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Research Report

Zambia's Chinese Debt in the Pandemic Era

Briefing Paper, No. 05/2021

Provided in Cooperation with:

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

Suggested Citation: Brautigam, Deborah; Wang, Yinxuan (2021) : Zambia's Chinese Debt in the Pandemic Era, Briefing Paper, No. 05/2021, China Africa Research Initiative (CARI), School of Advanced International Studies (SAIS), Johns Hopkins University, Washington, DC, <http://www.sais-cari.org/publications-briefing-papers-bulletins>

This Version is available at:

<https://hdl.handle.net/10419/248246>

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Based on project implementation status, we estimate that **US\$ 7.8 billion** was disbursed by August 2021.

Contracted but undisbursed Chinese loans as of August 2021 amounted to **US \$2.5 billion**, around 13 percent of 2020 GDP.

We calculate that Zambia and its SOEs have repaid at least **US\$ 1.2 billion** to Chinese lenders since 2000.

Zambia's Chinese Debt in the Pandemic Era

Deborah Brautigam and Yinxuan Wang

EXECUTIVE SUMMARY

IN NOVEMBER 2020, ZAMBIA BECAME THE FIRST African country to default on its Eurobonds during the COVID-19 pandemic, bringing the country's debt distress into headlines around the world. Bondholders' refusal to provide debt suspension rested largely on fears that Zambia was not disclosing significant liabilities to Chinese creditors.

In August 2021, national elections led to a surprise upset. A new president, Hakainde Hichilema took office, facing a debt burden that had never been fully transparent to Zambia's public and the world. In a meeting with reporters from Bloomberg shortly after taking office, the new president commented: "We had known for a long time that there was non-full disclosure... So now that we're in, we are beginning to see that the debt numbers that were being talked about officially are not really the comprehensive numbers."¹

The China Africa Research Initiative (CARI) has been tracking Chinese lending to African governments and their state-owned enterprises (SOEs) in Africa for much of the past decade. This CARI Briefing Paper is our contribution to public understanding of Zambia's Chinese debt. We estimate that Zambia's outstanding external debt to all Chinese financiers, official and commercial, was approximately **US\$ 6.6 billion** in August 2021. We do not anticipate much change in this figure for the rest of 2021.

Our estimate of US\$ 6.6 billion is almost double that of the highest figure (US\$ 3.4 billion) released previously by the Zambian government. It includes all public sector external debt to Chinese creditors, whether guaranteed or non-guaranteed. The estimate relies on CARI data on Chinese loan commitments and their terms, and detailed information on the implementation status of each project.

- **18 major and minor Chinese financiers** have provided external loans to Zambia and its SOEs since 2000.

- Loan commitments by Chinese financiers between 2000 and 2020 totaled **US\$ 10.3 billion**, with 67 percent (US\$ 6.94 billion) committed just since 2015
- Based on project implementation status, we estimate that **US\$ 7.8 billion** was disbursed by August 2021.
- Contracted but undisbursed Chinese loans as of August 2021 amounted to **US \$2.5 billion**, around 13 percent of 2020 GDP.
- We calculate that Zambia and its SOEs have repaid at least **US\$ 1.2 billion** to Chinese lenders since 2000.
- Excluding Kafue Gorge Lower, ZESCO's debt to all creditors is closer to US\$ 930 million than the US\$ 527 million reported by Zambia's Ministry of Finance.

Our debt figure does not include any penalties or accumulated interest arrears, and it does not include debt from any Zambian state-owned entities' minority holdings in private, non-Chinese joint ventures like Maamba Collieries that have borrowed from Chinese lenders. At the end of 2020 Zambia had over US\$ 2 billion in domestic arrears.² This includes substantial arrears to Chinese contractors for unpaid projects, but we have not included this in our research.

Our calculations may underestimate repayments to Chinese creditors by Zambia's central government in 2020 and state-owned companies in 2019 and 2020, yet given evidence on Zambia's numerous defaults, we do not believe these repayments would have been significant enough to make much difference.

Our estimate should not be interpreted as evidence that Zambia's total public external and publicly-guaranteed debt

as of December 2020 was higher than previously reported (US\$ 14.3 billion).³ These Chinese debt figures can largely be accounted for in Zambia's Ministry of Finance reports. It does mean that the Lungu government was not transparent about the heavy weight of Chinese financiers among its many external creditors.

Given the complicated situation with at least 18 Chinese lenders having provided external loan funding to the Zambian government and its state-owned firms, reaching consensus on burden-sharing is likely to prove exceptionally difficult.

BACKGROUND: CHINESE LENDING IN ZAMBIA IN HISTORICAL PERSPECTIVE

ZAMBIA BEGAN BORROWING interest-free loans from China's aid program in 1967.⁴ Early projects included the iconic 1,860 km Tazara Railway, built between 1970 and 1976, which allowed Zambia's copper exports to flow to Europe through Tanzania's port, bypassing apartheid-era South Africa. With the cross-border expansion of Chinese firms beginning in 1979, the launch of China's export credit agency, China Eximbank, in 1994, and the growth of commercial banks and China's large development finance institution, China Development Bank, new sources of Chinese finance and new



instruments (concessional loans, preferential export buyers' credits, suppliers' credits, commercial loans, syndicated loans) entered the picture.

After more than two decades of debt distress and contentious structural adjustment programs Zambia completed its Highly Indebted Poor Countries (HIPC) Initiative in 2005. Significant debt write-offs from the World Bank, other international financial institutions, and the Paris Club amounted to US\$ 3.8 billion.⁵ Zambia pledged at the time that the country would avoid new, non-concessional loans, yet this pledge was short lived.

Data from CARI in Appendix Table 1 show that after the HIPC completion point in 2005, Zambia and its SOEs entered into at least 77 different loan contracts with Chinese financiers, many at commercial rates. In addition, 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 sharply ratcheted up Chinese borrowing for public works (Figure 1), while clamping down on public disclosure.⁶ By September 2017, the International Monetary Fund (IMF) had labeled Zambia at “high risk” of debt distress.

Despite the risks, in 2018, Zambia obtained at least US\$ 1.34 billion in new Chinese funding, half of all the new loans signed by the government that year.⁷ In June 2018, President Lungu belatedly announced that unfinished projects would be suspended, aside from several priority projects, and Zambia would sign no new loans.⁸ The US\$ 2 billion Kafue Gorge Lower 750 mw hydropower project was designated a priority project (Box 1). In 2019, the Lungu government borrowed a further US\$ 187 million from Chinese banks to fund the construction of Buffalo Park army barracks in Chalala, Lusaka.⁹

OFFICIAL REPORTS OF ZAMBIA'S CHINESE DEBT

ZAMBIA'S AGGREGATED CHINESE debt has been officially reported in two complementary sources: the World Bank's International Debt Statistics (IDS), and Zambia's Ministry of Finance (MOF). The World Bank relies on Zambia's government for its debt statistics, but the data are presented differently by the two sources, so we discuss them both.

WORLD BANK DATA

ALL WORLD BANK BORROWERS are “required to provide statistics on ... the long-term external debt of public agencies and that of private ones guaranteed by a public agency in the debtor country.”¹⁰ Public debt includes all SOEs and public corporations, no matter how commercial they are in nature. These statistics are collected by the World Bank's IDS office. In 2020, the World Bank's IDS office began releasing disaggregated information for the first time on the composition of Chinese debt for its member countries.

