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EASTERN PROMISES: NEW DATA ON CHINESE LOANS IN AFRICA, 2000 TO 2014

CHINA AFRICA RESEARCH INITIATIVE

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Abstract

Chinese loan finance is often misunderstood in Africa. In this paper, we provide an overview of a new database on Chinese loans and describe our research methodology for collecting this data. We report on the scale of these loans, their African recipients, and the sectors where borrowers are investing this finance. The paper compares our findings with other efforts to estimate Chinese development finance. We also explain the Chinese system of securing risky loans with escrow accounts filled by exports and off-take arrangements. Chinese loans remain at a lower scale than is often believed. Our estimate suggests that Chinese financiers have provided US$86.3 billion to African governments and state-owned enterprises between 2000 and 2014. However, we warn that debt levels are rising, the Chinese are unlikely to cancel these debts, and we express concern that African governments may not be able to absorb the sharply increased pledges made by Chinese leaders in December 2015.

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1. Introduction

What is the scale of Chinese loan finance in Africa? What are the drivers for these loans, where do they go, what do they finance, and will they be repaid? Over the past decade, Chinese loans have reached all but a handful of African countries, and the Chinese have a sizable and growing program of development finance. In Johannesburg, December 2015, Chinese President Xi Jinping surprised many with a new US$60 billion pledge of loans, export credits, investment funds and grants, three-quarters of which would be committed over the next three years. Yet as with many areas of China's African engagement, there is considerable hype and a full-fledge mythology associated with Chinese loan finance.

In this paper we provide an overview of a new database of Chinese loans in Africa, soon to be published by Johns Hopkins University's China Africa Research Initiative (CARI) at the School of Advanced International Studies (SAIS). Our data allow us to fact-check some of the conventional wisdom about China's financial engagement in Africa, and to explain just how Chinese loans are being used by borrowing countries and Chinese lenders. While our database tracks all loans coming from China (and Hong Kong) to Africa, this paper focuses only on Chinese loans to African governments and their state-owned enterprises. We estimate that Chinese financiers have provided US$86.3 billion to African governments and African state-owned enterprises between 2000 and 2014.[1]

2. Chinese Development Finance in Africa: Persistent Beliefs

First, many believe that the Chinese government has committed truly enormous sums to Africa. The Christian Science Monitor wrote that China's aid to Africa in 2006 alone was "three times the total development aid give by rich countries." [2] This would have made it $90 billion in just that year. In 2015, The Economist's corporate network told its readers that Chinese policy banks had pledged to provide "as much as US$1 trillion over the next decade or so" in Africa.[3] Both of these were clearly off track by an order of magnitude, but it is significant that neither the authors nor the editors questioned these sums.

Second, the overestimation of the size of Chinese loans lends credibility to claims that Chinese debt cancellation is also huge. A 2011 Fitch Ratings report that has been widely cited claimed that "35 African countries had debts canceled by China, amounting to approximately $30 billion."[4] (The correct figure was US$3 billion.)[5] If African governments believe that Chinese debts are easily canceled, they might be more inclined to borrow beyond their means.

Third, it is widely believed that China Export-Import Bank (Eximbank) provides more finance to Africa than the World Bank. For example, in 2011, the aforementioned Fitch Ratings document reported that China Eximbank "lent about US$67.2 billion" to sub-Saharan Africa (SSA) "between 2001 and 2010 compared with the World Bank's US$54.7 billion."[6] Our data suggest that China Eximbank's lending to all borrowers in SSA between 2001 and 2010 totaled, in fact, to a much more modest US$26.4 billion.[7] Furthermore, while we do not expect this to continue, in each year since 2010, the World Bank has continued to outperform China

Eximbank as a provider of finance to the African continent. Among banks and development agencies, the World Bank remains in 2016, as its website states, "the world's largest provider of development assistance to Africa."[8]

Fourth, many believe that the Chinese mainly offer loans in order to access natural resources. For example, the authors of a World Bank study commented that "most Chinese government funded projects in Sub-Saharan Africa are ultimately aimed at securing a flow of sub-Saharan Africa's natural resources for export to China."[9]

Our database shows that 10 percent of loans go toward petroleum and mining (the latter are largely lines of credit to Angola's state-owned oil company, Sonangol), while transport, power, and telecoms projects for African governments and their companies take up 56 percent. On the other hand, about 33 percent of Chinese loan finance in Africa is secured by commodities or exports of natural resources. Our explanation of commodity-secured finance below suggests that the purpose of this security is much less about locking up natural resources and more about reducing the risks of lending to poor and unstable countries.[10]

Finally, many believe that Chinese loans go disproportionately to resource-rich, poorly governed countries and that this is a contrast with the way other major actors operate. We find that this is only partially the case. Between 2000 and 2014, the top recipient of government-to-government Chinese loans was a resource-rich country, Angola, but the second largest recipient was a resource-poor country, Ethiopia. The other top recipients were Sudan, Kenya, and the Democratic Republic of Congo (DRC). The top recipients of World Bank loans in sub-Saharan Africa during this period were Ethiopia, Nigeria, Tanzania, Kenya and the DRC.[11] In other words, three out of the top five recipients were the same for Chinese and for World Bank loans, which suggests that their lending criteria may not be very different.

Efforts to better understand how much the Chinese are lending, and how Chinese loan finance works, are important for policy-makers and academics. From questions of debt sustainability to a clear-eyed understanding of the geopolitics of power, getting the numbers right matters for our understanding of how China is going global, the risks and opportunities this poses for African countries, and the ways in which Africa's other partners like the United States ought best to respond.

3. Chinese Financiers in Africa

The vast majority of loan finance from China to Africa originates with China's official export credit agency, China Export-Import Bank (Eximbank), although China Development Bank and state-owned commercial banks are playing an increasingly visible role. In addition, the Ministry of Commerce provides a modest amount of zero-interest foreign aid loans, grants, and in-kind aid, while Sinosure offers insurance against risks.[12] Large Chinese companies also offer significant amounts of supplier credits directly to African borrowers. More information about these financiers can be found in Appendix 1.

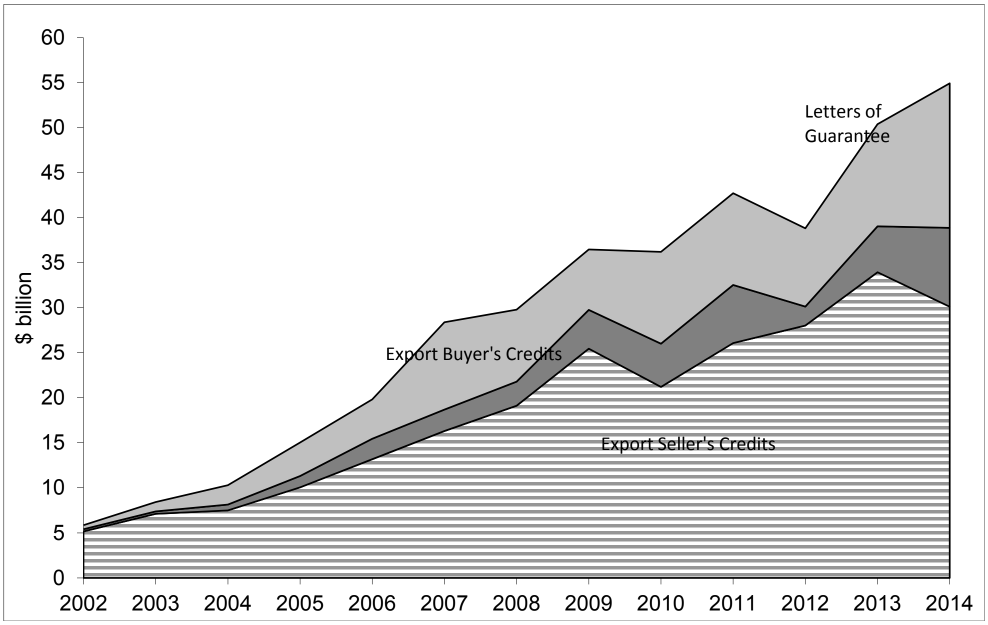
1. **China's Ministry of Commerce** houses the Department of Foreign Aid, which oversees projects financed through zero-interest loans (and grants) and signs off on China Eximbank's concessional loans.

