CHINA-LATIN AMERICAN ECONOMIC BULLETIN, 2020 Edition

BY REBECCA RAY AND PEDRO HENRIQUE BATISTA BARBOSA

EXECUTIVE SUMMARY

In 2019, infrastructure continued to form the backbone of the relationship between China and Latin America and the Caribbean (LAC). It provided the majority of both development finance and investment. These are among the findings of this year's China-Latin America Economic Bulletin, the sixth annual note summarizing and synthesizing trends in the burgeoning China-Latin America economic relationship. The goal of the bulletin is to provide analysts and observers a handy reference to the ever-changing landscape of China-Latin America economic relations, a landscape where data is not always as readily accessible. Highlights from this year's edition include:

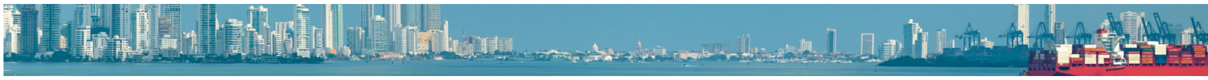
- LAC trade with China hit record levels in 2019, as the region exported $141.5 billion in goods (2.7% of regional GDP) to China and imported $161.7 billion (3.1% of regional GDP) in Chinese goods. Since both exports and imports rose at about the same rate, the resulting merchandise trade deficit, 0.4% of regional GDP, held steady from 2018.

- LAC exports to China continue to be concentrated in a few raw commodities, particularly soybeans, copper, petroleum, and iron. Thus, countries that export these commodities saw continued merchandise trade surpluses with China, while other LAC countries saw growing merchandise trade deficits. For soybeans in particular, the China-US trade dispute of the last few years has spurred a major South American boom, particularly in Argentina, Brazil, and Uruguay, as Chinese importers substituted away from US producers.

- LAC development finance from the China Development Band the Export-Import Bank of China fell to $1.1 billion, its lowest level in over a decade, as Ecuador, Brazil, and Venezuela ceased borrowing.

- New announcements of Chinese investment boomed for new ("greenfield") projects, with $12 billion in new announcements, while mergers and acquisitions fell for the second consecutive year, to just $4.3 billion. In each avenue, infrastructure investments—particularly ports and hydroelectric dams—dominated.

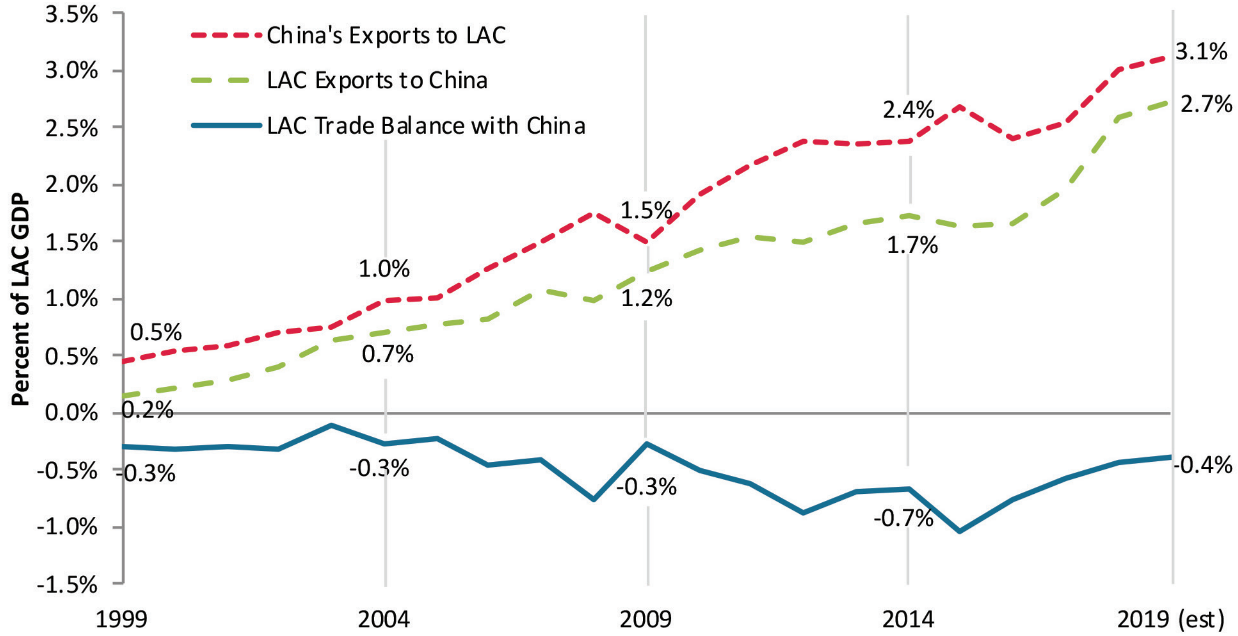
- In economic diplomacy, Ecuador became LAC's first full member of the Asian Infrastructure Investment Bank. Seven additional countries are prospective members. Jamaica and Peru joined the Belt and Road Initiative, bringing the total number of LAC BRI countries to 19.



LAC-CHINA TRADE: Holding steady

Preliminary estimates of China-LAC trade in 2019 show that the region exported $141.5 billion in goods to China last year, while China exported $161.7 billion in goods to LAC. These are both record figures, though the relationship between exports and imports has largely held steady from 2018, with the merchandise trade deficit remaining at 0.4% of regional GDP.

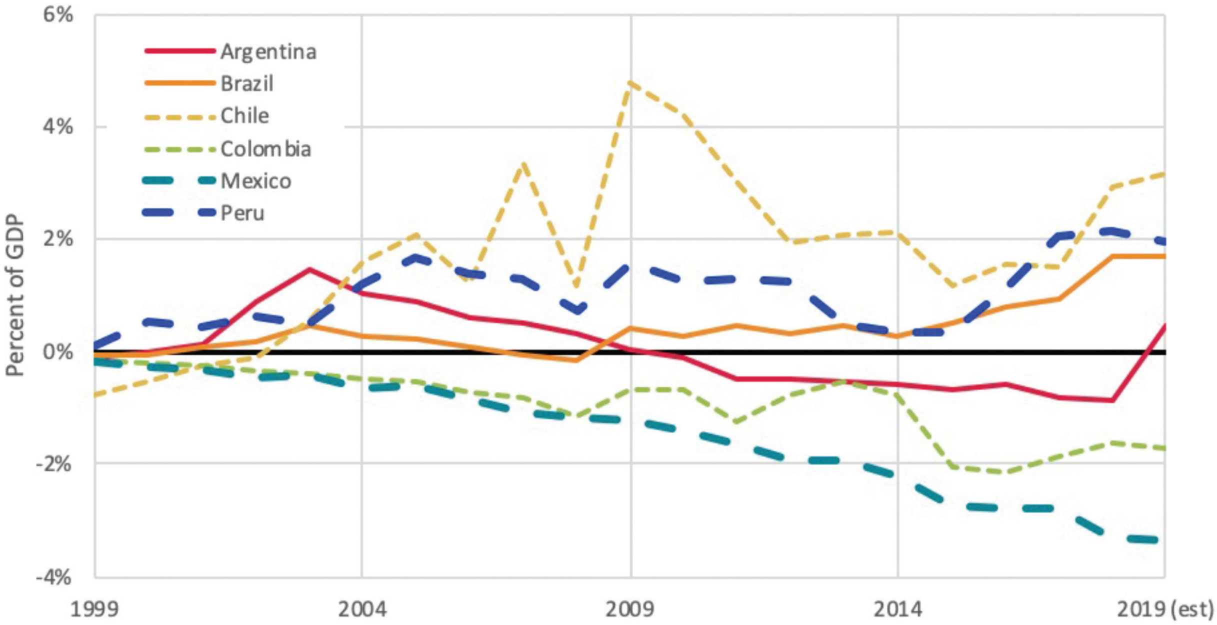
FIGURE 1: MERCHANDISE TRADE BALANCE, 1999-2019



Source: Author calculati ons using COMTRADE, China Customs, and IMF data. **Note:** these figures do not include trade in services, which are not reported on a bilateral basis, so the balances here are not equivalent to overall trade balances. China includes Hong Kong and Macao.

However, experiences vary dramatically across the LAC region. Many South American nations, especially heavy commodity exporters like Peru, Chile, and Brazil, have had reliably positive merchandise trade balances with China for the last decade. Argentina's balance had been trending downward to a record low last year, as a major drought hit their agricultural exports, but it bounced back into positive territory in 2019. Other countries, like Mexico and Colombia, have had negative—and worsening—merchandise trade balances with China over the past decade, and 2019 saw a continuation of this trend.