The World Bank recorded Zambia's public and publicly guaranteed (PPG) debt stock to all Chinese

Table 1: Zambia Government External Debt Stock 2020 (in US\$ million)

Creditor Type	End-2020 Stock	% of Total (rounded)
Multilateral (ADB, ADF, IMF, WB)	2,013.51	16%
Non-Paris Club	211.72	2%
Paris Club	123.26	1%
EXIM China	2,836.87	22%
CATIC	89.57	1%
China Dev Bank	468.77	4%
Euro Bond	3,000.00	24%
Others	3,994.61	31%
Total (excluding Publicly Guaranteed Debt) = 12,738.30		

Source: Ministry of Finance, 2020 Annual Economic Report, p. 38 https://www.mof.gov.zm/?wpfb_dl=358 and CARI calculations of percentages.

creditors as US\$ 3.4 billion in 2019, with US\$ 2.98 owed to official Chinese creditors and US\$ 436 million to private creditors.¹¹ According to the IDS, Zambia had repaid Chinese creditors US\$ 891.3 million in principal payments between 2000 and 2019.¹²

ZAMBIA MINISTRY OF FINANCE

PUBLIC DEBT (CENTRAL GOVERNMENT)

IN THE MIDDLE OF EACH YEAR, the Zambian MOF releases an Annual Economic Report for the previous calendar year, providing information on the country's external debt stock and new borrowings. In recent years, Annual Economic Reports have identified just three Chinese creditors by name (China Eximbank, China Development Bank, and CATIC, or China National Aero-Technology Import & Export Corporation), for which outstanding debt was US\$ 3.4 billion in 2020 (Table 1).¹³

According to this data, Zambia's debt to Chinese creditors was US\$ 3.4 billion, about 27 percent of total central government external debt of US\$ 12.7 billion. Yet by 2020, according to our data, the Zambian government and its SOEs had borrowed from at least 18 Chinese banks and other creditors.

Some of the 15 other Chinese creditors, including Industrial and Commercial Bank of China, are no doubt included, along with non-Chinese lenders, in a category called "Others", which itself makes up 31 percent of the total. However, the Annual Economic Report did not include significant borrowing by Zambian SOEs like ZESCO in these figures.

PUBLICLY-GUARANTEED DEBT (SOEs)

IN 2021, ZAMBIA'S MOF PUBLISHED a Government Debt Portfolio for 2020. This provided a summary of US\$ 1.58 billion in publicly guaranteed debt stock by institution (Table 2).²⁰ All of these institutions except

Box 1: Kafue Gorge Lower Case Study

In Table 2, Zambia's Ministry of Finance reported that Kafue Gorge Lower Power Development Corporation (KGL), a special purpose vehicle (SPV) wholly owned by ZESCO, had US\$ 932 million in outstanding debt stock by the end of 2020. None of this outstanding debt appears to have been reported to the World Bank's International Debt Statistics, or disclosed by the Ministry of Finance in its Annual Economic Reports.

On November 13, 2017, ZESCO finalized a US\$ 1.53 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.¹⁴ 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.¹⁵

According to ZESCO's Integrated Annual Reports, KGL, with a total project cost of approximately US\$ 2 billion, was financed by a syndicate of Chinese banks (China Eximbank and Industrial and Commercial Bank of China, for US\$ 1.53 billion) and the Development Bank of South Africa (DBSA, for US\$ 100 million).¹⁶ The DBSA loan was fully disbursed by the end of 2018, and could have been used by ZESCO for the advance payment, while the Chinese syndicate has been disbursing since July 2018.¹⁷ Adding just the remaining US\$ 888 million owed by Kafue Gorge Lower to the Chinese syndicate to the US\$ 3.4 billion reported by the Ministry of Finance as its debt to three named Chinese creditors (Table 2) would bring Zambia's debt to Chinese entities in 2020 to at least US\$ 4.2 billion.¹⁸ As of August 2021, we estimate that the Chinese syndicate has disbursed US\$ 919 million.

Given its poor financial position, it is not clear where ZESCO came up with the 15 percent advance payment for the US\$ 2 billion project, approximately US\$ 300 million. It is possible that Sinohydro fronted some of this payment in a formal or informal bridge loan to ZESCO. Sinohydro purchased Sinosure's Specific Contract Insurance (which covers non-payment from the client) for the KGL project. Sinosure filed a claim in January 2021; ZESCO made a "partial payment" but Sinohydro received an indemnity of more than US\$ 57 million in June 2021, its first on this project.¹⁹

Table 2: Publicly Guaranteed External Debt Stock by Institution (in US\$ million)

Institution	End 2020 Stock	% Composition
Kafue Gorge Lower	932.0	59.1
ZESCO	527.4	33.4
Public Service Pensions Fund	52.7	3.3
Development Bank of Zambia	27.5	1.7
ZAMTEL	22.2	1.4
Zambia National Building Society	15.0	1.0
Total = 1,576.9		

Source: Ministry of Finance, "Government Debt Portfolio, 2020 - Quarter 4" (Lusaka, Zambia: Ministry of Finance, 2021) https://www.mof.gov.zm/?wpfb_dl=352.

the Development Bank of Zambia are wholly owned by the Zambian government.

Together, the official figures as reported by the Zambian MOF for the country's total external PPG debt come to US\$ 14.3 billion at the end of 2020. However, as the Debt Portfolio did not name any creditors, it is not clear which part of this is owed to Chinese entities.

DISCUSSION

THE WORLD BANK relies primarily on the Zambian government to provide its debt data, so it is constrained by the quality of the Zambian government's data. We identify at least five problems with the Zambian data.

Publicly Guaranteed Debt. As the World Bank's IDS data and the MOF Annual Economic Report data (which exclude debt borrowed by SOEs, with or without government guarantees) are quite similar it is safe to say that Zambia has not reported the external debts of its SOEs to the World Bank, contravening the IDS guidelines that specify public debt as including SOE debt.

Non-guaranteed Debt. Zambia has not published clear figures on non-guaranteed debt of its SOEs, principally ZESCO. At the end of 2018, an IMF mission with access to ZESCO's books estimated that debt service for Zambian SOEs (principally ZESCO) would amount to US\$ 215 million in 2020, of which only US\$ 152 million was guaranteed by the Zambian state.²¹ In 2019, according to the IMF, non-guaranteed SOE debt (again, principally ZESCO) came to US\$ 600 million, a significant contingent liability for the central government.²²

Contracted but Undisbursed Debt. In contrast to countries like Nigeria, Zambia's government does not publish data on its contracted but undisbursed debt, creating challenges for would-be creditors to analyze debt sustainability. According to an IMF study, by April 2019 the total amount of contracted but undisbursed debt in Zambia had reached US\$ 9.7 billion (not all of this was Chinese) -- around 40 percent of 2018 GDP.²³

Debt cancellation. Debt cancellation provides another good example of significant gaps in the IDS data. According to the IDS, China cancelled US\$ 35.6 million in outstanding debt in Zambia in 2005 and 2006.²⁴ These two instances were the only debt forgiveness recorded from 2000 to 2019. In contrast, researchers at CARI using Chinese and Zambian sources identified six cases of Chinese debt cancellation (all from interest-free loans) in Zambia from 2000 to 2019, for a total of US\$ 392 million.²⁵

Arrears. Zambia had reported to the World Bank only US\$ 66 million in arrears to Chinese creditors as of the end of 2019. Yet Zambian officials told the London Stock Exchange that just four months later, as of the end of April 2020, the central government had accumulated arrears of at least US\$ 201 million to Chinese entities.²⁶ This did not include ZESCO and other SOEs' arrears.

