

Resource-Backed Loans in Sub-Saharan Africa

David Mihalyi

Jyhjong Hwang

Diego Rivetti

James Cust



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Abstract

This paper investigates the characteristics of resource-backed lending across Sub-Saharan Africa. To shed light on this type of lending, the paper presents new information on 30 resource-backed loans between 2004 and 2018, identified through publicly available information. These loans were concentrated in a few countries, where they represented a sizable fraction of all borrowing and were typically taken by

central governments and state-owned enterprises. Although the loan terms are mostly opaque, where data are available, the study finds that such loans are not cheaper than regular loans. The paper highlights opportunities to transparency and offers some suggestions for improving the governance of collateralized borrowings across developing countries.

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David Mihalyi
NRGI

Jyhjong Hwang
Ohio State University

Diego Rivetti
World Bank

James Cust
World Bank

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1. Introduction

Developing countries often face difficulties accessing large-scale financing to meet their development needs. Major constraints are the lack of sufficiently deep domestic markets and the limited or costly access to international capital markets. In response to this challenge, a new resource-linked financing model has become popular that provides new opportunities for countries to access finance in exchange for, or collateralized by, future streams of income from their commodities: resource-backed lending.

Resource-backed loans (RBL) describe the practice of using a country's natural resources to serve as either a direct source of repayment or as an underlying guarantee of repayment in respect of the loans. This kind of borrowing is typically undertaken by a central government or by a state-owned company with lending from another government, a state-owned company, the private sector and/or international financial institutions. Such borrowing practices go back at least a century (e.g., Peru's guano-backed borrowing in mid-19th century, Vizcarra, 2009), but have become widely used across resource-rich developing countries during the recent commodity boom (NRGI, 2020). The COVID-19 pandemic has generated considerable focus on these types of transactions in light of widespread debt sustainability challenges in developing countries combined with volatility in commodity prices.

RBL proceeds are often used to finance infrastructure projects. In theory, if the borrowing process is carried out transparently and effectively, if the loan has favorable terms and if the infrastructure projects are well selected and well executed, the transaction would be expected to generate positive returns for the borrowing country's economy. Such increased economic activity helps to generate the tax base available to the sovereign for repaying the loans, and also helps the country deliver on its development strategies. However, in the event of weak governance or weak capacity in debt management, or if the relevant infrastructure projects are poorly selected or executed, large RBLs may become overly burdensome for borrowers. RBLs can also exacerbate debt sustainability problems, especially when they are large or if they set off a cycle of increased dependence on this type of borrowing.

A set of RBLs undertaken by countries in Sub-Saharan Africa over the 2004-2018 period was analyzed, the loans were identified through publicly available information. Based on this review, we highlight key lessons and considerations for improving governance of these loans and other forms of collateralized borrowing across developing countries.

The paper is structured as follows. Section 2 presents the literature relating to resource-backed and resource-linked lending. Section 3 provides an overview of the data set of resource-backed loans that is analyzed in the paper, the data collection process and its limitations are also discussed. Section 4 presents the loans and main findings relating to them, and proposes different typologies for classifying key features. Section 5 reflects on the main findings and implications for policy making; for example identifying actions that might help improve the performance and governance of these instruments. Section 6 concludes.

2. Literature review

The history of collateralized lending and resource-backed loans goes back at least to the mid-nineteenth century when Peru borrowed using sizable guano deposits as collateral (Vizcarra, 2009). In Sub-Saharan Africa, this practice was first well documented in Angola in the mid-1990s using future petroleum revenues as guarantees (Brautigam, 2011). In the 2000s, the state-owned Export-Import Bank of China (Eximbank) started offering similar loans to Angola (Brautigam, 2011). Since then, the practice has become relatively commonplace in resource-rich countries in Sub-Saharan Africa, Latin America and beyond through

loans extended mainly by state-owned development banks from China and commercial players such as commodity traders (NRGI, 2020).

Resource-backed loans are often labeled as or seen as a subcategory of collateralized loans. Collateralized loans are defined by the International Monetary Fund (IMF) and the World Bank (WB) (IMF-WB 2020) as loans where “the creditor has rights over an asset or revenue stream that would allow it, if the borrower defaults on its payment obligations, to rely on the asset or revenue stream to secure repayment of the debt. In a legal sense, it entails a borrower granting liens over specific existing assets or future receivables to a lender as security against repayment of the loan. More broadly, it also includes arrangements that do not constitute granting of a security interest, but that have an equivalent effect.”

As used in this paper, and following on NRGI (2020), resource-backed loans refer to loans provided to a government or state-owned enterprise (SOE) where: (i) the repayment is either made directly in natural resources (i.e., in kind) or from a natural-resource-related future income stream; (ii) the repayment is guaranteed by a natural-resource-related income stream; or (iii) a natural resource asset serves as collateral.²

Non-commodity-related types of collateralized loans also exist, notably those linked to infrastructure (e.g., ports, toll roads), and governments have also collateralized a wide range of asset classes, including proceeds from lottery ticket sales, electricity generation, and value-added tax proceeds (IMF-WB, 2020).³ These are not considered in this paper.

In considering RBLs in this paper, we focus only on those loans whose proceeds are used for purposes external to the revenue stream that is used for repayment/as collateral. In the typology of IMF-WB (2020), these are labeled as “unrelated collateral” transactions. As such we exclude project financing or acquisition financing and carry arrangements (prevalent in the oil sector) and instead focus on financing with purposes beyond the resource sector. As a result, we excluded a large section of conventional financing arrangements by state-owned enterprises from this review; this is in order to focus on loans which can be considered substitutes to regular government borrowing.

The academic literature on the use of resource-backed loans or other forms of collateralized borrowing in developing countries is relatively short.

A handful of studies have put forward a strong economic argument in favor of countries borrowing against their resource wealth. A book by Halland et al. (2014) discusses the potential for resources to be used as collateral for infrastructure deals, which we consider as a subset of RBLs. Collier and Cust (2015) and Songwe (2013) discuss the important opportunity that natural resources represent for African economies to borrow for development. Xu et al (2021) provide a model to justify how collateralized lending can alleviate credit rationing in poorly governed settings. All four studies provide some strong theoretical arguments in favor of such deals while cautioning on some of the risks involved and providing limited empirical validation.

Others have emphasized the risks associated with these loans. Manzano & Rigobon (2007) argue that the collateralization of future resource revenues in the 1970s led to a large debt overhang in the 1980s, which was a major reason for the weak economic performance of resource exporters throughout this period. Venables (2016) opines that the absence of transparency in securing RBLs has, in most cases, resulted in host countries being offered poor contract terms in exchange for their natural resource wealth.

² Note that without access to the contract text, it is not possible to establish definitively if a collateral is legally enforceable.

³ A broad definition of collateralization would also include arrangements that do not constitute granting a security interest, but that have a similar economic effect (i.e., structures that do not give lenders the legal right to seize/liquidate an asset in an event of default, but give them a “first mover advantage” ahead of other legally unsecured lenders, for instance to withdraw from an escrow account).

Horn, Reinhart and Trebesch (2021) warn that Chinese loans to developing countries collateralized against natural resource revenues have the potential to become a threat to debt sustainability due to the size of such deals and their lack of transparency. The lack of transparency is highlighted by the authors' estimate that 50% percent of Chinese lending (overall, not just RBLs) is missing from official statistics.

Some studies have focused on the role of China. Brautigam and Gallagher (2014) provide a systematic empirical overview of Chinese commodity-backed loans (with data on loans until 2011) and discuss some key features of these loans. Sanderson and Forsythe (2012) analyze these deals from the perspective of China's development banks. Meidan (2016) analyzes their importance in terms of China's access to oil resources.

Another group of relevant studies focus on the resolution of debt repayment problems in cases where there is collateralized lending; and two papers look at the outcome of renegotiating collateralized debt extended by China. In the case of Gardner et al. (2020) the borrower is the Republic of Congo, while Acker et al. (2020) look at loans taken by Angola and Chad. Both papers contrast collateralized loans with uncollateralized loans.

There has been very little work on the socio-economic impact of projects financed via RBLs. Fieldwork by Tang and Shen in Ghana found that the Bui Hydropower Project in Ghana, financed via an RBL backed by cocoa proceeds, "has improved local urban households' access to electricity and increased their ownership of electric appliances" (Tang & Shen, 2020).

The World Bank and IMF, among other international financial institutions, have analyzed collateralized loans in order to formulate their own recommendations. The IMF-WB (2020) concludes that collateralized transactions "can be beneficial to a developing country borrower under a range of circumstances", but also points to risks and discourages this practice when the proceeds are not spent on assets which can be used to repay the loans, when loans are excessively large and when the details of such borrowings are opaque. The policy paper also touches on a number of considerations, many of which are also stated in this paper, including the fact that such loans are often over-collateralized (they use excessive amounts of collateral) to enhance the borrower's creditworthiness. They also highlight how the secured nature of certain RBLs might run afoul of negative pledge clauses in loan contracts, including loans made by multilateral development banks.

There are also multiple case studies focused on a single or small number of RBLs. These include Alves (2013) who compares the experience of Angola and Brazil; Gillies and Quaghe (2018) who discuss a proposed deal in Nigeria; and Landry (2018) who looks at the Democratic Republic of Congo's (DRC) Sino-Congolaise des Mines (Sicomines) case.

The current paper adds to the literature by providing a more detailed large-scale empirical review of existing RBLs based on data that we reviewed. Our work builds on earlier findings published by the Natural Resource Governance Institute (NRGI, 2020), and extends it significantly using novel data and further analysis.

3. Data

The analysis in this paper is based on an extended database of 30 major resource-backed loans. These loans cover the period 2004-2018 across Sub-Saharan Africa, covering 11 countries. This database builds on a data set of RBLs first published by NRGI (2020) which itself built primarily on the Johns Hopkins SAIS China-Africa Research Initiative's (CARI) data set on Chinese lending to Africa.⁴

⁴ CARI-BU (2021) <https://chinaafricaloandata.bu.edu/>

This new extended data set includes information on the lending entity, the borrowing country, the amount of the loan, the year of loan agreement signing, the type of resources involved, the nature of collateralization, when available, projects to be financed by the loan and repayment terms. The information collected on each loan is compiled from a variety of sources, including African government sources, lending entities, Extractive Industries Transparency Initiative (EITI) reports, AidData’s Global Chinese Development Finance Dataset (Dreher et al. 2021), investment reports from multilaterals, as well as fieldwork and interviews with experts. Primary source information is then complemented with a review of the financial press.

The data has been checked against the World Bank’s Debtor Reporting System (DRS). The DRS collects detailed loan-by-loan information on new public and publicly guaranteed external debt. The DRS does not include information on any collateral features of loans, however. We therefore also contacted relevant WB country economists or national debt offices to verify the information where possible.

