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Working Paper

How Zambia and China Co-Created a Debt "Tragedy of the Commons"

Working Paper, No. 2021/51

Provided in Cooperation with:

China Africa Research Initiative (CARI), School of Advanced International Studies (SAIS), Johns Hopkins University

Suggested Citation: Brautigam, Deborah (2021) : How Zambia and China Co-Created a Debt "Tragedy of the Commons", Working Paper, No. 2021/51, China Africa Research Initiative (CARI), School of Advanced International Studies (SAIS), Johns Hopkins University, Washington, DC, <http://www.sais-cari.org/publications-working-papers>

This Version is available at:

<https://hdl.handle.net/10419/248179>

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WORKING
PAPER

NO. 51

SEPT 2021

CHINA★AFRICA

RESEARCH INITIATIVE

How Zambia and China Co-Created a Debt "Tragedy of the Commons"

Deborah Brautigam

NO. 51 | SEPTEMBER 2021:

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TO CITE THIS PAPER:

Deborah Brautigam. 2021. *How Zambia and China Co-Created a Debt “Tragedy of the Commons”*. Working Paper No. 2021/51. China Africa Research Initiative, School of Advanced International Studies, Johns Hopkins University, Washington, DC. Retrieved from <http://www.sais-cari.org/publications>.

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ACKNOWLEDGEMENTS:

I gratefully acknowledge support from the Carnegie Corporation of New York, which made this research possible, and helpful comments from Miles Larmer, Marja Hinfelaar, Yufan Huang, Anonymous C, Anonymous D, Gregory Smith, Yinxuan Wang, Hong Zhang, and Thomas Callaghy that strengthened the paper. Yinxuan Wang and Kevin Acker provided excellent research assistance.

NOTE:

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Editor: Daniela Solano-Ward

ABSTRACT

**SAIS-CARI WORKING PAPER
NO. 51 | SEPTEMBER 2021:**

“How Zambia and China Co-
Created a Debt 'Tragedy of the
Commons'”

by Deborah Brautigam

Zambia is a clear outlier among African borrowers for its high level of Chinese loan commitments relative to its economy and its outstanding debt. What explains this exceptionalism? This paper uses a principal-agent framework, novel data on Chinese loans, lenders, and contractors, and process-tracing to argue that Zambia is an extreme case of principal-agent problems in Chinese lending. Among all African countries with Chinese loans, Zambia has the second largest number of different Chinese contractors winning Chinese loan-financed projects (after Angola), and the largest number of distinct Chinese lenders. This multiplication of stakeholders has created fierce competition for infrastructure contracts in Zambia. In Beijing, “fragmented authoritarianism” meant an absence of top-down coordination of firms’ and lenders’ activities and thus few restraints. At the same time, Zambia’s political leaders disregarded their own restraints on over-borrowing. Chinese reluctance to impinge on Zambia’s ownership of its policy space created additional disincentives for close Chinese monitoring. Finally, Zambia’s history of frequent debt cancellations from China and other lenders likely exacerbated moral hazard risks.

INTRODUCTION

In November 2020, Zambia became the first African country to default on its Eurobonds during the COVID-19 pandemic. Several months later, Zambia joined Ethiopia and Chad to seek deeper debt restructuring under the newly formed Group of 20-Paris Club Common Framework. Although Zambia's debt problems predated the pandemic by a large margin, the country is an important case for understanding the Chinese role in the rise of debt distress in the new millennium.

Given the many rumors about Chinese "debt traps," it is important to emphasize that Zambia is an outlier when it comes to the weight of Chinese loans. The China Africa Research Initiative (CARI) estimated that Zambia's loan commitments to all Chinese creditors at the end of 2019 was close to 43 percent of 2019's gross national income (GNI).¹ The average for Africa was 10 percent (all data refers to the African continent). Yet as Evan Liebermann reminds us, the close study of puzzling outliers can generate theoretical insights.²

This paper uses a principal-agent framework, novel data on Chinese loan commitments, lenders and contractors, statistical analysis, and process-tracing case study research. I argue that Zambia is an extreme case of two principal-agent problems – the tragedy of the commons, and moral hazard – in Chinese lending. Chinese companies, creditors, and Zambian politicians co-created Zambia's current insolvency.

The tragedy of the commons occurs when individuals have an incentive to overuse a common resource, and there are no effective government or community regulations to restrict this overuse.³ In this analogy, public resources become the commons, while unsustainable debt contracts are the "overfishing." Moral hazard arises in finance when one party to a transaction engages in activities that make it less likely that a loan will be repaid, because of an assumption that it is protected against risk, and the other party will pay for the costs. Frequent bailouts, for example, are said to encourage borrowers to discount the risks of painful defaults.⁴

In Beijing, "fragmented authoritarianism" meant an absence of top-down coordination of firms' and lenders' activities and thus few restraints. At the same time, Zambia's political leaders disregarded their own restraints on over-borrowing. Among all African countries with Chinese loans, Zambia has the second largest number of different Chinese contractors winning Chinese loan-financed projects (after Angola), and the largest number of distinct Chinese lenders. This multiplication of stakeholders has created fierce competition for infrastructure contracts in Zambia. Chinese reluctance to impinge on Zambia's ownership of its policy space created additional disincentives for close Chinese monitoring. Finally, Zambia has had more bailouts by the Paris Club (an informal cartel of official bilateral creditors) and from China than most other African countries. Zambia's history of debt cancellations likely exacerbated moral hazard risks.

The next section provides an overview of Chinese lending in Zambia and in comparative perspective, presents the puzzle, and alternative theories. The following sections provide evidence that Zambia is a case of two significant collective action problems leading to unsustainable debt:

the tragedy of the commons and moral hazard. I identify the multiple actors in Zambia's Chinese-financed borrowing, and some of the political economy of these relationships, showing how the absence of restraints facilitated overborrowing. Case studies of Chinese-financed power projects in the two major sectors, roads and hydropower, illustrate how these processes unfolded. The conclusion relates the issues raised in this analysis to larger questions about China's overseas lending.

THE PUZZLE: CHINESE LENDING IN ZAMBIA

High copper prices at independence in 1964 made Zambia one of the four wealthiest countries in Africa in per capita terms, but the economy was highly dependent on copper. During the 1970s and 1980s, copper prices collapsed. High debt pushed the country into a prolonged decline. Debt write-offs from the Highly Indebted Poor Countries (HIPC) initiative allowed Zambia to shuffle off most of its debt burden in 2005, and to issue its first international bond just seven years later. Zambia continues to remain heavily dependent on mining, which provided 77 percent of export revenues in 2018.⁵

Zambia began borrowing interest-free loans from China's aid program in 1967. Early projects included the iconic 1,860-kilometer (km) Tazara Railway, built between 1970 and 1976, which allowed Zambia's copper exports to exit through Tanzania's port, bypassing apartheid-era South Africa. Aside from Tazara, Chinese lending in Zambia was modest before 2000. Interest-free foreign aid loans funded spare parts and equipment for Tazara, several roads and bridges, and the Zambian state-owned Mulungushi textile mill. With the launch of China's export credit agency in 1994 and the growth of commercial banks, lending grew.