CARI ESTIMATES OF ZAMBIA'S CHINESE DEBT

OUR ESTIMATE OF TOTAL Chinese loan commitments to Zambia since 2000 is US\$ 10.3 billion.²⁷ However, some loans have not yet been disbursed, some projects were suspended or cancelled, and some debt has been repaid. Our disbursement estimate methodology is described in Appendix 1; Appendix 2 below provides details on the projects.

Completions, Suspensions, and Cancellations. By the end of August 2021, 35 out of 61 projects with loans committed by Chinese lenders since 2000 had been completed, mostly with full disbursement. Six had been signed but had not moved forward. Three were officially suspended or cancelled.

Disbursements. Based on our estimates, from 2000 to 2020, Zambia received US\$ 7.8 billion in loan disbursements from China. Thus, contracted but undisbursed Chinese debt as of August 2021 amounted to US\$ 2.5 billion, around 13 percent of 2020 GDP.²⁸ Zambia's MOF noted that defaults in 2020 by its SOEs and cross-defaults by the central government had "reduced disbursements to projects".²⁹ Yet eighteen Chinese projects appeared to be still under some stage of implementation in 2019 and 2020. For example, the MOF reported significant disbursements of US\$ 117 million and US\$ 126 million from Chinese creditors in December 2019 and January 2020.³⁰

Debt Cancellations. Although China has cancelled some debt owed by Zambia, these cancellations will not have reduced Zambia's debt stock as we have calculated it. Chinese debt cancellations have only been provided for the balance of interest-free loans that have reached maturity without being totally repaid.³¹ Most interest-free loans had a 20-year term, and most debt cancellations happened between 2000 and 2010 for loans issued in the 1970s and 1980s that had been in default since Zambia's last debt crisis.

Repayments. Loan terms can vary considerably, with suppliers' credits having very short terms and

infrastructure projects terms of 20 years or even longer. Some Chinese creditors have been repaid fairly quickly. Zambia has borrowed at least US\$ 278 million from military aircraft supplier CATIC, for example, but has been steadily repaying. In 2020, the CATIC debt had shrunk to US\$ 89.57 million, with US\$ 39.25 million in principal repayments just between 2017 and 2019.³²

On the other hand, Table 1.1 in the Appendix, compiled from ZESCO's Annual Reports, shows how some Chinese creditors had to wait. In 2017 and 2018, for example, ZESCO made no payments to Eximbank for the Kariba North Bank project, and nothing to ICBC for the Pensulo-Msoro-Chipata transmission lines, though ZESCO resumed repaying them in 2019. However, Bank of China was being paid on time for the Fibre-optic cable phase II project signed in 2011, and ZESCO appears to have fully paid CITIC for Fibre-optic cable project phase I, a loan signed in 2005.

Our estimate of repayments includes central government repayments of US\$ 891 million between 2000 and 2019 as recorded in the IDS. It also includes an additional US\$ 308 million repaid by ZESCO through 2018 (see Appendix Table 1.1). After accounting for these repayments (US\$ 1.20 billion), Zambia's PPG Chinese debt stock accrued since 2000 comes to US\$ 6.6 billion.

We note that not all of the US\$ 6.6 billion in estimated debt stock is due in the near future because Chinese loans normally have a grace period of three to seven years and a term of ten to twenty years. Many of the Chinese commercial loans will be accounted for under the central government's "other" category, which was nearly US\$ 4 billion in 2020. Nonetheless, no matter the expected repayment schedule, it is clear that the Zambian central government has been hiding the identity of some significant Chinese creditors, and failing to report ZESCO's non-guaranteed borrowing, which is very likely to include some Chinese loans.

CONCLUSION

OFFICIAL SOURCES, INCLUDING the World Bank and Zambia's MOF, have not yet provided accurate information on the stock of debt owed by Zambia to

Chinese lenders. Our research, based on open sources and interviews, suggests the public external debt, i.e., what the government of Zambia, including its SOEs, owes to all Chinese creditors is approximately US\$ 6.6 billion as of August 2021, almost double the amount cited by the Lungu administration. This does not include unpaid domestic debt to Chinese contractors. Given the complicated situation with at least 18 Chinese lenders having provided loan funding to the Zambian government and its state-owned firms, reaching consensus on burden-sharing is likely to prove exceptionally difficult.

In June 2020, Chinese president Xi Jinping set out his government's expectations about how Chinese banks would respond to the debt crisis: "We encourage Chinese financial institutions to ... hold friendly consultations with African countries according to market principles to work out arrangements for commercial loans with sovereign guarantees."³³ The Chinese government agreed to provide DSSI treatment (one year grace period and three years repayment) in Zambia for all "Government to Government" loans and all concessional loans.³⁴

Two Chinese policy banks, China Eximbank and China Development Bank, have already provided temporary debt relief to Zambia.³⁵ Yet suspension of debt service and longer repayment periods are unlikely to be enough. Zambia has requested debt relief under the Common Framework, a program that links Paris Club procedures with the G20's effort to provide pandemic-linked relief on debt service in developing countries. Now, the IMF will act as an "honest broker" in determining the level of write-down required to bring Zambia to debt sustainability. The Zambia case provides an important opportunity for China's State Council to coordinate a response from all Chinese lenders. ★

APPENDIX 1: METHODOLOGY FOR CARI ESTIMATES

Chinese financiers normally disburse their funds directly to Chinese contractors, once the Zambian government has signed off on milestones in a project's progress. The fundamental assumption is that contractors will not continue to implement projects for which financiers have not disbursed enough funds, which means that project progress shows the loan disbursement schedule under conservative estimates. Many situations indeed meet this assumption. For example, the Kafue Gorge Lower project faced suspension when loan disbursement was delayed, construction of the FTJ Chiluba University has stalled due to loan disbursement problems, and the contractor of the Kafulafuta Reservoir dam once paused its work, citing funding problems.

Appendix 2 provides CARI data on all loans Zambia and its SOEs borrowed from Chinese creditors since 2000 and the progress of the projects supported by these loans. We estimated the disbursement progress for each loan based on what we were able to find online about the status of the project's progress. For example, in March 2021, ZNBC reported that the Kafulafuta Dam was 98 percent complete.

In some cases, we observed that ZESCO reported project progress that is much more advanced than their reported disbursement schedule. For example, the Mpika Power Supply project was 85 percent completed by December 2018, but only 40 percent of the loan commitments were disbursed. In these situations, we followed the general methodology to estimate loan disbursements by August 2021, that is using the latest project progress multiplied by the loan commitment amount.

First, we only consider disbursement of a loan to begin when the project it finances is commenced. (Photo opportunities involving the laying of cornerstones does not qualify as actual commencement.) Then, we estimate the disbursed amount to be loan commitments times completed percentage for ongoing projects with progress

information. For example, if the latest progress report of a project that has a US\$ 100 million loan commitment shows the project is 90 percent complete, we estimated US\$ 90 million had been withdrawn from this loan facility. When there is evidence for project implementation, but the project progress was not available, we assumed that 20 percent of the loan would be disbursed every year after the loan was signed (Appendix Table 1.1 shows results of estimation).

Based on CARI's data, Chinese loan commitments to Zambia amounted to US\$10.3 billion between 2000 and 2020. Based on project implementation status, we estimate that US\$ 7.8 billion of this was disbursed by August 2021.

We calculate that Zambia has repaid US\$ 1.2 billion since 2000. This includes US\$ 891 million between 2000 and 2019 to "China" as recorded in the IDS, although this may not be accurate. It also includes an additional US\$ 308 million repaid by ZESCO through 2019 (Appendix Table 1.1). ZESCO has not released annual reports for 2020. Due to the complete lack of information about ZESCO's repayments during 2020, and the inaccuracy of IDS records, this estimate of loan repayment may be too low.