While significant effort has been spent on ensuring the accuracy of the data, the reliance on mixed sources and methods may justify a level of caution and verification in the use of facts and figures from this research in further analysis, including referring directly to the underlying data sets and sources for specific details.

RBL contracts are rarely publicly available. Nevertheless, whenever publicly available, we analyzed contract text. These were identified through NRG’s oil, gas and mining contracts⁵ and Gelpern (2021).

Our research identified 30 RBLs made in the 2004 to 2018 period in Sub-Saharan Africa that match the focal area of our review and where sufficient minimum information was available to incorporate into our data set. These minimum criteria consisted of having details on both the lending and borrowing entity, the size of the loan, the year the loan was agreed and confirmation that the loan had a repayment period beyond a single year.

Our data set is by no means comprehensive, and there are certainly more RBLs which match our criteria but for which insufficient information was readily accessible. The data set, and therefore the analysis, is limited by the information that is publicly available. As described further in Section 5b, the RBL landscape remains largely opaque, with limited information publicly available about the terms, and at times even the existence, of RBLs.

4. Results: Key characteristics of RBLs

a. Overview of the RBLs analyzed

Our research identified 30 RBLs in Africa signed between 2004 and 2018. Included in our review were 11 African countries which borrowed RBLs during the period: Angola, Chad, the Democratic Republic of Congo (DRC), Ghana, Guinea, Niger, the Republic of Congo, São Tomé and Príncipe, South Sudan, Sudan, and Zimbabwe. The relevant RBLs totaled USD\$ 46.5 billion agreed in this period, of which Angola accounted for nearly half the total.^{6, 7}

⁵ <http://ResourceContracts.org>

⁶ For the purpose of this paper, commitment is defined as amounts committed under signed loan agreements. In the cases of large credit lines that support multiple projects, disbursed amounts are used when available.

⁷ All dollar signs (\$) refer to United States dollars (USD) in this paper unless otherwise specified.

The manner in which loans are discussed and aggregated in this paper varies depending on the focus of the analysis. For example, credit lines can accommodate several independent projects, and thus entail multiple disbursements.⁸ In addition, we split up single ‘deals’ into separate loans where they had somewhat different terms (for example Ghana’s loans from the China Development Bank (CDB) [#13] & [#14] had two tranches with different interest rates and maturity, and thus are treated as two separate RBLs in our data set).

All the RBLs used in this paper are identified in the Appendix.⁹

The rest of this section summarizes key characteristics of the RBLs by category. First, we review the nature of borrowing entities, second the types of lender, third the form of collateral arrangements observed and fourth, the maturity conditions.

b. RBLs by the borrowing entity

The central government and state-owned natural resource enterprises are the primary borrowers of RBLs. We identified 9 loans out of 30 where the borrowing entity is a state-owned natural resource enterprise. However, the distinction between SOE and central government borrowing is sometimes blurry.

A central government’s control over SOE borrowing decisions will vary depending on: the rules of the country, the establishment or constitutive arrangements of the specific SOE, or the sector in which the SOE operates. Such levels of control may range from very close to very tenuous. For example, in some countries where oil is a major export, the sovereign/ central government might both fully own and control the oil-related SOE, and national legal frameworks may prescribe that the sovereign has exclusive purview and ownership over exploration and assets related to the oil and hydrocarbon sector. Similarly, the central government may be required under relevant legal frameworks to specifically approve a relevant SOE’s borrowing decisions, and in some cases may guarantee the SOE’s repayment of a loan. In some cases, there may not be any explicit government guarantee, but parties to the loan may expect the government to provide support in case the SOE runs into repayment difficulties (implicit guarantee). In other cases, for example where an SOE is only partially owned and not managed by the government, or where the SOE functions autonomously as a commercial enterprise separate from the central government, then the sovereign may not be aware of such SOE’s borrowing activities.

For example, in 2013 and 2014 Société des Hydrocarbures du Tchad (SHT, Chad’s national oil company) borrowed about \$2 billion in an oil-backed loan [#7] & [#8] from the commodities trader Glencore to purchase back certain interests in Chad’s Doba oil field from Chevron, and for budget financing. These RBLs were guaranteed by the state. The oil price collapse in 2014 put the Chadian government in a difficult fiscal position, leading to a protracted renegotiation with the oil trader that concluded in 2018 (a successful renegotiation was also a precondition for IMF support to Chad). In this case, the sovereign’s provision of a guarantee meant that the RBL became a liability for the central government.

⁸ All these grouped disbursements would share the same financing arrangement, from repayment terms to interest rates, and together be consider a single RBL in our data set. Credit lines tend to have a limited drawdown or availability period, such as 8 years for Angola to drawn down a \$2bn Eximbank RBL [#1] signed in 2007 Amounts that remain undrawn at the end of the availability or drawdown period is usually cancelled by the lender. Given that some credit lines may remain undrawn, or not fully drawn, by the end of the availability period, this paper reports both the total credit line amount made available at signing, as well as the amount actually disbursed (where such information is publicly available).

⁹ Each RBL cited in the paper is identified using [#ID] referring to numbering in the Appendix table A.2.

Occasionally, the RBL borrowing entity is a joint-venture between the SOE of the borrowing country and a commercial company from the lender side or a special purpose vehicle (SPV) that has been formed. In 2008, a consortium of Chinese companies led by Sinohydro and China Railway Engineering Corporation (CREC) formed the joint-venture company Sino Congolaise des Mines (Sicomines) with DRC's state-owned mining company La Générale des Carrières et des Mines (Gécamines). The Chinese companies owned 83% of the copper/cobalt venture. This newly formed joint venture company, Sicomines, then borrowed from the Eximbank [#9]. This loan also has an explicit financial guarantee from the government to repay the loan in case the designated revenues were not sufficient to fully repay the loan.¹⁰ As the modified loan agreement states¹¹:

Article 10.3. « The Democratic Republic of Congo has guaranteed repayment of the debt, in line with the current Convention on Collaboration, through the granting of mining concessions or concessions for other natural resources to SINOHYDRO if repayment of the loan due to JV Minière falls short of the repayment needed to cover its investment in the Infrastructure Projects. »

Article 13.3.4. « In the case that JV Minière has not been reimbursed for the investments and interests from the Infrastructure Projects within 25 years of the start of the loan, the Government of the Congo is committed to paying the outstanding balance by any means necessary. »

Loans taken by Republic of Congo's Société Nationale des Pétroles du Congo (SNPC) from commodity traders were kept off the Ministry of Finance's books. The IMF and other observers became aware of these loans in June 2017 as soon as SNPC experienced difficulties servicing them.¹² [#19] [#21] [#22]

Publicly available data on sovereign guarantees that support SOE debt is sparse (see section 5/b). It was therefore difficult to ascertain how commonplace such arrangements were.

c. RBLs by type of lender

From our review of 30 RBLs, we identified 13 different creditors that extended RBLs to African countries during the period studied. These can be grouped based on their economic functions or based on their classification as either an official bilateral creditor versus private/commercial creditor.

Based on functional grouping, the primary sources of RBLs are state policy banks/development banks. The two policy banks of China, China Development Bank (CDB) and China Export-Import Bank (Eximbank) are the top RBL lenders by volume. These two policy banks were initially set up by the State Council of China to carry out economic policies.¹³ Within our data set, Chinese policy banks are the source of 76% (\$36bn) of the RBLs to Africa, with Eximbank and CDB contributing \$17bn and \$18bn each.

¹⁰ The original 2008 loan agreement guaranteed both the infrastructure loan and a loan for the mine. <http://congominer.org/system/attachments/assets/000/000/276/original/B5bis-Sicomines-Convention-Incl-Anx-2008-Consortium-Entreprises-Chinoises-RDC.pdf?1430928308>

¹¹ A 2009 amendment narrows the guarantee to the infrastructure loan only. <http://www.congominer.org/system/attachments/assets/000/000/502/original/Sicomines-2009-Avenant3ConsortiumEntreprisesChinoises-RDC.pdf?1430928992>

¹² IMF, Country Report No. 19/244 on Congo: Staff Report (2019), www.imf.org/~media/Files/Publications/CR/2019/1COGEA2019001.pdf

¹³ CDB website: http://www.cdb.com.cn/English/gvkh_512/khjj/ Eximbank website: <http://english.eximbank.gov.cn/Profile/AboutTB/Introduction/>. The Agricultural Development Bank of China is the third Chinese policy bank, but has no known record of providing RBLs.

Besides China, the Republic of Korea has also offered RBLs. In 2011, the Export-Import Bank of Korea (KEXIM) announced that they signed an “Economic Development Cooperation Fund” (EDCF) loan with the DRC government. “Under the agreement, Korea would construct a network of water supply pipelines in the capital of Kinshasa with the condition that Korea would acquire development rights to Musoshi copper mine.” [#10]

A second source of RBLs is entities interested in natural resource access, which include state-owned and private natural resource companies. The state-owned oil company China National Petroleum Corporation (CNPC) lent \$1bn in RBL to South Sudan in 2015 [#25], and the Russian Federation’s state-owned oil company Rosneft has also provided oil-backed loans in the past, though (based on publicly available information) we found no evidence of it doing so in Africa.¹⁴ Besides these state-owned oil companies, private commodities traders such as Trafigura and Glencore also extend RBLs, usually for shorter terms, in order to secure shipments of oil.

A third source of RBLs is entities that want to protect their investments and accept natural resource security as a form of investment assurance. These entities consist of companies operating in sectors outside the concerned natural resources, and who face high risk due to the investment environment. The China National Aero-Technology Import & Export Corporation (CATIC) provided \$110mn to Zimbabwe for rural electrification equipment [#28]. The loan was to be repaid with tobacco sales receivables, even though CATIC does not appear to have a tobacco exporting business in Zimbabwe. CATIC is not interested in accessing Zimbabwe’s tobacco production, but seeks the certainty provided by tobacco revenues. [#28] Similarly, The Industrial and Commercial Bank of China (ICBC) offered a \$2.5bn RBL to Angola [#5] for the construction of Kilamba Kiayi New Town, to be repaid with proceeds from Angola’s oil sales to the Chinese SOE Sinopec. [#5] ICBC is not interested in oil access *per se*, but seeks the certainty of oil revenue proceeds to support the borrower’s repayment capacity and thereby protect ICBC’s investment. Such lenders usually utilize resources that already have a record of generating a stable revenue stream, like tobacco in Zimbabwe and oil in Angola.

As noted above, creditors can also be grouped according to official bilateral versus private/commercial creditor classification. The Chinese policy bank and Korean policy bank loans are categorized as official bilateral loans according to information in the DRS, while the loans extended by private commodity trading companies fall under private creditors (supplier and commercial credit). However, this distinction is not always clear and the classification, for example, of a state-owned policy bank may be viewed differently among lender countries. Many loans extended by Chinese SOEs, such as ICBC or CNPC, tend to be commercial in nature (and are classified as such by CARI) and their treatment in the DRS (as reported by authorities) is mixed.¹⁵ This distinction matters as official bilateral and private loans may be treated differently in cases of restructuring.

d. RBLs by type of collateral arrangement observed

Collateral arrangements can be grouped into four categories: resource sales receivables, resource sales pre-payment, resource development access and direct resource collateral.