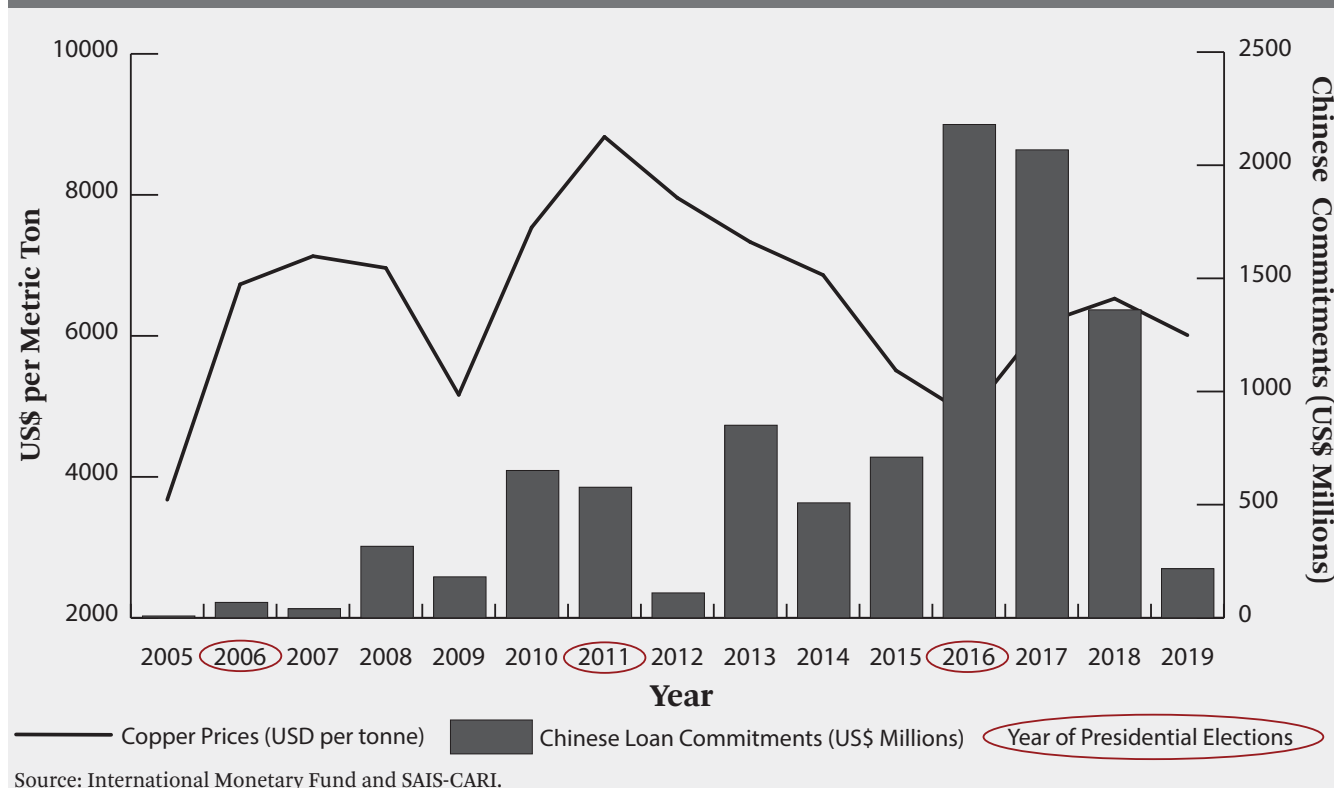
Between 2000 and 2009, Chinese lenders financed only nine infrastructure projects; the average project size was US\$ 56 million. However, between 2010 and 2019, Zambia and its state-owned enterprises (SOE) entered into at least 53 different loan contracts with Chinese funders, totaling US\$ 8.6 billion. The average Chinese project size grew to US\$ 172 million. Furthermore, in 2012, 2014, and 2015, Zambia issued three Eurobonds totaling US\$ 3 billion, with interest rates as high as 8.97 percent.

Under the government of Edgar Lungu (2015-2021), as copper prices were falling, Zambia ratcheted up Chinese borrowing (Figure 1), while clamping down on public disclosure. By September 2017, the International Monetary Fund (IMF) had labeled Zambia at "high risk" of debt distress. In June 2018, Lungu announced that unfinished projects would be suspended, aside from several priority projects, and Zambia would sign no new loans.⁶ Despite this, Chinese lenders committed at least US\$ 1.34 billion in new funding in 2018, half of all the new loans signed by the central government that year, and agreed to fund the construction of army barracks for US\$ 187 million in 2019.⁷

Some of what Zambia committed to borrow has been repaid, some projects suspended, and some has not yet been disbursed. According to an IMF study, by April 2019 the total amount of contracted but undisbursed debt in Zambia had reached US\$ 9.7 billion, around 40 percent of 2018

GDP (not all of this was Chinese).⁸ Between 2019 and 2021, considerable disbursement happened for some major Chinese projects. Analysis of Chinese project status in the CARI data suggests that contracted but undisbursed Chinese debt as of August 2021 amounted to US\$ 1.6 billion, around eight percent of 2020 GDP.⁹ CARI researchers estimate that total Chinese PPG debt by the end of August 2021 came to US\$ 6.6 billion, more than twice the US\$ 3.4 billion in Zambia's official publications.¹⁰

Figure 1: Copper Prices, Chinese Loan Commitments, and Zambian Presidential Elections



Chinese lending in Zambia does not fit the general pattern across Africa. Data from CARI on Chinese loan commitments to African governments show that aside from Angola, Chinese loan commitments peaked in 2013 (Figure 2).

Figure 3 uses CARI data on Chinese loan commitments as a rough measure illustrating which countries have borrowed particularly heavily from Chinese lenders as a percentage of their national income, and relative to their overall indebtedness. The Y axis plots governments' overall public and publicly guaranteed (PPG) debt relative to gross national income (GNI) in 2019. Here, Zambia (ZMB) is relatively high at close to 50 percent. The X axis shows aggregate Chinese loan commitments from 2000-2019 as a percent of GNI. Zambia (along with Angola, the Republic of Congo, and Djibouti) clearly stands out for the high share of Chinese loans relative to national income (Figure 3).¹¹

Angola and the Republic of Congo borrowed heavily from China when oil prices were high. Many of their loans were secured with oil exports from their state-owned oil companies. The collapse of

A stacked bar chart showing the US\$ Billions for 'All Other African Countries' (dark gray) and 'Angola' (light gray) from 2010 to 2019. The Y-axis ranges from 0 to 30 in increments of 5. The X-axis shows the years. The total value for both categories peaks in 2016 at approximately 29.5 billion US dollars, with Angola contributing the majority of that total in that year.

Year	All Other African Countries (US\$ Billions)	Angola (US\$ Billions)	Total (US\$ Billions)
2010	4.2	2.5	6.7
2011	6.5	3.3	9.8
2012	9.5	1.5	11.0
2013	14.5	4.0	18.5
2014	9.5	2.5	12.0
2015	9.0	1.8	10.8
2016	10.5	19.0	29.5
2017	10.0	2.5	12.5
2018	10.0	0.5	10.5
2019	7.5	0.2	7.7

External PPG Debt Stock as % of GNI (2019)

Total Chinese Loan Commitments from 2000 to 2019 as % of 2019 GNI

48 African countries are plotted, showing a positive correlation between the two variables. The countries are labeled with their three-letter codes. The plot includes a grid and axes ranging from 0.0 to 1.0 on the Y-axis and 0.0 to 0.6 on the X-axis.

Country	Total Chinese Loan Commitments from 2000 to 2019 as % of 2019 GNI (X)	External PPG Debt Stock as % of GNI (2019) (Y)
DZA	0.00	0.02
NGA	0.02	0.05
COD	0.03	0.08
BWA	0.04	0.08
BDI	0.04	0.15
CAF	0.05	0.20
BFA	0.02	0.22
ZAF	0.03	0.25
MAR	0.02	0.28
EGY	0.03	0.30
GMB	0.02	0.32
GNB	0.01	0.32
MLI	0.04	0.32
SLE	0.03	0.32
MWI	0.04	0.32
NER	0.05	0.32
CIV	0.06	0.32
LSO	0.07	0.32
GHA	0.08	0.32
TCD	0.09	0.32
UGA	0.10	0.32
COM	0.11	0.32
KEN	0.12	0.32
ETH	0.13	0.32
TGO	0.14	0.32
ZWE	0.15	0.32
CMR	0.16	0.32
GIN	0.22	0.20
AGO	0.52	0.45
ZMB	0.42	0.50
SDN	0.17	0.58
MOZ	0.15	0.73
MRT	0.09	0.55
SEN	0.08	0.58
STP	0.02	0.55
TUN	0.01	0.65
CPV	0.02	0.95
DJI	0.45	0.68
COG	0.57	0.63

oil prices showed the risks of contracts using future commodity exports to repay loans. A desert country with fewer than a million people and a tiny economy, Djibouti borrowed primarily to expand its ports, construct a water pipeline, and build its section of the railway linking land-locked Ethiopia to Djibouti, all projects deemed essential to realize Djibouti's ambition to be a Singapore in the Horn of Africa. Zambia fits neither of these patterns. Although Zambia is the world's seventh largest copper producer, Zambia privatized its mines in the 1990s, and thus the government did not own or control the natural resource exports Angola and the ROC used to secure large lines of credit.

ALTERNATIVE EXPLANATIONS

What explains Zambian exceptionalism? Here I consider four possible explanations: strategic over-optimism, or "a Zambian developmental state"; rent-seeking and patronage; political clientelism, and "debt-trap diplomacy" which emphasizes deliberate Chinese entrapment with the goal of seeking assets or strategic leverage.

A ZAMBIAN DEVELOPMENTAL STATE?

Is Zambia simply borrowing strategically, if over optimistically, to invest in its future, an "extractive developmental state" with Chinese lenders supporting this vision?¹² Zambia shares borders with eight other southern and eastern African countries. The country's 2006 development strategy, *Vision 2030*, emphasized the development of a "robust and competitive transport and communications network that services the region," as part of the path toward reaching middle-income status by 2030.¹³ Successive administrations have emphasized that the country's land-locked position actually enables Zambia to be "land-linked": a transport and energy hub for southern Africa.¹⁴ The "Link Zambia 8000" program launched in 2012 and aimed at paving 8,201 km of roads, as well as campaigns to build and modernize airports, fit with the regional hub strategy. As a Zambian official said to me: "We want to borrow for infrastructure. We want to be able five years down the line to point at something and say: this is what we did with this loan."¹⁵

For example, *Vision 2030* emphasized that energy policy would be "export-led". Zambia is strategically positioned for the regional electric power market. Its favorable geography, with rivers tumbling down from a high escarpment, makes hydropower attractive. Located at the crossroads between the enormous, mineral-rich Democratic Republic of the Congo, and the high energy demands of South Africa, Zambia's grid has also traditionally been the gateway for the flow of power in the region.¹⁶ Since 2010, 55 percent of all Chinese loan commitments have been in the transport and power sectors, with another 16 percent funding telecoms and water projects.

