic role in the intensification and deepening process of the whole of Latin America's relations with the People's Republic of China, reassessing our geographic area of influence."

b) "To design and implement, within the framework of this role, lines of action, and joint projects and activities at the various levels (institutional, group, or individual) and the various levels (social, cultural, economic, productive) that such relations cover" (CRICAL, 2015).

In the case of the Latin American countries, there has been no questioning these institutes' objectives. An outstanding case in point is Chile, a small country in the Latin American context, selected by China to establish CRICAL⁴ in May 2014. This "coincides" with the selection of Chile to sign an agreement in 2015 setting up an agency of the China Construction Bank in order to expedite use of the renminbi in the

region and to build momentum in the trading relationship between China and Latin America. It also coincides with the earlier choice of Chile for the signing of a free trade agreement (FTA), in force since October 1, 2006, and everything linked to intense penetration at the level of cultural soft power.

RETHINKING DEVELOPMENT

The reflection on the emergence of knowledge societies prompts a rethink of the concept of development. The new valorization of human capital leads one to think that traditional development models are being replaced by models based on knowledge, mutual cooperation, and the strengthening of public services. Greater valorization of knowledge would lead to a new cooperative development model, based on policies linked to the promotion of science and technology, which would play a relevant role in reducing inequalities.

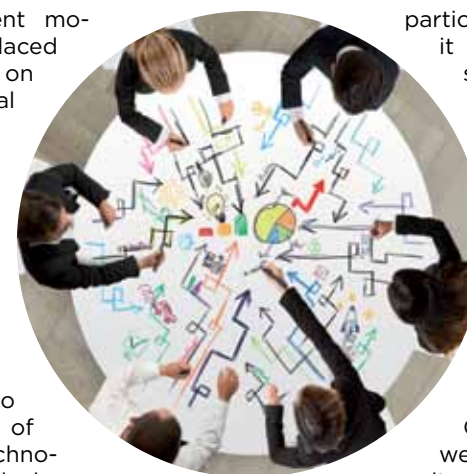
The prospects for relations between China and Latin America are of particular relevance given the country's profile as the main emerging power in the early part of this century. The route it took in 1978 in search of growth is a process that has had particular characteristics, a different growth model that shows there is no single pathway to development.

While China is currently experiencing a slowdown in economic growth, this underlines the need to transform its

economic development model, based on an intensive use of labor, investment, energy, and resources, to a model increasingly dependent on technology and innovation. In the recent past, the successful results in its growth levels are closely tied in with its progress in promoting science and education. It has currently managed to achieve several of the quantitative targets set in its plan for the Medium- to Long-Term Plan for the Development of Science and Technology (2006-2020) (2006-2020), and its goal is to achieve a 3% GERD:GDP ratio in 2020.

While China's has been a particular road of its own, it is possible to draw some lessons for Latin America, such as the emphasis of Chinese investment on R&D. Such an emphasis reveals an imminent structural break in the pattern of contribution of knowledge at the international level.

Reflecting on China's insertion and weight in Latin America, cultural soft power plays an important role, and education may become one of the strategic axes in the relationship between China and the region. President Jiang Zemin's tour of six countries in the region in April 2001 (Chile, Argentina, Uruguay, Brazil, Cuba, and Venezuela) and President Hu Jintao's in November 2004 established the guidelines for Sino-Latin American relations, demonstrating China's clear interest not only in the region's intrinsic value as a significant market, but also as a partner in issues of mutual cooperation, such as education and the promo-



tion of science and technology. This and other aspects are reflected in the White Paper in 2008.

Education is visibly becoming a potential for deepening the focus of cooperation between China and Latin America. But to do this it is key that a long-term agenda be set by Latin American governments to help promote the development of relations at this level. Given the proposals for cooperation made by China, Latin America could invest in scientific research, close the technological gap in strategic sectors, and create high-performance innovation systems. To do this a sustained effort is needed to implement policies in such a way that they can serve effectively as a platform for local produc-

tive sectors.