FIGURE 2: MERCHANDISE TRADE BALANCES OF SELECTED LAC COUNTRIES WITH CHINA, IN PERCENT OF EACH COUNTRY'S GDP

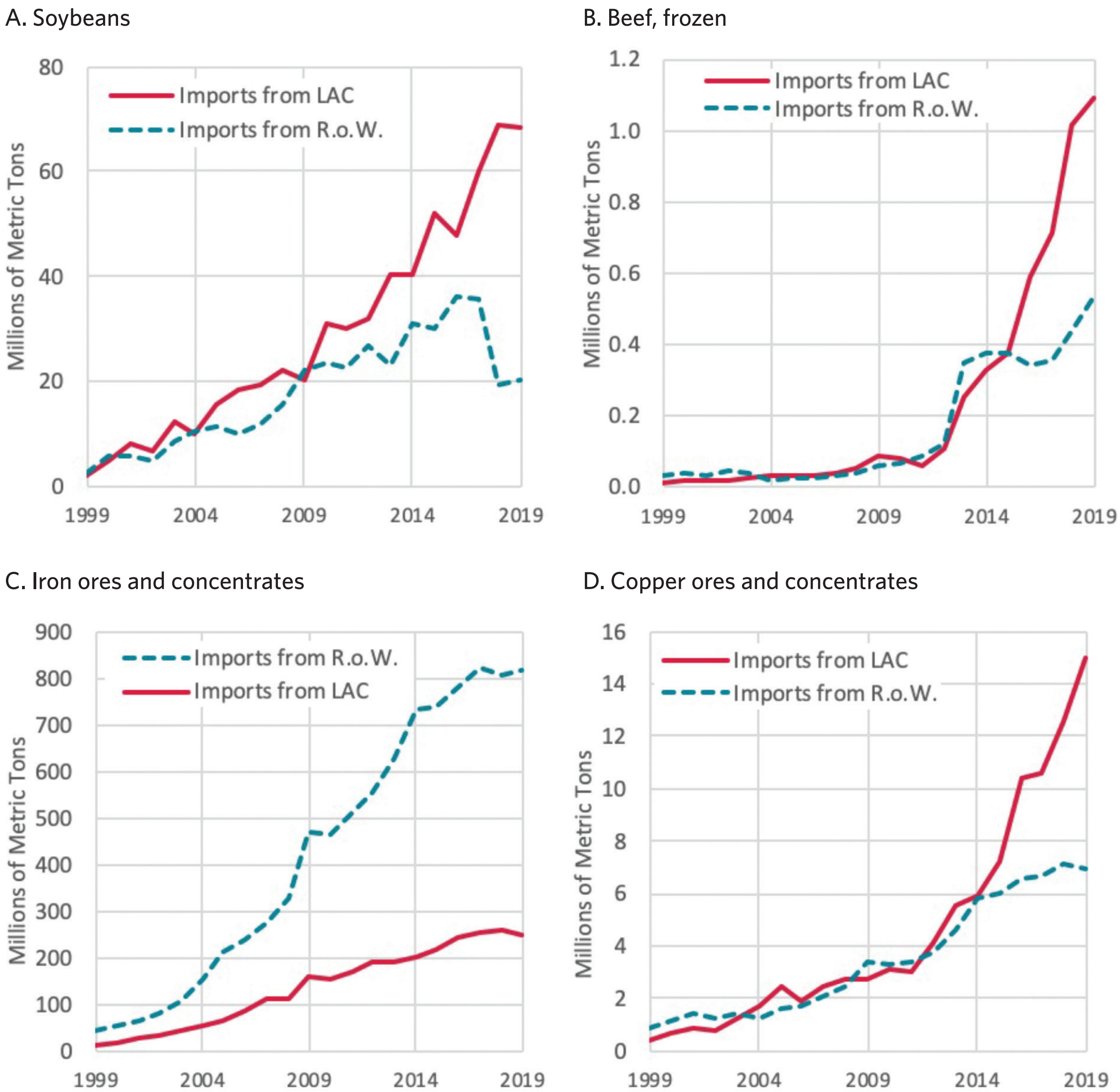


Source: Author calculations using COMTRADE, China Customs, and IMF data. **Note:** these figures do not include trade in services, which are not reported on a bilateral basis, so they are not equivalent to overall trade balances. China includes Hong Kong and Macao.

LAC's top exports to China continue to be soy, crude petroleum oil, copper ores and concentrates, and iron ores and concentrates, which collectively accounted for over half of LAC-China exports. Beef is another rising commodity: while it comprised less than 2% of LAC-China exports before 2015, its importance is growing quickly. In 2015 China lifted a three-year ban on Brazilian beef due to bovine spongiform encephalopathy (mad cow disease) concerns, and in 2019 it accounted for 3.6% of the LAC-China export basket.

Of these top commodities, LAC supplies a significant share of China's imported beef, soybeans, iron ores and concentrates, and copper ores and concentrates. (The use of third-party refineries makes tracing petroleum shipments less straightforward). Among these four, LAC now accounts for the majority of China's imported frozen beef, soybeans, and copper ores and concentrates. Soybeans in particular show the impact of the US-China trade dispute: in 2017 and 2018, LAC-China soybean exports came at the cost of soybeans from elsewhere, though they held steady in 2019.

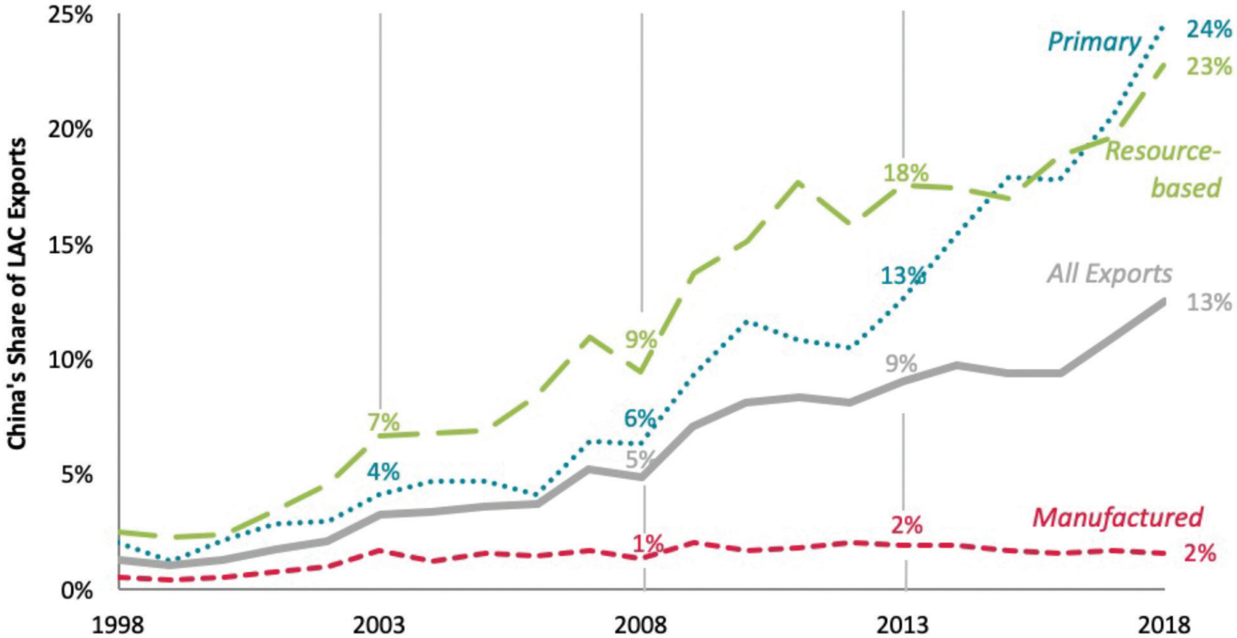
FIGURE 3: CHINESE IMPORTS OF BASIC RAW COMMODITIES



Source: Author calculations using UN COMTRADE and China Customs data. China includes Hong Kong and Macao.

Taken together, the growth of these sectors means that China has continued to grow in importance as an export market for LAC's low-value-added exports. As of 2018 (the last year for which technology-level trade baskets are available), China accounted for nearly one-fourth of LAC's primary exports, defined as products with little to no value added (including raw commodities such as soybeans and crude petroleum oil), as well as resource-based exports (including refined commodities such as soybean oil, and gasoline), but almost no manufactured goods.

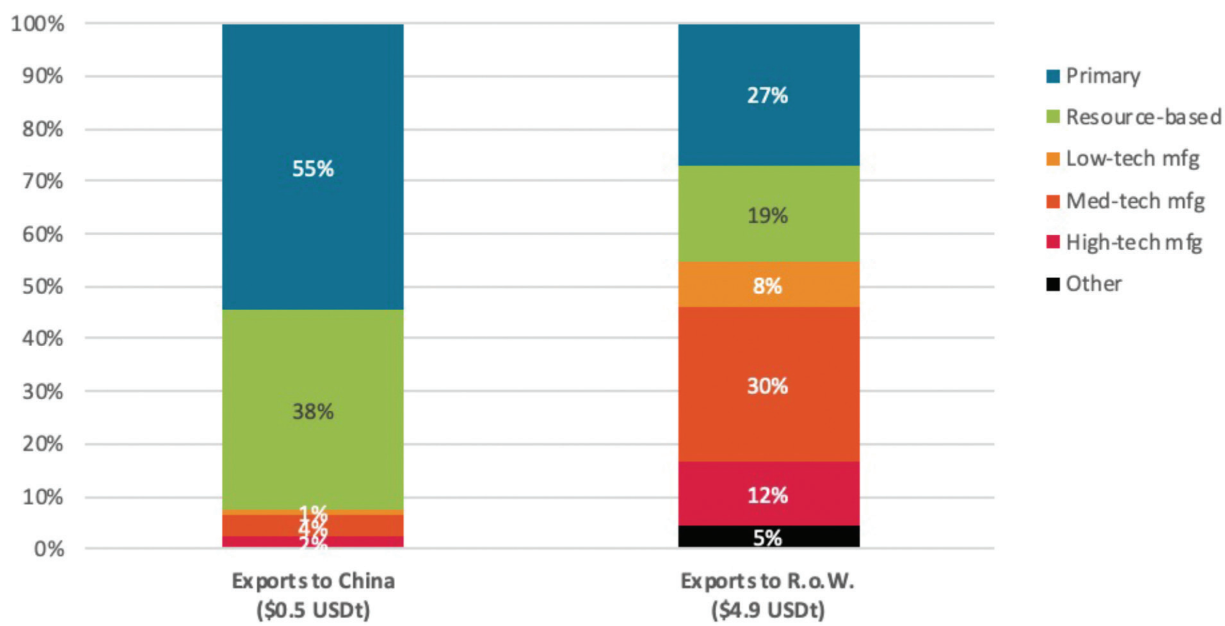
FIGURE 4: CHINA'S SHARE OF LAC EXPORTS, BY TECHNOLOGY LEVEL



Source: Author calculations using UN COMTRADE data. Technology level classifications are based on Lall (2000). China includes Hong Kong and Macao.