Furthermore, our estimated ZESCO debt stock for August 2021 just to Chinese companies is US\$ 619 million (not including Kafue Gorge Lower), which is higher than the US\$ 527 million of ZESCO publicly guaranteed outstanding debts to all creditors, as reported by the MOF at the end of 2020 (Appendix Table 1.2).

It is possible that ZESCO's repayments since 2019, the last year of official data, were indeed significant. Yet ZESCO's financial situation is dire. Maamba Collieries, an independent power producer, reported that ZESCO was in arrears to the company for US\$ 432 million as of 2021, for example.

We suspect that the difference is due to non-guaranteed debt that has not yet been publicly reported by Zambia's MOF, even though ZESCO appears to have reported fully on its borrowings up through the 2019 Integrated Report. As Appendix Table 1.2 shows, in 2019 ZESCO reported US\$ 550 million in debt to Chinese lenders and US\$ 282 million in non-Chinese debt for a total of US\$ 832 million (these figures exclude Kafue Gorge Lower). Yet Zambia's MOF has reported only US\$ 527 million for ZESCO's total external debt in 2020 to all lenders (excluding Kafue Gorge), US\$ 315 million less than ZESCO's own financial statement in 2019.

Furthermore, through the Kafue Gorge Lower project, which is close to completion, ZESCO will effectively owe Sinohydro for unpaid work, whether this is disbursed by the Chinese banking consortium or not. This is also the case for other work that Chinese contractors have undertaken in anticipation of disbursements.

Faced with these complexities, to reduce arbitrary assumptions and increase the replicability of our calculations, we estimated Zambia's debt stock based on our methodology of estimating disbursements and official repayment records. We concluded that Zambia's Chinese PPG debt stock, including the central government and SOEs accrued since 2000 amounts to approximately US\$ 6.6 billion. This includes any "non-guaranteed" Chinese debt owed by ZESCO.

Appendix 1.1: ZESCO's Outstanding Debt to Chinese Creditors, 2015-2019 (in US\$ millions)

Project	Financier	Year Signed	Loan Commitment	Outstanding Balance					Repayment by Dec 2019
				2015	2016	2017	2018	2019	
Kariba North Bank Extension Hydropower Project, 360 MW	Eximbank	2008	316	268	241	214	214	161	155
Chambishi East 330KV/66KV Substation	CNMC Industrial Zone Development	2009	11	6	5	4	4	3	8
Pensulo-Msoro-Chipata West 330 KV, and Pensulo-Kasama 330 KV Transmission lines	ICBC	2011	285	272	285	285	285	228	57
Fibre Optic Cable Phase II	BoC	2011	48	28	20	12	4	0	48
Musonda Falls Hydropower Station Upgrade, Bridging loan 1	Sinohydro	2015	10	10	10	0	-	-	10
Musonda Falls Hydropower Station Upgrade, Bridging loan 2	Sinohydro	2016	29	0	17	3	0	-	29
Mpika Power Supply	ICBC	2016	30	0	0	6	12	28	0
Kafue Gorge Lower Hydropower Station	ICBC and Eximbank	2017	1,531	-	-	-	551	888	0
300km Kabwe - Pensulo Second Transmission Line, 330 kV	Eximbank	2017	114	-	-	-	8	8	0
Luapula, Musonda Falls Hydropower Plant Rehabilitation and Upgrading, 10MW	ICBC	2017	35	-	-	30	30	30	0
Connection of Lundazi and Chama to the National Grid	ICBC	2017	37	-	-	7	7	29	0
Lusiwasi Upper Hydropower, 15MW - Bridging Finance	China Machinery Engineering Corporation Limited (CMEC)	2018	15	-	-	-	15	15	0
Kabwe - Pensulo Second Transmission Line, 330kV - Bridging Finance	China Jiangxi International Corporation (CJIC)	2018	17	-	-	-	14	10	0
ZTE Short Term Loan	Zhongxing Telecommunication Equipment Corporation (ZTE)	2019	N/A	-	-	-	-	18	0
Total Debt Stock to Chinese Creditors				628	623	606	1,189	1,416	308

Note: ZESCO's annual integrated reports list the US\$ 45 million loan signed in 2014 for the Kariba North - Kafue West Transmission Line, which is the only Chinese loan that ZESCO reported as having been signed through Zambia's Ministry of Finance. According to the CARI database, the project was also completed in 2014. We assume that the responsibility for the repayment of this loan lies with the Ministry of Finance, and that it is included in the Central Government's outstanding debt statistics while all the loans in this table are not. Therefore, it is not included in this table to avoid confusion. Source: All data is from ZESCO Integrated Reports 2015-2019, notes in the Borrowings section, compiled and with calculations by authors.

Appendix 1.2: ZESCO's External Outstanding Debt, 2018 - 2020 (in US\$ millions)

	Total				Chinese				
	2018	2019	2020	Difference 2018 to 2020	2018	2019	2020	2021	Difference 2018 to 2021
KGL	643	973	932	289	547	879	Unclear	919	372
Total Excluding KGL	981	832	527	-454	555	550	Unclear	619	64
Total	1,625	1,805	1,459	-166	1,102	1,428	Unclear	1,538	436

Source: Figures in bold are official figures. Data for 2018 and 2019 are from Section 23, pp. 110-111, in 2018 Integrated Report, and Section 22, pp. 102-103, in 2019 Integrated Report, and converted to USD from ZMW by authors using the Bloomberg Composite Rate. (In 2018, 1 ZMW equals 0.084 USD, and in 2019, 1 ZMW equals 0.071 USD.) Data for 2020 are from Zambia MOF's 2020 Q4 Government Debt Portfolio. *The 2021 estimate for Chinese debt is by authors.

Note: ZESCO's 2018 and 2019 Integrated Reports' Borrowing Section reported end-of-year outstanding debt in ZMW in a table and provided further detailed information on each loan. These separate descriptions report the outstanding balance of each loan in the currency in which the loan is denominated (which was used for appendix table 1.2), but ZESCO used different exchange rates for different loans and not all loans were denominated in USD. In order to use a uniform exchange rate to calculate debt outstanding for all loans, we used the amounts in ZMW and converted them with the Bloomberg Composite Rate.

APPENDIX 2: CHINESE LOANS CONTRACTED BY THE ZAMBIAN GOVERNMENT AND STATE-OWNED ENTERPRISES 2000-2020

Appendix 2: Chinese Loans Contracted by the Zambian Government and State-Owned Enterprises 2000-2020*

Summary of Public and Publicly Guaranteed (PPG) Loans from China, 2000-2020 (in US\$ Millions)		
Creditors	Commitments	Disbursements
Export-Import Bank of China (China Eximbank)	4,639	3,708
Export-Import Bank of China (China Eximbank) and Industrial and Commercial Bank of China (ICBC) Syndicate	1,531	919
Industrial and Commercial Bank of China (ICBC)	1,429	1,078
China Development Bank (CDB)	1,003 (incl. 418 suspended)	549
Export Suppliers Credit	768 (excl. one loan with an unknown commitment)	786
Bank of China (BoC)	446	375
China International Development Co-operation Agency (CIDCA) / Ministry of Commerce of the PRC (MOFCOM)	268	268
Jiangxi Bank Co., Ltd (Jiangxi Bank)	187	58
China International Trust and Investment Corporation (CITIC)	8	8
Contractor-Facilitated Finance	50	10
Totals	US\$ 10.329 billion	US\$ 7.759 billion

*Value includes loans signed but suspended. Does not include loans that were signed but later cancelled.