2. **China Export-Import Bank (Eximbank)** was established in 1994 to serve as China's export credit agency. The bank provides four broad kinds of finance (Figure 1): letters of guarantee for Chinese companies (usually for short-term trade finance); export seller's credits (to finance Chinese companies' overseas contracts, exports, and investments); export buyer's credits (generally for foreign governments to purchase Chinese goods and services); and concessional foreign aid loans. In Africa, China Eximbank and the China Foreign Exchange Reserve had jointly established the US$10 billion China-Africa Industrial Cooperation Capacity Fund Company Lt., an equity investment fund registered in Beijing in January 2016.[13]

3. **China Development Bank (CDB)** has been operating in Africa since at least 2005, providing commercial loans for investments by Chinese and African firms and lending to African governments at commercial rates. CDB also oversees the China Africa Development Fund (CAD-Fund), an equity investment arm which the Chinese government has committed to increase to US$10 billion over an unspecified period. CDB manages China's Small and Medium Enterprise (SME) loan program in Africa. These loans are disbursed to African banks, who use them to finance African firms. This fund has exceeded its 2012 pledge of US$1 billion and the Chinese pledged in December 2015 to increase funding by another US$5 billion.[14]

4. **Commercial Banks.** Several of China's state-owned commercial banks are also active in Africa. The Bank of China set up its first office in Africa in 1997; China Construction Bank has operated in Africa since 2000. Both banks primarily offer trade finance and guarantees for construction tenders, but China's largest commercial bank, Industrial and Commercial Bank of China (ICBC), began to finance projects in Africa in 2009, and opened a branch in South Africa in 2011.

Figure 1: China Eximbank global lending (annual globe disbursements, 2002-2014)



Note: It is not clear whether concessional loans are included in these figures.

Source: China Eximbank Annual Reports, various years, converted to US$ using annual exchange rates.

5. **Sinosure** is China's export credit insurance company. Established in 2001, it does not itself provide loans, but offers insurance on loans and export credits. Although Sinosure publishes no information about its premiums, anecdotal information suggests a wide range of annual premiums. For example, the commercial loan portion of a package for Kenya's Standard Gauge Railway was reported to carry an insurance premium of 6.93 percent.[15]

4. CARI Methodology: Forensic Internet Sleuthing

The Chinese are not very transparent about their flows of overseas loans. China is not a member of the OECD and thus they do not participate in the OECD's Creditor Reporting System, which is the source for much of the data we have on official flows from the wealthy countries. While Chinese policy bank officials do release data from time to time on their African loan commitments, this is not systematic.[16] As is the case with the United States Export Import Bank and other export credit agencies, Chinese banks also rarely publish information regarding financing agreements for particular projects. It is also uncommon for the recipients of such financing to fully disclose the details of the finance they receive. Despite this, there is considerable official and semi-official information available.

Our loan database builds on previous work by Brautigam tracking Chinese aid finance.[17] All data collection and cleaning was done by master's or Ph.D. students, working closely with and under the supervision of the project leader. Most team members are native Chinese speakers, and several also have French, Portuguese, and Arabic language skills. They were trained to use a rigorous set of steps in triangulating and cross-checking reports of loans, emphasizing official websites of central banks and ministries of finance, Chinese contractors, and our own personal contacts in China and in African countries. The desk work was supplemented by in-country interviews and meetings with Chinese and African officials. The "forensic internet sleuthing" methods that we employ cannot easily be replicated. The work is more akin to investigative reporting or detective work than accounting. Some sources are more reliable than others. Learning to judge information appropriately takes time and depends deeply on experience, personal contacts, perseverance and inclination.

After collecting initial reports of loans using search strings in Lexis/Nexis, AllAfrica, and Google, all loan reports over US$25 million received extensive scrutiny before being classified as "signed," "[in] implementation," or "complete." For loans over US$25 million, we include loan agreements as signed only where we could confirm official signing by a representative of the Chinese bank or the Chinese government, or an official commitment by a reliable source or official website. We may have over-counted, as we entered loans under US$25 million into the database after only a first level check. In addition, our database currently ends in 2014 and some loans signed that year or in 2013 may not ever be implemented. On the other hand, we may have undercounted as, despite our best efforts, tracking down Chinese finance remains a daunting task, requiring frequent updates.

5. How Much Loan Finance?

Chinese loan finance has increased sharply since the early part of the millennium, but it is not as large as most observers seem to believe. We estimate that between 2000 and 2014, China Eximbank has provided nearly US$59.0 billion in official, medium to long-term finance to African governments and state-owned enterprises. China Development Bank has lent a further US$13.7 billion to official African borrowers and their SOEs, while ICBC has provided at least US$3.3 billion. The Chinese government and other state-owned banks have disbursed at least US$3.5 billion in zero-interest and other loans (this category includes many loans simply marked as "China" by African central banks and ministries of finance in Africa and some modest finance from Bank of China and CITIC). Furthermore, Chinese companies have been actively seeking business through suppliers' credits to African governments and SOEs: at least US$6.7 billion since 2000. While we do not include grants in our database or analysis, Chinese official finance is heavily loan-based in Africa. For example, Chinese official sources have announced that total grants worldwide between 2010 and 2012 amounted to 32.32 billion RMB (US$5.28 billion) and approximately half of this went to Africa (US$2.65 billion, or about US$880 million per year during that period).[18]

Table 1 provides further details.

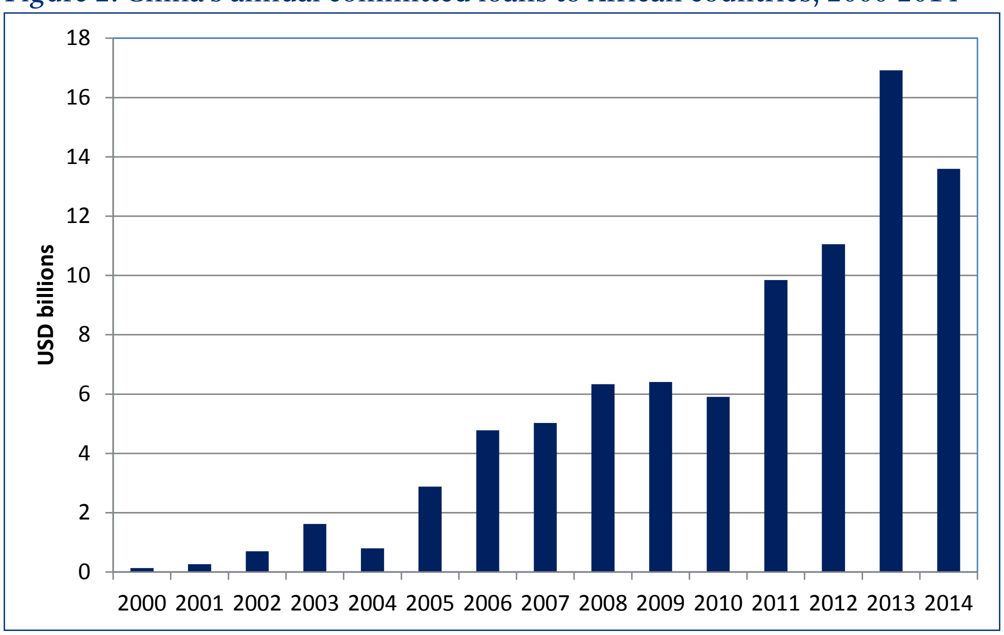
Table 1: Chinese bankers to Africa, 2000-2014*

Lender	US$ billion
China Eximbank	59.0
China Development Bank	13.7
Company Suppliers' Credits	7.7
ICBC	3.3
MOFCOM/Ch. Gov./Other	2.5
TOTAL	86.3

*Includes all loans to governments and their SOEs; includes North Africa. Total may not add up due to rounding.