In fact, primary materials comprised a majority (55%) of LAC-China exports over the five-year period from 2014-2018. In contrast, about half of LAC exports to the rest of the world were manufactured, particularly medium-technology goods such as automobiles.

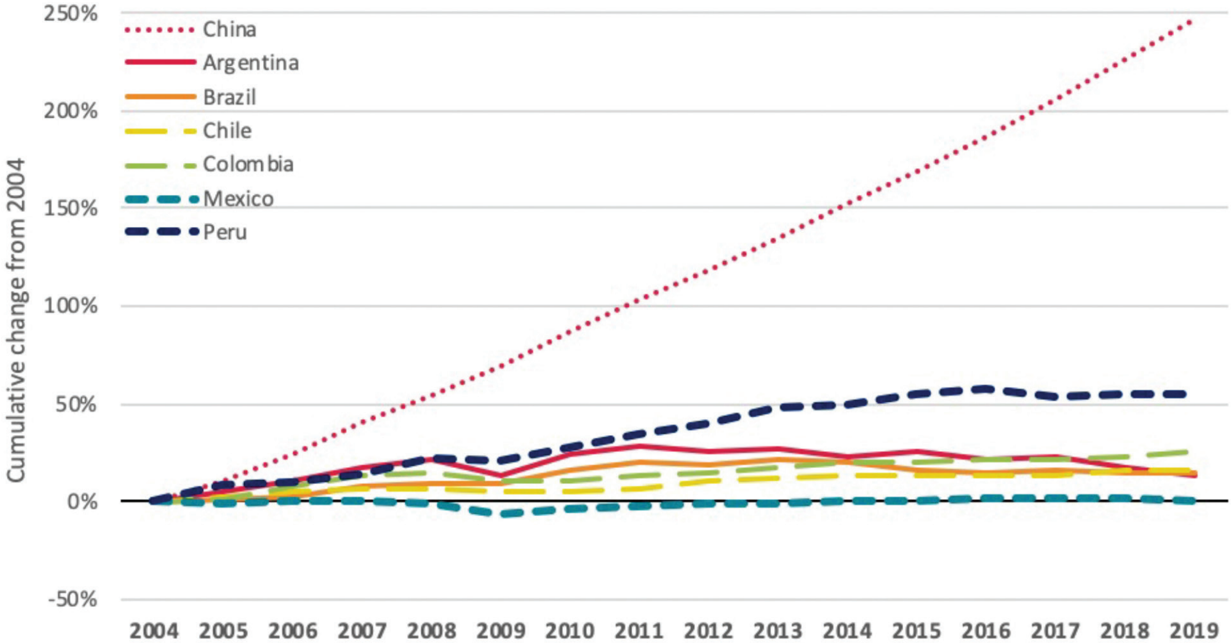
FIGURE 5: TECHNOLOGY DISTRIBUTION OF LAC EXPORTS, 2014-2018, BY DESTINATION



Source: Author calculations using UN COMTRADE data. Technology level classifications are based on Lall (2000). China includes Hong Kong and Macao.

Part of this imbalance is rooted in differing levels—and rates of growth—of labor productivity between China and the LAC region. Over the last 15 years, Argentina, Brazil, and Chile have seen cumulative labor productivity growth between 13 and 16 percent. Colombia (25%) and Peru (55%) saw significantly faster productivity growth, while Mexico's labor productivity has been essentially flat. Meanwhile, China's labor productivity has more than doubled over the same time period.

FIGURE 6: ESTIMATED LABOR PRODUCTIVITY GROWTH IN SELECT COUNTRIES, 2004-2019

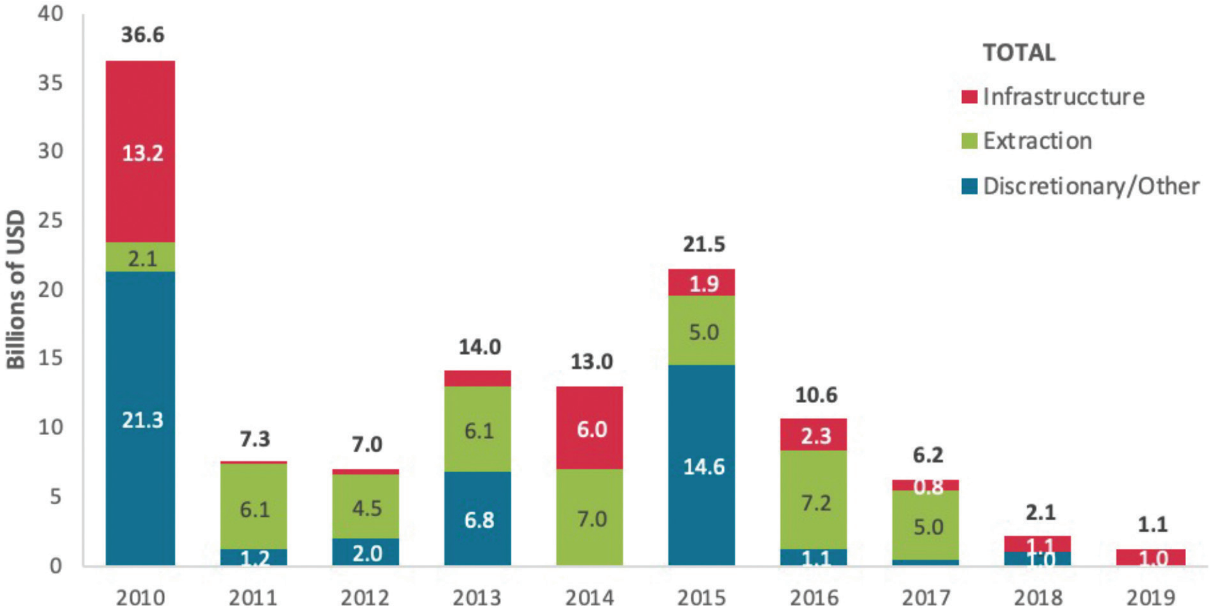


Source: Author calculations using ILO data. Productivity is measured as real GDP (PPP) per employed person. China refers to mainland China only, excluding Hong Kong, Macao, and Taiwan.

CHINESE DEVELOPMENT FINANCE IN LAC

China's two main policy banks for overseas development finance, the China Development and the Export-Import Bank of China, issued $1.1 in new sovereign loans to LAC countries in 2019, the lowest level in over a decade. This decline comes as the most frequent LAC borrowers—Brazil, Ecuador, and Venezuela—have diminished their borrowing from China. Brazil's state-owned oil company Petrobras borrowed heavily from both CDB and China Ex-Im in years past, but in 2019 *prepaid* two outstanding CDB loans (Boadle, 2020; Teixeira, 2020). In Ecuador, after reforms in debt reporting, the total external public debt now appears to have surpassed its constitutional limit, and its current IMF agreement sets a path for its reduction, limiting the possibilities for further borrowing (IMF 2019). Finally, China has tapered its financing activities in Venezuela in the last few years, with its most recent activity now five years old and largely limited to renewing existing credit line tranches (Kaplan and Penfold, 2019; Piña, 2019).

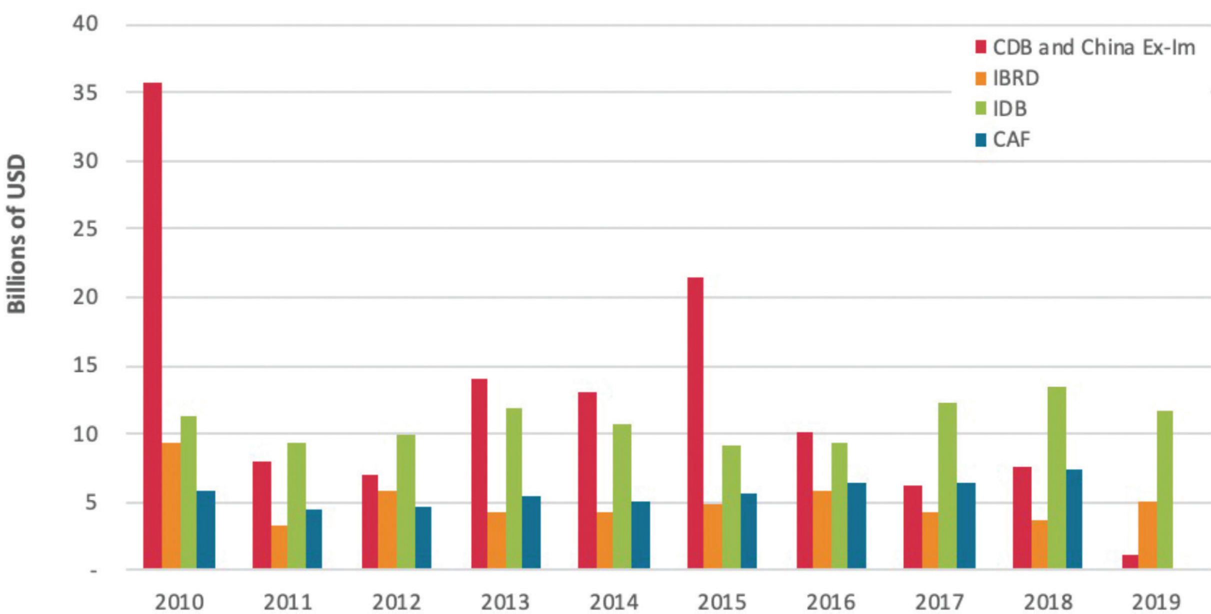
FIGURE 7: CDB AND CHINA EX-IM LOANS TO LAC COUNTRIES, 2000-2019



Source: Author calculations using Gallagher and Myers (2020).