Appendix 2.1: Loans Signed by the Central Government 2000-2020 (US\$ 7.813 billion)

(Value includes loans signed but officially suspended. Does not include loans that were signed but later cancelled) - page 1/11

No.	Project Title	Loan Commitment (US\$ millions)	Signed Year	Grace Period* / Maturity	Interest Rate	Project Implementation Status	Disbursement Amount (Estimate)	Ultimate Beneficiary	Comments
2.1.1 Total Commitment from Export-Import Bank of China (China Eximbank): US\$ 4.209 billion									
1	Concessional Loan for Unknown Purpose	12	2001	- / -	-	-	12	-	This loan was likely for the rehabilitation of Grain Silos managed by the Food Reserve Agency.
2	2 Xian MA-60 Cargo Planes; 12 Harbin Y-12 Cargo Planes	56	2006	- / -	-	Completed	56	Ministry of Defense (Zambia Air Force)	Sold by AVIC-China National Aero-Technology Import and Export Corporation (CATIC) and used by the Zambian Air Force.
3	Procurement of Earth-Moving Equipment for Road Rehabilitation	40	2007	- / -	-	Completed	40	Ministry of Work and Supply	-
4	Kamwala Government Complex Building Interior Construction	25	2009	5 / 15	2%	Completed	25	Ministry of Work and Supply	Contracted to Shanghai Construction Group (SCG).
5	Purchase of Non-Intrusive Container Scanning Equipment	46	2009	5 / 15	2%	Completed	46	Zambia Revenue Agency	-
6	Food Reserve Agency (FRA) Storage Sheds	12	2009	5 / 15	2%	Completed	12	Ministry of Agriculture (Food Reserve Agency)	Contracted to China National Construction and Agricultural Machinery Import and Export Corporation (CAMC)
7	Military Residential Housing Unit (MOD) Project - 4,527 units in 3 Provinces	366	2010	5 / 20	-	Completed	366	Ministry of Defense	Contracted to China National Machinery Industry Corporation (Sinomach)

Appendix 2.1: Loans Signed by the Central Government 2000-2020 (US\$ 7.813 billion)

(Value includes loans signed but officially suspended. Does not include loans that were signed but later cancelled) - page 2/11

No.	Project Title	Loan Commitment (US\$ millions)	Signed Year	Grace Period*/Maturity	Interest Rate	Project Implementation Status	Disbursement Amount (Estimate)	Ultimate Beneficiary	Comments
8	Purchase of Military Equipment for Transport Disaster Management Program	105	2010	-/-	-	Completed	105	Ministry of Defence (Zambia Air Force)	Equipment is sold by China National Aero-Technology Import & Export Corporation (CATIC) and used by the Zambian Air Force.
9	Lusaka National Stadium	86	2010	10/20	-	Completed	86	Ministry of Youth, Sport and Child Development	Contracted to Shanghai Construction Group (SCG).
10	Mobile Hospital Project	47	2010	-/-	-	Completed	47	Ministry of Health	Contracted to AVIC-China National Aero-Technology Import and Export Corporation (CATIC).
11	Independence Stadium Western Grandstand Rehabilitation	8	2010	-/-	-	Completed	8	Ministry of Youth, Sport and Child Development	Contracted to Shanghai Construction Group (SCG).
12	Mongu-Tapo Section, Mongu Kalabo Road, 34 km	244	2011	-/-	-	Completed	244	Road Development Agency	Contracted to Aviation Industry Corporation of China (AVIC).
13	Lusiwasi Hydro-power Expansion Project & Lunzua Hydropower Rehabilitation Project	183	2013	-/-	-	Lunzua Station commissioned; Lusiwasi Lower Station project is under implementation	100	ZESCO Limited (ZESCO)	This loan finances 2 projects: Lunzua and Lusiwasi Lower Hydropower Stations. China National Electric Engineering Co. Ltd (CNEEC), as the contractor, completed the Lunzua project in 2015. The Lusiwasi Lower project was contracted to Sinohydro in 2017.

Appendix 2.1: Loans Signed by the Central Government 2000-2020 (US\$ 7.813 billion)

(Value includes loans signed but officially suspended. Does not include loans that were signed but later cancelled) - page 3/11

No.	Project Title	Loan Commitment (US\$ millions)	Signed Year	Grace Period* / Maturity	Interest Rate	Project Implementation Status	Disbursement Amount (Estimate)	Ultimate Beneficiary	Comments
14	Mbala to Nakonde Road, 172 km	196	2013	- / -	-	Completed	196	Road Development Agency	Contracted to China CAMC Engineering Co., Ltd. (CAMCE).
15	Lusaka Urban Road (L400) Upgrade, 400 km Phase I	296	2013	- / -	-	Completed	296	Road Development Agency	Contracted to Aviation Industry Corporation of China (AVIC).
16	120 km Kariba North - Kafue West Transmission Line, 330 kV	45	2014	7 / 20	2%	Completed	45	ZESCO Limited (ZESCO)	Contracted to Sinohydro Ltd.
17	Lusaka International Airport (Kenneth Kaunda International Airport) Expansion	360	2014	5 / 15	2%	Terminal commissioned; overall, over 90% completed (August 2021)	324	Ministry of Housing and Infrastructure Development	Contracted to China Jiangxi Corporation for International Economic and Technical Cooperation (CJIC).
18	Smart Zambia National ICT Development Project Phase I	66	2015	- / -	-	Completed	66	Office of the President (SMART Zambia Institute)	Contracted to Huawei Technologies Co., Ltd.
19	Digital Migration Phase II and III, Eximbank Portion	232	2015	5 / 20	-	Completed	232	TopStar Communications Company Limited (TopStar)	The loan was contracted by the government of Zambia, and the government on lent it to TopStar, of which Zambia holds 40% of TopStar and StarTimes, a Chinese company, holds the other 60%. This loan was not included in the list of loans contracted by the government in 2015, in Zambia's 2015 Annual Economic Report.

Appendix 2.1: Loans Signed by the Central Government 2000-2020 (US\$ 7.813 billion)

(Value includes loans signed but officially suspended. Does not include loans that were signed but later cancelled) - page 4/11

No.	Project Title	Loan Commitment (US\$ millions)	Signed Year	Grace Period*/Maturity	Interest Rate	Project Implementation Status	Disbursement Amount (Estimate)	Ultimate Beneficiary	Comments
20	Ndola International Airport Phase I, Eximbank Portion	338	2016	-/-	-	Completed	338	Ministry of Housing and Infrastructure Development	Contracted to Aviation Industry Corporation of China (AVIC).
21	Lusaka-Kafue Bulk Water Supply	128	2016	-/-	-	98% Completed (Sept 2020)	125	Ministry of Water Development	Contracted to China Civil Engineering Construction Corporation (CCECC).
22	Lusaka Urban Road Rehabilitation Phase II (L400 Phase II)	313	2016	-/-	-	Completed	313	Road Development Agency	Contracted to Zhejiang Communications Construction Group Co., Ltd. (ZCCC).
23	Communication Towers Project Phase II (Smart Zambia/Zambia ICT Project Phase II)	281	2017	-/-	-	78% Completed (March 2021)	219	Office of the President (SMART Zambia Institute)	Contracted to Huawei Technologies Co., Ltd.
24	Kitwe, Chingola, and Mufulira, Copperbelt Province Urban Road Lot 1, 152 km	197	2018	-/-	-	Signed (Not disbursed; Delayed)	0	Road Development Agency	Contracted to Aviation Industry Corporation of China (AVIC).
25	Lusaka Urban Roads (L400) Upgrade, 400km, Phase III, Eximbank Portion	205	2018	-/-	-	Implementation (Expected to finish the first 25 km in 2021)	13	Road Development Agency	Contracted to China Jiangxi Corporation for International Economic and Technical Cooperation (CJIC).
26	Defense Project	171	2018	-/-	-	Signed	0	Ministry of Defence	-
27	Defense Project	30	2018	-/-	-	Signed	0	Ministry of Defence	-
28	Kawambwa to Mporokoso (D019) Road Upgrade, 122 km	121	2018	-/-	-	Implementation (Expected to finish the first 10 km in 2021)	10	Road Development Agency	Contracted to China Harbour Engineering Company Ltd. (CHEC).