While we have not tried systematically to track the rise of China's commercial bank lending to commercial clients, these figures do include some data on Industrial and Commercial Bank of China, which is becoming a significant lender to African governments and their SOEs. According to one source, by the end of June 2011, ICBC had co-financed US$8 billion in projects with its partner Standard Bank of South Africa.[19] Four years later, by the end of 2015, ICBC's commitments to co-financed construction and investment finance deals with Standard Bank were reported to have risen to 70 projects worth US$20 billion.[20]

Figure 2: China's annual committed loans to African countries, 2000-2014



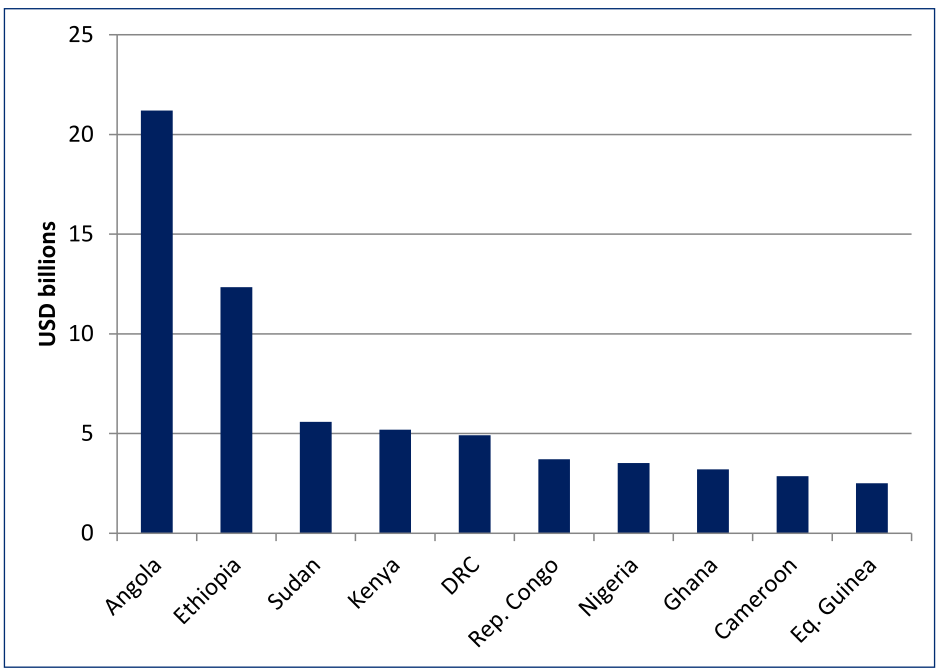
6. Where do Chinese Loans go?

Chinese official loans have reached governments in 45 of the 54 countries in Africa. Not surprisingly, we see no official loans going to countries that do not recognize the People's Republic of China (PRC) (Burkina Faso, Swaziland, and, until recently, The Gambia and São Tomé and Príncipe). But we were also unable to confirm any government-to-government (including SOE) loans in this period (up to the end of 2014) to Libya, Liberia, Guinea-Bissau, Somalia or South Africa.

Angola is by far the largest recipient of all Chinese loans, with US$21.2 billion in cumulative loans over the 15-year period. This is followed by Ethiopia at US$12.3 billion, Sudan at US$5.6 billion, Kenya at US$5.2 billion, and the DRC at US$4.9 billion. These top five countries constitute more than 50 percent of all Chinese official loans to Africa (Figure 3).

Why have Chinese banks provided loans to these specific countries? We do not see a particular political angle on the choice of these countries. Sudan could be seen as a "client" country, but that is not the case for Angola, Ethiopia, Ghana, or the DRC. Zimbabwe has also been viewed as a "client" of China's, but Zimbabwe was not even among the top ten recipients of Chinese loan finance between 2000 and 2014.

Figure 3: Top 10 loan recipients, 2000-2014



7. What Do Chinese Loans Finance?

Transportation constitutes the largest sector financed by Chinese loans, US$24.2 billion. Energy (mainly power) is the second largest sector at US$17.6 billion, followed by mining/oil at US$9.0 billion, and communication projects at US$6.5 billion. The bulk of the rest are large lines of credit that fund projects in several sectors, or loans that have been signed, but the purpose is either undecided or unpublished.

- Of the US$24.2 billion loans for transportation, road construction and maintenance constitutes US$9.6 billion, and railways comprised US$9.5 billion.
- Energy/power is the second largest sector at US$17.6 billion, with hydroelectric projects, power transmission and distribution lines, gas pipelines, gas-power plants, and coal-power plants constituting the top five categories. Hydropower projects alone constitute US$8 billion.
- More than 83 percent of the mining sector loans went to Angola's state-owned oil company, Sonangol, with two gold mines in Côte d'Ivoire and Eritrea, a uranium mine in Niger, a copper mine investment in DRC, and a geo-chemical mapping project in Morocco making up the rest.

Figure 4: Sectors receiving Chinese loans, 2000-2014

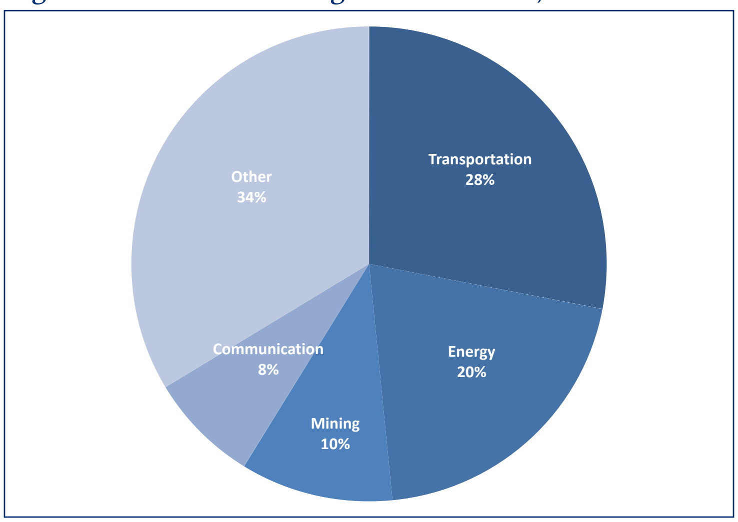


Figure 5: Energy sector breakdown

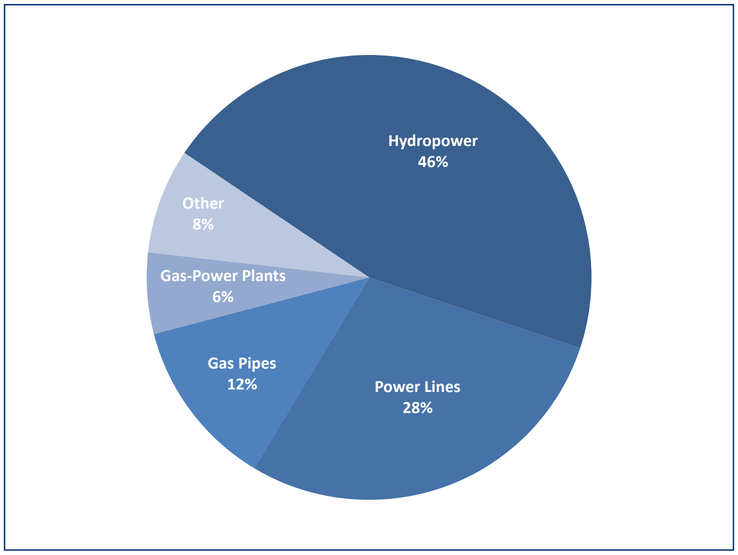
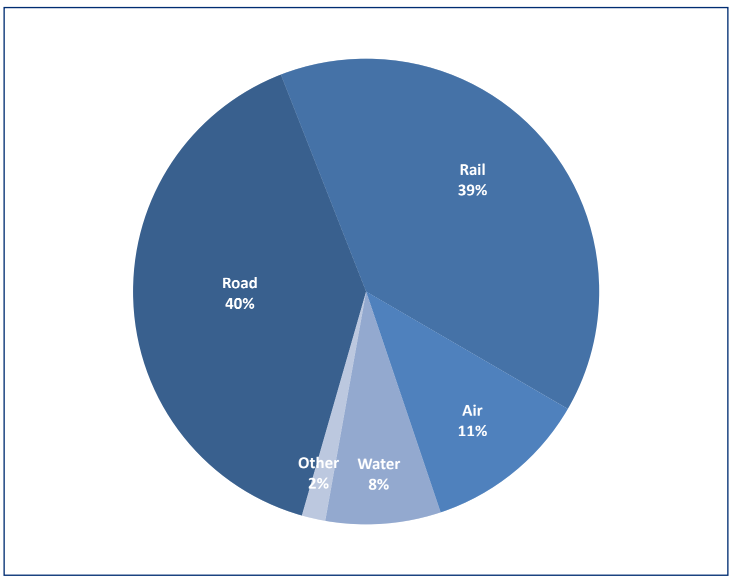