Although these two Chinese policy banks were the most important source of sovereign finance in LAC for much of the last decade, that no longer appears to be the case. For the last few years, the Inter-American Development Bank (IDB) and the Development Bank of Latin America (CAF) have each lent more to the region than CDB and China Ex-Im combined, although 2019 figures for CAF are not yet available as of this writing.

FIGURE 8: CDB AND CHINA EX-IM LOANS TO LAC, COMPARED TO MDB SOVEREIGN LOANS, 2000-2019



Source: Author calculations using Gallagher and Myers (2020) and MDB annual reports. CAF results for 2019 are not yet available as of this writing.

Despite the low absolute level of Chinese policy bank loans, infrastructure continues to be the most important sector for them. The loans in 2019 included:

- $600 million lent to the Dominican Republic for improvements to the country's electricity distribution system (originally reported in 2018 but not finalized until 2019)
- $236 million lent to Argentina for rail cars for its Roca commuter rail line
- $200 million lent to Suriname to upgrade the J.A. Pengel International Airport
- $104 million lent to Trinidad and Tobago to develop the Phoenix Park Industrial Estate

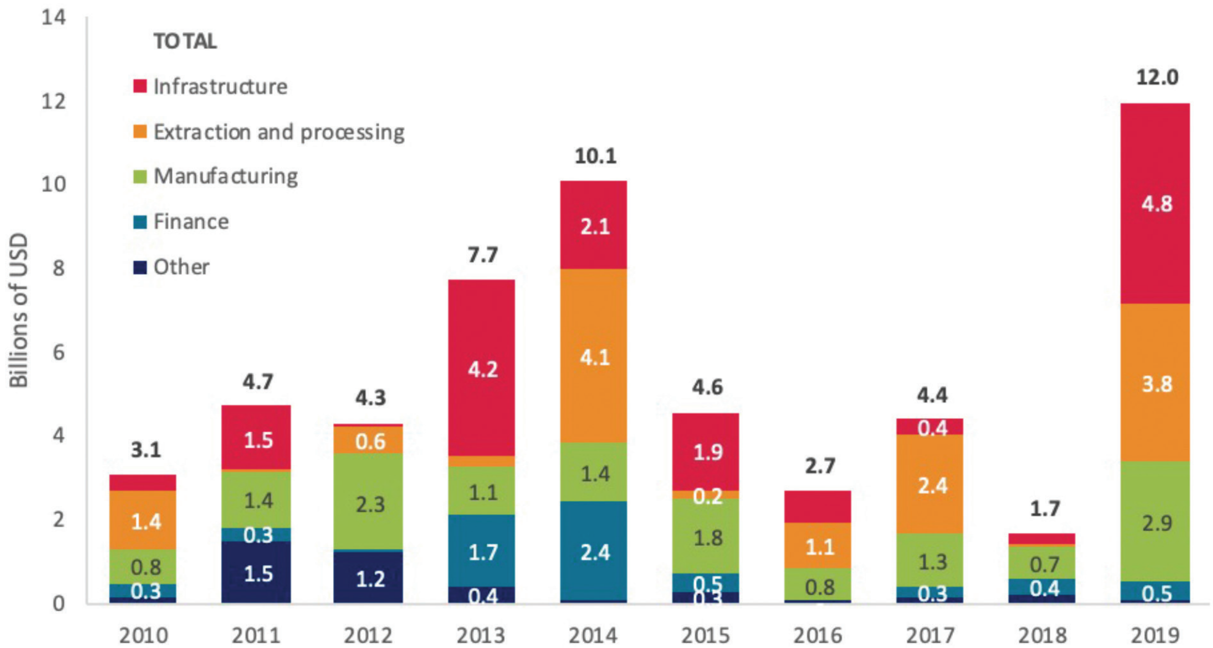
CHINESE INVESTMENT IN LAC: M&As slump while greenfield projects push forward

FDI projects can arrive in one of two avenues: new "greenfield" projects or M&A deals: the acquisition of, or merger with existing projects. This section looks at each avenue separately. Greenfield projects shot up in 2019, while M&A deals slumped. Infrastructure continues to dominate both types of investment deals, particularly in the electricity sector.

New (Greenfield) Investments

China's announcement of new greenfield investment (GFDI) projects in LAC rebounded in 2019, to a record high of $12 billion USD. Infrastructure continues to be a major sectoral driver in this relationship, along with extraction and manufacturing projects.

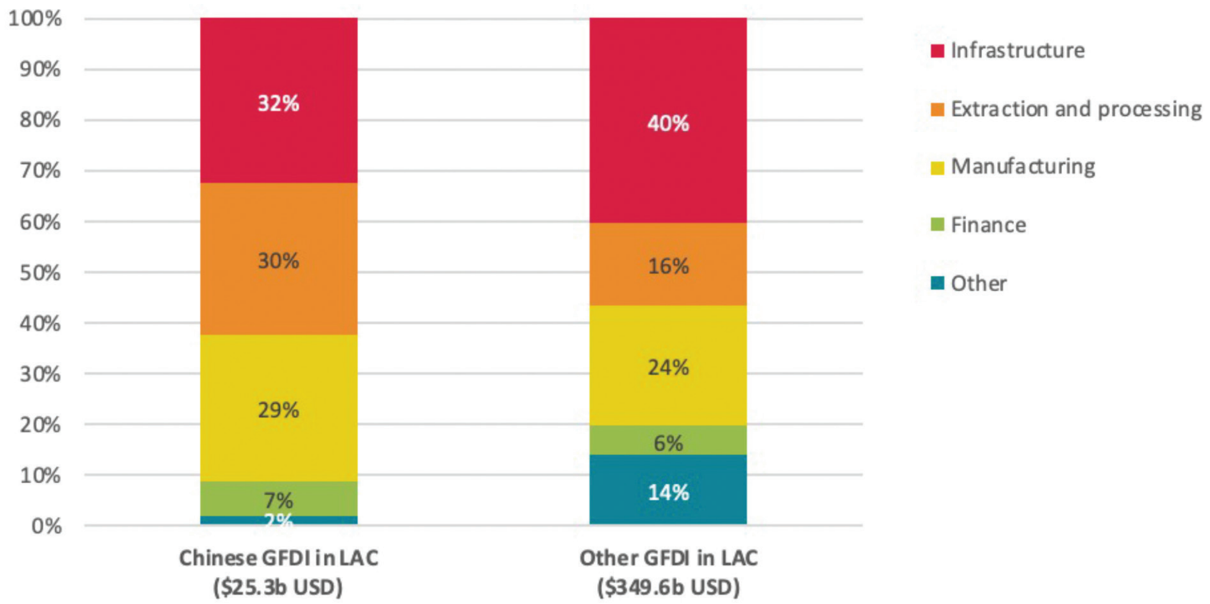
FIGURE 9: CHINESE GFDI ANNOUNCEMENTS IN LAC, BY SECTOR



Source: Author calculations from Financial Times data. Notes: Extraction and processing includes mining, drilling, basic chemical and metal processing. This figure excludes the Nicaragua canal project, announced in 2014, which if completed would represent an additional $40 billion. China includes Hong Kong and Macao.

In comparison to other sources of GFDI, Chinese GFDI in LAC was more heavily concentrated in extraction and processing, particularly because of Xinjiang TBEA Group's announcement of a lithium project in Bolivia, in conjunction with Bolivia's state-owned lithium development corporation, YLB (Yacimientos de Litio Bolivianos). As the Bolivian government has changed since this deal was announced, the project is currently receiving renewed scrutiny under Bolivia's interim government (Jourdan, 2020).

FIGURE 10: SECTOR DISTRIBUTION OF GFDI IN LAC BY SOURCE, 2015-2019



Source: Author calculations from Financial Times data. Notes: Extraction and processing includes mining, drilling, basic chemical and metal processing. China includes Hong Kong and Macao.