Last, the current global picture has altered the nature of economic competition, which requires rapid, profound changes in national education, scientific research, and cooperation policies. It is, therefore, relevant to accurately evaluate Latin America's policies on this level, since these changes cannot but influence in the short term the region's level of development and the definition of its objectives. Given the China's weight, Latin American governments are facing new spaces and opportunities for cooperation. Education has become a focal point in the challenge to define a strategic and long-term perspective in the relationship with China. ■

NOTES

¹ Robert Aumann, Nobel Laureate in Economics 2005. In: BBC World, October 2, 2011.

² The education sector in China comprises preschool, primary, secondary, technical-vocational, and university education.

³ The C9 League is an alliance of nine elite universities in China, akin to the eight elite universities of the Ivy League in United States, or its counterparts in the UK and Australia, the Russell Group or the Group of Eight (Go8). In China, the C9 League is comprised of: Fudan University, the Harbin Institute of Technology, Nanking University, Peking University, the Shanghai Jiao Tong University, Tsinghua University, the University of Science

and Technology of China, the Xi'an Jiaotong University, and Zhejiang University.

⁴ To bring CRICAL into existence, Hanban signed an agreement with Chile's Santo Tomás University, which provided a 1300 m2 building in the center of the capital Santiago for the Center's operation. Further background at: <http://www.critical.cl/quienes-somos/> (Consulted 25.11.2015).

⁵ This marks a milestone, with its focus on Latin America in 2008; the respective reports from 2006 and 2003 focused on Africa and the EU.

⁶ The White Paper highlights a broad spectrum of cooperation issues at the level of international affairs, climate change, military issues, etc.

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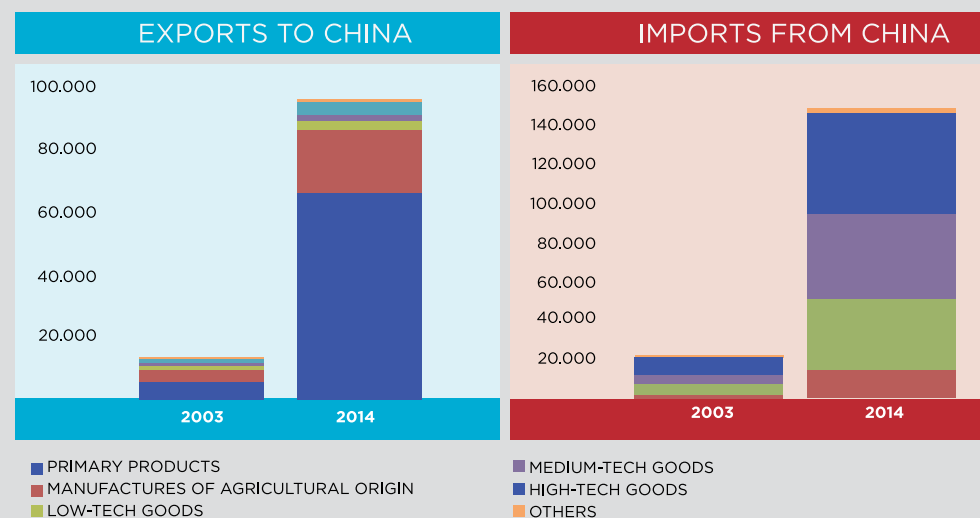
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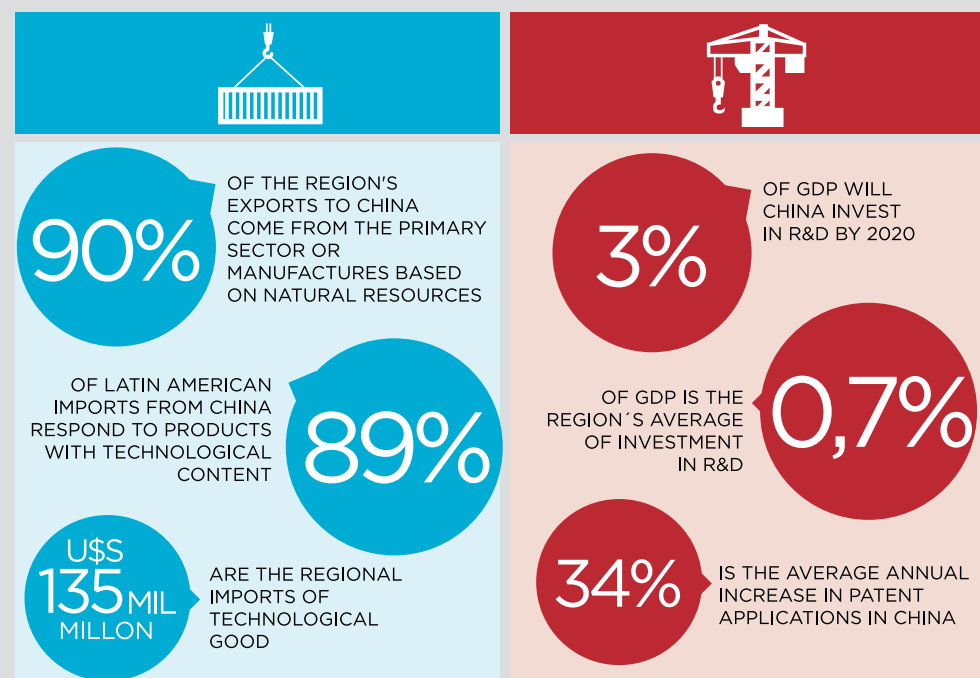
TECNO-INTEGRATION