Figure 6: Transport sector breakdown



8. Other Efforts to Estimate Chinese Development Finance in Africa

While our project is the first effort to estimate Chinese loans in Africa from the bottom up, others have attempted to estimate "Chinese aid" and development finance in Africa. One approach is to collect media reports and aggregate them into a database. A study by the Rand Corporation used media reports and an expansive definition of "aid" (all Chinese government-related flows, including foreign direct investment) to estimate that "between 2001 and 2011, 49 countries in Africa received approximately US$175 billion."[21] Researchers at the College of William and Mary (AidData) used a "media-based data collection" (MBDC) methodology to estimate that China had provided US$75 billion in various kinds of official development finance to 50 countries from 2000 to 2011.[22] As noted above, the Fitch Ratings agency estimated that just one Chinese bank, China Eximbank, had loaned "about US$67.2 billion" to sub-Saharan Africa between 2001 and 2010.

The difference among these various projects is obviously stark. They reflect different definitions, and different methods and degrees of rigor in collecting, cleaning, and checking the raw data. AidData is the most transparent in their methodology and their organization has made progress in delivering cleaner data since the version 1.0 dataset published in 2013. That year, the paper accompanying the release of their version 1.0 dataset included 19 bilateral "megadeals" worth a total of US$36.8 billion.[23] All of these were said to be either completed, under implementation, or signed commitments. In checking the status of these "megadeals," we could only confirm that half of them were actually realized as of 2014, and for others, the actual size was considerably different from that listed in the database (Table 2). Furthermore, as Lowy Institute researcher Philippa Brant has pointed out, in version 1.0, which has been used by many other scholars, "47 percent of their project records rely on a single source," often a media report.[24]

Table 2: AidData Version 1.0 Chinese "Megadeals" 2000-2011 vs. CARI database

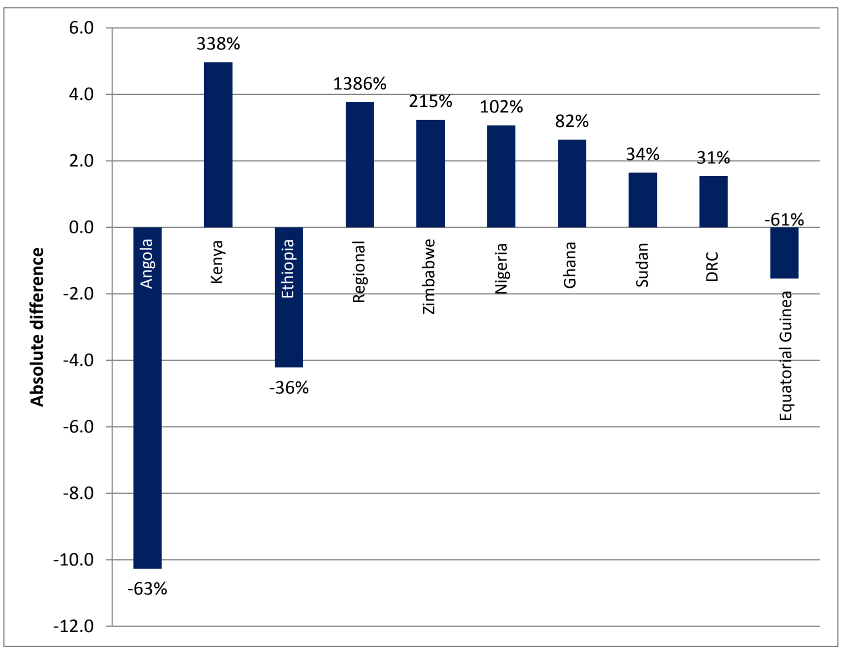
Country	Year	Project	Commitment Amount (US$ mn)	
			AidData	CARI
Sudan	2003	Merowe hydropower	836	608
Cameroon	2003	Membe'ele hydropower	674	541
Angola	2004	Infrastructure	1,507	2,000
Eq. Guinea	2006	$2bn loan	2,692	2,000
Nigeria	2006	Abuja Light Rail	673	500
Sudan	2007	Khartoum-Port Sudan Railway	1,377	1,098
Angola	2009	Infrastructure	1,200	2,000
Ghana	2009	Oil project, road project, etc.	3,000	1000 (reduced amount)
Ethiopia	2009	"Dams"	2,249	810 (reduced amount)
Cameroon	2009	Water distribution	775	121 (reduced amount)
Zimbabwe	2004	Kariba hydropower	1,010	0 (no finance)
Nigeria	2006	Infrastructure	5,383	0 (no finance)
Mauritania	2006	Oil exploration, sewage system, etc.	4,037	0 (no finance)
Madagascar	2008	Hydropower	1,421	0 (no finance)
Mauritius	2009	Ring Road etc.	782	0 (no finance)
Mozambique	2009	Agriculture center	700	0 (no finance)
Ghana	2010	$6bn loan	5,485	0 (no finance)
Zambia	2010	Kafue Gorge hydropower	930	0 (no finance)
South Africa	2011	Financial Cooperation	2,072	0 (no finance)
		AidData	36,803	10,678

Despite these obvious limitations, researchers are still using version 1.0. For example, two scholars published the results of an analysis of the relationship between Chinese "aid" and conflict, using version 1.0, in the Washington Post in December 2015.[25] Their paper purported to find that "as a nation receives more Chinese aid, its military increases its violence against civilians (including bombing them)."[26] Perhaps this is the case, but it seems highly problematic to test this hypothesis using such flawed data.

Furthermore, this kind of analysis is likely to continue. The most recent AidData dataset of Chinese development finance (version 1.2) released in 2015, includes over $30 billion in "pipeline: pledge" projects that were picked up from media stories despite the fact that, according to the researchers, there is "no concrete evidence" that these have ever resulted in a firm commitment or a signed grant or loan.[27] AidData includes these projects in the databases that they release to the public and to other researchers, despite warning that they do not use these "pledge" numbers in their own publications or analyses. Despite these warnings, researchers often knowingly use these faulty data in the interest of achieving statistical significance.

When "pipeline: pledge" projects are not included and we remove categories that we could identify as grants, AidData's version 1.2 database provides a figure (in current US$) that is similar to ours over the 2000-2013 period: US$80.1 billion (AidData) versus US$73.6 billion (CARI). However, the distribution is significantly different. In 25 of the 44 African countries receiving Chinese loans, or 57 percent of the time, Aid-Data's aggregate Chinese loan figures are larger than CARI's. In other cases, our loan figures are larger (Figure 6). For example, in Angola alone, CARI recorded an additional US$10.3 billion in Chinese loans over the amount AidData reported.

Figure 7: Top 10 discrepancies between CARI and AidData



In Angola, CARI was able to identify a number of Chinese policy bank loans that did not show up in AidData's database. We also identified more loans in Ethiopia (through fieldwork),Niger, and Equatorial Guinea. On the other hand, our analysis suggests that AidData may have over-counted by an average of about US$3 billion in each of these cases: Kenya, Zimbabwe, Nigeria, Ghana, and Sudan.