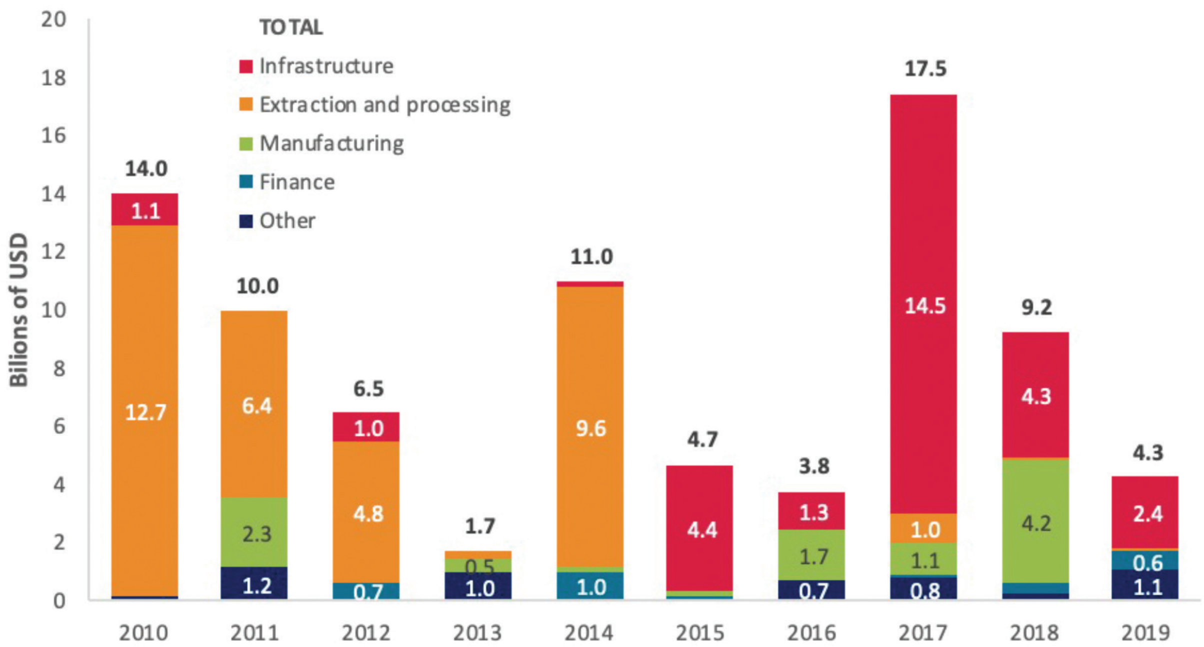
Among the largest deals announced in 2019 were:

- Cosco Shipping announced its intention to invest $3 billion in Peru's Terminales Portuarios Chancay SA port project in Chancay, Peru, a large project that could serve as a cargo logistics hub for the region. It purchased a stake in this project from the Peruvian mining firm Volcán Compañía Minera S.A.A for $225 million, so that purchase is also listed under mergers and acquisitions, below.
- Xinjiang TBEA Group announced its intention to partner with Bolivia's state lithium company YLB (Yacimientos de Litio Bolivianos) in a joint venture to extract lithium from the Coipasa and Pastos Grandes salt flats and build lithium processing factories. Xinjiang TBEA agreed to take a 49% stake in the joint venture, which is expected to entail $2.3 billion in investment in mines and processing facilities, spread over several years.
- Huawei announced its intention to build a second electronics factory in the Sao Paolo state of Brazil, an investment of $800 million over three years.
- Hong Kong-based Hutchison Port Holdings announced a new $450 million cargo port in Veracruz, Mexico, using blockchain technology to allow for more transparent monitoring of the flow of cargo.
- Hydro Global Peru, a subsidiary of China Three Gorges Corp., announced the San Gabán III hydroelectric project, expected to amount to $438 million in investment.

Mergers and Acquisitions

Last year Chinese companies spent $4.3 billion on M&A deals in LAC, the lowest sum since 2016. This trend is not unique to Latin America; Chinese outbound M&A activity has been falling generally over the last several years as the Chinese economy has slowed, from $184.8 billion in 2017 to $$93.1 billion in 2018 to $70.1 billion in 2019. Roughly one-half of Chinese M&A activity in LAC was in the electricity sector in 2019, but other traditionally important sectors such as food production and other infrastructure also had important roles.

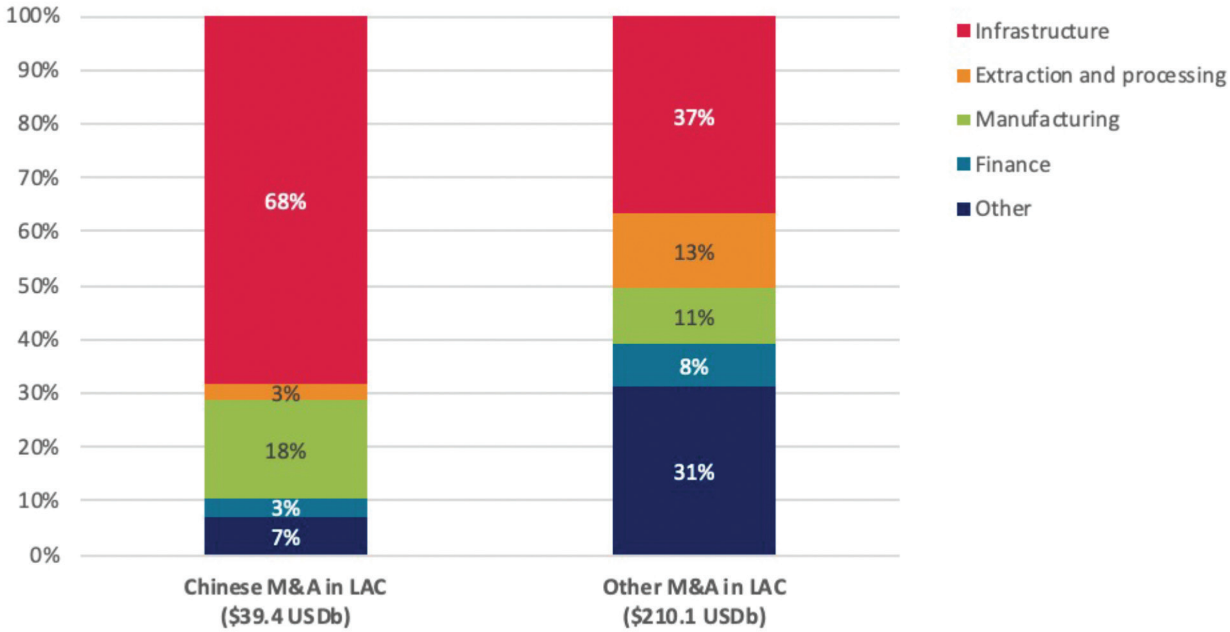
FIGURE 11: CHINESE MERGERS AND ACQUISITIONS IN LAC, BY SECTOR



Source: Author calculations from DeaLogic data. Notes: Extraction and processing includes mining, drilling, basic chemical and metal processing. China includes Hong Kong and Macao.

Overall, infrastructure companies formed the majority of Chinese M&A purchases over the last five years, marking a sizeable shift from the previous five years, when extraction and processing dominated the China-LAC M&A relationship. As Figure 12 shows, infrastructure is also the largest sector for other M&As in LAC, but to a lesser extent.

FIGURE 12: MERGERS AND ACQUISITIONS DEALS IN LAC, BY SOURCE AND SECTOR



Source: Author calculations from DeaLogic data. Notes: Extraction and processing includes mining, drilling, basic chemical and metal processing. China includes Hong Kong and Macao.

Among the largest China-LAC M&A deals in 2019 were:

- A consortium of three Chinese companies (Hubei Energy Group Co., CNIC Corp., and China Three Gorges Corp.) finalized their purchase of the Chaglla hydroelectric dam in Peru from troubled Brazilian infrastructure conglomerate Odebrecht, for $1.39 billion. This deal was first announced in 2017, but not finalized until 2019.
- Joyvio Agriculture Development Co Ltd, a private Chinese agricultural processing company, bought a nearly-complete stake (99.8%) in the Chilean Australis Seafoods SA for $985.8 million.
- China General Nuclear Power Corp bought the Brazilian Gamma project, which consists of two solar parks (with a combined capacity of 450MW) and a 90 MW wind farm, from Italian firm Enel for $778.9 million.
- China Minsheng Investment Corp bought Old Mutual Holding de Colombia SA, an insurance carrier, from the UK's Old Mutual, for $300 million.
- Cosco Shipping bought a 60% stake in Peru's Terminales Portuarios Chancay SA project, which is still under construction, for $225 million from Peruvian Volcán Compañía Minera S.A.A.

FOCUS: CHINESE INVESTMENT IN SOUTH AMERICA'S ELECTRICITY SECTOR

In 2019, Chile and Peru both saw huge Chinese electricity investments, including power generation, transmission and distribution. Brazil had smaller figures comparing to previous years, but for the first time all investments were in renewables: solar and wind farms.

The US-based Sempra Energy sold its Chilean and Peruvian equity interests to State Grid International Development (SGID) and China Yangtze Power International (CYPI), respectively, for approximately $5.82 billion. Last September, CYPI announced the acquisition of 84% of Peru's largest electric company Luz del Sur, as well as other interests in energy services firms Tecsur SA and Inland Energy SAC, for $3.6 billion. A month later, SGID concluded a $2.23 billion deal to acquire Chilquinta Energía—Chile's third-largest electricity distributor—and other minor firms, such as Tecnored S.A. and Eletrans S.A ("Sempra" 2019).

Moreover, last April, China Three Gorges concluded the acquisition of the Peruvian Chaglla hydroelectric dam from the heavily indebted Odebrecht for USD 1.4 billion; the dam is responsible for 6% of the country's power generation. The Chinese company also announced the San Gabán III dam through its local branch Hydro Global Peru. As mentioned above, China's increasing stakes in Peru's electric sector has raised concerns from local legislators and politicians, and some investments are under scrutiny from local authorities.

In Brazil, after years of heavy investments in the country's hydroelectric sector, Chinese energy investments were smaller in 2019, but remarkable in their shift to renewable energy. China General Nuclear Power Corp (CGN) purchased two solar power plants—including the Brazil's second largest—and six wind farms. It bought the Atlantic project wind parks from the British-based Actis (for an undisclosed sum) and two solar parks and one wind parks from the Italian Enel for $779 million. CGN is now the 5th largest clean energy producer in Brazil, with 1600MW of installed capacity ("CGNEI", 2019), and the largest in solar generation (Costa, 2019b).