TECHNOLOGICAL CONTENT OF GOODS AND INVESTMENT IN R&D

SPECIALIZATION BY TECHNOLOGICAL CONTENT OF LAC WITH CHINA (MILLIONS OF US\$)

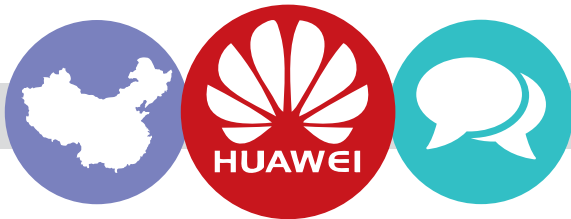


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Cellular Telephony Accessible To All

With quality phones at affordable prices, Huawei has successfully positioned itself in the region as a major player in a highly competitive market. The Chinese telecommunications giant has annual revenues of US\$47,000 million and a global presence in 170 countries. The company has 500 employees in Argentina, with a business plan worth over US\$100 million. In Tierra del Fuego Province, the firm manufactures 240,000 cellular telephones per year. Norberto Martínez, Chief Operating Officer (COO) of the local branch, argues that innovation is key to the company's development and that, with that objective, nine agreements have been signed with universities across Argentine territory.

Which countries does Huawei operate in?

Huawei is a company with Chinese capital, born in the 1980s with the aim of providing solutions for private communications for the Chinese market. During the 1990s, the company consolidated and switched strategy, targeting the telecommunications infrastructure market, i.e. the telcos. Its consolidation was successful, ushering in its internationalization phase.



Globally, Huawei is already among the top 500 companies: it lies 282th with a 170,000-strong workforce, 76,000 of whom work in research and development (R&D), in 16 R&D centers in countries such as Germany, Sweden, United States, France, Italy, Russia, India, and China. Huawei is divided into three business units: the Carrier Unit (Carrier Networks Business Group), where it is the leader in sales of information and communications technology (ICT) solutions for infrastructure, works together with the top 50 global operators, and which is responsible for 77% of its income; the Consumer Unit (Consumer Business Group), where it is currently the third largest global provider of smartphones; last, the Huawei Enterprise Business Group Unit, through which the company offers a broad portfolio of innovative ICT solutions, especially for vertical industries and corporate customers, such as government and the public sector, finance, transport, energy, large companies, multiple-system operators (MSOs), and small and medium enterprises (SMEs).

0.15%

increases GDP if there is a 10% rise in the number of mobile phones users



Norberto Martínez. Huawei's COO in Argentina is an electronics engineer from the University of Buenos Aires (UBA). Before taking up the post, he spent 12 years at Siemens.

What is your business area in Argentina?