¹⁴ Rosneft offered RBLs to the República Bolivariana de Venezuela in 2006.

¹⁵ CARI methodology only considers loans from the People’s Bank of China (China’s central bank, distinct from the commercial Bank of China), the Ministry of Commerce, or the three policy banks (Eximbank, CDB, Agricultural Development Bank of China) as official bilateral loans.

Resource sales receivables are the most common collateral arrangements. Such arrangements require (agreed) specific amounts of natural resources (barrels per day, tons, etc.) to be sold to designated buyers. The amount that the designated buyers are obligated to pay for the resources is paid for the benefit of the lender, whether directly or into a deposit account owned by the borrower but over which the lender has rights to deduct funds in the event of a loan repayment failure.

For example, in 2004, Angola signed a \$2bn loan with China Eximbank to be used for infrastructure development [#1]. Monthly proceeds of the sales of 10,000 barrels per day (bpd) from Chinese state-owned oil company Sinopec's 4 oil blocks in Angola were to be deposited in an offshore account to repay the loans. Another example is Zimbabwe's \$110mn loan with China CATIC for the supply of rural electrification equipment secured by tobacco sales revenues, as discussed above [#28].

Resource sales pre-payments (SPP) are advances made in respect of purchases of resources, most commonly used by commodities traders who want to purchase natural resources. For example, the multinational commodities trader Trafigura advanced \$550mn to the Republic of Congo in 2015 for 9-10 cargoes of oil. [#21] SPPs tend to be very short term, ranging from a few months to a few years, we only consider those that go beyond one year. However, these tenors may have to be renegotiated and extended should the borrower fail to deliver the resources on time. Glencore advanced \$500mn of a \$700mn purchase of oil from the Republic of Congo in late 2015, and experienced difficulties in receiving the expected cargo shipments in a timely manner [#22]. In December 2016, Glencore and Trafigura offered to extend the delivery of oil to 2019, yet the Congolese government had made such restructuring conditional on an additional combined advancement of \$380mn, which the two companies rejected [#22] & [#23]. The renegotiation between these two companies and the government has still not concluded.¹⁶

Resource development access ties the expected returns from granting mineral development rights to an investor to the repayment of a loan. They are sometimes labeled "resource for infrastructure" deals or "barter deals." The KEXIM's 2011 loan for the Musoshi Copper Mine development rights mentioned in the previous section is one such example, with Taejoo Synthesis Steel given the rights to develop the mines [#10].¹⁷ The 2008 Sicominex deal follows similar logic, where the profit (100% for an initial period, only 85% later on) of a newly developed copper-cobalt mine was earmarked for the repayment of two loans for infrastructure and the mine itself [#9].¹⁸ These two loans also had an additional government guarantee.

Finally, direct resource collateral involves collateralizing undeveloped resources that are still in the ground, usually mineral or oil deposits. In 2006, Zimbabwe contracted a \$200mn loan from China Eximbank for the purchase of agricultural equipment, the platinum deposits in Selous and Northfields reserves were given as collateral [#29]. There is no information on whether platinum production was to be carried out by Zimbabwean or Chinese mining companies, only that China reportedly asked that the rights to 50% of the potential platinum reserves be put up as collateral for the loan, which is freed once the loan is fully repaid in cash.¹⁹ We have rarely observed still-in-the-ground resource assets (rather than flows) being used as collateral. This is in line with Gelpert et al.'s 2021 review of Chinese loan contracts more broadly, where they found limited evidence for using still-in-the-ground resource assets as collateral.

As discussed above, lenders may be interested in resource access as well as repayment assurance.

¹⁶ <https://www.imf.org/~media/Files/Publications/CR/2020/English/1COGEA2020001.ashx>. Box 1. page 9.

¹⁷ Korea-Africa Center, 2017

¹⁸ In our definition, we only consider the latter to be an RBL, although clearly the two deals are interlinked and part of the same resource-for-infrastructure deal.

¹⁹ <https://www.theindependent.co.zw/2011/02/03/chinas-us3-billion-offer-for-platinum-raises-tension/>

Collateralization may be facilitated through the requirement to convert all earmarked payments into escrow-type accounts held offshore, such as in the case of Ghana’s Sinohydro loan [#15], where a loan summary states:

“The Ministry of Finance is required to ensure that the proceed generated by the Government of Ghana from selling bauxite will be deposited into an Escrow Account which shall be opened and maintained in a reputable offshore Bank acceptable to Sinohydro and the financiers.”²⁰

Occasionally, the borrower may be required to maintain a certain minimum amount of cash in the escrow account. The Republic of Congo contracted a \$1.6bn loan with China Eximbank in 2006 for infrastructure development [#18]. The IMF describes the arrangement as:

“as a guarantee for the loans, the Congolese authorities are required to keep a minimum deposit balance equivalent to about twenty percent of total outstanding loans in an escrow account in China’s EXIM Bank from the proceeds of their oil sales to China.”²¹

A variety of natural resources besides oil have been used as loan collateral, ranging from base metals such as bauxite, copper and cobalt, to precious minerals such as diamonds and platinum, and agricultural outputs such as cocoa and tobacco.

e. RBLs by maturity

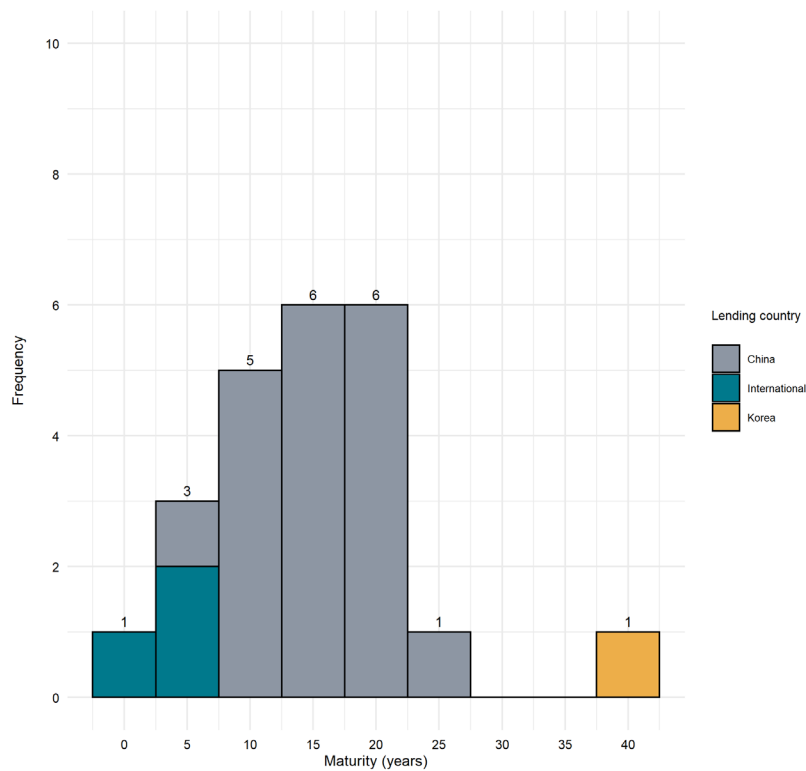
Our data reveals that the loans provided by commercial commodity traders typically have short maturities, between 2 and 5 years. Note that our data excludes all advances by commodity traders with a maturity of less than one year. Some of these trader loans have seen their maturity extended, after renegotiation, to up to 14 years.

The credits extended by Chinese SOEs tend to have long maturities ranging from 8 to 25 years. The longest maturity we observed in our review of 30 RBLs is 40 years for the Korea Exim loan. The grace periods, where they exist, are typically three to five years, though eight-year grace periods were also observed. (See figure 1).

Figure 1 Distribution of (original) maturities of RBLs

²⁰ Report of the Finance Committee of Parliament of Ghana on the Ghana-Sinohydro loan.

²¹ IMF CR 14/272 Rep of Congo (see page 9 in Box 1) <https://www.imf.org/external/pubs/ft/scr/2014/cr14272.pdf>



Due to fluctuations in commodity prices, the targeted quantity of sales necessary to generate cashflows to an amount sufficient for the borrower to repay the RBL may be a variable. Such variables may be addressed in a range of ways depending on the commodity, market practice and the parties. When the repayment modality is defined as, or linked to, the sale of a certain volume of resources, the sale of the pre-specified quantity may nonetheless fall short relative to the necessary RBL repayment amounts over the prescribed timeframe, due to changes in the price of that commodity. As a result, the parties may have to size and calculate the repayment duration for an RBL based on prevailing market assumptions about the commodity’s anticipated price levels (e.g., oil prices), while also building in loan features that account for the prospect of price volatility. For example, the CDB-Ghana loan [#13] summary document²² states:

“The period of the (Offtaker) Agreement will be 15 years and 6 months, as it was agreed under the (Master Facility Agreement) MFA that the (Offtaker) Agreement would extend beyond the repayment period of the loan to allow CDB to be fully paid if necessary”.

On the other hand, the Master Project Support Agreement for Ghana’s Sinohydro loan [#15] document²³ states that any shortfall in the earmarked revenue stream should be compensated for by the government:

“2.3 (b) GoG shall make payments for the Sinohydro Arranged Project Financing out of receipts from the transfer of refined Bauxite (Alumina or Aluminium) to its strategic partner (Offtaker), and where receipts from the refined Bauxite are not sufficient for the repayment of the Sinohydro Arranged Project Financing, GoG shall use other sources for the repayment of Sinohydro.”

²² https://www.mofep.gov.gh/sites/default/files/reports/economic/CDB_Loan_Summary_050112.pdf

²³ http://ir.parliament.gh/bitstream/handle/123456789/980/321122114725_0001.pdf

f. RBLs by interest rates and fees

We could only identify information on the interest rate for 17 of the 30 cases surveyed. 7 of these have fixed rates, while 10 have floating interest rates.

To the extent that interest rate information was available, Chinese policy banks offered fixed interest rates as low as 0.25 percent on RBLs, as in the case of a 2009 loan made by China Eximbank to the Republic of Congo [#18]. Interest rates were as high as 2 percent in Niger and Zimbabwe. Among the RBLs reviewed, all fixed interest rate RBLs made by Chinese lenders were made by China Eximbank. Floating interest rates generally use the London Inter-bank Offered Rate (LIBOR) as the reference rate, with rates ranging from Libor+ 1.0 percent [#9] to Libor+ 2.95 percent [#14]. The Korean loan to the DRC has the lowest weighted interest rate in our data set with 0.01% [#10].