The reason for this is likely to be the continued reliance on media sources, some of which report deals that have not actually been finalized (and may never be). Fifty-four percent of the sources in AidData's most updated version 1.2 are media sources.[28] As we will discuss below, Chinese companies (and African governments) need to have a signed contract in hand before they can apply for finance from Chinese policy banks. Furthermore, companies, banks, and governments frequently sign memorandums of understanding as they launch discussions, and companies often confidently claim to be able to arrange financing. We are reluctant to assume that a memorandum of understanding, or even a project contract, with an announced intention to secure Chinese finance, is the same as a commitment. As Remi Bello, founder and CEO of B&M Consulting, a political-risk consultancy focused on Africa, has noted, "only 2% to 4% of MOUs [memos of understanding] lead to projects in Africa."[29]

9. Commodity-Secured Loan Finance in Africa's Risky Environments

In this section, we explain how Chinese banks have pursued a model of commodity-secured and off-take-secured loan finance in Africa, allowing them to increase the funds available for infrastructure investment, while, in most cases, tying these loans to Chinese goods and construction services. We estimate that at least a third of the value of Chinese loans to African governments and SOEs committed and disbursed between 2000 and 2014 were secured in this way, to individual projects (Table 3) and in large lines of credit that can be drawn on to finance a number of projects (Table 4).[30]

The model is used most often in high-risk countries, often those that (like China in 1978) are emerging from a period of crisis, even war, with enormous and urgent rebuilding needs, and little cash or credit-worthiness, but with assets that the Chinese banks believe will allow them to securely reduce the risks of default and take on more debt than conventional models would allow.

China and Japan: Past Models

One of the central dilemmas for poor countries that want to build power plants, ports, and railways is: how do they finance them? In the 1970s, as China emerged from the decade of political struggle we know as the Cultural Revolution, Chinese leaders were well aware that they needed modern technologies and that they would need to increase the export of their natural resources in order to pay for these imports. China's reform leader Deng Xiaoping, already deeply involved in negotiations with Japan, suggested in 1975:

> In order to hasten the exploration of our coal and petroleum, it is possible that on the condition of equality and mutual benefit, and in accordance with accepted practices of international trade such as deferred and installment payments, we may sign long-term contracts with foreign countries and fix several production sites where they will supply complete sets of modern equipment required by us, and we will pay for them with the coal and oil we produce."[31]

In 1977, Japanese firms negotiated a preliminary agreement to export high technology equipment for coal and oil extraction to China, with repayment in oil and coal.[32] But in 1978, an even larger deal was signed. The Japanese government offered a line of export credit at market rates to finance the export of US$10 billion of Japan's modern complete plant or turn-key projects, and China agreed to pay by exporting US$10 billion in crude oil and coal to Japan.[33] The model of projects financed by a line of credit with deferred repayment in resources helped China move forward on its modernization program.

Repayment of loans using commodities or products ("compensatory trade" or buchang maoyi 补偿贸易) became a common practice in China at the start of the reform period post-1978, where foreign firms accepted payments in coal, oil, and even pajamas in return for providing equipment, management, technology and technical expertise..[34]

China's Secured Finance in Africa

We see evidence of a parallel practice in China's zero-interest foreign aid loans to Africa in past decades: the Chinese commonly allowed borrowing governments to repay these RMB loans in export commodities.[35] This barter-like arrangement freed both China and the host government from the higher transaction costs of having to do multiple conversions into dollars. Tanzania exported cashew nuts to pay for spare parts; Sierra Leone exported coffee and cocoa. In 1993, as one researcher reported, China was "willing to supply development goods and services in return for local products…cotton from Egypt, rubber from Sri Lanka, coffee from Ghana, copper from Zambia."[36]

In the late 1990s and early in the millennium, Chinese companies moving into Africa also made use of this financing form, offering suppliers' credits to the Republic of the Congo (oil to repay the costs of the Imboulou hydropower project), Zimbabwe (tobacco exports for rural electrification) and in Nigeria (oil to secure repayment for two power plants) (Table 3).

The practice expanded sharply in 2003-2004, when China Eximbank agreed to provide a large, US$2 billion oil-backed line of credit in Angola, which would be used to finance infrastructure. The deferred repayment in resource exports allows African governments like Angola to invest in infrastructure, securing loans with current or future revenues from exports or services. Chinese banks have used these arrangements in Africa to secure individual project loans and larger lines of credit. The credits are called different names. We have seen them referred to as "hu hui dai kuan" (mutual benefit loan,互惠贷款[37]) and "shiyou, xindai, gongcheng yi lanzi hezuo xiangmu" (cooperation package of oil, credit, and engineering projects, 石油, 信贷 工程 一揽子 合作项目[38]).

Our database identifies at least US$28.8 billion, one-third of the total loan finance, as secured by export commodities. For example, almost all of the Eximbank and CDB loans going to Angola are oil-backed and at commercial rates (LIBOR plus a margin). Since 2004, the Angolan government's four oil-secured lines of credit from China Eximbank have paid for at least 127 public works projects, while it appears that an oil-backed credit from ICBC to the state-owned firm Sonangol financed the construction of a new city, Kilamba Kaixi.

- We identified oil-secured lines of credit in Angola, Congo-Brazzaville, Equatorial Guinea, Ghana, Niger and Sudan.

- Chad negotiated an oil-secured line of credit but later cancelled it. Ghana one used a third of the oil-secured US$3 billion facility it signed with China Development Bank.
- Although the majority of commodity secured finance relies on oil, we also have cases where investments in copper (DRC) or iron ore (Gabon) were planned as the means of repaying large loans (the Gabon iron ore project did not go forward).
- Ghana's commercial loan for the Bui Dam was secured by the sale of cocoa beans.
- Ethiopia secured a US$500 million line of credit with general exports, mainly sesame seeds.

However, it is not only export commodities that are used to secure loans:

- Kenya is securing its railway loan through an escrow account into which it will deposit revenues from rail traffic.
- Many countries, like Ghana, have secured electric power plant loans with future electricity revenues.

The point of securities like these is not for the lender (or a Chinese company) to acquire ownership of an oil well, cocoa farm, railway system, or electrical grid, but to reduce the lender's risks in a country without a good credit rating, or where projects lack sovereign guarantees (or where sovereign guarantees are not very meaningful). For example, Angola is the largest borrower of Chinese oil-secured loans, and China imports 49 percent of Angola's oil, partly in repayment for those loans. Yet Chinese oil companies own only a little more than 10 percent of the oil being produced in Angola; Western companies like ExxonMobil and Total dominate Angolan oil investments dating back decades.[39] An escrow account filled by commodity exports or an off-take of electricity sales increases security and lowers risk. This allows projects to be financed at a reasonable interest rate.

Terms of the Commodity-backed Loans

In other research, we have reported on the terms of the various commodity-backed loans and lines of credit.[40] Nearly all are at non-concessional rates based on the London Inter-bank Offered Rate (LIBOR) plus a margin. In Angola, the interest rate on Chinese loans are similar to those that Angola has signed with Western bank consortia, except the repayment period is generally longer. The lowest interest rates charged by China Eximbank—LIBOR plus 125 basis points (bps)—were higher than the best rates Angola has secured from Western bank consortia—LIBOR plus 100 bps.[41] African loans tend to have lower interest rates and more generous repayment periods than those Chinese banks provide to Latin America.