Appendix 2.1: Loans Signed by the Central Government 2000-2020 (US\$ 7.813 billion)

(Value includes loans signed but officially suspended, Does not include loans that were signed but later cancelled) - page 5/11

2.1.2 Total from Industrial and Commercial Bank of China (ICBC): US\$ 1.042 billion										
No.	Project Title	Loan Commitment (US\$ millions)	Signed Year	Grace Period*/Maturity	Interest Rate	Project Implementation Status	Disbursement Amount (Estimate)	Ultimate Beneficiary	Comments	
29	2350-Unit Police and Security Force Housing	275	2016	-/-	-	Completed	275	Ministry of Home Affairs	Contracted to Aviation Industry Corporation of China (AVIC).	
30	Chinsali General Hospital Project	136	2016	-/-	-	Completed	136	Ministry of Health	Contracted to China National Complete Engineering Corporation (CCEC).	
31	Nkana Water and Sanitation	170	2016	-/-	-	Implementation (Delayed)	136 (Assuming 80% disbursed)	Ministry of Water Development	Contracted to China Henan International Cooperation Group Co., Ltd. (CHICO), temporarily suspended in 2019 due to funding issues.	
32	Ndola International Airport Phase I, ICBC Portion	60	2017	-/-	-	Completed	60	Ministry of Housing and Infrastructure Development	Contracted to Aviation Industry Corporation of China (AVIC). This loan pays for Zambia's 15% of the project costs, required for the Exim-bank export buyer's credit.	
33	2,000 Housing Units for Zambia National Service (Defense Project)	210	2018	-/-	-	Implementation	84 (Assuming 40% disbursed)	Ministry of Defence	The project is contracted to Shandong Dejian Group Co., Ltd.	
34	FTJ Chiluba University Project in Mansa and Kasama	191	2018	-/-	-	Signed (Delayed)	0	Ministry of Higher Education	The 2018 Mid-Year Economic Report of Zambia listed this loan as borrowed from ICBC (中国工商银行), but Chinese sources report the loan as a syndicated export buyer's credit with participation of the Industrial Bank (兴业银行). The project is delayed by funding and disbursement issues.	

Appendix 2.1: Loans Signed by the Central Government 2000-2020 (US\$ 7.813 billion)

(Value includes loans signed but officially suspended. Does not include loans that were signed but later cancelled) - page 6/11

2.1.3 Total from China Development Bank: US\$ 973 million									
No.	Project Title	Loan Commitment (US\$ millions)	Signed Year	Grace Period*/Maturity	Interest Rate	Project Implementation Status	Disbursement Amount (Estimate)	Ultimate Beneficiary	Comments
35	Mansa to Luwingo Road, 175 km	176	2013	- / -	-	Completed	176	Road Development Agency	Contracted to China Henan International Cooperation Group Co., Ltd. (CHICO).
36	Copperbelt Province Road Rehabilitation (C400 road) Rehabilitation, 406 km	418	2015	- / -	-	Signed (Suspended)	0	Road Development Agency	Contracted to China Henan International Cooperation Group Co., Ltd. (CHICO). Project suspended due to funding problems.
37	Mansa to Luwingo Road, 175 km (Additional Loan)	30	2016	3 / 10	LIBOR + 6M + 4.5%	Completed	30	Road Development Agency	Contracted to China Henan International Cooperation Group Co., Ltd. (CHICO).
38	Public Security Network III	179	2016	- / -	-	Implementation	143 (Assuming 80% disbursed)	Ministry of Home Affairs	Contracted to Zhongxing Telecommunication Equipment Corporation (ZTE).
39	Solar-Powered Milling Plant	170	2016	- / 12	LIBOR + 6M + 3.5%	Completed	170	Ministry of Commerce, Trade and Industry/ Presidential Milling Initiative/ Zambia Cooperative Federation	Contracted to Shandong Dejian Group Co., Ltd.

Appendix 2.1: Loans Signed by the Central Government 2000-2020 (US\$ 7.813 billion)

(Value includes loans signed but officially suspended. Does not include loans that were signed but later cancelled) - page 7/11

2.1.4 Total from Bank of China: US\$ 398 million									
No.	Project Title	Loan Commitment (US\$ millions)	Signed Year	Grace Period*/ Maturity	Interest Rate	Project Implementation Status	Disbursement Amount (Estimate)	Ultimate Beneficiary	Comments
40	Kafalafuta Reservoir Dam Water Supply Project	332	2016	- / 15	-	98% Completed (March 2021)	325	Ministry of Finance	Contracted to China National Chemical Engineering Co., Ltd. (CNCEC). The project experienced disbursement-related delays.
41	Lusaka Urban Road (L400) Upgrade, 400 km, Phase III, BoC Portion	36	2018	- / -	-	Implementation (Expected to finish the first 25 km in 2021)	2	Road Development Agency	Contracted to China Jiangxi Corporation for International Economic and Technical Cooperation (CJIC). This loan pays for Zambia's 15% share of the cost, required by the Eximbank buyer's credit.
42	Defense Project	30	2019	- / -	-	Signed	0	Ministry of Defence	-
2.1.5 Total from China Development Cooperation Agency (CIDCA) / Ministry of Commerce of the PRC (MOFCOM) : US\$ 268 million									
43	TAZARA	6	2001	- / -	0%	Completed	6	Tanzania-Zambia Railways Authority (TAZARA)	-
44	TAZARA	6	2002	- / -	0%	Completed	6	Tanzania-Zambia Railways Authority (TAZARA)	-
45	Kamwala Government Complex in Lusaka Completion	8	2002	- / -	0%	Completed	8	Ministry of Housing and Infrastructure Development	Contracted to Shanghai Construction Group (SCG).