Huawei is a flagship company and is present in more than 170 countries, covering practically the whole of Latin America. At present it has a strong business focus on telecommunications operator networks, but we are diversifying our growth in the Consumer and Enterprise Units. The company opened its first office in Argentina in 2001. Huawei's first contracts in the country date from 2003, when it installed the first next-generation fixed networks and the ADSL network (home broadband) in the telcos. In 2008, it closed the first 3G technology contract with Movistar and immediately after with Personal. In 2009, it manufactured its first basic telephone in Tierra del Fuego and launched it through Personal. During this period, Telefónica Argentina and Claro entrusted Huawei with the expansion of their optical fiber illumination and intelligence networks (WASON network) that allows operators to streamline communications with VIP customers like banks and large companies. In 2011, Personal again turned to Huawei for the launch of its ambitious mobile technology swap plan (replacing its 2G network with 3G). Last, in 2014, it was chosen to illuminate a large section of optical fiber installed by ARSAT and began deploying 4G technology in Personal and Movistar.

13%

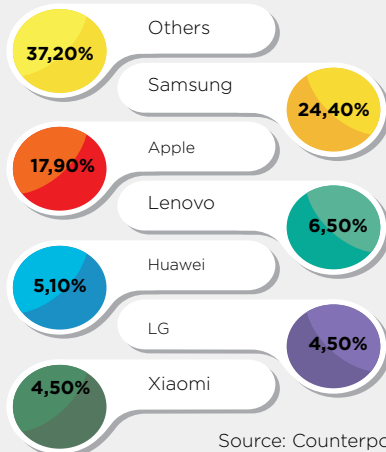
WAS THE ANNUAL AVERAGE OF CHINESE DEMAND GROWTH OVER THE PAST DECADE

What are your investment plans for Argentina?

Argentina is one of the countries where we are betting on the future. 4G deployment, our smartphones, and business networks are the focus in 2016. We are already funding our projects, having complied with the Argentine Central Bank's import payment rules on time. One of our priorities is technology transfer, where nine agreements with leading Argentine universities have already been signed: we are co-operating with the University of Buenos Aires (UBA), for example, over setting up a joint laboratory. Also, a strategic relationship with the Federal Authority for Information and Communication Technologies (AFTIC) was established in 2014 to work toward improving the quality of the current networks. In terms of investments in the country, in the short term, we'll be implementing a training center to meet our clients' training needs, and we also want to invest in a data center to establish new host-

GLOBAL SMARTPHONE SHIPMENTS

Share Q1 2015



Source: Counterpoint Research, April 2015.

ing services, introducing the business of world-quality digital content to aid the development of the digital market. Last, considering Argentina's competitive advantages in human resources, we also plan on implementing a software development center in the country.

US\$ 100

MILLION IS THE VALUE OF THE BUSINESS THAT THE COMPANY HAS IN ARGENTINA

What is your vision of the region's infrastructure needs?

Compared with the rest of the region, Argentina has a high demand for growth in information technology networks. For example, the average number of people served by each 3G node in Argentina is 4.37/node; in Chile, it is 1.61, and in Uruguay, 2.34. On the other hand, according to a Deloitte & Touch report, telecommunications development can directly raise productive efficiency, the rate of employment, and GDP. If the number of mobile network users increases by 10%, GDP rises by 0.15%, and when a user doubles the volume of data on the network, GDP rises by 0.5%. The new 700 MHZ AWS spectrum allocation issued by the AFTIC

aims to solve this problem in the short term, the challenge clearly being to improve these numbers by raising the quality of the network and improving the user's experience. This calls for high investments by the telcos and a commitment from providers like Huawei to meet the demand within the deadlines set by the AFTIC. Another challenge for our industry is to ensure the user can enjoy this technology. To do this it is necessary to improve the shortfall of terminals and lower their price. Here, Huawei has made a commitment in the local production of reasonably-priced smartphones. The challenges of this kind of project are logistics of deployment and the management of the work teams in the field, as well as our commitment to local industry. Huawei has 30 teams of subcontractors, creating more than 1,000 jobs. In 2014, the total cost of the operation in Argentina was in excess of US\$100 million. ■

282nd

IS THE COMPANY'S RANKING IN THE WORLD'S TOP 500



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THINK TANKS & UNMISSABLE READS

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THINK TANKS EN AMÉRICA LATINA



LATIN AMERICAN ASSOCIATION OF ASIA AND AFRICA STUDIES (ALADAA)

Argentina. ALADAA was created in 1976 on the occasion of the XXX International Congress of Human Sciences in Asia and North Africa. It seeks to exchange academic experiences among its members, to collaborate with higher study centers in Latin America in the training of teachers and researchers, to exchange information, and disseminate studies on Asia and Africa ancient and modern, and anything that generally contributes to knowledge of Asia and Africa in Latin America.