In all cases, loan finance from Chinese policy banks is tied preferentially to goods and services from China, although we saw no examples of agreements that specified the use of Chinese workers. Ghana's contract with CDB required that Chinese contractors obtain at least 60 percent of the business, while Angola's have required that 70 percent go preferentially to Chinese firms. Zimbabwe and China Eximbank signed a project loan to build the National

Defense College, secured by profits from a joint venture diamond mine. The contract specified more vaguely that: "The goods, technologies and services purchased by using the proceeds of Facility [sic] shall be purchased from China preferentially and also from Zimbabwe where this will benefit the Project and End User."[42]

Table 3: Chinese resource-backed loans for projects or SOEs in Africa, 2000-2014

Status	Year	Recipient	Financier	Actual implemented amount (US$ mn)	Purpose	Resource-backed
Completed	2010	Angola	ICBC	2500	Resource-backed structured financing (Kilamba Kiaxi New Town)	oil backed
Implementation	2011	Angola	CDB	2000	Sonangol development	oil backed
Implementation	2012	Angola	CDB	1000	Sonangol development	oil backed
Implementation	2013	Angola	CDB	2500	Sonangol development	oil backed
Signed	2014	Angola	CDB	2000	Sonangol development	oil backed
Implementation	2008	DRC	Eximbank	1300	Mining Project disbursed amount as of END OF 2014	profits from copper
Completed	2008	Gabon	Eximbank	300	Grand Poubara Hydropower Project	iron-ore backed*
Completed	2007	Ghana	Eximbank	292	Bui Hydropower Project (CommL part)	38000 ton Cocoa/ year & electricity offtake
Completed	2002	Nigeria	CMEC	115	Omotosho Gas Power Plant in Ondo State	oil-backed
Completed	2006	Nigeria	Eximbank	200	NICOMSAT satellite	oil-backed

Completed	2003	ROC	CMEC	238	Imboulou Hydropower Station, new, 120MW	oil-backed
Completed	2001	Sudan	Harbin Power Equipment Company	128	El-Jaili (Garri) Gas Power Station Phase I 212MW	oil backed
Implementation	2009	Sudan	Eximbank	119	Al Rank - Malakal Road (Peace Road)	oil backed
Completed	2009	Sudan	Eximbank	86	Aum Kadada - Alfashir Road (Salvation Road/ Aum-Fa Road)	oil backed
Implementation	2009	Sudan	Eximbank	680	Al Fulah Gas-Power Plant	oil backed
Implementation	2009	Sudan	Eximbank	100	Al Dibabat - Abou Zayd - El Fula Road (Dubeibat - Abu Zabad - El Fula Road)	oil backed
Completed	2009	Sudan	Eximbank	120	El Nahood - Aum Kadada Road (En Nahud - Um Kadada Road)	oil backed
Inactive	2010	Sudan	Eximbank	118	Social housing in Khartoum and other area	oil backed
Implementation	2010	Sudan	Eximbank	233	South Kordofan Transmission Lines (Al Fulah Thermal Plant's Tranmission Line?)	oil backed
Inactive	2010	Sudan	Eximbank	30	Agricultural improvement/ electricification in Blue Nile	oil backed
Signed	2010	Sudan	Eximbank	24	Dali water project	oil backed
Completed	2010	Sudan	Eximbank	66	Sennar Bridge	oil backed

Implementation	2004	Zimbabwe	Catic China	110	Purchase of Rural Electrification Agency Equipment	Tobacco
Completed	2006	Zimbabwe	Eximbank	200	Agricultural equipment, pesticides, fertilizer, etc.	Secured with platinum deposits
Completed	2011	Zimbabwe	Eximbank	105	National Defense College	diamond (Zim side of Anjin JV income in an escrow account)
TOTAL				14,564		
*proposed, but canceled						

Table 4: Chinese resource-backed lines of credit to African governments, 2000-2014

Status	Year	Recipient	Financier	**Actual implemented amount (US$ mn)**	Purpose	Resource backed
Completed	2004	Angola	Eximbank	2,000	Multisector Infrastructure	10000 bpd oil
Completed	2007	Angola	Eximbank	2,000*	Multisector Infrastructure	oil-backed
Completed	2007	Angola	Eximbank	500	Multisector Infrastructure	oil-backed
Implementation	2009	Angola	Eximbank	2,000	Multisector Infrastructure	oil-backed
Finance Canceled	2012	Chad	Eximbank	2,000*	Multisector Infrastructure	oil-backed
Implementation	2008	DRC	Eximbank	3,000*	Multisector Infrastructure	copper profits
Implementation	2005	Eq. Guinea	Eximbank	2,000*	Multisector Infrastructure	oil-backed
Completed	2006	ROC	Eximbank	2,000*	Multisector Infrastructure	oil-backed
Implementation	2012	ROC	Eximbank	1,000*	Multisector Infrastructure	oil-backed

Completed	2007	Sudan	Eximbank	3,000*	Multisector Infrastructure	oil-backed
Completed	2011	Ghana	CDB	3,000*	Multisector Infrastructure	oil-backed
Signed	2013	Niger	Eximbank	1,000*	Unknown	oil-backed
TOTAL				23,500		

* Note that not all of these have been committed or disbursed and some are no longer active. This sum is not reflected in our database, which includes only lines of credit that were still active in 2014, and commitments and disbursements of sub-loans from previous lines of credit.

10. Will Chinese Loans Create a New Debt Crisis?

A decade ago, observers worried that Chinese loans would create a new debt crisis. This has not happened, at least not yet. As of 2014, for most government borrowers, debt levels were still moderate, although there were exceptions such as Angola and Ethiopia. With the downturn in commodity prices, some countries that borrowed heavily from China have turned to the IMF (Angola and Ghana, for example). Others have suspended, failed to draw down, or canceled their credit lines from Chinese banks (Niger, Ghana, and Chad).

With these signs of reluctance, we believe that it may be difficult for the FOCAC pledge of US$35 billion in new loans over the next three years to reach borrowers who are willing—and able—to provide the kind of risk guarantees demanded by China Eximbank and China Development Bank for their commercial rate loans.

At the same time, history suggests that although the Chinese government has offered several rounds of debt cancellation for its zero-interest foreign aid loans, a relatively minor part of its loan portfolio, this has not been the case for the policy bank loans. Zimbabwe has often been thought to be a "client" of China's, but as a local commentator remarked:

> Despite the Government noise about "mega-deals" with China, the Look East policy hasn't produced much fruit in the last 15 years. China is also one of Zimbabwe's many creditors which expects its loans to be repaid. Last year, [Patrick] Chinamasa [Zimbabwe's Minister of Finance since 2013] confessed that he had had to make a token payment to the Chinese on loans that Zimbabwe owes. This was out of embarrassment as his boss, President Mugabe, was going to China on a state visit. Truth is, as long as we are delinquent debtors, no lender, not even China, will pay us any serious attention."[43]

While Chinese banks may reschedule loans or renegotiate interest rates and fees, they do expect the loans to be repaid. As a Chinese official with experience in both China Eximbank and CDB told one of the authors, "Cancellation is not possible, even for concessional loans."[44]

11. Conclusion

In the introduction we asked five questions about Chinese loan finance: What is the scale of Chinese loan finance in Africa? What are the drivers for these loans, where do they go, what do they finance, and will they be repaid? Chinese loan finance is large and growing, but it is not as large as many observers believe. The drivers for these loans appear to be business: even in oil-rich Angola, China's loans have not led to much equity oil for Chinese petroleum firms. Instead, they have generated ample amounts of construction business for Chinese builders. It is worth emphasizing that fully two-thirds of the loans we have identified do not have any natural resource-guarantees.

While much has been written about Chinese bank finance in Africa, we believe that observers have operated without the kind of systematic data that is now available. Obviously, official data published by the Chinese government would be preferable to the painstaking collection and cross-checking that we have done, but at present, our database is a unique resource. Every loan and line of credit above US$25 million has been carefully checked across multiple sources, mostly official, backed by interviews and field research. Furthermore, when we were able to identify the value of projects funded by a line of credit, we used that instead of the value of the line of credit. This enabled us to paint a more accurate picture of the sectors where African governments are allocating their Chinese funds. Chinese banks and companies are offering finance that allows them to secure a greater share of the business deals in Africa as part of their move to "go global." This brings with it risks for African borrowers—but also opportunities.

Appendix 1: Chinese Financiers: Actors and Modalities

The vast majority of finance from China to Africa originates with the Chinese government's policy banks, although state-owned commercial banks play an increasingly visible role. The Chinese government's primary instruments for loan finance are two of the three Chinese policy banks: China Export Import Bank (China Eximbank) and China Development Bank (CDB). In addition, the Ministry of Commerce provides a modest amount of zero-interest foreign aid loans, grants, and other official aid. This section presents the primary actors in China's overseas finance, outlines the various models of finance, and provides a brief history.