At first, Zambia's infrastructure-intensive borrowing strategy appeared to be paying off. The country's annual, inflation-adjusted gross domestic product (GDP) growth rate averaged nearly seven percent between 2000 and 2014.¹⁷ Zambia reached lower-middle income status in 2011 (which led to a drop in its access to concessional finance from the World Bank and other donor agencies). Yet a sharp drop in copper prices, Zambia's main export, and several years of drought set the

economy back. Despite this, the Zambian government continued to seek loans from Chinese lenders, even accelerating its borrowing, and Chinese lenders failed to turn off the tap despite the accelerating risk.

RENT-SEEKING AND PATRONAGE?

A second explanation emphasizes Zambia's "competitive clientelist" system and points the finger at political leaders concerned overall with staying in power, the Chinese companies whose kickbacks facilitate those goals, and the weaknesses in local governance. There is much evidence that the efficiency and independence of major gatekeeper bureaucracies like the Ministry of Finance has been undermined in Zambia.¹⁸

In her seminal study of Chinese capital in Zambia: *The Specter of Global China* (researched between 2007 and 2014) Ching Kwan Lee argues that the absence of elite political will and a state developmental strategy in Zambia has made Chinese lending "a perilous proposition."¹⁹ Chinese contractors and creditors, she argued, engage in rampant rent-seeking, giving favors to politicians who throw aside prudent debt limits, and approve over-priced contracts obtained without competitive bidding.²⁰ Chinese loans, Lee starkly concluded, are "a predatory and pernicious threat to Zambia's long-term solvency."²¹

C. K. Lee's analysis is persuasive in its detail, and her predictions were borne out when Zambia defaulted during the pandemic. Yet the conditions she describes are not at all unique to Zambia. Few governments on the continent stand out for their elite political will, or their coherent developmental strategies. The same Chinese banks and companies are active across the continent, while as we have seen, Zambia still stands out as particularly problematic.

ALLIANCE POLITICS?

Perhaps Chinese lenders and insurers have eschewed prudent lending limits because of a long-standing special relationship with Zambia? After all, Zambia was, with Tanzania, the site of the Tazara Railway, a historic symbol of Chinese altruism. Could Zambia have been such a "loyal ally" of China that loans became political favors, much as the United States bolstered bulwarks of anti-communism like Zaire during the Cold War with economic support funds?

Yet Zambia's history of contentious relations with China over the past 15 years and multiple party turnovers casts doubt on this explanation. The Patriotic Front's Michael Sata, elected as president in 2011, even pledged at one point during an earlier candidacy to establish official relations with Taiwan.²² There is little evidence that Beijing regards Lusaka as a dependable ally or an important political relationship.

DEBT TRAP DIPLOMACY?

A final line of analysis asks: is Zambia in control of strategic assets that might be particularly attractive to Chinese stakeholders? The idea of “debt trap diplomacy” arose from an Indian pundit’s misreading of Chinese investment in a debt-burdened Sri Lankan port.²³ In unveiling the Trump administration’s Africa strategy, National Security Adviser John Bolton charged that China made “strategic use of debt to hold states in Africa captive to Beijing’s wishes and demands.”²⁴ Bolton alleged that China was about to take over Zambia’s national power company, ZESCO, to collect on unpaid debt.²⁵ Other rumors arose regarding Zambia’s Chinese-financed airport, the Chinese-financed joint venture overseeing Zambia’s migration from analog to digital television, and even an unprofitable copper mine that was, at the time, owned by the Swiss firm Glencore.²⁶ Although this story has been debunked with regard to Sri Lanka, might it be playing out in Zambia?²⁷

While Zambia’s debt crisis may again lead (as it did in the 1990s) to new privatizations, Chinese companies have already had ample opportunity to invest in Zambia’s energy sector as independent power operators (and have declined) and have been steadily investing in mining since purchasing the derelict Chambishi mine in 1998. It seems unlikely that there was a Chinese conspiracy to draw Zambia into debt as a roundabout way to acquire assets. Furthermore, official sources familiar with details of Zambian debts confirmed that none of Zambia’s Chinese loans were secured with collateral or assets.²⁸

TRAGEDY OF THE COMMONS AND MORAL HAZARD

If we can consider the public resources of a country to be a kind of commons, multiple claimants and a lack of oversight can lead to unsustainable debt. After the late 20th century debt crisis, the World Bank and IMF attempted to regulate this “overfishing” from above through imposing limits on non-concessional borrowing and otherwise discouraging unsustainable debt in vulnerable countries. Borrowing governments can “tie their hands” through adopting robust public investment management rules, parliamentary oversight, and other checks and balances. The tragedy can also be averted through regulation from below: participants agreeing to voluntarily limit their activities to sustainable levels and monitor compliance themselves.

In this section, I show how neither the Chinese government nor the Zambian government provided the oversight required for the tragedy of the commons to be averted. I also provide evidence on past debt cancellations that might have induced Zambian borrowers to act in a riskier fashion, believing that Chinese debt would be written down, or even cancelled, i.e., moral hazard. The analysis relies on original data collected by the author, and interviews with knowledgeable informants. Given the sensitivity of the topic, most interviews were conducted with the assurance of anonymity.

COORDINATION FAILURES IN CHINA

Scholars of China's decision-making have long emphasized that China is best understood not as a monolithic totalitarian system but as a "fragmented authoritarian" model, with extensive coordination challenges.²⁹ In 2007, Bates Gill and James Reilly warned that this fragmentation meant that Beijing faced significant principal-agent challenges in its African engagement.³⁰ They predicted that government bureaucracies based in Beijing (principals) would find it challenging to align their interests and goals with multiple Chinese corporations on the ground (agents).

This challenge shows up in a failure of the Chinese system to adequately limit state-backed lending in many risky environments. In principle, since 2001, large projects (at first, US\$ 100 million and above; since 2018, US\$ 300 million) financed by Chinese loans and insured by China's export credit insurance agency Sinosure, need to be approved by China's State Council.³¹ When a company is bidding or developing a contract for a large project and will be seeking finance, it is supposed to get the opinion of China's Chamber of Commerce for Import and Export of Machinery and Electronic Products (for large exports) or China International Contractors Association (for construction projects). These industry associations have 20 days to consult a committee of experts and the Chinese embassy (generally, the Economic and Commercial Counsellor's office) in the country where the project is located. After the industry association signs off, the enterprise can apply for the loan and insurance; the provisional loan plan is submitted to the Ministry of Commerce (MOFCOM), who coordinates with the Ministry of Foreign Affairs (MOFA) and Ministry of Finance (MOF). Together, they submit the proposal to the State Council for approval.

This seems a robust web of oversight, at least for large loans, yet the time frame is short, and there are powerful incentives to refrain from throwing a wrench in the works. For example, even if business associations and economic counsellors in the prospective host country believe a project risks breaching debt sustainability levels, they are unlikely to prevail if the financing bank, the implementing company, and the host government are all pushing hard for approval.³² These problems are hardly unique to China. In the early 1990s, the World Bank's "Wapenhans Report" famously critiqued a "culture of approval" that led the board to sign off on problematic projects.³³ This partly explained the World Bank's high rate of project failure, especially in Africa.

China's State-owned Assets Supervision and Administration Commission (SASAC) owns or controls the majority of shares in China's SOEs, including the large engineering firms that implement African projects. Yet SASAC generally allows these firms to make their own risky decisions. As the chair of SASAC announced in March 2019, "State-owned enterprises are independent market players. They are self-operated, self-financed, self-sustained, self-disciplined and self-developed."³⁴ Furthermore, SOEs and SASAC have branches at city, and province levels. This creates additional layers of complexity, as many smaller projects are financed by branch offices of China's policy banks and carried out by branch offices of the SOE contractors. For example, China Jiangxi International Economic and Technical Cooperation Group (CJIC) was able

to secure a US\$ 114 million preferential export buyer's credit from China Eximbank's Jiangxi branch for its successful "EPC plus finance" bid to build Zambia's 300 km transmission line between Kabwe and Pensulo.

As Bates and Reilly put it, "given the limitations of bureaucratic capacity, geographical distance, and companies' incentives to hide information, government regulatory and implementing agencies are likely to have difficulty in accessing timely information sufficient for oversight."³⁵ Revisiting the complicated Sicomines project in the DRC, researcher Johanna Janssen also found in 2013 that oversight was challenging.³⁶ She argued that China's two policy banks were exercising more prudence than riskier Chinese companies.