CHINESE ARGENTINE CULTURAL ASSOCIATION (ACCA)

Argentina. ACCA is a civil association dedicated to Mandarin Chinese language courses and workshops; cultural events, lectures, and exhibitions; translation and interpretation service, among other activities relating to the dissemination of Chinese culture and art. It was formed in 2005 after years of teaching practice, initially teaching Spanish to the Eastern community. Later there were requests from the local population to learn Mandarin.

ASIA-PACIFIC STUDIES CENTER AT EAFIT UNIVERSITY

Colombia. Since its creation in 2006, it has been working to strengthen Latin America's relations—especially Colombia's—with Asia-Pacific and to disseminate knowledge and culture of the region, making it one of the main centers for Asian Studies.

CHINESE-MEXICAN STUDIES CENTER (CECHIMEX)

Mexico. CECHIMEX aims to improve and deepen knowledge of Chinese socioeconomy, focusing on long-term bilateral relations between China and Mexico. Although CECHIMEX emphasizes economic aspects, it has full openness and the greater interest from the start in incorporating topics analyzed by other areas and in other faculties, such as agriculture, philosophy, history, architecture, engineering, languages, international relations, and political science.

CENTER FOR ASIA PACIFIC AND INDIA STUDIES (CAPIS)

Argentina. CAPIS is a space open to interinstitutional cooperation with foreign universities and centers, and to participation in university networks that promote the spread of knowledge relating to the Asia-Pacific region and India. It comprises professionals with proven track records and graduates in highly prestigious Asian and European university institutions, who combine teaching work and academic research with transfer activities to the public and private sectors.

LATIN AMERICAN CENTER FOR POLITICAL AND ECONOMIC STUDIES ON CHINA (CLEPEC)

Argentina. CLEPEC was born in 2013 by an initiative from a group of young Latin American politicians who visited China at the invitation of the Chinese Communist Party. Once there, they saw the need to work toward greater integration between Latin America and China. CLEPEC's main objectives are to continue to deepen political relations between China and the region, and to work in conjunction with governments, political parties, non-governmental organizations, universities, and business chambers.

CROSSING THE PACIFIC

Chile. Cruzando el Pacífico [Crossing the Pacific] is a not-for-profit organization that encourages academic, educational, cultural, and social exchange between Chile and China, while seeking to develop interpersonal relationships and the need to know each other better. The corporation aims to spread knowledge and understanding of the two nations by joining up institutions from the public and private sectors, academia, and civil society, and encouraging the formation of non-competitive networks and alliances in Latin America.

DI TELLA ASIA CLUB

Argentina. Di Tella Asia Club is a space within the UTDT to spread culture and establish relations with the Asian continent. It seeks to promote exchanges between professionals, students, and institutions with an interest in the bloc and to establish a go-to place for such meetings. Its mission is to promote relations with Asia through lectures and seminars facilitating the understanding of Asian cultures.

SCHOOL OF ORIENTAL STUDIES

Argentina. The School of Oriental Studies offers the Technical Degree in Contemporary China geared to the study of contemporary Chinese language, philosophy, politics, and economics, and to developing the main themes of Sinology and of Chinese cultures. It also offers the Bachelor's Degree in Oriental Studies, which goes in depth into the history, literature, religions, and philosophies of Asia.

ICBC FOUNDATION

Argentina. The ICBC Foundation is a not-for-profit organization spanning more than 40 years' activity in Argentina. Its origins can be traced back to May 15, 1973, and the opening of the Argentine Export School. Since then, the Foundation has been contributing concretely to people's intellectual and spiritual development in a framework of mutual respect and exchange based on its three fundamental pillars: foreign trade, culture, and social commitment.

WORKING GROUP ON CHINA

Argentina. The committee is made up of ambassadors, specialists, and researchers, who hold regular meetings and set a program of activities. Its mission is to study and research, identify and publicize sectors interested in the political, production, commercial, scientific, cultural, and strategic aspects of that region.