1. China's Ministry of Commerce houses the Department of Foreign Aid, which oversees projects financed through zero-interest loans and grants and signs off on China Eximbank's concessional loans. The first two categories of funds are relatively modest. The Chinese State Council's White Paper on Chinese foreign aid revealed that as of the end of 2012, i.e. over five decades, the Chinese had committed 138.52 billion yuan (US$22 billion) in grants, and 83.8 billion yuan (US$13.3 billion) in interest free loans since 1960, worldwide.[45] These figures represent the accumulation of nominal amounts that were not adjusted to a common year. Approximately half of China's official foreign aid has been directed to Africa in recent years.

2. China Eximbank was established in 1994 to serve as China's export credit agency. The bank provides four broad kinds of finance:

    a) **Letters of guarantee.** These offer a written, standby guarantee for payment on commitments undertaken by Chinese companies (usually exporters) to reduce the risks of operating overseas, particularly in new or uncertain markets. These letters of guarantee are usually used in conjunction with short-term trade finance. These are not reflected in our database.

    b) **Export seller's credits.** These credits make up the bulk of China Eximbank's business. They allow exporters to finance their sales of products such as ships, or mechanical or electrical products. Companies can also receive these credits to support their overseas construction contracts and investment projects. Export seller's credits began in 1998. As Figure 1 illustrates, between 2002 and 2014, Eximbank had disbursed approximately US$240 billion in export seller's credits (these figures are nominal, that is, they are not adjusted to a common year). Backed by these credits, Chinese companies can offer supplier's credits to governments to promote the purchase of their products and services. Export seller's credits are usually shorter term lines of credit, and have been at rates averaging 4.58 percent, with 11 year term and a 3 year grace period.

    c) **Export Buyer's Credits.** Export buyer's credits are government-to-government loans and allow the Chinese Eximbank to finance projects undertaken by Chinese companies for foreign governments. In all cases, they need either a sovereign guarantee or a commercial form of security such as an off-take arrangement. As the bank's website states: "The borrower shall provide a repayment guarantee acceptable to the Bank."[46]

Export buyer's credits come in two varieties: commercial and preferential. Commercial export buyer's credits can have either a sovereign or a commercial guarantee, and come with a negotiable interest rate of LIBOR plus a margin, a term of 12 to 15 years, and 2 to 5 years of grace period. When risk is considered high, commercial loans from the China Eximbank require political risk or insurance cover. Usually this is offered by Sinosure, China's official export credit insurance agency. Borrowers using export buyer's credits to finance imports or construction services from China are required to make a down payment of at least 15 percent of the value of the contract (i.e. export buyer's credits can finance no more than 85 percent of the value). Export buyer's credits began on a relatively modest scale in 2000, and made their first appearance in Africa in 2005.[47]

Preferential export buyer's credits are "soft loans" at a preferential rate. They require a sovereign guarantee (usually from the borrower's Ministry of Finance), and have fixed interest rates of 2 to 3 percent, with maturity over 15 to 20 years, including 2 to 5 years of grace period. China's Ministry of Finance subsidizes the difference between the Eximbank's cost of funds and the fixed interest rate. According to the Finance Ministry, policy banks provide financing based on a breakeven rate. The Finance Ministry supports these banks by subsidizing interest rate spreads and offering fiscal discounts.[48] Former China Eximbank President Li Ruogu, explained this major difference between policy banks and commercial banks: "Contrary to profit-oriented commercial banks, the Eximbank operates based on the principle of near-zero-profit or breakeven investments. Commercial banks usually have at least 0.5% higher spreads than Exim Bank."[49] He also commented on Eximbank's loans to Africa: "for some African countries, China Exim Bank provides loans based on the breakeven principle. The interest rates of these loans are LIBOR plus 200 or 300 basis points."[50] However, while this is significantly lower than normal commercial bank level interest rates, it is similar to other resource-secured loans coming from commercial Western banks.

d) **Concessional Foreign Aid Loans.** China Eximbank also manages China's concessional foreign aid loans. These loans operate as government-to-government official development assistance and are provided for projects that generate economic or social benefits, such as infrastructure projects industrial production projects, and imports of essential equipment and machinery, including airport scanners and telecoms equipment. Concessional loans require an inter-governmental Framework Agreement (which sets the interest rate, grace period, and maturity), followed by a loan agreement signed by the borrower and China Eximbank. In 2011, the interest rate on concessional foreign aid loans was between 2 and 3 percent, with a grace period of 5 to 7 years and a 15 to 20 year term.[51] In recent years, some loans have had interest rates as low as 1 percent. For example, the 2009 construction of CTPhone and the national fiber-optic backbone project in Cameroon by Huawei and the Cameroon national company CAMTEL was financed by a US$52 million concessional loan from Eximbank that apparently enjoyed an interest rate of 1 percent.[52]

Until at least 2007, concessional loans were always denominated in Chinese RMB, and required at least 50 percent of the goods and services procured under the loan to come from China.[53] They can finance the full cost of the project or import, i.e. there seemed to be no requirement that the borrowing government provide a down payment. In 2005, a review of China Eximbank by Standard & Poor's stated that concessional foreign aid loans made up only 3 percent of the bank's business.[54] As of the end of 2012, the Chinese government had committed 123.31 billion RMB (US$10.8 billion) in concessional foreign aid loans, world-wide.[55]

3. **China Development Bank.** China's largest policy bank, China Development Bank was also established in 1994, although in recent years it has sharply expanded its commercial lending.[56] Traditionally, CDB operated primarily inside China. CDB began lending for overseas projects around 2003, yet as of late 2007, CDB's loans outside of China were less than 1 percent of its total portfolio.[57] As of March 2007, CDB reported that it had financed 30 projects in Africa, for a total of about US$1 billion.[58] By the end of 2015, the publicly announced figure had increased to US$32 billion in medium and long-term funding commitments.[59] Our figures suggest that between 2007 and 2014, CDB had disbursed nearly US$15.0 billion in loans to governments, banks, and companies (including Chinese companies) in Africa. While there will be a difference between commitments and disbursements, the gap is large and is probably caused by commercial loans to Chinese companies, something our data does not capture. CDB's loans to Africa make up a small part of its portfolio. By the end of September 2015, CDB had an outstanding balance of overseas loans of US$328.2 billion, for projects in more than 100 countries and regions.

   As a policy bank, China Development Bank was tasked with carrying out the Chinese government's programs, including some of its economic cooperation programs overseas. In Africa, for example, CDB is responsible for fulfilling the FOCAC pledges to of US$6 billion of loans for African small and medium enterprises. These loans are on lent through African state or regional banks, and as of the first half of 2015, China Development Bank had committed US$2 billion and disbursed US$1.3 billion in this program.[60]

4. **Commercial Banks.** Aside from the policy banks, other banks are operated mainly on commercial lines. Bank of China first set up an office in Africa in 1997 to support Chinese contractors and trade. It is increasingly involved in consortium finance of large investment and infrastructure projects. China Construction Bank has operated in Africa since 2000, and provides support to Chinese construction companies (bonds for tenders, etc.). It has also increasingly moved into project finance and has taken part in consortium loans to African banks.[61] China's largest commercial bank, Industrial and Commercial Bank of China, began to finance projects in Africa after purchasing 20 percent of South Africa's Standard Bank in 2008, a deal valued at over US$5 billion. ICBC has been particularly active in Angola.