We only have interest rate data for commodity trader loans in the case of the two Glencore loans to Chad which had an interest rate initially set at Libor+6.6% and Libor+6.625% [#7] & [#8]. These loans were first renegotiated in 2015, when they were combined, their maturities were extended and their interest rate was adjusted to Libor+6.75%. The second renegotiation happened in 2018, when the base interest spread was set at 2% until 2021, and 3% thereafter (+ additional 2% of deferred interest payments).²⁴

We have little information on fees. Ghana's 2018 RBL from Sinohydro [#15] reveals that on top of an annual interest of LIBOR + 2.8 percent, there is also a requirement to pay a flat management fee of 0.7 percent, a commitment fee of 0.5 percent per annum and a one-time China Export and Credit Insurance Corporation (Sinosure) premium of 7 percent. The loan in Guinea [#16] attracts a management fee of 0.5% while that in Niger [#17] of 0.25%. The Glencore-Chad loan involved fees for a total of USD37 million plus 0.75 % annual fee on any outstanding amount, later lowered to USD 0.6 million [#7] & [#8].

We analyze how the rates of these loans compare to traditional loans in section 5/c. Given that data on fees is not systematic, these are not analyzed.

g. Repayment schedules

In seven cases we observe RBLs with repayments set to yearly, quarterly or a daily volume of commodities used to service the loan. These repayment volumes are converted into their monetary value based on market prices and deducted from the total outstanding loan amounts. In some cases, the annual repayments change, with less to be repaid in earlier years. Some set a range of volumes (e.g., 150,000 to 200,000 barrels per day or up to up to 40,000 metric tons of cocoa). Some of these RBLs may require higher volumes within the set range to be shipped when prices are low, but still effectively cap the repayment value.

In some cases (especially RDA deals) the loan is to be repaid from a designated commodity income stream (or a percentage of it) and repayment speed depends on how much revenue is generated by that income stream. Examples of such earmarks include the Sicomines copper and cobalt mine in the DRC (85% of mine profits), the Agadem revenues in Niger (the government's share of oil revenues) and the Badoit project in Chad (a fraction of profit oil and royalty oil).

²⁴ See EITI 2018 report for further details. <http://itie-tchad.org/wp-content/uploads/2020/12/Rapport-ITIE-Tchad-2018-sign%C3%A9.pdf>

Chad's Badoit deal with Glencore, renegotiated in June 2018 has repayment terms that depend specifically on the oil price. When the price of the locally produced oil blends is over a certain threshold (about \$55/barrel) in a given year, both the amount of principal and the interest rate due increases [#7] & [#8].

São Tomé and Príncipe's \$30 million RBL from Nigeria for administering the Joint Development Zone in 2009 also presents an interesting case [#23]. Though São Tomé and Príncipe received and spent the loan funds, it is not servicing the loan because the RBL terms specified that repayments would be made from the revenue streams derived from the project. However, no oil project, and consequently no oil revenues, materialized. The loan (currently in dispute) provides a cautionary tale on lending against highly uncertain revenues.

The repayment structures presented above lead to lower repayment values when commodity prices are low, and higher when prices are up, and therefore have strong similarities with state-contingent debt instruments. Most of the loans discussed appear to have net present value (NPV) neutral features (i.e., lower repayment now attracts additional payment with interest later), although their merits would necessarily depend on key assumptions such as discount factor or collateral reference price. The renegotiated Chad-Glencore loan [#8] stands out as a case where the benefit of the interest reduction and maturity extension have been almost entirely cancelled by complex state-contingent clauses i.e., a "cash-sweep mechanism" (CSW). A CSW can be a useful instrument to make debt service proportional to oil sales. However, in the case of Chad, the CWS parameters were designed in a way to significantly favor Glencore in case of upside scenarios, without significantly reducing Chad's debt burden in case of downside scenarios. In fact, at the time of the agreement, the oil price was close to 60 USD per barrel. The downside trigger was set at a very low level (42 USD) and this scenario, which materialized in 2020, involves very limited debt service reduction (1% principal deferral). Conversely, the upside triggers were below the spot oil price (between 53 and 57 USD), thus generating significant principal payment acceleration (more than 5%) and a rise in interest payment (+2%) in 2018-2019.

h. Allocation of proceeds

Infrastructure projects are the most common sectors financed through RBL. Of the 30 resource-backed financings in Sub-Saharan Africa that were reviewed, 18 are for infrastructure projects including roads, energy, water supply, etc. Some of the very large credit lines are intended for multiple infrastructure projects. Angola's first RBL in 2004 was a China Eximbank RBL that totaled \$2bn and was disbursed for at least 50 different projects, averaging about \$40 million each. The projects ranged from construction projects for schools and hospitals, power lines, water supply projects, and procurement of equipment and vehicles. These credit lines streamline the disbursement process such that both sides do not need to renegotiate every time a new project needs financing. This also means that credit line RBLs are often earmarked ahead of time.

Some RBLs are designated for specific projects, often large scale. Ghana contracted close to \$600mn in a cocoa-backed RBL from China Eximbank for the construction of the Bui Hydropower Project in 2007 [#11] [#12]. A similar big-ticket item was Angola's Kilamba Kiaxi New Town, a large-scale housing project in Angola, financed with a \$2.5bn oil-backed loan from ICBC. What counts as "big-ticket items" varies by country [#5]. South Sudan's Nadapal-Torit-Juba Road cost around \$169mn and was financed through oil-backed China Eximbank loans [#27]. This amount may sound relatively small compared to those in Ghana and Angola, but is nonetheless the largest loan that South Sudan had contracted with China as of 2020.²⁵ There are several possible drivers as to why RBLs tend to flow into infrastructure projects. These are often low internal return rate projects that would not

²⁵ CARI data set. The second largest is the New Juba Airport loan, \$158mn from Eximbank in 2013.

succeed in raising capital independently in the commercial market. Such projects tend to have large upfront costs that countries with reduced creditworthiness, capacity challenges or poor project implementation performance history may struggle to otherwise finance.

Though infrastructure projects constitute the most common sectors financed, they do not constitute the bulk of the RBLs in terms of value. Instead, the bulk of the RBL in value went to resource sector related projects, including refinery construction or gas infrastructure development. For example, CDB contracted a \$15bn RBL with the Angolan government in 2015, of which \$10bn was then on-lent to the state-owned oil company Sonangol as long-term financing for Sonangol's planned 200,000 bpd Sonaref refinery in Lobito [#6]. Similarly, in Ghana, a \$1.5bn oil-backed loan from China Eximbank in 2011 went towards the development of gas processing facilities and an accompanying information and communications technology surveillance platform [#12].

There are a number of RBLs where natural resource development projects are complemented by infrastructure projects. Ghana's \$1.5bn gas processing development RBL is complemented by another \$1.5bn loan, designated for infrastructure development such as railway and port construction [#11]. Similarly, in DRC, the Sicominex deal had two loans, one for unrelated infrastructure and one for developing the mine itself [#9].²⁶ This kind of two-pronged financing simultaneously ensures the production of the collateral, while supporting the development of other essential infrastructure projects that may be hard to finance through project-specific funding structures.

Beyond sector-specific RBLs, RBLs can also take the form of pre-payments from commodity traders who are interested in securing shipments of natural resources. Six out of the 30 RBLs were advanced payments of shipments of oil by private commodity traders (plus one by CNPC) in Chad, Rep Congo and South Sudan. Most private trader loans do not appear to be earmarked for any project and the proceeds appear to be used at the discretion of the borrowing government; where any detail is provided, they are described as being used to cover budget shortfalls. Occasionally, commodities traders may lend to sovereign borrowers in a bid to purchase mineral assets. For example, a syndicate of banks led by Glencore provided a total of \$1.5bn to Chad State National Oil Company in 2014 to be used to help Chad purchase back Chevron's oil assets in Chad [#8].

²⁶ We do not consider the latter loan an RBL under our definition, given that it is repaid via the project it finances.

5. Policy considerations

In this section we discuss the insights derived from our analysis. Specific features of the RBLs reviewed suggest there may be several opportunities to improve the governance of the RBLs.

a. RBL importance as a source of finance

The RBLs we identified represent a small share of total lending to Sub-Saharan Africa. The 30 loans that we identified as RBLs account for \$46.5 bn (with a large share of some loans only partially committed or disbursed). The total new external debt over the 2004-2018 period is recorded by the World Bank's International Debt Statistics unit at \$600 bn, of which \$450 bn was disbursed. While our recordings on RBL commitments and disbursements do not always match the DRS, we can provide a ballpark estimate of their economic significance. RBLs represent about 8% of total borrowing in Sub-Saharan Africa.

RBLs are heavily concentrated among a few countries. Figure 2 shows new external debt disbursements relative to RBL agreement dates, and while disbursements may experience a time lag following the signing of RBLs deals and some RBLs went unrecorded (see next section), the RBLs represent a major source of new financing in all of the countries listed below. DRC and Sudan stand out for having much higher new RBL deals signed than what was disbursed. This is consistent with our own data, which shows that the share of loan which was disbursed (by end-2018) in DRC was about 25% (across two loans) and 50% in the case of Sudan - more than 10 years after the loan was agreed. In the case of Niger, the \$ 1 billion loan [#17] agreed in 2013 was cancelled by Parliament in 2018.

Figure 2. New disbursements of external public and publicly guaranteed debt vs. RBL committed amounts.

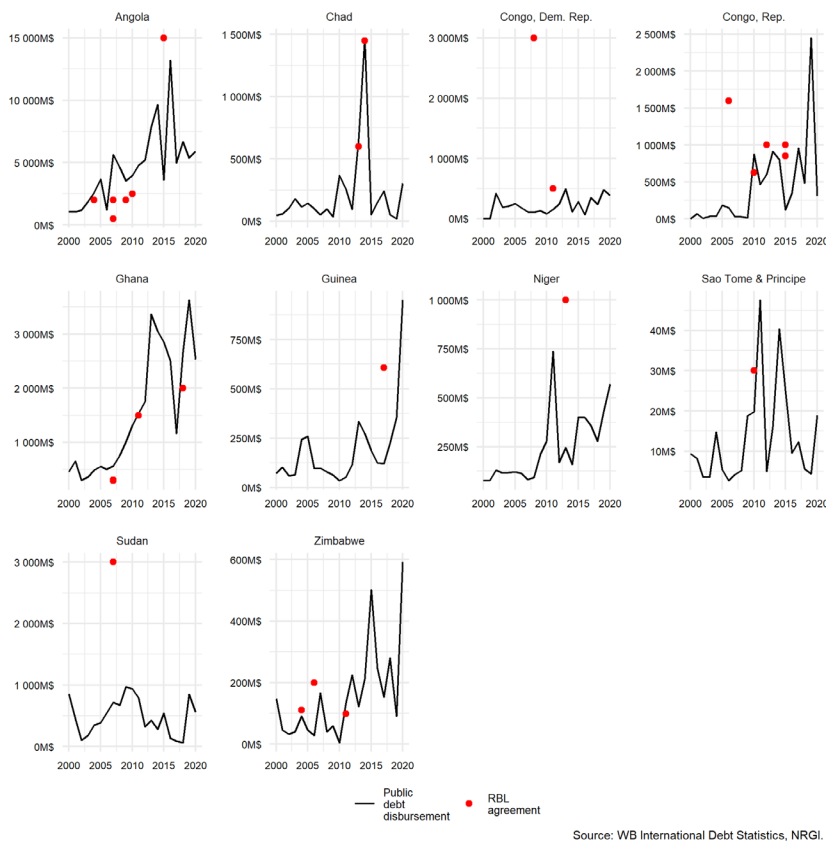


Figure 3 External public and publicly guaranteed debt stock vs RBL committed amounts.