An announcement in 2018 that China's ambassadors and Ministry of Foreign Affairs would be given more authority to represent China's interests overseas "with one voice" suggests an effort to provide the oversight from above that has been lacking.³⁷ Commentary on this announcement pointed out that this shift was especially important given the need to provide oversight on infrastructure projects and foreign loans.³⁸

Furthermore, in 2019, China's Ministry of Finance unveiled a new debt sustainability framework for projects financed under China's Belt and Road Initiative (BRI), Chinese president Xi Jinping's branding of China's push for overseas business.³⁹ Yet lenders were asked only to consider using the framework: it was explicitly "non-mandatory." China's debt sustainability framework for the BRI differs from the Washington-based framework in its statement that even in debt distress, some borrowing for growth-stimulating projects might still be in order. It is safe to assume that effective oversight continues to be elusive.

COORDINATION FAILURES IN ZAMBIA

A robust public investment management system in low-income countries generally requires borrowing decisions to be centralized in the Ministry of Finance, with parliamentary oversight and approval of commitments made by the executive branch. Good public investment management normally requires competitive international tenders for all major infrastructure projects. All of this is dependent on a head of state that agrees to be bound by existing rules.

On paper, Zambia's public investment management rules appear to be close to best practice. Only the Minister of Finance has legal power to contract loans.⁴⁰ Article 63 (2) of Zambia's constitution requires that the government seek parliamentary approval of public debt before it is contracted. Articles 114 and 207 specify that parliament needs to approve all terms and conditions, and that this oversight includes loan guarantees.⁴¹ In principle, this should mean that Zambia's parliament should have full information about Zambia's total indebtedness. Yet in a 2020 case brought by former Minister of Commerce, Trade and Industry Dipak Patel charging that the Zambian state had failed to observe these rules, Zambia's Constitutional Court ruled that the provisions were not yet in force because of a technicality (one judge dissented from this ruling).⁴²

In other ways, rules on good debt management in Zambia appear to be regularly flouted. For example, a 2016 report charged that Zambian ministries and departments negotiated financing and then made public announcements, sometimes bringing in the head of state “to force the finance ministry” to sign off on politically popular pledges.⁴³ On the other hand, others observed that decision-making on large Chinese projects had become extremely centralized in Zambia, with the Minister of Finance or even the President proposing projects while the various line ministries were unable to exercise due diligence.⁴⁴ C. K. Lee quoted a director at the Road Development Authority who complained, with regard to the Mbala-Nakonde road, “the [Chinese] contractor had already secured the agreement with the Ministry of Finance when they came to us. We just negotiated about the details of design, not the amount of the loan.”⁴⁵

Zambia’s long economic crisis and adoption of Washington Consensus policies shrinking the state also had consequences. Government cutbacks, austerity, and a shift away from planning weakened the government’s ability to manage a coherent public sector investment program.⁴⁶ As one informed source noted, “It was a perfect storm. In the 1990s, all the planning went out the window. The capacity to do project appraisals went out the window. And the Chinese companies were saying: ‘don’t worry about the finance. We can arrange the finance.’”⁴⁷

A World Bank study – “How Zambia Can Borrow Without Sorrow” – noted that, as debt soared, the government responded to the deepening crisis by limiting access to information.⁴⁸ The sheer number of loans also created management challenges. In 2011, the year the Patriotic Front came to power, the country signed only five external loans; in 2016, it signed at least 30. From a moderate level of only 20 percent of GNI in 2014, Zambia’s public and publicly guaranteed external debt doubled in just one year, to 43 percent of GNI in 2015.

MULTIPLE ACTORS IN ZAMBIA’S CHINESE-FINANCED BORROWING

So far, I have shown that Zambian political leaders failed to enforce their own rules enacted to manage sustainable debt, and there were few restraints employed in Beijing. In a tragedy of the commons framework, Zambian and Chinese principals exercised insufficient oversight of their agents, who all flocked to “overfish” in the pool of Zambia’s public finances, leading to unsustainable debt. In this section, I briefly introduce the multiple actors “fishing” for infrastructure contracts in Zambia.

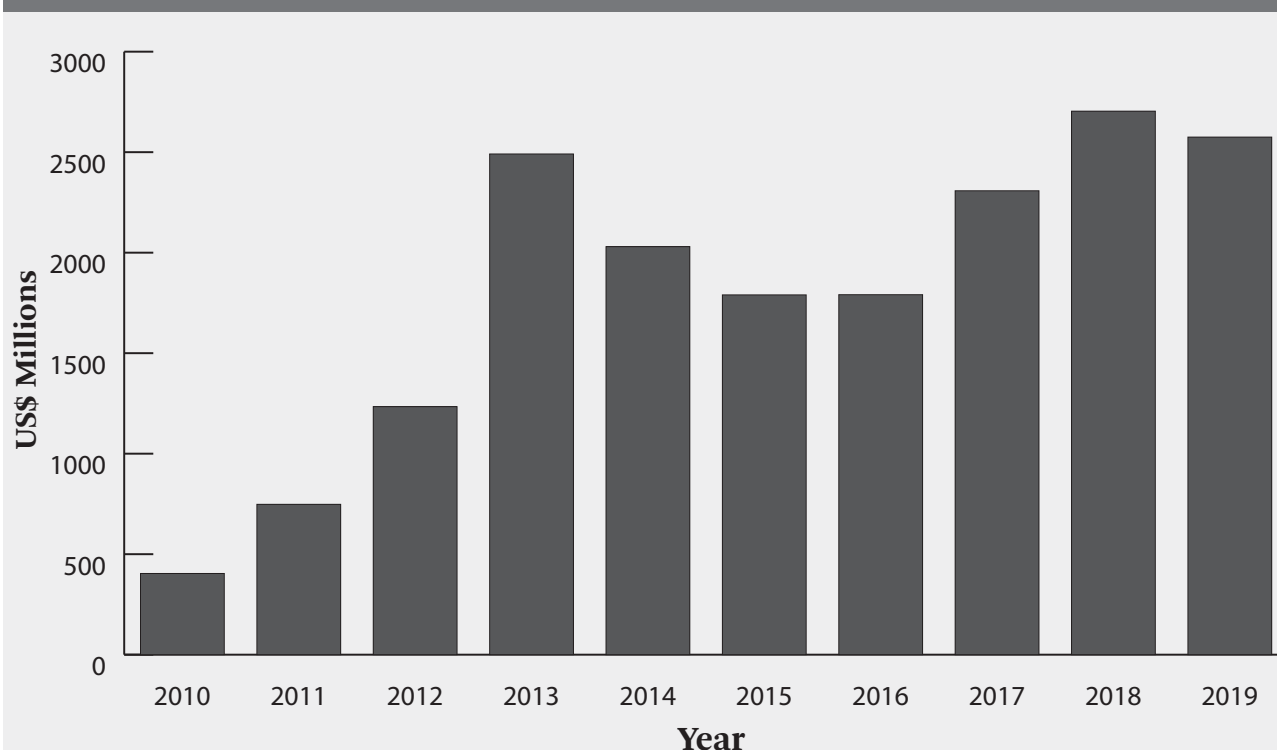
Between 1967 and 1994, only one Chinese lender existed in Zambia: China’s central government, represented by the foreign aid office of the Ministry of Commerce (now China International Development Cooperation Agency, or CIDCA). The Bank of China, the first Chinese bank allowed to do foreign-exchange related banking, set up its first African branch office in Lusaka in 1997, offering banking services and bid bond security.⁴⁹ China Eximbank arrived in 2001 and became the largest Chinese lender. In 2005, CITIC Bank, China’s seventh largest commercial lender, provided the first Chinese commercial loan (to Zambia’s parastatal ZESCO). Starting in 2011, China Development Bank, Industrial and Commercial Bank of China, Bank of China, and Jiangxi Bank also began financing projects. These seven lenders were joined by 16 companies offering suppliers’

credits, including those accepted under “contractor-facilitated finance”, even if these were later cancelled (below).

Zambia stands out in the CARI China Africa loan data as the country with the highest number of distinct Chinese lenders: 18 different Chinese banks and companies providing credits (see Appendix Table 1). Forty-three (88 percent) of the 49 countries in the loan data have five or fewer Chinese creditors. In another five countries (10 percent), including Angola, CARI research has identified between five and 10 Chinese creditors. Only Zambia has over 10.⁵⁰

Zambia is also a strong outlier in the number of Chinese contractors winning Chinese loan-financed projects. While Angola, with approximately US\$ 43 billion in Chinese loan commitments, has the largest number of separate Chinese companies carrying out Chinese loan-financed project contracts (43), Zambia is second with 29 separate contractors.⁵¹ As early as 1998, Zambia ranked third in Africa, following Nigeria and Sudan, as the countries producing the highest annual revenues for Chinese engineering firms.⁵² Chinese contractors' annual revenues grew sharply with the Lungu administration's infrastructure push. In 2010, for example, Chinese contractors reported revenues of US\$ 404 million in Zambia, and in 2013, revenues of US\$ 2.5 billion (Figure 5). A survey of construction firms across Africa found that Chinese firms held, on average, 34 percent of the local construction business but in Zambia, the Chinese share was 69 percent.⁵³

Figure 4: Annual Revenues from Chinese Contracted Projects in Zambia



Source: China Statistical Yearbook 2011-2019; National Bureau of Statistics of China.