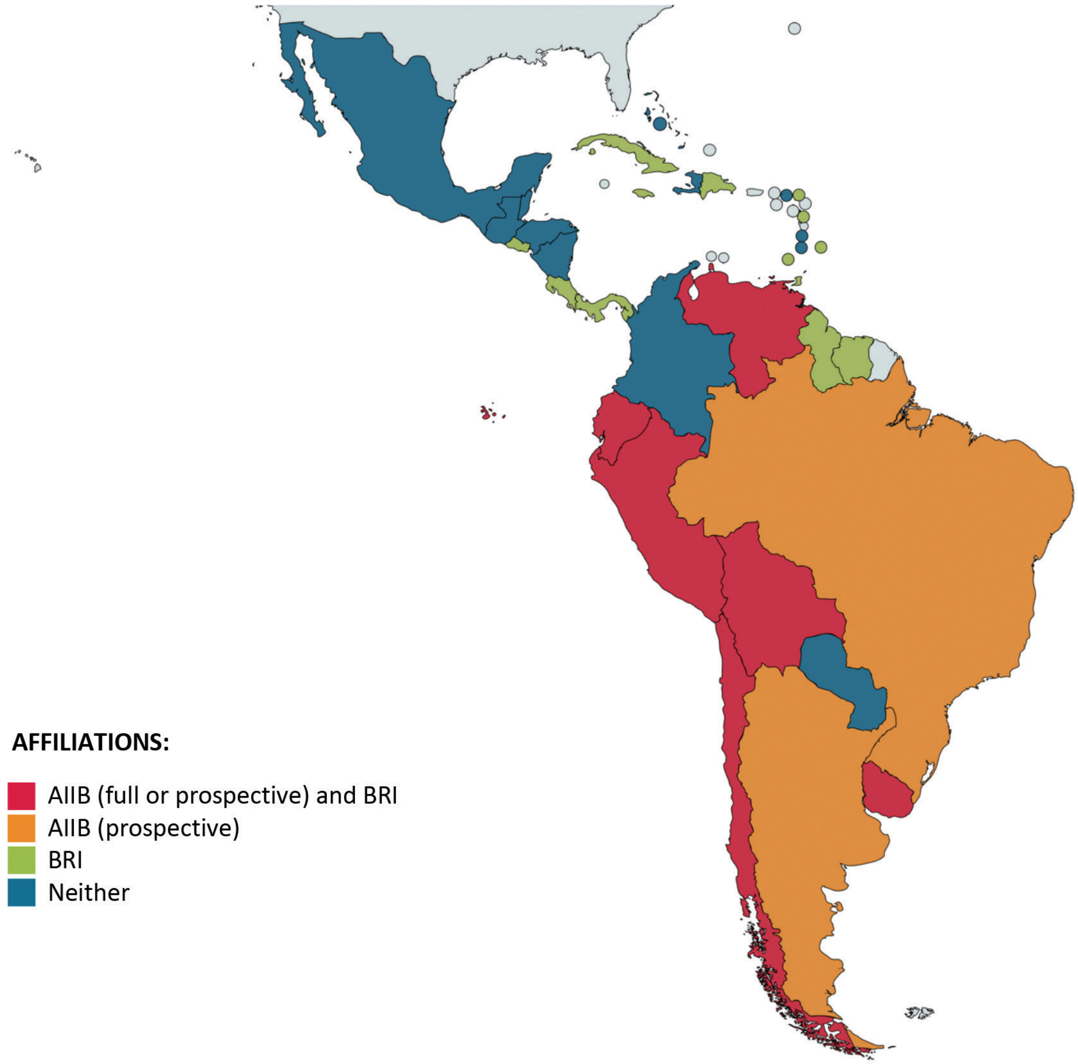
As of mid-2019, Chinese companies—including China Three Gorges and State Power Investment Corp –owned 16% of Brazil's wind power capacity and 21% of its solar capacity, totaling 2,822MW (Andreoni, 2019). More strikingly, Chinese firms were responsible for 99% of the $1 billion spent in Brazil with imports of solar panels (Silva Pinto, Mali and Nobrega, 2020).

Finally, it is worth mentioning that 2019 saw an important milestone of Chinese energy investment: the completion of the second transmission line of the Belo Monte dam, the world's third biggest. Both of Belo Monte's lines were built by State Grid and link the Northern hydropower generation facility to the country's main consumer markets in the Southeast. The first line—2,076 km—was inaugurated in 2017 approximately $1.5 billion; State Grid has 51% of that line. The second line—of 2,543 km—was integrally constructed by the Chinese firm and entered into operation last August at a cost of approximately $2.2 billion. Including these two investments above, State Grid now has 15,761 km of transmission lines in Brazil ("Sobre", n.d.; Costa, 2019a).

ECONOMIC DIPLOMACY: The AIIB and BRI

Last year saw a continued expansion in LAC of the two largest China-led economic diplomacy efforts, the Belt and Road Initiative (BRI) and the Asian Infrastructure Investment Bank (AIIB). Jamaica and Peru both signed memorandums of understanding to join the BRI, and Ecuador became the first full LAC member of the Asian Infrastructure Investment Bank.

FIGURE 13: LAC MEMBERSHIP IN THE ASIAN INFRASTRUCTURE INVESTMENT BANK AND THE BELT AND ROAD INITIATIVE



Note: Grey territories are non-LAC or non-sovereign. BRI affiliation denotes having signed a BRI memorandum of understanding, BRI cooperation agreement, or BRI framework agreement. Ecuador is the only LAC country with full AIIB membership. **Source:** "Cooperation Agreements" (n.d.), "Members and Prospective Members" (n.d.), "Profiles" (n.d.). Created with MapChart.net.

As of this writing, these initiatives have most readily found members in South America, where eight of 12 nations have joined the BRI: Bolivia, Chile, Ecuador, Guyana, Peru, Suriname, Uruguay, and Venezuela. Eight South American countries—though not the same group—are also prospective or full AIIB members: Argentina, Bolivia, Brazil, Chile, Ecuador, Peru, Uruguay, and Venezuela. Only two South American nations (Colombia and Paraguay) have joined neither body.

The BRI has also found a home in the Caribbean, where Jamaica became the eighth signatory, joining Antigua and Barbuda, Barbados, Cuba, Dominica, the Dominican Republic, Grenada, and Trinidad and Tobago. Central America has been slower to sign on, with only three members so far: Costa Rica, El Salvador, and Panama.

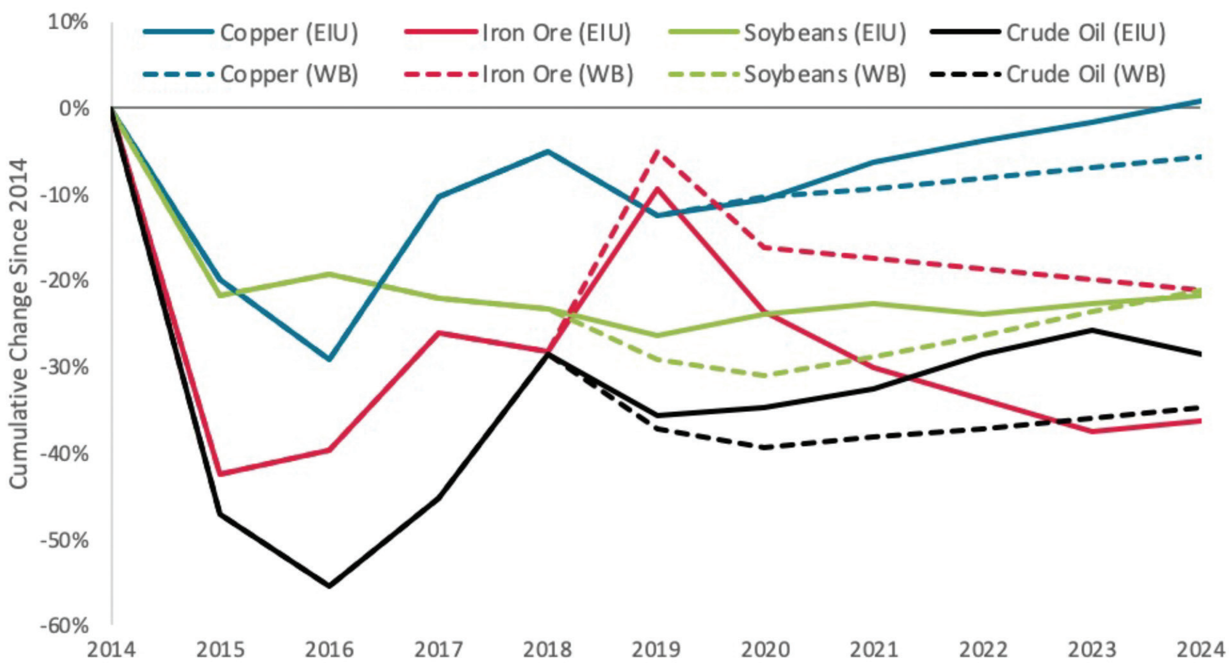
PROSPECTS FOR 2020 AND BEYOND

Three areas are worth watching for signs of trends in the relationship in 2020 and beyond: commodity prices, the "Phase 1" US-China trade deal, and the coronavirus. All three point to potential weakening in the China-LAC trade relationship. However, investment deals appear to be continuing, with major new infrastructure and extraction projects expected in Bolivia, Brazil, and Mexico.

Factors Dampening LAC-China Trade: Commodity Prices, US-China Trade, and the Coronavirus

Commodity prices are expected to remain relatively low over the coming few years, compared to their peak in 2014. Copper is expected to recover to near or above its peak levels by 2024, but this represents a less optimistic outlook than last year's forecasts, which expected it to hit that level by 2021. Iron is expected to fall in price again, after an improvement last year. Soy and petroleum prices are also expected to remain well below their peak prices for the foreseeable future.