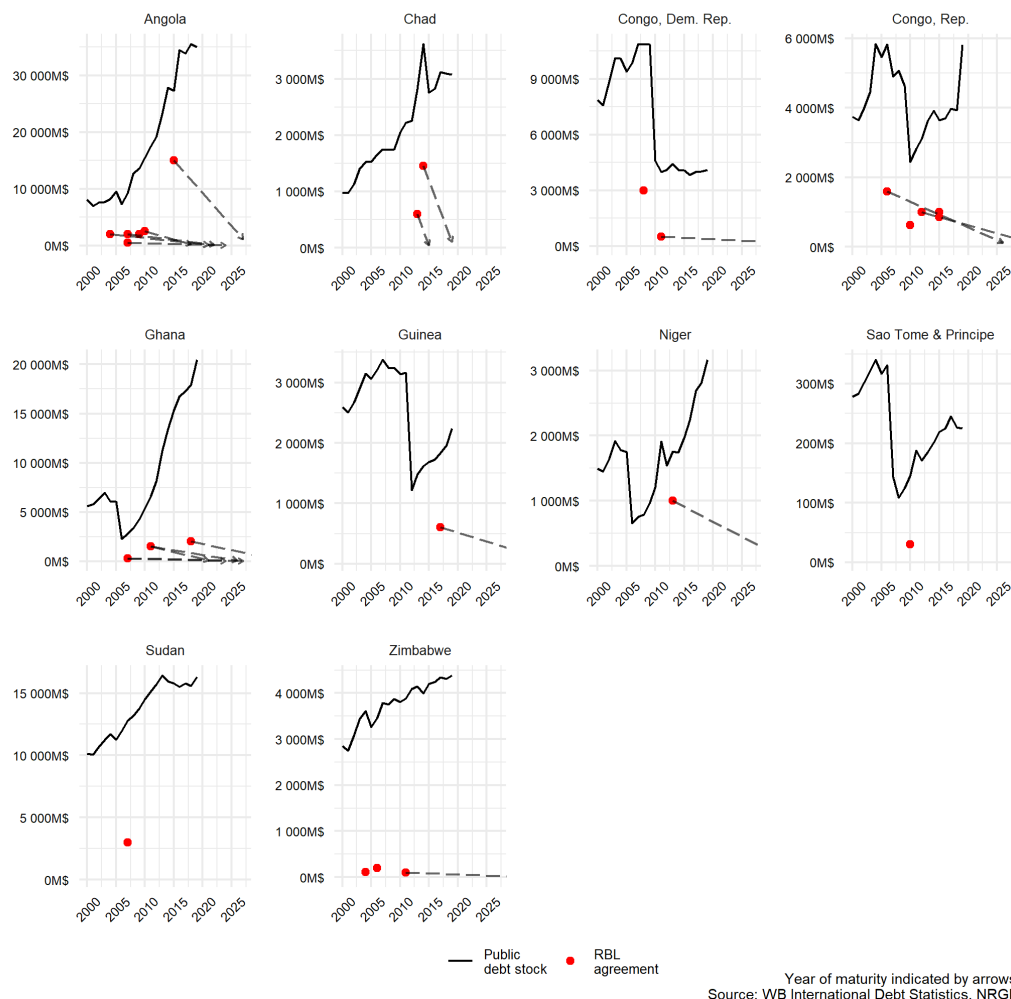


Figure 3 shows RBLs as a share of total debt stock rather than just new debt issued. RBLs represent a substantial share of these countries' borrowings by this metric, with the total amount of RBLs representing over 10% minimum and over 30% of the median country's total external public debt stock in the periods after the RBLs were signed.

This suggests that countries either choose not to take on RBLs or when they do, they decide to take them on in large volumes. Given the magnitudes observed, understanding their terms is critical to monitor debt sustainability. This is evidenced by cases in Angola, Chad, Republic of Congo, where the renegotiation of RBLs was presented as a key factor in restoring debt sustainability by the IMF.²⁷

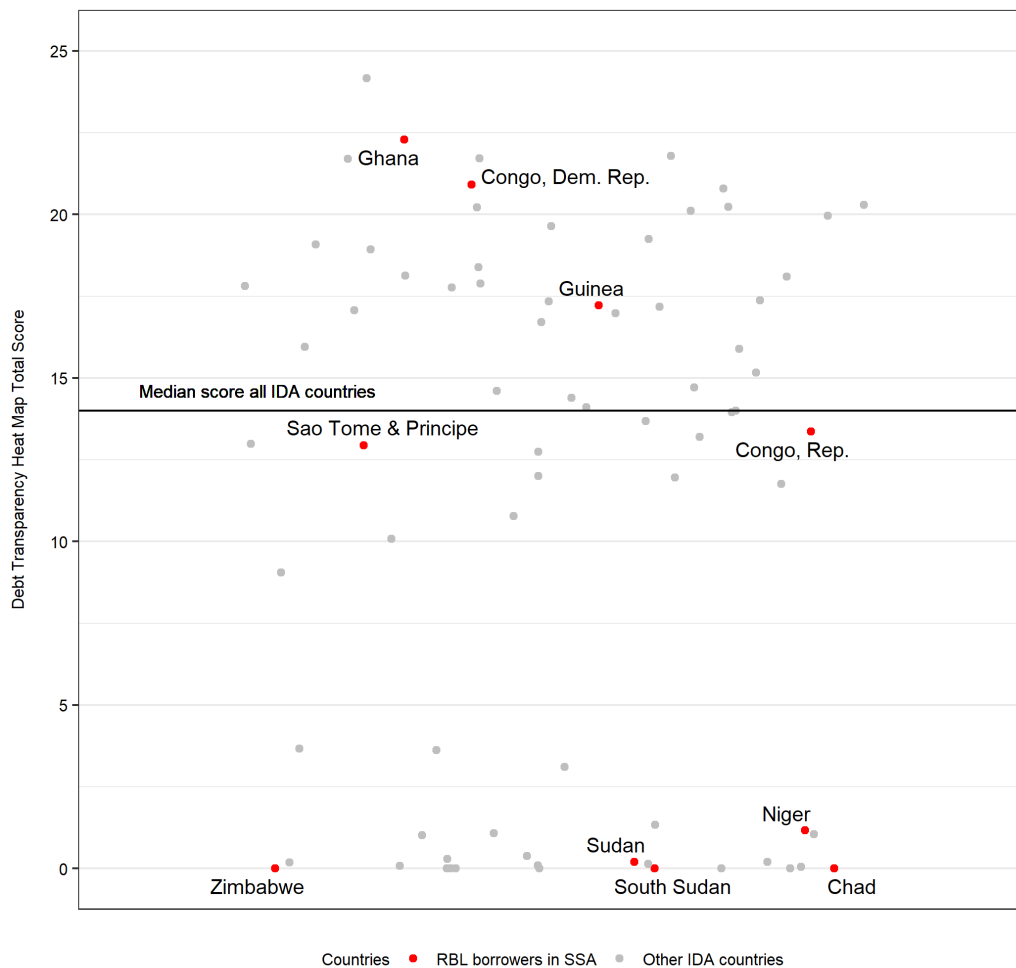
The fact that multiple countries are repeat borrowers of resource-backed loans also raises the question on whether these loans may be displacing or discouraging other forms of more conventional borrowing, and if they carry the risk of increasing resource dependency.

²⁷ IMF Country Report No.20/26 on Rep Congo, IMF Country Report No.18/108 on Chad. IMF Country Report No.20/281 on Angola.

b. Transparency

Data indicates that countries which borrow using resource-backed loans have weaker debt disclosure practices.²⁸ We looked at how 10 RBL borrower countries performed on the World Bank’s Debt Transparency Heatmap (1st April 2020 evaluation). The heatmap presents an assessment based on the availability, completeness and timeliness of public debt statistics and debt management documents posted on national authorities' websites among the 76 International Development Association (IDA) eligible countries.²⁹ The results are presented in Figure 4, where the box represents the range of scores between the top and bottom quartiles across IDA countries.

Figure 4: Debt transparency in RBL borrowing countries³⁰



Source: WB Debt Transparency Heat Map data
 Each heat map criteria is assigned between 0-3 points based on color code.
 Each country's score is the aggregate number of points it received across the criteria on the heat map.

As Figure 4 shows, five RBL borrowing countries were in the bottom range in terms of transparency (where timely public debt reports are available); two were just below the median (the thick line); and three countries were among the stronger

²⁸ NRG (2020) highlights how RBL borrowers also have a weaker governance of their natural resource sector.

²⁹ Angola is excluded from the Heatmap, as Angola is not an IDA country.

³⁰ The scores shown are calculated taking the sum of the performance (on a 0-3 scale) across all 9 criteria measured on the World Bank’s Debt Reporting Heat Map. (Rivetti, 2021)

performers. Among the criteria used for scoring the heatmap, two are especially relevant for the type of debt we analyze: sectoral coverage of debt reporting and debt instrument coverage. Sectoral coverage of debt reporting is important as SOEs, and not central government, are often the borrowing party. Debt instrument coverage is also important as it reveals whether the borrower has received a government guarantee in support of its loan repayment obligations. Across the RBL borrower countries scored on the heatmap, only the DRC has full coverage across both sectors and instruments. Guinea does not report SOE debt. Ghana reports on government-guaranteed SOE debt, but Ghana's reporting on non-guaranteed SOE debt is missing. None of the other RBL countries reports on either of these aspects according to the heatmap.

The transparency of SOEs is critical given that they were the borrowers in nine of the 30 loans. These borrowers are Ghana Integrated Aluminum Development Corporation (GIADEC), Gécamines (DRC), SNPC (Rep. Congo), SHT (Chad), Sonangol (Angola's national oil company), and Zimbabwe Electricity Supply Authority (ZESA)). Of these SOEs, Sonangol publishes audited financial statements yearly (latest available 2018). SHT recently released audited financial statements for the first time.³¹ SNPC recently released its audited financial statements for 2012-2018 for the first time, although consolidated financial statements for the SNPC Group have yet to be disclosed.³² ZESA does not have a functioning website. Gécamines produces audited financial accounts, which it files to the public registry and shares with the EITI secretariat but they are not made public.³³ GIADEC does not publish audited financial statements, which may be because it was only recently established.³⁴ In many additional instances SOEs played an important intermediary role (for example through an additional offtake contract offering to supply resources which are then deployed as collateral for repayment of the sovereign's loan).