SETTING THE STAGE FOR THE TRAGEDY OF THE COMMONS

By the time of the 2016 presidential election (see Figure 1), the stage was set for the tragedy of the commons, with multiple banks and companies competing for lucrative contracts. Two further shifts away from best-practice show how the Zambian government and some of its Chinese lenders (and other banks) failed to face up to the growing debt sustainability challenges: advance-payment loans and contractor-facilitated financing.

Export credits commonly require governments to provide an advance payment of 15 percent of total project costs, with the loan accounting for only 85 percent. Zambia has on multiple occasions been unable to come up with the 15 percent advance payment. Sometimes, the contractor lent the government the down payment, as Star Times did for a digital migration project. In several other cases, a second Chinese bank has provided a separate loan to cover the 15 percent payment. In 2017, for example, Industrial and Commercial Bank of China (ICBC) covered the 15 percent down payment for the Ndola International Airport project, with China Eximbank providing a credit of 85 percent. Two of the 2018 loan commitments in the CARI data were “bridge” loans from contractors who advanced the 15 percent. Zambian analyst Trevor Simumba warned about this practice in 2018, calling it “borrowing upon borrowing”.⁵⁴ It is not limited to Chinese banks. In 2017, for example, Standard Chartered Bank financed the 15 percent advance payment for a Lusaka traffic decongestion project financed by India’s Eximbank.⁵⁵ According to one informed observer, part of the Eurobonds proceeds were also used for advance payments.⁵⁶

Contractor-facilitated financing (CFF) was introduced around 2016, to meet difficulties in raising external loans and shortfalls in local revenues available for politically popular roads and other construction.⁵⁷ More commonly known as availability payment-based public-private partnerships (PPP), these long-term contracts give private companies the responsibility of building, financing, and operating public facilities.⁵⁸ The companies are reimbursed over time on a “performance-based payment plan.”⁵⁹ As an astute review of this financing structure noted:

Private financing of public infrastructure can be used to circumvent debt limits that many governmental entities are subject to, essentially creating a new source of borrowing that may be “off-balance sheet” and may not appear in relevant government financial plans or statements. While on its face, this may sound attractive to governmental entities averse to taking on new debt, availability payment PPPs may actually have debt implications that fly in the face of prudent public financial management.⁶⁰

By guaranteeing regular payments to the builders if they keep the roads maintained, no matter the traffic or level of tolls, CFF contracts transfer the risk to the government in ways that risk-sharing PPPs do not. Their transparency is also highly questionable. It is not clear if Zambia’s Ministry of Finance signed off on these projects, although it is possible that they were included in a general “suppliers’ credit” item in the Ministry of Finance’s Annual Economic Report.⁶¹ In February 2018, Zambia’s cabinet announced that henceforth the government would obtain finance “directly from

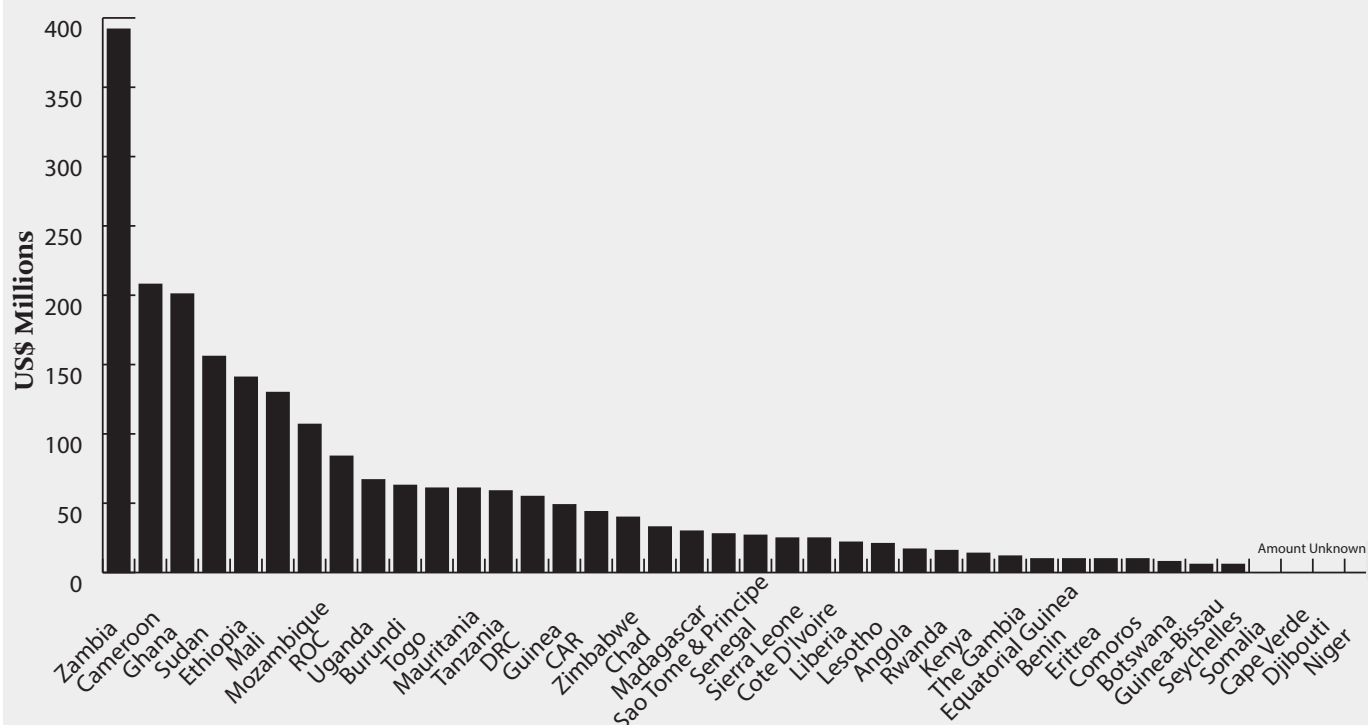
Chinese banks and not through contractors.”⁶² Yet as the roads case study below shows, CFF contracts were still being signed in 2019, after this date.

MORAL HAZARD

Moral hazard denotes the risk that past debt cancellations might induce a government to over-borrow in the expectation that debt will again be cancelled. Zambia first won debt relief from the Paris Club, an informal cartel of official bilateral creditors, in 1983. Zambia knocked on the door of the Paris Club again in 1984. And in 1986. And in 1990, 1992, 1996, 1999, 2002, and 2005. Only eight countries (out of 90) have gone to the Paris Club more frequently than Zambia.⁶³ “Every time Zambia has been teetering on the edge of the cliff, they’ve always been bailed out,” as one informed observer noted. “There’s always that feeling that someone will come.”⁶⁴

Zambia stands out among other African countries for both the value and the frequency of China’s HIPC-equivalent debt reduction program. Interest-free loans, a foreign aid instrument, has been the only category of Chinese loan ever to have been written off in full or in part in Africa.⁶⁵ Some Zambians may recall how in January 1999, on a visit to Lusaka, China’s foreign affairs minister Jiaxuan Tang said that China “will not cancel or reduce Zambia’s debt,” although extending the repayment period was possible.⁶⁶ Less than two years later, China provided a US\$ 30 million write-off. In 2006, Zambian official data showed that Zambia had US\$ 140 million in arrears to Chinese lenders, out of a total Chinese debt (disbursed and outstanding) of US\$ 157.6 million.⁶⁷ Eventually, the Chinese government canceled at least US\$ 392 million in Zambian interest-free loan debt.

Figure 5: Debt Cancelled by Country, 2000-2019 (US\$ million)



Source: SAIS-CARI Data.

Our data on Chinese debt relief shows that Zambia is the African country with the largest amount of interest-free loan debt cancelled, almost twice as much as any other country (Figure 6). Zambia also holds the record for the largest number of separate Chinese interest-free loan debt cancellations since 2000: six. Indeed, this history may lie behind the questionable claim of a prominent Zambian economist that “Chinese debt can easily be renegotiated, restructured or refinanced.”⁶⁸

The next sections examine Chinese lending in the road and hydropower sectors, with process-tracing case studies of the two most expensive Chinese-financed projects in each sector. Transport and electricity power are the two largest sectors for Chinese loans in Zambia, accounting for over half of the total. The road sector clearly illustrates the tragedy of the commons, while the power sector shows how the dominance of one firm (China’s preeminent global engineering giant Sinohydro), may have helped impose greater order.