FIGURE 14: COMMODITY PRICE PROJECTIONS FOR MAJOR LAC-CHINA EXPORTS



Source: Author calculations using EIU and World Bank data.

The signing of the "Phase One" US-China trade deal is widely expected to reverse some of China's recent increased demand from Latin American commodities (see for example Heuring, Chu and Albertoni, 2020). In this agreement, China has committed to purchasing $200 billion in US goods over the next two years. In particular, the agreement foresees record levels of Chinese agricultural imports form the US: $40 billion, far above the historical peak of less than $30 billion in 2012 (Bown, 2020). An analysis by Bloomberg Economics estimates that the impacts of the deal on agricultural trade, if fulfilled, will be particularly heavily felt in Brazil and Uruguay (Cousin and Orlik, 2020). Despite the long-term social and environmental cost of Brazil's soy and beef boom, including tropical deforestation and the displacement of traditional communities for industrial agriculture, the benefits of the boom may turn out to have been short-lived (Fearnside and Figueiredo, 2017).

Finally, the recent outbreak of the novel coronavirus SARS-CoV-19 has already begun to dampen Chinese economic growth in general and specifically demand for imports, particularly for those commodities that are most important to its relationship with LAC: copper, beef, and soy (Kishan, 2020). For example, Chinese manufacturers have asked for delays in copper shipments as they wait to resume production, although major companies like Foxconn have already begun to return to normal operations (Hille and Wong 2020; Shirouzo and Sun, 2020; Yu, 2020). Brazil's beef, soy, and iron shipments are well below their levels from this point in 2019, though it is difficult to differentiate the impact of the coronavirus from the impact of the US-China trade agreement discussed above ("Brazil Beef," 2020; Samora and Mano, 2020).

New Infrastructure and Extraction Projects

Despite the weak commodities market, coronavirus, and potential end to the US-China trade tensions that have fueled a soybean export boom, other signs show that the China-LAC relationship will continue to be fueled by Chinese participation in new infrastructure and extraction projects. Specifically, new lithium opportunities have arisen in Bolivia, Brazil, and Mexico, as have greater infrastructure participation in Brazil and Peru.

As mentioned above, the announcement of Xinjiang TBEA Group's investment deal with Bolivia's YBL lithium state-owned enterprise (SOE) was a historic one, in that the Bolivian SOE would maintain a slight majority in the joint venture (JV) formed to develop it ("Bolivia y China", 2019). However, the project may face setbacks due to Bolivia's political instability. As of this writing, YLB has replaced its executive director twice since the October 2019 elections, after the previous interim executive director was the focus of protests during a visit to lithium-rich Uyuni ("Uyuni", 2020).

Also under heightened public scrutiny is a proposed iron mine in Brazil by Sul Americana de Metais (SAM), a subsidiary of China's Honbridge Holdings (Nogueira, 2020). SAM has proposed the new "Bloco 8" iron mine, which would represent $2.1 billion in new investment, in the state of Minas Gerais, the same state where an iron mine operated by Brazil's Vale company saw a disastrous tailings dam collapse in in early 2019 (Bourscheit, 2019). Notably, Bloco 8 plans to install a large tailings dam of 845 million cubic meters, many times larger than Vale's ill-fated tailings dam, giving rise to a public demand for greater government oversight. In January a court suspended the project's environmental license after public prosecutors pushed for federal, rather than state, regulators to take over the project's licensing process. SAM has appealed the ruling, and negotiations are ongoing.

In Mexico, a part-Chinese JV has won a concession to develop the first mine to exploit newly-discovered lithium deposit in the northern desert state of Sonora. The deposit was discovered by Canada's Bacanora Lithium, but the concession was granted to a JV between Bacanora and China's Ganfeng Lithium, a major Chinese participant in the sector and supplier to LG and Tesla, among other manufacturers (Jamasmie, 2018). This project promises to be the largest lithium mine in the world, with proven and probable reserves of 243.8 Mt, containing 4.5Mt of lithium carbonate-equivalent ("Top Ten", 2019). The mine is expected to begin extraction in 2020 and have a preliminary lifespan of 19 years (Medina, 2019). Potential obstacles to this project include the water-intensive nature of lithium extraction and processing, especially in the water-scarce state of Sonora, and security concerns, as the mountainous region where the deposit is located has been significant violence related to organized crime (Deslandes, 2020).

Newly-announced infrastructure investment continues, including significant projects in Brazil and Peru. In Brazil, China Communications Construction Company has signed a statement of intent with the state government of Pará to invest $1.6 billion into a new Pará railway, which is expected to connect the inland city of Santiago do Araguaia to the port city of Barcarena, enabling easy transportation of iron to the coast. As of this writing, this project has not yet been finalized and feasibility studies are still underway, but it holds the possibility of providing significant support to Brazil's iron exports to China, especially as the industry faces lagging global prices (Menezes, 2019).

In Peru, US firm Sempra Energy has agreed to sell a majority stake (83.6%) in the Peruvian electricity distribution company Luz del Sur to Yangtze Power Co., owned by China Three Gorges Corp., though this deal is not yet finalized. It is expected to be worth $3.6 billion: over half of 2019's total value of China-LAC M&A activity. However, this purchase is currently under review due to concerns of allowing overly-concentrated ownership in Peru's electricity sector. Three Gorges Corp. is already heavily invested in Peru's power *generation* sector, including the purchase of the Chaglla hydroelectric dam (mentioned above) and recent construction of the San Gabán III dam. The Ministry of Energy and Mines has recommended that the sale be permitted, with the condition that the newly-acquired Luz del Sur be required to purchase power through a transparent bidding process to avoid collusion. Peru's official ruling is expected in March (Quispe, 2020).

These new extraction and infrastructure projects have all been announced as investment, rather than finance, deals. In other words, they will be operated and owned by the Chinese companies involved. Thus, while several signs point to the potential for a slump in China-LAC trade and development finance, investment may continue moving forward.

REFERENCES

Databases:

China General Administration of Customs. "Imports and Exports by Country (Region) of Origin/Destination." http://english.customs.gov.cn/statics/report/monthly.html.

EIU (Economist Intelligence Unit). "World Commodity Forecasts: Food Feedstuffs and Beverages."

EIU (Economist Intelligence Unit). "World Commodity Forecasts: Industrial Raw Materials."

Financial Times. "FDIMarkets." https://www.fdimarkets.com.

Gallagher, Kevin P. and Margaret Myers. (2020). "China-Latin America Finance Database." Washington, DC: Inter-American Dialogue. https://www.thedialogue.org/map_list/

Heuring, Emily, Haoliaang Chu, and Nicolás Albertoni. (2020). "The U.S.-China "Phase-One" Trade Deal and Latin America." *Global Americans*. 25 February. https://theglobalamericans.org/2020/02/the-u-s-china-phase-one-trade-deal-and-latin-america/

IBGE (Instituto Brasileiro de Geografia e Estatística). "Levantamento Sistemático da Produção Agrícola, Tabela 6588." https://sidra.ibge.gov.br/tabela/6588.

ILO (International Labour Organization). "ILOStat." https://ilostat.ilo.org/data/.

MDIC (Ministério da Economia, Indústria, Comércio Exterior e Serviços). "Base de Dados do Comex Stat." http://www.mdic.gov.br/comercio-exterior/estatisticas-de-comercio-exterior/base-de-dados-do-comercio-exterior-brasileiro-arquivos-para-download.

International Monetary Fund. "World Economic Outlook Database, October 2019." https://www.imf.org/external/pubs/ft/weo/2019/02/weodata/index.aspx.

United Nations Statistical Division. "UN Comtrade Database." https://comtrade.un.org.

World Bank. "Commodity Prices." http://www.worldbank.org/en/research/commodity-markets.

Published works:

"Bolivia y China crean empresa mixta para industrializar salares de Pastos Grandes y Coipasa." *Xinhua*. 21 August 2019. http://spanish.xinhuanet.com/2019-08/21/c_138325593.htm.

"Bolivia Makes First-Ever Shipment of Beef to China." *Xinhua*. 30 August 2019. http://www.xinhuanet.com/english/2019-08/30/c_138350485.htm.

"Brazil Beef Firms Face Reduced Chinese Demand Due to Coronavirus." *Reuters*. 27 February 2020. https://www.reuters.com/article/us-brazil-beef-china/brazil-beef-firms-face-reduced-chinese-demand-due-to-coronavirus-idUSKCN20L2VV

"CGNEI Acquires Atlantic Project and Becomes the 5th Largest Clean Energy Producer in Brazil." 16 October 2019. http://www.cgnei.com/encgninde/xwbd/2019-10/16/content_1134ff988a1e4843a507df599284c1a5.shtml.

"Cooperation Agreements and MoUs Under the Belt and Road Initiative." Belt and Road Initiative. (no date.) Website, accessed 19 February 2019. https://www.beltroad-initiative.com/memorundum-of-understanding-belt-and-road-initiative/#more-1881.

"Members and Prospective Members of the Bank." *Asian Infrastructure Investment Bank*. (no date). Website, accessed 19 February 2019. https://www.aiib.org/en/about-aiib/governance/members-of-bank/index.html

"Profiles." *Belt and Road Portal*. (no date.) Website. Accessed 19 February 2019. https://eng.yidaiyilu.gov.cn/info/iList.jsp?site_id=CMSydylyw&cat_id=10076&cur_page=5.

"Top Ten Biggest Lithium Mines in the World." *Mining Technology*. 30 August 2019. https://www.mining-technology.com/features/top-ten-biggest-lithium-mines/

"Sempra Energy Announces Agreement To Sell Chilquinta Energía In Chile." *Sempra Energy.* 14 October 2019. https://www.sempra.com/sempra-energy-announces-agreement-sell-chilquinta-energia-chile.