Only 15 of the 30 loans analyzed could be identified on the World Bank's Debtor Reporting System. Of these 15, 11 loans could be clearly matched and 4 could be partially matched with the reporting provided in the DRS.³⁵ There are several possible reasons for why these debts were missing from the system. Reporting coverages and definitions vary by country, and as discussed above, loans borrowed by SOEs (or joint ventures that involve state participation) may not be centralized and reported to DRS. In addition, some types of financing may have not been treated by the reporting country as a debt instrument, but rather as an advance payment to a supplier. The absence of information on collateral features in the DRS may have also led to mis-reconciliation, if there were discrepancies in reporting across sources.

Among the loans not found in the DRS, many could be directly verified in government reporting. For example, DRC's public debt report provides details of Sicominex loan under the heading of external loans with government guarantees. South Sudan and Republic of Congo report intermittently on the debt that they have outstanding with commodities traders. Angola's 2018 sovereign bond prospectus provides details of Sonangol's CDB loans.

The Sicominex loan stands out as the sole RBL transaction for which the loan contract is publicly available.³⁶

The lack of transparency on RBLs has a number of implications. First, these deals are often highly complex and are therefore susceptible to receiving a poor evaluation of the risks that they entail. Second, given limited competition in providing such loans

³¹ <https://eiti.org/chad>

³² <https://eiti.org/news/republic-of-congo-from-disclosure-to-diagnostics>

³³ IMF Country Report No.19/286, statement here: <https://www.africanews.com/2018/11/28/gecamines-publishes-a-comprehensive-report-in-response-to-outrageous-and-systematic-allegations-of-certain-ngos/> and this from 2016 annex 4 more authoritative, though unclear on audits. <https://drive.google.com/file/d/1JVPyPgiGzieGjRe-N8ux-2I3s61x92zp/view>

³⁴ https://www.mofep.gov.gh/sites/default/files/reports/economic/2018_State_Ownership_Report_v3.pdf

³⁵ We label "partial match" when a number of distinct features of RBLs in the public domain match the DRS, but not all.

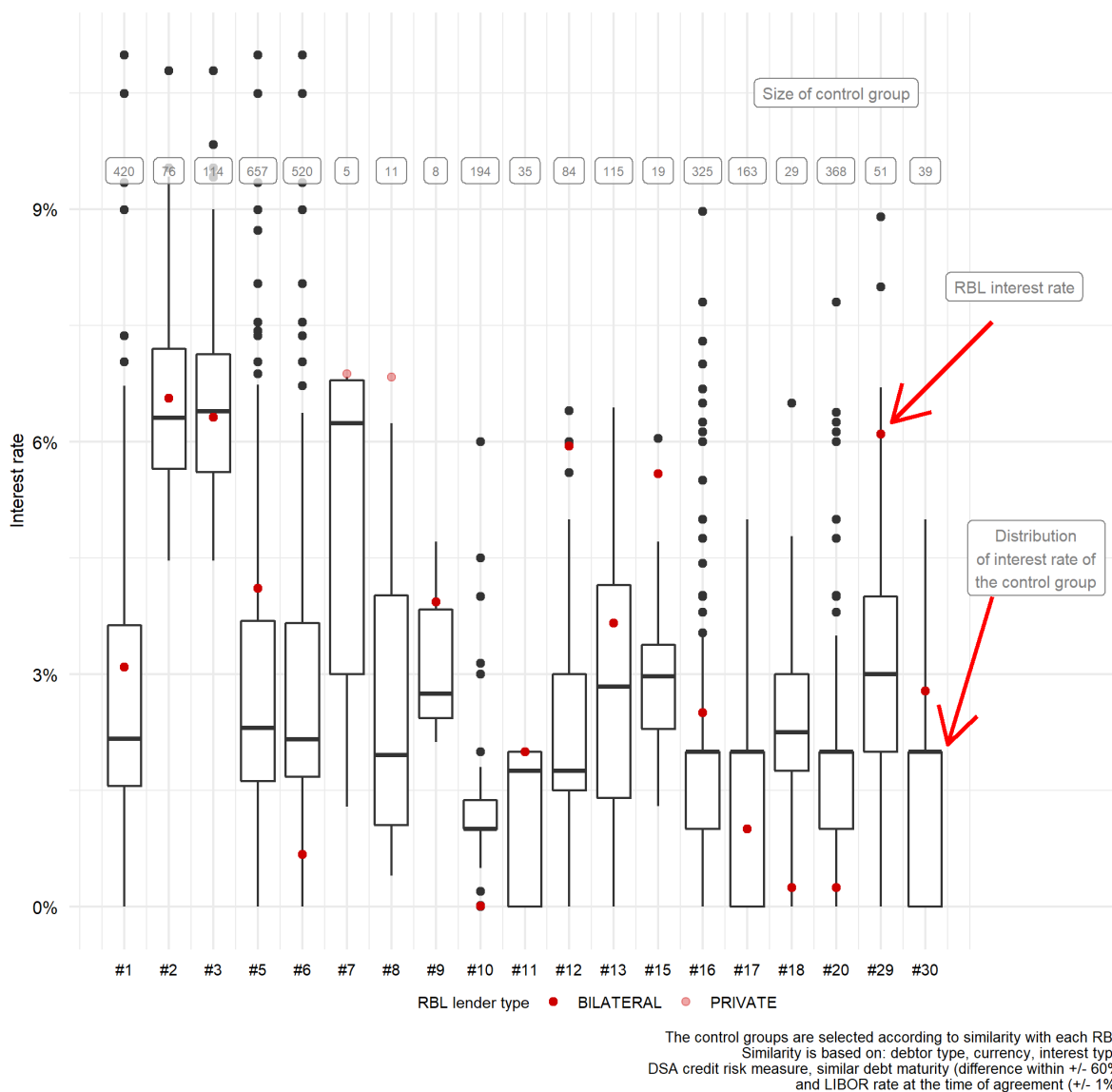
³⁶ The contract documents are available on the Ministry of Mines website, mines-rdc.cd, and on congominex.org

(few lenders offer them), there is also a risk of poor negotiation outcomes. In both cases, the risk is higher when the outcome is subject to limited scrutiny. Finally, RBLs may utilize transaction structures that are not reflected in standard debt statistics or may confer undisclosed seniority or payment advantages to their lenders, which ultimately leads to a mispricing of the country's risk by other creditors.

c. Cost of financing

We compared the interest rates on RBLs to the rates on regular loans. We identified 19 RBLs for which we had the necessary data on interest rate and maturity needed for evaluation. We compared each of these loans to an individual control group with similar features (other than collateral) constructed based on the WB Debt Reporting System, which contains over 25,000 loans. We filtered the data to include only those loans extended by private sector and bilateral creditors to the public sector. The loan features used for matching were for borrower countries that have similar risk ratings (splitting countries between those classified by the WB/IMF debt sustainability analysis as low or medium risk vs high risk and in debt distress vs not scored), same currency, same interest type (floating vs fixed), similar maturity, similar prevailing global lending rates at time of signing (Libor within +/- 100 bps range). Each control group contains at least 5 loans, some as many 500 loans. We compared loan terms based on their weighted interest rate, a metric used by WB to denote average interest rate for complex loans. Figure 5 below denotes key results.

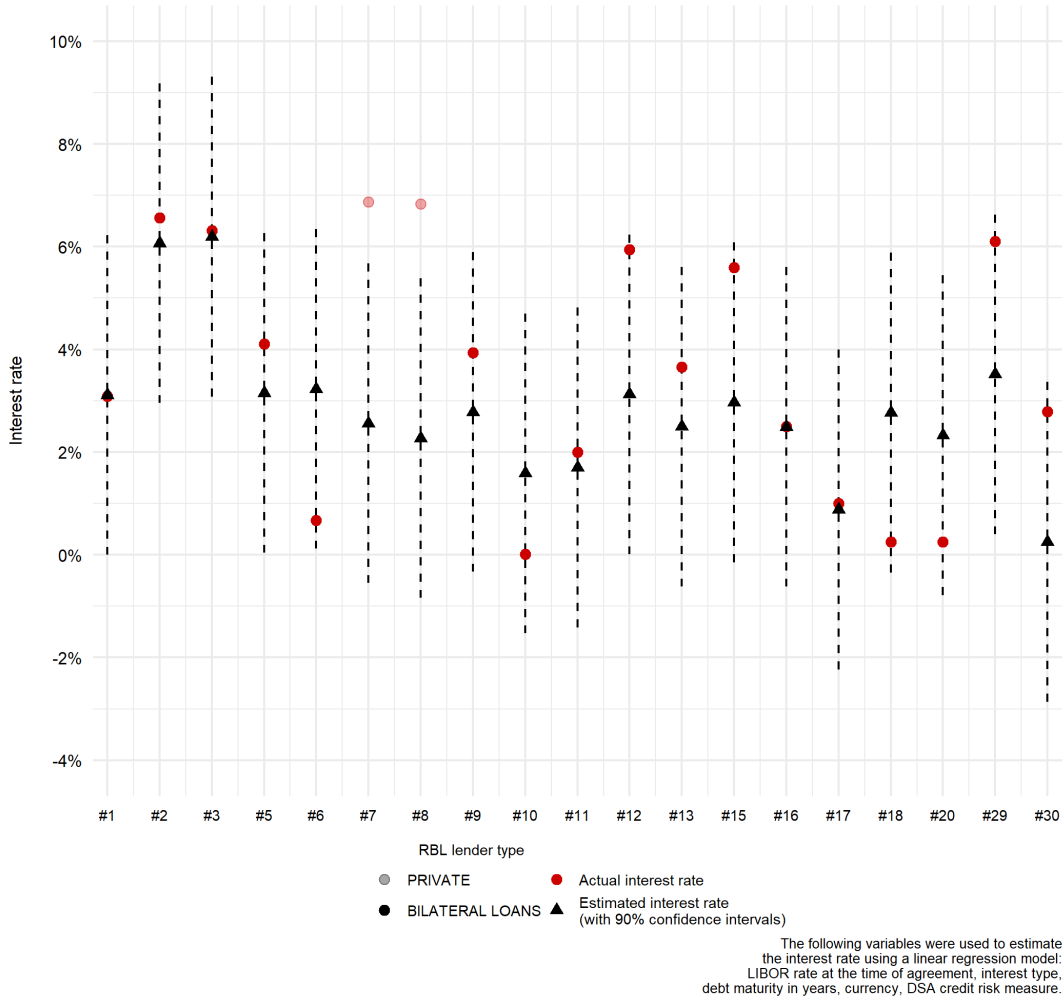
Figure 5: Interest rate of RBLs vs other similar loans



Our results suggest RBL borrowing rates are, on average somewhat higher than other sources of financing with comparable terms (other than their collateral features). Six RBLs have interest rates within the 50 percent range of their control groups (denoted by the box), but most loans have rates within the 90 percent range (denoted by the line). There are more RBLs with rates higher than their control group than with lower rates. For the two commercial RBLs issued by commodity traders for which we have data, interest rates are higher (prior to renegotiation) than their control groups, although the control groups are also very small.