THE ROAD SECTOR

In the 1970s, despite challenges of large size, sparse population, and difficult terrain, the Zambian road network was thought to be one of Africa’s best.⁶⁹ China’s aid program funded some of those roads. The 412 km Lusaka-Mankoya (Kaoma) road, built by China between 1970 and 1972, included a 282-meter bridge crossing the Kafue River. The 365 km Serenje-Mansa road, built between 1977 and 1986, included a 2.8 km bridge along with 20 kilometers of elevated causeways over wetlands. At the time, this was the longest bridge ever built in Africa.⁷⁰ Yet Zambia’s financial difficulties were evident even then. The Serenje-Mansa road took nine years to complete because Zambia was continually unable to contribute its portion of the funding.⁷¹

Zambia has typically invested in upgrading and new road construction at levels that were not justified by road traffic. “The public has totally unrealistic expectations for the road sector,” two economists noted in a 2012 report.⁷²

Having got used to roads being ‘over-engineered’ since Independence, there is a widespread expectation that all Trunk, Main and District roads should ultimately be paved. Given the political attraction of paving roads in Zambia, it is not surprising that their dubious economics is largely ignored. Instead, projects are justified on such grounds as: (a) traffic will increase substantially after the road is opened; (b) upgrading is needed for national integration; (c) there will be important social and developmental benefits which are not captured by conventional economic analysis; and (d) the road will open up new trade (e.g., with Angola). While there can be some validity to such arguments, they are rarely backed up with evidence – they are simply asserted.

The political popularity of roads, despite their perhaps dubious developmental importance, made them central to Zambia’s 2030 Vision and to the “Link Zambia 8000” program launched by Edgar Lungu’s Patriotic Front administration in 2012. The Mongu-Kalabo road provides an extreme

example of these dynamics, while also dramatically illustrating how a firm with little experience in road construction broke into the crowded transport sector.

THE MONGU-KALABO ROAD

The Zambezi River runs through Zambia's Western Province. During the rainy season, the river spills across the Barotse floodplain, a seasonal wetland of some 550,000 hectares. Jill Kandel, an American who lived in rural Mongu for six years with her Dutch agronomist husband, told me what traveling from Mongu to the provincial capital of Kalabo, 57 km away as the crow flies, was like before the road. "It was a daunting, full-day, hot trip. For six months of the year the river would flood and you had to move north or south to a pontoon ferry. Each way it was a five-hour trip, just to get to the ferry. In the dry season, you could travel on the Zambezi, but it would take eight to ten hours on a banana boat with a 35 hp motor."⁷³

A paved road through this section of the Western Province linking Zambia to Angola has been a dream for successive Zambian governments. In the late 1990s, the OPEC Fund provided US\$ 27.3 million for a road.⁷⁴ Launched in 2000 by a Kuwaiti firm, the project collapsed when floods in 2003 and 2004 washed out the embankments built by the company. In October 2010, leading up to a critical election year, AVIC--a Chinese firm with roots in the aviation industry, but with ambitious goals of adding global engineering, procurement, construction (EPC) projects to its portfolio--was able to negotiate funding from China Eximbank for its single-source bid to build the 34 km road for US\$ 287 million.⁷⁵

A well-known Chinese saying asserts "to become prosperous, first build a road." China Eximbank, which provided a preferential export buyer's credit for the project, does not appear to have questioned the Zambian argument that the road had developmental benefits beyond those reflected in a traditional economic analysis. As a Zambian official told C. K. Lee: "It's extremely expensive. No European bank would finance it, but with China, we agreed that it's important for Zambia and Angola... You cannot drive from Zambia to Angola; you cannot because there is no road. For the benefit of SADC [Southern African Development Community] we have to open up this part of Africa."⁷⁶

Rumors circulated in Lusaka that the project's costs were padded to allow President Rupiah Banda and the MMD to finance the 2011 election campaign, which, ironically, he lost to China's chief critic at the time: Michael Sata of the PF. Yet the technical achievement of the road, with its 26 bridges, remained impressive. The road "totally blew me away," Jill Kandel recalled. "It's like I was living on the moon and someone built a stairway."⁷⁷ Still, videos of the road posted by travelers show little traffic aside from bicycles and pedestrians. Beyond Kalabo, a sandy track remains the only way to reach Angola.

CONTRACTOR-FACILITATED FINANCING

The Mongu-Kalabo road failed to “open up this part of Africa” although it allowed AVIC to open up space in Zambia’s crowded road construction sector. The growing dominance of Chinese players in the road sector was evident in the annual reports of the Zambian National Road Fund Agency. By 2019, Chinese contractors were carrying out just nine percent of the 774 contracts being implemented that year, but these contracts accounted for 71 percent of the value of all contracts.⁷⁸

Public expectations for paved roads in a period of constrained finance led the Zambian National Road Fund Agency (ZNRFA) to adopt the CFF model, and to expand their program of raising revenues by installing toll gates. While ZNRFA distinguished CFF from external loans and grants, contractor-facilitated financing is an external loan—essentially, a supplier’s credit. The contractor mobilizes external funds for the project and then must be repaid.

Table 1: Chinese Contractor-Facilitated Finance Projects in the Road Sector

Project	Contractor	Contract Sum (US\$ Millions)	Year	Status
Matebele (M10) Road	China State Construction	154	2015	Finance cancelled
Pave D792 Katunda to Lukulu - Watopa - Mumbezhi	Anhui Shui'an Construction	61*	Before 2016	Indefinitely postponed
Paving D792, Lot 2	Anhui Shui'an Construction	61*	Before 2016	Indefinitely postponed
Paving D792, Lot 3	China Railway Seventh Group	86*	Before 2016	Indefinitely postponed
Rehabilitate D775 Road from Batoka to Maamba	SEPCO Electric Power Construction	123	2017	On-going; unclear whether MOF approved CFF for project or if it is locally financed
Upgrade Mbala to Kasaba Bay; 31 km of Mbala to Kalambo Falls; 19.5 km of Mbala to Chisanza (D7); 38.3 km of Samora Machel Airport through Mbala Town to Kaseshya; 18km of Mbala Urban Roads	China Civil Engineering Corporation	287	2017	The CFF was likely cancelled. Part of the project is being implemented with local finance.
Upgrade ~321 km of T2 Road from Lusaka to Ndola	China Jiangxi Corporation for International Economic & Technology	NA	2017	Finance cancelled
Rehabilitate and maintain feeder roads - Phase I	AVIC International Project Engineering	24	2019	Possibly on-going; unclear whether MOF approved CFF
Rehabilitate and maintain feeder roads - Phase II	China Geo Construction Engineering	50	2019	Possibly on-going; unclear whether MOF approved CFF

*Note: The contract amount is converted from Zambian kwacha to US Dollar using exchange rate in 2016 when the project was reported. These projects were signed by RDA, but the Ministry of Finance needed to approve them.

Source: Road Development Agency of Zambia, Zambia Parliament Documents, Zambia Road Sector Annual Work Plan

By 2017, 35 percent of the budget for the Zambian Road Sector Annual Work Plan was coming from CFF, while 34 percent came from external loans and grants, and 31 percent from local resources.⁷⁹ By 2020, Zambia had signed at least preliminary agreements for US\$ 863 million in CFF supported road projects with eight separate Chinese contractors (Table 1). While most of these were suspended after 2018 (when the government announced a halt to CFF) and others show no sign of going into implementation, this significant activity during a time when Zambia was close to, or already in, debt distress does not support a developmental state interpretation. Furthermore, Zambia's roads, according to a study, stand out as among the most expensive in the region, even when Mongu-Kalabo is not included.⁸⁰ It is also unclear what leverage Beijing would gain by all of this activity, which appears highly uncoordinated. The road sector supports the idea that Chinese contractors, and their Zambian counterparts, co-created an unsustainable tragedy of the commons.

THE POWER SECTOR

The percentage of Zambians with access to electricity (43 percent) is similar to the average for sub-Saharan Africa (46.7 percent). Access is skewed toward urban areas: in 2019, only 14 percent of rural Zambians had access to electricity.⁸¹ In the World Bank's *Doing Business* ratings, Zambia ranked 155 from the top in terms of electricity supply. Electricity tariffs that were at one point among the lowest in the world, and despite increases, remain among the lowest in sub-Saharan Africa, are said to create sustainability problems for ZESCO, the parastatal that manages power production and distribution.⁸² (Debates exist on this point, with some analysts noting that ZESCO operated at a profit until a prolonged drought starting in 2015 required the import of costly power from neighboring countries.⁸³)

The case study of roads showed that since Independence, Zambia has skewed road budgets toward new roads and upgrading rather than maintenance. In contrast, no major new power plants were opened between 1977 and 2014, despite the unmet needs. Four have come online since then: the 360 MW Kariba North Bank Extension (commissioned in 2014) and two independent power producers (IPP): the 120 MW Itezhi-Tezhi Hydro (co-owned by ZESCO and Tata, an Indian multinational company) and 300 MW Maamba Collieries power plants (co-owned by ZESCO and a Singapore firm), both commissioned in 2016.⁸⁴ Finally, the first unit of the massive 750 MW Kafue Gorge Lower Hydro was commissioned weeks before the August 2021 election.