"Sobre." *State Grid Brazil Holding.* Accessed 10 March 2020. https://www.stategrid.com.br/pagina-inicial/sobre/.

"Uyuni: Reciben con bloqueo a nuevo gerente de YLB Juan Carlos Zuleta." *Erbol*, 11 January 2020. https://erbol.com.bo/nacional/uyuni-reciben-con-bloqueo-nuevo-gerente-de-ylt-juan-carlos-zuleta.

Andreoni, Manuela. (2019). "China Bets on Wind and Solar Power in Brazil." *Diálago Chino.* 9 August. https://dialogochino.net/en/climate-energy/29559-china-bets-on-wind-and-solar-power-in-brazil/.

Boadle, Anthony. (2019). "Petrobras repays $5 billion China Development Bank loan due in 2027." *Reuters*. 16 December. https://www.reuters.com/article/us-petrobras-china/petrobras-repays-5-billion-china-development-bank-loan-due-in-2027-idUSKBN1YK23X.

Bourscheit, Aldem. (2019). "Communities Resist Chinese Mining Company's Iron Ore Tailings Dam." *Diálago Chino.* 18 December. https://dialogochino.net/en/extractive-industries/32317-communities-resist-chinese-mining-companys-iron-ore-tailings-dam/.

Bown, Chad P. (2020). "Unappreciated Hazards of the US-China Phase One Deal." Washington, DC: Peterson Institute for International Economics. https://www.piie.com/blogs/trade-and-investment-policy-watch/unappreciated-hazards-us-china-phase-one-deal.

Costa, Luciano. (2019a). "Chinesa State Grid conclui testes de linhão de transmissão da usina de Belo Monte." *Reuters.* 23 August. https://economia.uol.com.br/noticias/reuters/2019/08/23/chinesa-state-grid-conclui-testes-de-linhao-de-transmissao-da-usina-de-belo-monte.htm.

Costa, Luciano. (2019b). "ENFOQUE-China acelera venda de painéis solares no Brasil e mira avanço maior em geração." *Reuters.* 28 August. https://br.reuters.com/article/businessNews/idBRKCN1VI21M-OBRBS.

Cousin, Maeva and Tom Orlik. (2020). "Here Are the Losers from U.S.-China Trade Agreement." *Bloomberg.* 22 January. https://www.bloomberg.com/amp/news/articles/2020-01-22/here-are-the-losers-from-u-s-china-trade-agreement-map

Deslandes, Ann. (2020). "Mexico's Lithium Discovery is a Double-Edged Sword." *Diálago Chino.* 14 February. https://dialogochino.net/33491-mexicos-lithium-discovery-is-a-double-edged-sword.

Fearnside, Philip M. and Adriano M. R. Figueiredo. (2017). "China's Influence on Deforestation in Brazilian Amazonia: A Growing Force in The State of Mato Grosso." In *China and Sustainable Development in Latin America: The Social and Environmental Dimension,* Rebecca Ray, Kevin P. Gallagher, Andrés López and Cynthia Sanborn, Eds. London: Anthem Press.

Hille, Kathrin and Sue-Lin Wong. (2020). "Foxconn to Resume Full Production in China by End of Month." *Financial Times.* 3 March. https://www.ft.com/content/cf971d94-5d2a-11ea-b0ab-339c2307bcd4.

IMF. (2019). "Second and Third Reviews Under the Extended Fund Facility Arrangement and Request for a Waiver of Nonobservance and Modifications of Performance Criteria—Press Release and Staff Report." Washington, DC: International Monetary Fund. https://www.imf.org/~/media/Files/Publications/CR/2019/1ECUEA2019005.ashx.

Jamasmie, Cecilia. (2018). "China's Ganfeng Lithium lands three-year contract to supply Tesla." *Mining.com.* 21 September. https://www.mining.com/chinas-ganfeng-lithium-lands-three-year-contract-supply-tesla/.

Jourdan, Adam. (2020). "Exclusive: Bolivia's New Lithium Tsar Says Country Should Go it Alone." *Reuters.* 15 January. https://uk.reuters.com/article/uk-bolivia-lithium-exclusive/exclusive-bolivias-new-lithium-tsar-says-country-should-go-it-alone-idUKKBN1ZE2DU.

Kaplan, Stephen B. and Michael Penfold. (2019). "China-Venezuela Economic Relations:

Hedging Venezuelan Bets with Chinese Characteristics." Washington, DC: Wilson Center. https://www.wilsoncenter.org/sites/default/files/media/documents/publication/china-venezuela_relations_final.pdf

Kishan, Hari. (2020). "China's First-Quarter Economic Hit from Coronavirus Looking More Severe: Reuters Poll." *Reuters.* 5 March. https://www.reuters.com/article/us-china-economy-poll/china-first-quarter-economic-hit-from-coronavirus-looking-more-severe-reuters-poll-idUSKBN20T00L.

Lall, Sanjaya. (2000). "The Technological Structure and Performance of Developing Country Manufactured Exports, 1985–98." *Oxford Development Studies* 28(3), 337-369. https://doi.org/10.1080/713688318.

Medina, Luis Alberto. (2019). "Confirman yacimiento de litio en Bacadéhuachi, Sonora." *Aristegui Noticias*. 5 December. https://aristeguinoticias.com/0512/mexico/confirman-yacimiento-de-litio-en-bacadehuachi-sonora-video/.

Menezes, Carlos. (2019). "Governo garante início da Ferrovia Pará em 2021, obra de R$ 7 bilhões." *AgênciaPará.* 12 November. https://agenciapara.com.br/noticia/16323/.

Nogueira, Marta. (2020). "Honbridge's SAM Confident $2 Billion Brazil Iron Mine Will Go Ahead." *Reuters.* 7 February. https://www.reuters.com/article/us-honbridge-brazil-mining/honbridges-sam-confident-2-billion-brazil-iron-mine-will-go-ahead-idUSKBN2012QF.

Piña, Carlos Eduardo. (2019). "Inversiones y préstamos chinos en el sector petrolero venezolano (2000-2018)." Mexico City: Centro de Estudios China-México, Universidad Nacional Autónoma de México. https://dusselpeters.com/CECHIMEX/Revista_Cchmx_1_2019.pdf.

Quispe, Magda. (2020). "Venta de Luz del Sur a China Yangtze Power Co. corre el riesgo de no concretarse." *La República,* 27 January. https://larepublica.pe/economia/2020/01/27/venta-de-luz-del-sur-a-china-yangtze-power-co-corre-el-riesgo-de-no-concretarse/.

Samora, Roberto and Ana Mano. (2020). "Brazil Soy, Iron Ore Exports Slide Amid Concerns Over Coronavirus Impact." *Reuters.* 10 February. https://www.reuters.com/article/us-brazil-commodities/brazil-soy-iron-ore-exports-slide-amid-concerns-over-coronavirus-impact-idUSKBN2042HT.

Shirouzo, Norihiko and Yilei Sun. (2020). "As One of China's 'Detroits' Reopens, World's Automakers Worry about Disruptions." *Reuters.* 8 March. https://www.reuters.com/article/us-health-coronavirus-autos-parts/as-one-of-chinas-detroits-reopens-worlds-automakers-worry-about-disruptions-idUSKBN20V14J.

Silva Pinto, Paulo, Tiago Mali, and Ighor Nobrega. (2020). "China tem 99% do mercado de US$ 1 bilhão de painéis solares no Brasil." *Poder360*. 12 January. https://www.poder360.com.br/economia/china-tem-99-do-mercado-de-us-1-bilhao-de-paineis-solares-no-brasil/.

Teixeira, Marcelo. (2019). "Brazil's Petrobras to pre-pay Chinese loans, end oil supply obligation." *Reuters*. 14 August. https://www.reuters.com/article/petrobras-debt/brazils-petrobras-to-pre-pay-chinese-loans-end-oil-supply-obligation-idUSE6N21601S.

Terezano, Emiko. (2020). "How Swine Fever is Reshaping the Global Meat Trade." *Financial Times*. 9 January. https://www.ft.com/content/42f2170a-20e8-11ea-b8a1-584213ee7b2b.

Yu, Sun. (2020). "Chinese copper traders declare force majeure over coronavirus." *Financial Times*. 7 February. https://www.ft.com/content/e3d6b116-4975-11ea-aeb3-955839e06441.

BOSTON UNIVERSITY Global Development Policy Center

Boston University
53 Bay State Road
Boston, MA 02215

gdp@bu.edu
www.twitter.com/gdpc_bu
www.bu.edu/gdp

www.bu.edu/gdp

The views expressed in this coding manual are strictly those of the author(s) and do not represent the position of Boston University, or the Global Development Policy Center.

DATA UPDATE PROCEDURE

The current procedure of annual updates are as follows:

1. The data manager maintains a daily file marking the rows or cells that are under revision or include new entries. Deleted entries and older versions of the revised cells are kept in a separate sheet.

2. The data visualization company returns the master files from the previous year. These files should match the in-house master file from the previous year. There should be one Chinese file (labeled ZH) and one English file.

3. The data manager prepares three files for the GDP Center director: two updated master files (Chinese and English) and one separate change log for the year.

4. The master file should have fewer columns than the daily file. The master files do not include loan details such as energy capacity, Chinese companies involved, loan types, etc. The master files also do not include source of entries.

5. If there are new Chinese entries, translation is included.

6. If the data visualization company has follow-up questions, answers are provided.

7. After the annual update, only the daily file needs to be maintained every day.