CONFUCIUS INSTITUTE OF THE UNIVERSITY OF BUENOS AIRES (ICUBA)

Argentina. The ICUBA was founded in 2009. Its main aim is to promote, through the teaching and dissemination of Chinese language and culture, the relationship between Argentina and China, which has been progressively consolidated in the course of the last decade. The Confucius Institutes have proliferated with agreements between the Asian giant and various universities in the region.

OBSERVATORY LATIN AMERICA-ASIA PACIFIC

Latin America. The Observatory is a joint LAIA, CAF, and ECLAC initiative. Its aim is to deepen understanding of the economic relations between the two regions, as well as providing a permanent mechanism to furnish the different actors in the two regions with the information needed to adopt economic policies and strategies. It covers 37 economies: 19 from Latin America and 18 from Asia-Pacific.

LATIN AMERICAN AND CARIBBEAN STUDIES NETWORK ON ASIA-PACIFIC (REDEALAP)

Mexico. Consisting of institutions and experts from Latin America and the Caribbean, REDEALAP's objective is to support the development of research and dissemination activities in relation to Asia-Pacific, with a view to contributing to the creation of public and private strategies relating to the link between the two regions. Among the network's standout activities are its annual meetings, where various research papers on Latin America and Asia are presented.

PERU - CHINA CENTER FOR STUDIES

Perú. Based at the University of the Pacific, seeks to disseminate and deepen understanding of China and its relations with Peru through academic research and bilateral exchange.



THINK TANKS EN CHINA



CHINA ASSOCIATION FOR SCIENCE AND TECHNOLOGY (CAST)

CAST is a non-governmental organization of scientists and technology workers from China. Its history can be traced back to the foundation of the People's Republic of China, in 1949, when a group of organizations came together to call on the country's entire scientific and technological community to devote their efforts to building the New China. Since its foundation, it has made a significant contribution to the progress of science and technology of China, and to Chinese economic and social development.

ACADEMY OF MILITARY SCIENCE (AMS) OF THE CHINESE PEOPLE'S LIBERATION ARMY

The AMS was founded in 1958 and has been the Chinese Army's main center for military research ever since. It reports directly to the Central Military Commission (CMC) and also receives directives from the General Staff Department. It mainly carries out research into military science, and into issues of defense and development of the armed forces, as well as amending military doctrines, regulations, and laws. Similarly, it provides strategic advice to the military authorities. It currently has 500 researchers distributed across several research departments.

CENTER FOR LATIN AMERICAN STUDIES, NANJING UNIVERSITY

The Center was established in 2006 to expand the study of language, culture, history, society, politics, economy, and ecology to the whole of Latin America in order to better understand the region, and to contribute to society with the knowledge obtained. It develops academic research, periodicals, courses, conferences, and workshops on the Latin American issues in the above fields of study, and has a library specializing in Latin America.

DEVELOPMENT RESEARCH CENTER OF THE STATE COUNCIL (DRC), PEOPLE'S REPUBLIC OF CHINA

The DRC is a research and policy consultation institution belonging to the State Council. Since its establishment in 1981, it has carried out studies on strategy issues and long-term domestic economy policy, social development and reform, and Chinese opening. The institution advises, and provides policy recommendations to the Central Committee of the Communist Party of China and the State Council. It has a team of economists and researchers specializing in such different fields of action as macroeconomic policy, strategic development, social development, and reform and business development.

CHINA NATIONAL COMMITTEE FOR PACIFIC ECONOMIC COOPERATION (CNCPEC)

CNCPEC is a national organization established in 1986, after the launch of the Pacific Economic Cooperation Council (PECC), to promote economic cooperation in the Pacific region. To this end, it includes representatives from the Chinese government, business and industry, academic institutions, and other intellectual milieu. Its main tasks are geared to the organization and coordination of different sectors to participate in the PECC's activities and promote exchanges with other members, as well as conducting research into economic development and cooperation in the Pacific.