We also evaluated the rates using regression analysis. We ran a linear regression on the same sample of loans and provide an estimated interest rate for each of the 19 RBLs based on a list of explanatory variables identical to the above matching approach (risk ratings in DSA, currency, interest type floating vs fixed, years of maturity, prevailing global lending rates at time of signing). All explanatory variables were significant (results not shown here). Figure 6 provides the estimated rates based on regression analysis of key characteristics (excluding collateral features) vs the actual observed interest rates.

Figure 6: Interest rate of RBLs vs estimated rate based on other loan characteristics



Our results are quantitatively similar to the approach used for constructing a control group.³⁷ The RBL rates are somewhat higher overall than their other features would predict from the regression. For the two commercial RBLs issued by commodity traders for which we have data, interest rates are significantly higher (prior to renegotiation) than the regression estimates.

Overall, we found large variations in how favorable RBL borrowing rates were for the small sample for which we had data. Some RBLs extended by bilateral lenders (Korea, China) have outstandingly low rates, but many come with rates well above the median, including those extended by commodity traders.

There are some important caveats to the method employed. They are based on a limited number of RBLs for which we have interest rate information and we can only control for a limited number of parameters in order to get to reasonable sized comparators.

³⁷ There is 0.84 correlation in the size of the gap between actual RBL interest rate minus the average control group or estimated rates.

The analysis above suggests that RBLs do not provide a uniquely cheap mode of financing. Nevertheless, RBLs from bilateral lenders have interest rates within a broad range of other loans so their use should not be ruled out on this basis. It may also be possible that some of the loans would have not materialized at all without some collateral.

This suggests that borrowers should seriously consider whether giving resource-based collateral in respect of their borrowings provides tangible additional benefits. This could be done by seeking alternatives, and encouraging more competition among lenders. More transparency in lending terms is also needed to increase scrutiny and to ensure that only competitively priced loans are taken up.

d. Spending considerations

RBLs, like any other debt represent a financial burden, so covering debt repayments must be sourced from future forms of revenue. Typically, borrowing can be used to make productive investments such as infrastructure that might generate revenues for government directly, or generate future revenue via increased economic growth and tax payments. Generally speaking, using RBL receipts to plug budget shortfalls, rather than fund capital expenditure may be risky, as a one-time cash injection might not prevent future shortfalls in government revenue. It may also not fix the underlying causes of low growth or low tax revenue, which may require different types of spending or structural reform.

As discussed in section 3/F most RBLs were spent on infrastructure (esp. petroleum sector, road, energy). In theory, these can yield returns which outweigh their costs, but there are a number of loans which went either for budget support or for unknown goals. Pre-payments are especially risky in this respect, as they are often not earmarked for specific projects, and are used at the borrowing governments' or SOE's discretion. The lack of transparency on the use of proceeds might increase the risk of payments being used inefficiently.

There are also mixed cases. In 2006, Zimbabwe contracted a \$200mn loan from Eximbank to purchase agricultural inputs such as tractors, fertilizer, and pesticides. Clearly, the latter two items are short-term consumables, with no guarantee that a one-time increase in agricultural production that year would somehow reduce the cost for future demand of fertilizers and pesticides [#29]. While this may appear intuitive at the outset, the pathway from a one-time injection of fertilizers and pesticides to an increase in production, and then to higher government revenue is rife with other uncertainties.

The contracting process is another consideration for borrowing countries. While there are no hard rules dictating that RBLs have to involve tied contracting, e.g., Chinese loans often involve construction or procurement to be carried out by Chinese companies (at least in respect of a portion of the loan), as a result of their ability to best leverage the preferential financial support that the state policy banks bring. This leads to an open question on whether it may be advisable to trade potentially cheaper credit for a more competitive bidding process.

There is no guarantee that governments will use all loans for their intended purposes. In this study, we did not attempt to verify RBL loan use comprehensively. However, our review of press reports and articles on RBLs confirms that the designated projects are generally the ones that receive the funding. One counterexample exists in an RBL that South Sudan took from a

commodity trader to finance its Green Horizon farming project and provide general budget support. In an OCCRP investigation, it has been alleged that some of these RBL funds were instead used for military spending (although this has been disputed).³⁸

To summarize, the majority of RBLs are earmarked for financing particular infrastructure projects. Since the infrastructure gap in developing countries tends to be large, it may economically justify the borrowing if the social returns from the infrastructure projects are higher than the interest charges and risks associated with the loan. However, there are also risks associated with project selection and execution, especially when there is a lack of transparency, accountability and competition. It is therefore critical for lenders and loan recipients to create safeguards to ensure that RBLs are invested productively.

e. Negative pledge undertakings³⁹

In addition to considering the merits and terms of a RBL transaction, there are legal factors that a sovereign or SOE ought to consider prior to finalizing arrangements.

One such consideration is whether the structure or terms of a proposed loan would cause non-compliance with contractual undertakings that the sovereign or SOE borrower has already given in favor of other lenders. A relevant example of such an undertaking is the negative pledge clause.

While the precise application of a negative pledge clause will vary depending on its text, the key aim of a negative pledge provision is to preclude or limit the ability of the borrower to grant collateral through liens and similar forms of security in favor of other lenders, unless the borrower equally and ratably secures the lender in question, or provides equivalent security or otherwise obtains its consent. Negative pledge clauses are important to a lender: if, for example a borrower provides collateral against an asset by giving a lien or other legal security⁴⁰ in favor of a specific lender, then in the event of non-payment or default by the borrower, the lender will have a legally enforceable right and claim against the secured asset, and be able to liquidate the asset in order to repay itself the outstanding loan amounts. When specific assets of the borrower are secured in favor of specific lenders, it leaves fewer borrower assets out of which unsecured lenders can be repaid in the event of a default.⁴¹

Given the possible variety in scope of negative pledge undertakings, the question of whether a particular transaction violates a negative pledge undertaking will depend both on the language used in the negative pledge clause itself, as well as the structure of the transaction and the language of the legal documentation setting out the deal. It is clear that a negative pledge clause will

³⁸ Sam Mednick, *Sprouting Weapons of War*, OCCRP, 17 July 2019, www.occrp.org/en/investigations/sprouting-weapons-of-war.

³⁹ Susan Maslen (WB-LEG) has contributed to this section.

⁴⁰ The concepts of “lien” or “security” are usually defined terms in the loan agreement and so the precise definition and contents will vary by lender, market etc. However, in general, the concepts used in negative pledge clauses typically include liens, charges, security interests, pledges, mortgages and other encumbrances.

⁴¹ Some negative pledge clauses have an expanded scope in that they apply not only to transactions involving the creation of legal security or a lien which is legally enforceable, but also to transactions with collateral arrangements that offer lenders a kind of commercial security and that do not amount to true, legally enforceable security in an insolvency or similar scenario. Such transactions may be considered to have an equivalent (economic) effect to legal security, albeit not the same legal effect (or remedies). Under such arrangements, contractual rights and transaction structuring techniques may be used to give the relevant lenders advantages vis-à-vis other lenders, despite the absence of a legally enforceable claim against a specific asset. These contractual features are often referred to as “quasi-collateral” or “quasi-security”. In negative pledge clauses that seek to also target quasi-security, the definition of “lien” or “security” may, for example, be extended to include (language like) “...and any arrangement having an equivalent effect”.

not catch all types of resource-backed loan structures, and indeed it may not be desirable or practical to do so. Irrespective of whether legal security or quasi-security is used, sovereign and SOE borrowers in resource-backed loans need to consider the extent to which a collateralized transaction structure effectively ties up the borrower's assets, for example with resource sale proceeds being directed and held in specific accounts where the borrower's ability to withdraw funds is subject to contractual limitations tied to the loan. These limitations may significantly counter-balance the charm and allure of any low interest rate offered in connection with such loan.

The breadth of a negative pledge undertaking turns on more than just the definitions of concepts such as "lien" or "security". Exceptions are often contemplated within the negative pledge clause itself. Examples include exceptions given to: (i) the giving of liens or security by the borrower in connection with debt that has a maturity of 12 months or less; and (ii) transactions that entail a lien or security created on property at the time of purchase of such property, where the lien is created solely to secure payment of the purchase price or to secure the repayment of debt incurred for the purpose of purchasing the property. In addition, and depending on the context of the debt in question, a lender may limit the scope of the negative pledge undertaking to external debt incurred by the borrower. External debt is usually defined either as debt that is denominated in a foreign currency relative to the borrower; or as debt incurred by the borrower to a lender that resides overseas.

Negative pledge undertakings are used in loans made by a wide range of lenders, including multilateral development banks, private or commercial lenders, and state-owned policy banks. They are also usually included in the terms and conditions of bonds issued by sovereigns and commercial entities alike. Particularly in commercial contexts, negative pledge texts may be accompanied by a list of permitted liens or similar limitations to the application of the negative pledge clause itself.

Permitted Lien Provisions

Under "permitted lien" provisions the lender will upfront, through the language of the clause, permit the borrower to enter into collateralized transactions of a certain nature and these transaction types are usually listed and described with some specificity and parameters. For example, in a resource-backed loan context, a lender may agree under permitted lien language to permit a borrower engaged in the oil sector to undertake limited recourse project finance transactions, where security is given to the relevant lenders over oil production equipment or facilities and where the aim of the relevant borrowing is to increase or improve the overall capacity or efficiency of the borrower in oil production and sales. Similarly, a lender may permit a borrower, upfront, to provide security to other lenders in respect of trade finance facilities.

In permitting certain types of liens or secured transactions upfront, a lender may stipulate maximum monetary values of a permitted loan; they may limit permitted liens to loans with a specific purpose; or specify other limitations beyond which the borrower is required to obtain the lender's consent or otherwise to equally and ratably secure such lender. The lender's motivation for permitting, upfront, the borrower to give such liens or security in favor of other lenders over the life of the loan will vary, but may include any of the following: (i) recognizing that such liens are usual in the borrower's business context or sector; (ii) recognizing that such liens are likely to be given in connection with specific investment types that enhance the borrower's overall business and value; and (iii) a desire on the part of the parties to limit the amount of time and transaction costs expended over the life of a loan in obtaining the lender's consent. In some instances, the number and scope of permitted liens or transaction types is so extensive that one might wonder if the extensive number of carve-outs impairs the purpose of the permitted lien (and negative pledge) language in the first place.