ZESCO's finances and its role in Zambia's debt profile is complicated by the independent power producers (and the arrears ZESCO has built up in failing to pay for their power) as well as several special purpose vehicles (SPVs), investment companies that may be 100 percent owned by ZESCO but are "off budget" and whose loans are not always guaranteed by the central government. For example, at the end of 2018, an IMF mission with access to ZESCO's books estimated that debt service for Zambian state-owned enterprises (principally ZESCO) would amount to US\$ 215 million in 2020, of which only US\$ 152 million was guaranteed by the Zambian state.⁸⁵

ZESCO's first major investment since 1977 was the 360 MW Kariba North Bank Extension project. ZESCO set up an SPV company, Kariba North Bank Extension Power Corporation Limited (KNBEPCL, or Kariba North) in which ZESCO owned all the shares. In 2008, ZESCO borrowed a commercial loan of US\$ 315.6 million from China Eximbank with an excellent rate of LIBOR plus two percent and on-lent the funds to Kariba North. Sinohydro built the project. Kariba North secured power offtake agreements with the private Copperbelt Energy Corporation, which supplies most Zambian mines, and the Chinese-owned Chambeshi Mining Company. These future receivables anchored the cash flows of the project. As of 2017, ZESCO was making steady payments on the Chinese loan, which had a balance of US\$ 214 million.⁸⁶ The larger Kafue Gorge Lower Project would take a similar structure, although for Kafue Gorge, the SPV itself would borrow the funds.

THE KAFUE GORGE LOWER PROJECT

Zambia's Kafue River tumbles through the steep walls of the Kafue Gorge, spilling out of the Zambian highlands to the flat plains below. In 1967, only a few years after independence, Zambia developed the hydropower potential in the upper portion of the Kafue Gorge, with the construction of the 900 MW Kafue Gorge Upper power plant. The lower portion of the gorge presented opportunities for a second major project using the same water.

Sinohydro, already in Zambia, began angling to build Kafue Gorge Lower (KGL) with finance from China Eximbank, signing an MoU in December 2003.⁸⁷ "After the World Bank dragged its feet on the project for years, we reached an MoU with the Chinese within three weeks," a Zambian official crowed.⁸⁸ Yet the MoU did not result in a project.

In 2006, Zambia's Five-Year Plan specified that KGL would be built as a PPP. The government sought assistance from the World Bank's International Finance Corporation (IFC), which paid for extensive feasibility studies.⁸⁹ The IFC had estimated that a 750 MW power plant would cost approximately US\$ 1.5 billion and would have an attractive after-tax internal rate of return of 20.3 percent.⁹⁰ "We thought it was a very good project for the country as we had designed it," an engineer connected with the IFC project commented.⁹¹ However, the global financial crisis delayed the IFC's plans.⁹²

In 2008, a Zambian businessman gave me his perspective on the project. The World Bank was interested in financing KGL, he said. "But they would only give a loan if [electricity] tariffs were increased by 60 percent. This won't help Zambia's capacity to pay the loan and it would have a huge impact on business competitiveness. Then China offered to do it. So, while we are kicking and shoving, scratching and biting with the World Bank, the Chinese are quietly doing this deal. If the Chinese had not been there, we would have had to sign with the World Bank. But we see energy as a social, not a commercial investment," he concluded. "Like tarred roads."⁹³

In May 2010, while the IFC was completing the feasibility study, China Development Bank's president Jiang Chaoliang flew to Zambia and spent the weekend with Zambian president Rupiah

Banda, who was facing a contentious election in 2011.⁹⁴ During the visit, CDB offered a US\$ 1 billion line of credit toward the project, and proposed Sinohydro as the developer. As one informed participant told me, the Zambian government then “unilaterally terminated the contract with the IFC.”⁹⁵

The MoU signed on August 10, 2010 by ZESCO, Sinohydro, and China Africa Development Fund as equity partners specified that the project would be Build, Own, Operate, and Transfer (BOOT), a type of PPP finance in which the investors provide equity and operate the project for 30 years or so, before transferring it to the government.⁹⁶ The SPV company created was named Sinozam. According to some reports, ZESCO would hold 30 percent of the shares of Sinozam, while Sinohydro would invest 50 percent and China-Africa Development Fund (CAD-Fund), 20 percent. China Development Bank, would provide loan finance to the venture. It was clear that Zambia expected that the SPV project finance structure would keep the debt “off the books” of the government. On August 16, 2010, Zambia’s Minister of Finance Situmbeko Musokotwane remarked that the new joint venture was going to “borrow funds on its own without the government being part [of] the new debt.”⁹⁷

As a PPP, the project’s estimated cost had risen to US\$ 1.94 billion, including financing costs.⁹⁸ As Rupiah Banda campaigned for reelection in 2011, a campaign heavy with anti-Chinese rhetoric on the part of Patriotic Front challenger Michael Sata, Sinohydro and ZESCO held a formal groundbreaking ceremony in July, attended by the new Chinese ambassador to Zambia.⁹⁹ The groundbreaking was premature; the ambassador’s speech noted that financing arrangements were still being finalized.¹⁰⁰ However, in September that year, Michael Sata won Zambia’s presidential election, and the project failed to move forward.

It is not clear why the project was suspended. When I interviewed him as a leading opposition figure in 2008, asking about the Kafue Gorge project among other Chinese projects, Michael Sata told me that the Chinese “invest heavily in the pockets of leaders. For Kafue Gorge, they are empowering somebody’s pocket.”¹⁰¹ With a new party coming to power, new opportunities for kickbacks may have been an issue. Others noted Zambian concerns about control mechanisms and technical aspects of the project.¹⁰² Yet a more certain hindrance was that ZESCO was having trouble raising its 30 percent share of the project. As an informed observer noted, “the Chinese wanted ZESCO to put some equity into the project, in cash.”¹⁰³

Under the Patriotic Front, Zambia again sought international equity partners for KGL. Yet ZESCO’s international tender conducted between 2013 and 2015 offered only a straight EPC project.¹⁰⁴ Sinohydro was awarded the tender in October 2015, although its US\$ 1.48 billion bid was the highest among the participating firms.¹⁰⁵

At least three of the losing companies were also Chinese, including China State Construction Engineering Corporation (CSCEC), Dongfang, and China Gezhouba Group. When the tender results were announced, CSCEC wrote to the Zambia Public Procurement Authority listing 39 reasons why ZESCO should not have awarded the tender to Sinohydro.¹⁰⁶ The losing companies

argued that Sinohydro should have been disqualified from participating in the tender because of conflicts of interest. CSCEC asked the Lusaka High Court to issue an injunction barring the award and held a news conference to publicly protest irregularities in the process.¹⁰⁷

Yet Sinohydro's dominance in the hydropower construction market prevailed and CSCEC eventually dropped its suit.¹⁰⁸ Still, although Sinohydro held another optimistic groundbreaking ceremony early in 2016, the financing was still not nailed down.¹⁰⁹ After a year in limbo, Sinohydro staff launched an effort to bring ICBC, China Eximbank, ZESCO, and the Government of Zambia together to solve the financing challenge. The negotiations took seven months. The final syndicated loan facility agreement included 87 loan conditions, none of which has been made public.¹¹⁰ Sinohydro staff pushed to help Zambia complete all conditions before the syndicate would commit to finalizing the loan.

On November 13, 2017, ZESCO finalized a US\$ 1.5 billion senior loan facility with China Eximbank and ICBC for the project. Zambia's Ministry of Finance provided a sovereign guarantee; the first installment was disbursed seven months later.¹¹¹ The increase in the project's costs from the US\$ 1.48 billion in the EPC contract, to nearly US\$ 2 billion, came in part because the project required US\$ 100 million in Sinosure insurance, while interest of US\$ 312 million due during the grace period was capitalized so that Zambia would not have to pay until the project began earning revenues.¹¹²

The gap between the total costs and the available financing suggests that Sinohydro may have also contributed its own capital to the project, possibly by contributing some of the 15 percent advance payment from its own funds. Despite setbacks due to COVID-19 and Zambia's debt difficulties (with its other loans in default, ICBC became reluctant to continue disbursing on the KGL project), KGL began producing power in July 2021 as Zambia's presidential election campaigning moved into high gear.

Zambia's power sector is managed more independently than the road sector yet constrained by politically mandated low power prices and high costs for power imports, ZESCO is deeply in debt and has not been able to pay its IPPs. In 2019, ZESCO owed Tata's hydropower joint venture at Itzhi Tezhi at least US\$ 416 million.¹¹³ In 2020 Maamba Collieries took ZESCO to arbitration in London over US\$ 300 million in arrears.¹¹⁴ Despite this, ZESCO's major investment of Kafue Gorge Lower does appear more cost-effective and "developmental" than the Mongu-Kalabo road.