CHINESE INSTITUTE OF INTERNATIONAL STUDIES (CIIS)

The CIIS is a think tank of the Chinese Ministry of Foreign Affairs. It carries out research and analysis into a wide range of foreign policy issues. It was founded in 1956 as the "Institute of International Relations" and was renamed in December 1986. Its studies focus mainly on medium- and long-term strategic issues, particularly those relating to international policy and economy. It even takes consultations and makes recommendations on issues of current international importance.

CHINA INSTITUTES OF CONTEMPORARY INTERNATIONAL RELATIONS (CICIR)

The CICIR is an institution dedicated to research covering the international situation. It was officially set up in 1980 and was renamed in 2003. The organization focuses mainly on international strategy, international politics and economics, and global and regional security, particularly of the main hubs of world power. It has eleven institutes and ten research units.

INSTITUTE OF LATIN AMERICAN STUDIES (ILAS), CHINESE ACADEMY OF SOCIAL SCIENCES (CASS)

Founded in 1961, ILAS is one of the largest research institutions on Latin America in China. Its key research points are the politics, economics, international relations, culture, and social problems of Latin America. It comprises five research departments: Politics, Economy, International Relations, Social Problems, and Multidisciplinary Studies.

INSTITUTE OF STRATEGIC AND INTERNATIONAL STUDIES (IISS), PEKING UNIVERSITY

Founded in 2013, the IISS is a research institute devoted to the study of international politics and security, and global governance. It puts an emphasis on presenting strategic perspectives and policy recommendations to government agencies, businesses, and other institutions in China. The IISS publishes various works, notably including the Strategic and International Studies Report and the annual review of China's international strategy, relations with the main actors in the international system and with their regional environment.

FIND OUT MORE ABOUT LATIN AMERICA AND CHINA



A BRAVE NEW CHINA, THE BIG CHANGE.
FRANCESCO SISCI. GOWARE. 2014.

This book looks in detail at how the Chinese see themselves, the world, and the challenges ahead. It navigates through China's history, traditions, geography, and the transformations it underwent during the twentieth century, which converted it into a new and different China. The author contends that the Chinese have changed so much that they do not see themselves in their present shape, just like an animal going through a metamorphosis. It also claims that we are in the middle of this huge transformation and we do not know if and when the new shape will stabilize and what impact it will have on the conscience of the Chinese and of the people of the world looking at China.



**BY ALL MEANS NECESSARY, HOW CHINA'S RESOURCE QUEST
IS CHANGING THE WORLD.**
ELIZABETH C. ECONOMY & MICHAEL LEVI. OXFORD UNIVERSITY PRESS. 2014.

The authors explore the expansion of the Chinese economy and the global effects of its dizzying growth. They analyze the impact of international insertion and the need to secure resources to feed and sustain the economy and the population. They also look deeply into defense and security policy in Asia, and into trade policy and foreign market capture through companies and corporations. The work tries to give an account of where the search for raw materials will lead China in the years to come and what the consequences will be for the country and the world.



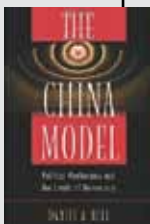
CHINA 3.0.
MARK LEONARD (ED.). EUROPEAN COUNCIL ON FOREIGN
RELATIONS. 2012.

This is a compilation of articles that provide different perspectives about the great debates taking place on China's future, its model for growth, political system, and foreign relations. It essentially analyzes the change of leadership in the Chinese Government and its shift toward the next stage of development.



**CHINA IN THE 21ST CENTURY:
WHAT EVERYONE NEEDS TO KNOW.**
JEFFREY N. WASSERSTROM. OXFORD UNIVERSITY PRESS. 2013.

It seeks to contribute to understanding on China, and its political and economic system by providing answers to its meteoric rise and growth. It looks at historical legacies, and the design, reform, and development of its economic and financial system. It also places an emphasis on cultural aspects and analyzes the Chinese view of the world and of the main actors in the international system. The author also provides a guide to possible Chinese courses of action vis-à-vis United States, Russia, India, and the countries of East Asia.



**THE CHINA MODEL: POLITICAL MERITOCRACY
AND THE LIMITS OF DEMOCRACY.**
DANIEL A. BELL. PRINCETON UNIVERSITY PRESS. 2015.