Appendix 2.1: Loans Signed by the Central Government 2000-2020 (US\$ 7.813 billion)

(Value includes loans signed but officially suspended. Does not include loans that were signed but later cancelled) - page 8/11

No.	Project Title	Loan Commitment (US\$ millions)	Signed Year	Grace Period* / Maturity	Interest Rate	Project Implementation Status	Disbursement Amount (Estimate)	Ultimate Beneficiary	Comments
46	TAZARA	11	2004	- / -	0%	Completed	11	Tanzania-Zambia Railways Authority (TAZARA)	-
47	TAZARA	13	2006	- / -	0%	Completed	13	Tanzania-Zambia Railways Authority (TAZARA)	-
48	TAZARA	7	2006	- / -	0%	Completed	7	Tanzania-Zambia Railways Authority (TAZARA)	-
49	TAZARA Equipment and Machinery	5	2006	- / -	0%	Completed	5	Tanzania-Zambia Railways Authority (TAZARA)	-
50	Economic and Technical Cooperation	21	2007	- / -	0%	Completed	21	Government of Zambia	-
51	Levy Mwanawasa Stadium in Ndola	68	2009	- / -	0%	Completed	19	The Ministry of Youth, Sport and Child Development	Contracted to Anhui Foreign Economic Construction Group (AFECC).
52	TAZARA Protocol - 2009 Recapitalization	19	2009	10 / 15	0%	Completed	19	Tanzania-Zambia Railways Authority (TAZARA)	-
53	TAZARA 14th Protocol - Engine and Wagon Purchase	39	2010	- / -	0%	Completed	39	Tanzania-Zambia Railways Authority (TAZARA)	-
54	TAZARA 15th Protocol - Purchase of Locomotives	43	2012	- / -	0%	Completed	43	Tanzania-Zambia Railways Authority (TAZARA)	Purchased from China Communications Construction Company, Ltd. (CCCC).
55	TAZARA	22	2015	- / -	0%	Completed	22	Tanzania-Zambia Railways Authority (TAZARA)	-

Appendix 2.1: Loans Signed by the Central Government 2000-2020 (US\$ 7.813 billion)

(Value includes loans signed but officially suspended. Does not include loans that were signed but later cancelled) - page 9/11

2.1.6 Total from Jiangxi Bank Co., Ltd. (Jiangxi Bank): US\$ 187 million									
No.	Project Title	Loan Commitment (US\$ millions)	Signed Year	Grace Period*/ Maturity	Interest Rate	Project Implementation Status	Disbursement Amount (Estimate)	Ultimate Beneficiary	Comments
56	Chalala Barracks	187	2019	- / -	-	31% Completed (Aug 2020)	58	Ministry of Defence	Contracted to Jiangxi Zhongmei Engineering Construction Co., Ltd. (Zhongmei Group). According to a 2017 article posted on the Jiangxi Government Website, project is financed by a syndicated loan from Eximbank and Jiangxi Bank, though Zambia's MOF only reported Jiangxi Bank as the lender.
2.1.7 Total from Export Supplier's Credit: US\$ 686 million									
57	8 Hongdu JL-8 (K-8) Fighter Jet Trainers	67	2012	- / -	-	Completed	67	Ministry of Defence (Zambia Air Force)	Purchased from and financed by AVIC - China National Aero-Technology Import and Export Corporation (CATIC).
58	Take-over of Loan owed by Libya LAP Green Network to ZTE.	103	2014	- / -	-	Completed	103	LAP Green Network & Zambia Telecommunications Company Limited (Zamtel)	Financed by Zhongxing Telecommunication Equipment Corporation (ZTE). LAP Green Network bought Zamtel from the previous Zambian government with a ZTE loan. The current government renationalized Zamtel and took over the loan owed by LAP Green to ZTE.
59	Security Equipment for Police, the Immigration Department, Prisons and the Drug Enforcement Commission	164	2015	- / -	-	Implementation	164 (Assuming 100% disbursed)	Ministry of Home Affairs	Contracted to and financed by Poly Technologies Inc.

Appendix 2.1: Loans Signed by the Central Government 2000-2020 (US\$ 7.813 billion)

(Value includes loans signed but officially suspended. Does not include loans that were signed but later cancelled) - page 10/11

No.	Project Title	Loan Commitment (US\$ millions)	Signed Year	Grace Period*/ Maturity	Interest Rate	Project Implementation Status	Disbursement Amount (Estimate)	Ultimate Beneficiary	Comments
60	Earth-moving Machinery for Road Repairs/ Construction Purchase, Phase II	50	2015	- / -	-	Completed	50	Road Development Agency	Contracted to and financed by Aviation Industry Corporation of China (AVIC).
61	6 Hongdu L-15 Trainer Jets	211	2015	- / -	-	Completed	211	Ministry of Defence (Zambia Air Force)	Contracted to and financed by Poly Technologies Inc. Poly delegated the project to China Railway 24th Bureau Group, Anhui Company.
62	Ndola City Roads Construction and Upgrade, 42.9km	50	2016	- / -	-	Completed	50	Road Development Agency	Contracted to and financed by Poly Technologies Inc. Poly delegated the project to China Railway 24th Bureau Group, Anhui Company.
63	Digital Migration Phase II and III, StarTimes Portion	41	2017	- / -	-	Completed	41	TopStar Communications Company Limited (TopStar)	Contracted to and financed by StarTimes Group (StarTimes). This is to pay for Zambia's 15% of the project costs, required for the Exim-bank export buyer's credit.
2.1.8 Total from Contractor-Facilitated (CFF) Projects : US\$ 50 million confirmed (total unclear)									
64	Upgrade Kalabo - Kalongola (D319) - Sitoti to Matebele (M10) Road, 194 km	171	2016	- / -	-	Contract Cancelled	-	Road Development Agency	The contract was awarded to China State Construction. The contract was cancelled by Zambia because of its debt situation.
65	Upgrade T2 Road from Lusaka to Ndola, 321 km; Luansha-Fisenge-Masangano Road, 45 km; Kabwe and Kapi-ri-Mposhi bypasses	-	2017	- / -	-	Contract Cancelled	-	Road Development Agency	The contract was awarded to China Jiangxi Corporation for International Economic and Technical Cooperation (CJIC). The contract was cancelled by Zambia because of its debt situation.

Appendix 2.1: Loans Signed by the Central Government 2000-2020 (US\$ 7.813 billion)

(Value includes loans signed but officially suspended. Does not include loans that were signed but later cancelled) - page 11/11

No.	Project Title	Loan Commitment (US\$ millions)	Signed Year	Grace Period*/Maturity	Interest Rate	Project Implementation Status	Disbursement Amount (Estimate)	Ultimate Beneficiary	Comments
66	Rehabilitation of D775 Road from Batoka to Maamba	123	2017	- / -	-	Project on-going; CFF status unclear	Unknown	Road Development Agency	The contract was awarded to SEPCO Electric Power Construction.
67	Rehabilitating and maintaining feeder roads Phase I	424	2019	- / -	-	Project on-going; CFF status unclear	Unknown	Road Development Agency	The contract was awarded to AVIC International Project Engineering.
68	Rehabilitating and maintaining feeder roads, Phase II	50	2019	- / -	-	Implementation	10 (Assuming 20% disbursed)	Road Development Agency	The contract was awarded to China Geo Construction Engineering

Section 2.1 Total: US\$ 7.813 billion

Appendix 2.2: Loans Signed by State-Owned Enterprises 2000-2020 (US\$ 2.516 billion)

(Value includes loans signed but officially suspended. Does not include loans that were signed but later cancelled) - page 1/3

No.	Project Title	Loan Commitment (US\$ millions)	Signed Year	Grace Period*/Maturity	Interest Rate	Project Implementation Status	Disbursement Amount (Estimate)	Ultimate Beneficiary	Comments
2.2.1 Total from Export-Import Bank of China (China Eximbank) & Industrial and Commercial Bank of China (ICBC) Syndicate: US\$ 1.531 billion									
1	Kafue Gorge Lower Hydropower Project, 750MW	1,531	2017	- / -	-	The 1st unit commissioned; Expected to be complete by June 2022	919 (Assuming 60% disbursed)	Kafue Gorge Lower Power Development	Kafue Gorge Lower Power Development is a special purpose vehicle, however ZESCO owns 100% of the shares. The project was contracted to Sinohydro.
2.2.2 Total from Export-Import Bank of China (China Eximbank) : US\$ 430 million									
2	Kariba North Bank Extension Hydropower Project 360 MW	316	2008	- / 15	LIBOR + 2%	Completed	316	ZESCO Limited (ZESCO)	ZESCO borrowed the loan and on-lent the money to Kariba North Bank Extension, a wholly-owned subsidiary of ZESCO. The project was contracted to Sinohydro.
3	300km Kabwe - Penu-lo Second Transmission Line, 330kV	114	2017	3 / 15	LIBOR + 3.2%	Implementation	68 (Assuming 60% disbursed)	ZESCO Limited (ZESCO)	ZESCO is the borrower. The project was contracted to China Jiangxi Corporation for International Economic and Technical Cooperation (CJIC).