Zambia's power sector is hardly free from dubious decisions. The international tender that delivered the contract to Sinohydro, the highest cost bidder, was never explained, for example. The provision of electricity is an attractive electoral strategy for incumbent governments, as Ryan Briggs has demonstrated for Ghana.¹¹⁵ Yet in Zambia's power sector, we do not see the feeding frenzy produced by the multiple Chinese companies active in other infrastructure arenas. The structure of the industry, with large projects demanding more specialized expertise, and Sinohydro's dominant role, winning 76 percent of the value of all Chinese-financed energy contracts in Zambia, may partially explain this difference.

CONCLUSION

Focusing on Zambia as an outlier provides insights of theoretical and practical interest, much as Lieberman suggested: “the identification of an outlier case may immediately suggest a new theoretical specification with potentially broader application.”¹¹⁶ This paper has argued that Zambia’s exceptional debt difficulties were co-created by Zambians and multiple uncoordinated Chinese actors. Beijing did not indebt Zambia for some strategic purpose. As we saw earlier, the Zambian government has a long history of being unable to manage its foreign borrowing. No doubt the instability of copper prices is one reason why Zambia’s government has found debt management a challenge, but Figure 3 suggests that most other resource dependent countries in Africa have done better than Zambia in adjusting to the inevitable ups and downs of their export revenues. Among African countries, Zambia hosts a particularly crowded pond of Chinese contractors and financiers. The proliferation of firms created a tragedy of the commons. Individual firms and banks all fished for profits, financing projects without much consideration of the impact on debt sustainability, other lenders’ portfolios, and on their own ability to be repaid.

Ironically, Zambia’s democracy and a series of tight races with razor thin margins may be one underlying reason for Zambia’s tragedy of the commons. While Hakainde Hichilema was voted in with a landslide in August 2021, garnering around 60 percent of the vote, elections in 2006, 2011, and 2016 were won with 43 percent, 42 percent, and 50 percent of the vote, respectively. Election margins of a few percentage points create powerful incentives to use public works to reward constituencies. Politicians often believe that being able to point to paved roads and increases in electric power can pave their way to a victory. Yet as the defeat of incumbents Rupiah Banda in 2011 and Edgar Lungu in 2021 – both of whom relied on Chinese-financed infrastructure to boost their campaigns – illustrates, this cannot be seen as a winning formula. Indeed, although Hichilema refrained from mobilizing public support against China in his 2021 campaign, Zambia’s unsustainable debt became an electoral issue.

The Zambian case, although an outlier, is particularly important for its portrayal of Chinese actors overseas: not a monolith, but rather a fragmented and often fractious group of financiers and companies pursuing their own individual interests. The tragedy of the commons can be solved by state regulation from above: the Chinese government imposing its own “Beijing Club” of lenders, or perhaps by China’s State Council exercising a more effective oversight of debt sustainability. It can be solved by the Zambian government under new leadership binding its own hands, with greater transparency and accountability. Or, less likely, it can be overcome by collective action from below: Chinese business councils or contractor organizations exerting greater oversight over their members, much as Elinor Ostrom observed in *Governing the Commons*. Educating Zambia’s population that in some cases paved roads will be beyond the country’s means could be a task for the new administration.

With Zambia having applied for external debt relief under the G-20/Paris Club Common Framework, which uses Paris Club rules of “comparable treatment,” all creditors will be asked to provide equivalent write-downs of their existing debts. The IMF will act as an “honest broker” in

determining the level of write-down required to bring Zambia to debt sustainability.¹¹⁷ The failure of Chinese lenders to avoid a creditor trap in cases like this means that Chinese lenders are likely to suffer steep losses, as Western banks did in the last debt crisis. When Chinese lenders, including corporations, are forced to write off portions of their Zambian debt, as seems inevitable, this will accelerate reforms already underway in the way Chinese banks, and Chinese companies, pursue business overseas. ★

APPENDIX

Appendix Table 1a: CARI Data on Chinese Lending in African Countries 2000-2019

Country	Total Chinese Loan Commitments 2000-2019 (US\$ Millions)	Total Chinese Loan Commitments as % of 2019 GNI	Total External PPG Debt 2019	Chinese Loan Commitments (2000-2019) as % of 2019 PPG External Debt	Number of Chinese Contractors	Number of Chinese Lenders
Republic of Congo	5,387	57%	5,801	93%	12	3
Angola	42,638	52%	34,568	123%	44	9
Djibouti	1,449	45%	2,145	68%	7	4
Zambia	9,861	43%	11,104	89%	29	18
Equatorial Guinea	3,004	36%	N/A	N/A	7	4
Guinea	2,696	22%	2,177	124%	6	5
Sudan	4,991	17%	16,309	31%	25	9
Cameroon	6,191	16%	10,275	60%	17	4
Mozambique	2,263	15%	10,726	21%	6	2
Zimbabwe	2,962	15%	4,386	68%	13	5
Ethiopia	13,729	14%	27,490	50%	23	8
Togo	743	13%	1,561	48%	8	2
Gabon	1,681	11%	6,112	28%	6	4
Comoros	123	10%	267	46%	2	1
Kenya	8,998	10%	30,069	30%	17	4
Uganda	3,130	9%	8,638	36%	9	2
Mauritania	657	9%	4,043	16%	5	2
Senegal	1,998	9%	12,842	16%	13	4
Ghana	5,015	8%	20,492	24%	21	8
Chad	770	7%	3,075	25%	5	1
Cote d'Ivoire	3,652	6%	15,099	24%	10	3
Lesotho	165	6%	856	19%	2	2
Botswana	931	5%	1,334	70%	4	3

Appendix Table 1b: CARI Data on Chinese Lending in African Countries 2000-2019

Country	Total Chinese Loan Commitments 2000-2019 (US\$ Millions)	Total Chinese Loan Commitments as % of 2019 GNI	Total External PPG Debt 2019	Chinese Loan Commitments (2000-2019) as % of 2019 PPG External Debt	Number of Chinese Contractors	Number of Chinese Lenders
Benin	746	5%	3,611	21%	9	2
Niger	699	5%	3,167	22%	6	2
Mali	731	4%	4,636	16%	6	2
DRC	2,097	4%	4,099	51%	18	2
Burundi	127	4%	429	30%	2	3
Rwanda	413	4%	3,908	11%	2	2
CAR	95	4%	454	21%	3	2
Malawi	264	4%	2,026	13%	4	1
Namibia	489	4%	N/A	N/A	1	3
Tanzania	2,074	3%	14,101	15%	4	3
Madagascar	419	3%	3,120	13%	4	2
Cape Verde	48	2%	1,808	3%	2	2
Sierra Leone	93	2%	1,119	8%	5	4
Liberia	55	2%	913	6%	2	2
Egypt	5,322	2%	90,305	6%	5	5
Nigeria	7,203	2%	27,531	26%	11	6
The Gambia	25	1%	617	4%	1	1
South Africa	3,857	1%	85,872	4%	0	4
Morocco	1,245	1%	36,466	3%	2	3
Burkina Faso	77	1%	3,342	2%	1	2
Tunisia	132	0%	23,857	1%	2	2
Algeria	9	0%	1,398	1%	0	1
Guinea-Bissau	0	0%	507	0%	0	0
Sao Tome & Principe	0	0%	225	0%	0	0
Libya	0	0%	N/A	N/A	0	0
Eswatini (Swaziland)	0	0%	N/A	N/A	0	0

Appendix Table 1c: CARI Data on Chinese Lending in African Countries 2000-2019

Country	Total Chinese Loan Commitments 2000-2019 (US\$ Millions)	Total Chinese Loan Commitments as % of 2019 GNI	Total External PPG Debt 2019	Chinese Loan Commitments (2000-2019) as % of 2019 PPG External Debt	Number of Chinese Contractors	Number of Chinese Lenders
Eritrea	632	N/A	N/A	N/A	3	2
Mauritius	619	N/A	N/A	N/A	8	2
Seychelles	34	N/A	N/A	N/A	3	1
Somalia	0	N/A	N/A	N/A	0	0
South Sudan	407	N/A	N/A	N/A	1	1

Table 1a, 1b, and 1c include 54 African countries where SAIS-CARI tracks Chinese commitments data.

Source: GNI data are from World Bank National Accounts Data; Debt stock data are from World Bank International Debt Statistics; SAIS-CARI Chinese Loans to Africa Database Master List, accessed Sep 10, 2021.

ENDNOTES

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Support for this working paper was provided by a grant from Carnegie Corporation of New York. Carnegie Corporation of New York is a philanthropic foundation created by Andrew Carnegie in 1911 to do “real and permanent good in this world.”



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