Bell's book explores and contributes to an understanding of the Chinese political system, which it describes as a political meritocracy. It seeks to understand the ideals and the reality of this system by answering three main questions: How do the ideals of political meritocracy set the standards for evaluating political progress in China? How does China avoid the disadvantages of political meritocracy? And how can meritocracy be better combined with democracy?



**CHINA ON THE GROUND IN LATIN AMERICA: CHALLENGES
FOR THE CHINESE AND IMPACTS ON THE REGION.**
R. EVAN ELLIS. PALGRAVE MACMILLAN. 2014.

This work analyzes China's presence in Latin America and the Caribbean since 2009. Evan Ellis provides a comprehensive overview of China's trading activity in such sectors as energy, mining, agriculture, manufacturing, construction, and services. He also goes into the dilemma faced by the Chinese government regarding the use of its growing "soft power" and other instruments geared to protecting its interests in the region, against the background of its sustained position of respect for internal affairs and national sovereignty.



**CHINA'S NEW GOVERNING PARTY PARADIGM: POLITICAL
RENEWAL AND PURSUIT OF NATIONAL REJUVENATION.**
TIMOTHY R. HEATH. ROUTLEDGE. 2014.

Heath argues that, for the first time since its foundation, the Chinese Communist Party has adopted a new paradigm for its role in China, abandoning its identity as a revolutionary party and assuming a new identity as a government party committed to meeting the diverse needs of its population and to revitalizing China as a great power.



CHINA'S PATH TO INNOVATION.
XIAOLAN FU. CAMBRIDGE UNIVERSITY PRESS. 2015.

The author argues that the success of industrial transformation is the result of a process based fundamentally on imitation and that, to sustain this success, China is now relying on its ability to develop a strategy to strengthen its capacity for innovation. The book sets out quantitative and qualitative research that includes an analysis of the country, its provinces, and its companies. Different theories are used to examine the motivations, obstacles, and consequences of Chinese innovation in order to draw lessons from China's experience.



**THE DRAGON IN THE ROOM: CHINA AND THE FUTURE OF
LATIN AMERICAN INDUSTRIALIZATION.**
KEVIN GALLAGHER Y ROBERTO PORZECANSKI.
STANFORD UNIVERSITY PRESS. 2010.

This book analyzes China's role in Latin American and Caribbean growth. The main emphasis is placed on the fact that, while China contributes to regional growth by importing primary commodities, it hampers the region's ability to generate long-term economic growth, by making it impossible for Latin American manufacturing to compete with Chinese manufacturing. The authors argue that China's road to globalization, which puts more emphasis on gradualism and coordinated macroeconomic and industrial policies, goes far beyond the Washington Consensus adopted in the past by many Latin American countries.



**THE END OF COPYCAT CHINA: THE RISE OF CREATIVITY,
INNOVATION AND INDIVIDUALISM IN ASIA.**
SHAUN REIN. WILEY. 2014.

This book addresses the subject of China's ongoing shift from an economy based on strong investment to a service and consumer economy. It describes in detail how Chinese companies are focusing increasingly on innovation, and how consumer aspirations and demands are evolving. Accordingly, it observes that China is leaving behind its investment- and export-based growth model of the last three decades and adopting a model more reliant on domestic consumption.



How to build a convergence within the diversity of integrationist experiences? How can global efforts converge with regional and national realities through a glocal (global + local) governance that supports a productive integration and generates sustainable jobs?

In this context of new challenges, Latin America must face the transformation of the Chinese economic model. After years of keeping prices of raw materials high, an exponential growth and an active investment policy in the region, Chinese economy grows at a slower rate, shows greater financial volatility, and shifts the focus from production to consumption.

How will this metamorphosis impact on Latin-American development? What are the ways to overcome the stage of mere exchange of commodities for industrial products? How to move forward to a technology transfer that fosters innovation and facilitates export diversification?

World-class authors, diplomats, negotiators, academics and private sector representatives analyze here the outlook of the linkage with the Asian giant.

From an interdisciplinary approach, the Institute for the Integration of Latin America and the Caribbean (INTAL), a unit of the Department of Integration and Trade of the Inter-American Development Bank (IDB), makes through this volume a contribution to building a regional agenda to jointly address the questions of the current scenario.