Appendix 2.2: Loans Signed by State-Owned Enterprises 2000-2020 (US\$ 2.516 billion)

(Value includes loans signed but officially suspended. Does not include loans that were signed but later cancelled) - page 2/3

No.	Project Title	Loan Commitment (US\$ millions)	Signed Year	Grace Period*/Maturity	Interest Rate	Project Implementation Status	Disbursement Amount (Estimate)	Ultimate Beneficiary	Comments
2.2.3 Total from Industrial and Commercial Bank of China (ICBC) : US\$ 387 million									
4	685 km, Pensulo to Kasama and Pensulo to Chipata Transmission Lines, 330 kV	285	2011	5 / 15	LIBOR + 2%	Completed	285	ZESCO Limited (ZESCO)	ZESCO is the borrower. The project was contracted to Tebian Electric Apparatus Co., Ltd. (TBEA).
5	Mpika Power Supply, 330-66 KV Substation	30	2016	3 / 18	LIBOR + 3.35%	Completed	30	ZESCO Limited (ZESCO)	ZESCO is the borrower. The project was contracted to Tebian Electric Apparatus Co., Ltd. (TBEA).
6	Connection of Lundazi and Chama to the National Grid	37	2017	3 / 15	LIBOR + 3.35%	Completed	37	ZESCO Limited (ZESCO)	ZESCO is the borrower. The project was contracted to Sinohydro.
7	Luapula, Musonda Falls Hydropower Plant Rehabilitation and Upgrading, 10MW	35	2017	3 / 15	LIBOR + 3.35%	Completed	35	ZESCO Limited (ZESCO)	ZESCO is the borrower. The project was contracted to Sinohydro.
2.2.4 Total from Bank of China (BoC) : US\$ 48 million									
8	Fibre Optic Cable Phase II	48	2011	2 / 10	LIBOR + 3%	Completed	48	ZESCO Limited (ZESCO)	ZESCO is the borrower. The project was contracted to Zhongxing Telecommunication Equipment Corporation (ZTE).
2.2.5 Total from China Development Bank (CDB) : US\$ 30 million									
9	Small and medium-sized enterprises	30	2015	- / -	5.5%	Implementation	30 (Assuming 100% disbursed)	Zambian small and medium-sized enterprises	The state-owned Development Bank of Zambia (DBZ) is the borrower.

Appendix 2.2: Loans Signed by State-Owned Enterprises 2000-2020 (US\$ 2.516 billion)

(Value includes loans signed but officially suspended. Does not include loans that were signed but later cancelled) - page 3/3

No.	Project Title	Loan Commitment (US\$ millions)	Signed Year	Grace Period*/Maturity	Interest Rate	Project Implementation Status	Disbursement Amount (Estimate)	Ultimate Beneficiary	Comments
2.2.6 Total from CITIC Group Corporation Ltd. (CITIC) : US\$ 8 million									
10	Fibre Optic Cable Phase I	8	2005	- / -	-	Completed	8	ZESCO Limited (ZESCO)	ZESCO is the borrower. The project was contracted to Zhongxing Telecommunication Equipment Corporation (ZTE).
2.2.7 Total from Export Supplier's Credit : US\$ 82 million									
11	Chambishi East 330KV/66KV Substation	11	2009	- / 15	0%	Completed	11	ZESCO Limited (ZESCO)	ZESCO borrowed from China Nonferrous Metal Mining (Group) Co., Ltd. (CNMC) Industrial Zone Development.
12	Musonda Falls Upgrade Bridge Loan 1	10	2015	0 / 2	7%	Completed	10	ZESCO Limited (ZESCO)	ZESCO borrowed from Sinohydro Ltd.
13	Musonda Falls Upgrade Bridge Loan 2	29	2016	0 / -	7%	Completed	29	ZESCO Limited (ZESCO)	ZESCO borrowed from Sinohydro Ltd.
14	Lusiwasi Upper Hydro-power, 15MW - Bridging Finance	15	2018	0 / -	6%	Implementation	15	ZESCO Limited (ZESCO)	ZESCO borrowed from China Machinery Engineering Corporation (CMEC).
15	Kabwe - Pensulo Second Transmission Line, 330kV - Bridging Finance	17	2018	0 / 1.33	10%	Implementation	17	ZESCO Limited (ZESCO)	ZESCO borrowed from China Jiangxi Corporation for International Economic and Technical Cooperation (CJIC).
16	ZTE Short Term Loan	N/A	2019	- / -	-	Implementation	18	ZESCO Limited (ZESCO)	ZESCO borrowed from Zhongxing Telecommunication Equipment Corporation (ZTE). Specific purpose unknown.

Section 2.2 Total : US\$ 2.516 billion**Total Commitments: US\$ 10.329 billion (Appendix 2.1: US\$ 7.813 billion + Appendix 2.2: 2.516 US\$ billion)**

Notes to the Data in Tables 2.1 and 2.2

* Grace period begins with the first disbursement of the loan.

Note: CARI data also includes Chinese loans for two joint ventures with Zambian minority shares. The Maamba Collieries Limited (MCL) borrowed US\$91 million from each of the Industrial and Commercial Bank of China (ICBC) and the Bank of China (BoC) for a total of US\$182 million for the Maamba Coal Power Plant Phase I. This project is completed. The Central African Cement Limited (CAC) borrowed US\$408 million from CBMI Constructions Co Ltd in 2018 for the Ndola Cement Plant in Copperbelt, although there is no evidence that this latter project has moved into implementation. We follow guidelines in the World Bank Debtor Reporting System Manual which do not include joint ventures with minority government ownership in public external debt statistics unless there is a government guarantee, which does not appear to be the case.

Disbursement Estimation: Authors estimated loan disbursements based on the latest project progress available online. Loan disbursements are estimated based on the latest project progress available online. For example, if the latest progress report of a project that has a US\$100 million loan commitment shows the project is 90% complete, CARI estimated US\$90 million was disbursed for this loan. When there is evidence for project implementation, but the project progress was not available, it was assumed that 20% of the loan would be disbursed every year after the loan was signed. A loan is considered not disbursed if the project it finances is not commenced or suspended. Please see the appendix for the detailed methodology.

Sources: China Africa Research Initiative and Boston University Global Development Policy Center. 2021. Chinese Loans to Africa Database, Version 2.0. Retrieved from <https://chinaafricaloandata.bu.edu/>; SAIS-CARI, "Chinese Loans to Africa Database Masterlist"; ZESCO Integrated Annual Reports (various years); Authors' research.

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Editor: Daniela Solano-Ward

ACKNOWLEDGEMENTS: This briefing paper is published in partnership with Boston University’s Global Development Policy Center. Visit <https://www.bu.edu/gdp/publications/> for a full list of the GDP Center’s publications.

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Support for this policy brief 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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