APPENDIX 2: Chinese Loans to African Governments and State-Owned Enterprises, 2000-2014 (USD million)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
Regional	0	0	0	0	0	0	0	0	50	100	0	84	0	39	185	457
Algeria	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	9
Angola	0	0	151	11	263	1043	704	2252	130	1249	2500	3571	1812	2697	4824	21206
Benin	18	16	0	0	0	0	4	0	0	0	31	0	0	154	0	223
Botswana	2	16	0	27	24	22	9	0	3	0	0	0	0	0	0	103
Burkina Faso	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Burundi	0	0	0	0	8	0	0	0	12	0	0	16	0	0	25	60
Cameroon	0	0	0	0	4	0	5	64	24	261	9	566	1522	400	0	2856
Cape Verde	0	0	0	0	0	0	3	0	16	34	17	5	78	0	0	152
CAR	0	0	0	5	2	63	0	4	0	5	0	27	0	0	0	106
Chad	0	0	0	0	0	0	0	456	0	0	0	0	130	0	0	586
Comoros	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	8
ROC	24	4	0	238	0	0	584	0	242	867	0	0	1406	188	158	3711
Cote d'Ivoire	0	1	0	0	0	2	3	30	0	4	0	7	210	516	890	1664
Djibouti	0	12	0	18	0	0	0	0	0	0	0	0	64	814	0	908
DRC	0	0	0	0	0	1	1	34	4448	4	0	367	60	0	0	4916
Egypt	0	0	24	0	30	16	71	0	0	0	0	0	200	0	0	342
Equatorial Guinea	0	11	6	6	0	1022	257	721	0	132	0	0	346	0	0	2502
Eritrea	10	0	0	0	0	0	21	106	0	0	6	100	62	0	100	405
Ethiopia	0	1	0	0	0	0	1900	207	0	619	265	1961	78	6533	774	12337
Gabon	0	0	7	0	6	3	0	0	309	0	0	155	0	0	129	609
The Gambia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ghana	26	0	0	26	22	0	111	636	238	6	0	542	317	1274	0	3198
Guinea	0	0	0	6	4	18	15	0	0	0	0	338	0	0	264	646
Guinea-Bissau	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kenya	0	6	6	0	0	0	45	63	58	365	260	190	441	34	3730	5199
Lesotho	0	0	0	0	0	0	0	0	0	0	0	8	10	0	0	18
Liberia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Libya	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Malawi	0	0	0	0	0	0	0	0	0	90	0	79	70	0	0	239
Mali	18	0	0	0	0	0	0	0	74	0	339	51	32	256	112	881
Madagascar	0	0	0	0	0	20	0	36	0	0	0	0	0	0	0	56
Mauritius	21	5	14	16	2	5	15	0	0	272	0	90	0	0	0	440
Mauritania	0	0	0	0	0	0	8	0	0	294	100	0	0	17	17	435
Morocco	3	13	7	5	0	0	0	0	0	0	0	184	0	0	305	516
Mozambique	0	11	0	0	0	0	0	50	70	117	2	140	1056	410	0	1856
Namibia	0	0	0	0	5	250	9	104	4	0	0	0	181	0	0	552
Niger	0	0	0	0	0	0	4	0	352	0	0	101	49	1102	0	1607
Nigeria	0	0	390	0	0	23	200	0	0	0	400	0	600	1410	500	3522
Rwanda	0	0	0	6	0	2	0	0	0	38	6	20	145	0	8	225
Senegal	0	0	0	0	0	0	47	49	0	61	76	0	46	140	0	419
Seychelles	0	0	0	0	0	0	0	60	0	0	0	0	0	0	0	60

Sierra Leone	0	0	0	0	0	0	17	0	0	0	0	16	15	0	0	47
Somalia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South Africa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sudan	0	128	54	1247	255	355	230	115	188	1516	641	109	48	0	700	5586
South Sudan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	158	158
Swaziland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sao Tome & Principe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tanzania	0	0	5	12	0	0	0	0	78	0	175	80	1179	589	16	2134
Togo	0	0	0	0	37	0	38	0	0	204	29	0	155	0	0	464
Tunisia	3	0	0	0	17	13	6	0	0	0	0	0	0	0	0	39
Uganda	0	40	0	0	0	0	30	0	15	0	15	633	0	0	483	1216
Zambia	0	0	8	0	0	8	68	42	0	169	966	281	328	0	0	1869
Zimbabwe	7	0	16	0	110	12	376	0	21	0	68	132	416	346	222	1727
Annual total	133	264	699	1622	798	2879	4778	5030	6333	6410	5905	9849	11055	16917	13597	86269

All loans from Chinese policy banks and contractors to African governments or African SOEs that are either signed, in implementation or completed, between 2000 and 2014. Financing form are recorded as is when entering Africa. Last updated April 30th, 2016.

Endnotes

1. These figures are in current dollars and include North Africa.
2. Donna Harman, “China Takes up Civic Work in Africa,” *Christian Science Monitor*, June 27, 2007, I-13, quoted in Deborah Brautigam, *The Dragon’s Gift: The Real Story of China in Africa* (Oxford: Oxford University Press, 2011), 177.
3. Herman Warren, “Spanning Africa’s Infrastructure Gap,” T*he Economist Corporate Network*, November 2015, 7. This now wide-spread myth stems from a translation error. The original prediction was that China Eximbank and other Chinese investors would provide up to $100 billion by 2025, or an average of $10 billion per year. See discussion at: Deborah Brautigam, “Will China Provide $1 Trillion in Finance to Africa by 2025? No Way,” China in Africa: The Real Story, July 10, 2015, http://www.chinaafricarealstory.com/2015/07/will-china-provide-1-trillion-in.html; “Statement about Incorrect Report of Hong Kong’s South China Morning Post,” China Eximbank, December 5, 2013, http://www.eximbank.gov.cn/tm/medialist/index_23_23380.html; and Steve Johnson, “China by Far the Largest Investor in African Infrastructure,” *Financial Times*, November 29, 2015, http://www.ft.com/cms/s/3/716545c0-9529-11e5-ac15-0f7f7945adba.html#axzz3t5g7xJdA.
4. Mike Cohen, “China Exim Bank Lends More to Africa Than World Bank, Fitch Says,” *Bloomberg Business*, December 28, 2011, http://www.bloomberg.com/news/articles/2011-12-28/china-exim-loans-to-sub-sahara-africa-exceed-world-bank-funds-fitch-says.
5. The original figure announced in 2011 was 18.96 billion Chinese yuan of debt cancellation At 6.8 yuan to the dollar, this becomes just under $3 billion. Information Office of the State Council of PRC, “Full Text: China’s Foreign Aid,” Xinhua News, April 21, 2011, http://news.xinhuanet.com/english2010/china/2011-04/21/c_13839683.htm.
6. Mike Cohen, “China Exim Bank Lends More to Africa Than World Bank, Fitch Says,” 2011.
7. While most of our figures include North Africa, in this comparison we only include Chinese loans to Sub-Saharan Africa, in keeping with the World Bank’s practice. We have kept loans in current values in these aggregate figures.
8. “The Accelerating Growth in Africa,” the World Bank, accessed on June 11, 2016, http://www.worldbank.org/ida/africa/.
9. Vivien Foster, William Butterfield, Chuan Chen and Nataliya Pushaket, “Building Bridges; China’s Growing Role as Infrastructure Financier in Africa,” (Washington, DC: World Bank), 84.
10. See, for example, Johanna Jansson, “BRIEFING: The Sicomines agreement revisited: prudent Chinese banks and risk-taking Chinese companies,” *Review of African Political Economy* 40, no. 135 (2013): 152-162.
11. World Bank figures are, like the Chinese figures, nominal figures aggregated, 2000 to 2014. “IBRD and IDA Summary,” The World Bank Group Finances, June 30, 2015, https://

finances.worldbank.org/organization.

12. Appendix 1 provides further detail on these actors and modalities. For more detail, see Deborah Brautigam, *The Dragon's Gift*, 2011; Deborah Brautigam, "Chinese Development Aid in Africa: What, Where, Why, and How Much?" in *Rising China: Global Challenges and Opportunities*, eds. Jane Golley and Ligang Song, (Canberra: Australia National University Press, 2011), 203-223.

13. China Eximbank, "China-Africa Industrial Cooperation Capacity Fund Recruitment Notice," April 20, 2016, http://www.eximbank.gov.cn/tm/medialist/index_25_28924.html

14. Janet Eom, Jyhjong Hwang, Ying Xia, and Deborah Brautigam, "Looking Back and Moving Forward: An Analysis of China-Africa Economic Trends and the Outcomes of the 2015 Forum on China-Africa Cooperation," CARI Policy Brief No. 9, Johns Hopkins University, January 2016.

15. "Kenya Engineer," *The Journal of the Institution of Engineers of Kenya* 35, no. 5 (September-October 2014), https://issuu.com/kenyaengineer/docs/kenya_engineer_sept-oct_2014.

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