Compliance with Negative Pledge and Permitted Lien Requirements Is the Obligation of the Borrower

Compliance with a negative pledge clause and permitted lien provisions is the obligation of the borrower. The limitations of these clauses, whilst often viewed as a burden, can function as an ally to sovereign and SOE borrowers in resource-rich Sub-Saharan African countries by giving the borrower something to point to in seeking to minimize any legal security or quasi-security proposed by lenders. It is not the responsibility of lenders to monitor or check compliance with negative pledges and permitted lien provisions. However, if information about a sovereign's or SOE's borrowing activities is available, a lender may decide to conduct its own review. The difficulties faced by lenders in assessing the borrowing activities of sovereigns and SOEs (whether for the purpose of reviewing compliance with negative pledge clauses or for the purpose of assessing debt sustainability and creditworthiness) are often complicated by the lack of public disclosure of such information.

f. RBL renegotiations

A number of key differences emerge when comparing how RBLs can be renegotiated compared to traditional lending instruments.

RBLs are likely to involve fewer creditors than other forms of sovereign debt, especially sovereign bonds. This may make it easier to reach an agreement. The renegotiation of bonds is often complicated by differing interests among bondholders and holdout creditors that are less amenable to bargaining.⁴²

The parties to an RBL are also often more heavily interdependent. The interdependence may stem from having agreed on multiple loans, tied contracting practices with regards to spending loan proceeds (referenced above) or additional contracts related to commodity production or marketing. Therefore, lenders may have additional incentives to reach an agreement to continue their business operations.

While the collateralized nature of RBL transactions may seem like a strong guarantee for repayment, in practice it is often difficult to enforce such collateral. This is especially the case when the collateral involves assets located in the borrowing country. Assets such as the bauxite reserves supposedly serving as collateral for the Selous and Northfields platinum reserves in Zimbabwe are highly sensitive and their loss would face great resistance.⁴³ If lenders tried to seize them rather than negotiate, they would be heavily dependent on local cooperation by state and citizens for using them productively, which they would likely find difficult. This may be the key reason that no claims on such subsoil collateral have emerged publicly from the various RBLs facing repayment difficulties.⁴⁴ The same cannot be said about foreign assets used as collateral.⁴⁵

The use of proceeds as collateral also has strong limitations. In Chad, in order to service the RBL following the oil price crash, Glencore was allowed to keep a large share of government's oil revenues (100 percent of equity oil and 70 percent of royalty oil). But the government found ways to reduce its repayment. SHT started diverting some of the oil to the domestic refinery rather than paying Glencore, showing that designated RBL revenue streams can be altered by governments looking to force a

⁴² Innovations in collective action clauses have recently been implemented to ease this problem.

⁴³ "Storm Brews Over China Deal," Zimbabwe Independent, 9 July 2009, www.theindependent.co.zw/2009/07/09/storm-brews-over-china-deal/.

⁴⁴ Acker, et al.'s 2020 review of disputes involving Chinese loans also has not found evidence for "asset seizures".

⁴⁵ For example, the dispute over the ownership of CITGO pledged by PDVSA as security. CITGO's refinery assets are above ground in the US, rather than underground as in the República Bolivariana de Venezuela. "New York court decision tightens bondholders' grip on Citgo Petroleum, Venezuela's most valuable foreign oil asset" (<https://www.wsj.com/articles/citgo-backed-bondholders-win-court-ruling-against-venezuela-11602863428>).

renegotiation.⁴⁶ The country's president also threatened to give Glencore's monopoly trading rights to ExxonMobil. Glencore's upstream interests may have also made the company more amenable to renegotiate.⁴⁷ In 2018, as part of its IMF program, Chad completed its debt restructuring with Glencore, which lengthened the maturities on the debt, lowered interest rates and made the debt more counter-cyclical by including contingencies which adjust repayment depending on oil price.

The pandemic has accentuated the already sharp debt sustainability challenges in a number of developing countries. In response, the G-20 has agreed to an initiative which enables the temporary suspension of debt servicing (DSSI) for the world's poorest countries. However, most RBLs were outside its scope, mostly because only official lenders participated and not commercial lenders or commodity traders.⁴⁸ Further consideration should be given to how international financial institutions may be able to assist RBL borrowers to help restructure their debt effectively (in a way that also ensures inter-lender equity) in the eventuality of debt burdens becoming unsustainable.

6. Conclusions

In this paper we analyze the main features and the impact of resource-backed loans on borrowing countries. While our review was restricted to publicly disclosed information about borrowings by central governments or SOEs in Sub-Saharan Africa during the 2004-2018 period, our conclusions are relevant to developing countries in general and may also be applicable to other forms of collateralized borrowing.

We found that while RBLs have limited use in a handful of countries, they represent a sizable proportion of debt in many of them. The countries that rely most on this form of borrowing are generally less transparent in their debt reporting, especially with regards to SOE debt, and collateralization is not disclosed in public debt records. Within our analysis sample, we found wide variations in how favorable RBL borrowing rates were. While a few RBLs extended by bilateral lenders (Korea, China) have outstandingly low rates, most come with rates well above the median. This is markedly the case for the few RBLs extended by commercial commodity traders. Some RBLs have resource price contingent repayment features, which allow for faster repayment in commodity booms and less in bust times, which could be attractive for resource-dependent borrowers. Most RBLs are earmarked for infrastructure investment, which in theory can yield returns that offset borrowing costs; however, non-earmarked loans (more prevalent among pre-payment deals) may be hard to justify economically, especially given their often-higher rates. We highlighted the nature of negative pledge undertakings and permitted lien clauses, and their relevance to borrower decisions related to the giving of collateral in the context of individual RBLs, and finance transactions more broadly. Finally, we showed how collateralization can threaten inter-lender equity and undermine the process of orderly debt dispute resolutions. RBLs have been so far renegotiated on an ad-hoc basis, which is likely driven by the strong interdependence between borrower and lender and by the practical limitations to enforcing any collateral granted through these loans.

When transparently conducted, borrowing operations that leverage natural resources as credit enhancement may represent an opportunity. However, their net benefit depends on a country's debt sustainability, the use of proceeds and the improvement in

⁴⁶ Madjiasra Nako and Julia Payne, "Exclusive: Chad wants to cut off Glencore's oil supplies in debt row," Reuters, 30 October 2017, www.reuters.com/article/us-glencore-chad-oil-exclusive/exclusive-chad-wants-to-cut-off-glencores-oil-supplies-in-debt-row-idUSKBN1CZ1TK

⁴⁷ Ian Lewis, "Oil price recovery eases Chad's gloom," Petroleum Economist, 25 June 2019, www.petroleum-economist.com/articles/politics-economics/africa/2019/oil-price-recovery-eases-chads-gloom

⁴⁸ Chad did request suspension from Glencore in September 2020.

financial terms. On the downside, these contractual arrangements inhibit the ability of a sovereign or SOE borrower to freely direct their own cashflows, potentially impairing the borrower's ability to respond to economic shocks and source price volatility. The COVID-19 pandemic has exposed some Sub-Saharan African countries to these risks, as they face narrow fiscal space and reduced control over scarce resources that are tied up in highly structured loan arrangements. The complexity and critical nature of RBLs presented in this paper underscore the importance of the international community's continued efforts in developing technical capacity in Sub-Saharan African countries and highlight the key role of financial and legal technical assistance in promoting borrowers' interests in negotiations with lenders.

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Appendix

A.1. Acronym List

Bpd	barrels per day
CARI	China-Africa Research Initiative
CATIC	China National Aero-Technology Import & Export Corporation
CDB	China Development Bank
Chalco	Aluminum Corporation of China
CHICO	China Henan International Cooperation Group
CNPC	China National Petroleum Corporation
CPI	China Power Investment Corporation
CREC	China Railway Engineering Corporation
CSW	cash-sweep mechanism
DRC	Democratic Republic of Congo
DRS	World Bank Debtor Reporting System
DSSI	temporary suspension of debt servicing
EDCF	Economic Development Cooperation Fund
EITI	Extractive Industries Transparency Initiative
Eximbank	China Export-Import Bank
Gécamines	La Générale des Carrières et des Mines (DRC)
GIADEC	Ghana Integrated Aluminum Development Corporation
ICBC	Industrial and Commercial Bank of China
IDA	International Development Association
IMF	International Monetary Fund
KEXIM	Export-Import Bank of Korea (Republic of Korea)
LIBOR	London Inter-bank Offered Rate
MFA	master facility loan
NPV	Net present value
NRGI	Natural Resource Governance Institute
OCCRP	Organized Crime and Corruption Reporting Project
RBL	resource-backed loan
SHT	Société des Hydrocarbures du Tchad (Chad)
Sicomines	Sino-Congolaise des Mines (DRC)
SNPC	Société Nationale des Pétroles du Congo
SOE	state-owned enterprise
SPV	special purpose vehicle
WB	World Bank
ZESA	Zimbabwe Electricity Supply Authority (Zimbabwe)

A.2. List of RBLs

ID	Borrowing country	Borrower entity	Main lending entity	Agreement year	Resource
1	Angola	Government	Eximbank	2004	Oil
2	Angola	Government	Eximbank	2007	Oil
3	Angola	Government	Eximbank	2007	Oil
4	Angola	Government	Eximbank	2009	Oil
5	Angola	Sonangol	ICBC	2010	Oil
6	Angola	Government	CDB	2015	Oil
7	Chad	SHT	Glencore	2013	Oil
8	Chad	SHT	Glencore	2014	Oil
9	Congo, Dem. Rep.	Sicomines	Eximbank	2008	Copper & cobalt
10	Congo, Dem. Rep.	Government	Korea Exim	2011	Copper
11	Ghana	Government	Eximbank	2007	Cocoa
12	Ghana	Government	Eximbank	2007	Cocoa
13	Ghana	Government	CDB	2011	Oil
14	Ghana *	Government	CDB	2011	Oil
15	Ghana	GIADEC	Sinohydro	2018	Bauxite
16	Guinea	Government	ICBC	2017	Bauxite
17	Niger *	Government	Eximbank	2013	Oil
18	Congo, Rep.	Government	Eximbank	2006	Oil
19	Congo, Rep.	SNPC	Gunvor	2010	Oil
20	Congo, Rep.	Government	Eximbank	2012	Oil
21	Congo, Rep.	SNPC	Trafigura	2015	Oil
22	Congo, Rep.	SNPC	Glencore	2015	Oil
23	São Tomé and Príncipe	Government	Government	2010	Oil
24	South Sudan	Government	Trafigura	2015	Oil
25	South Sudan	Government	CNPC	2015	Oil
26	South Sudan	Government	Eximbank	2016	Oil
27	Sudan	Government	Eximbank	2007	Oil
28	Zimbabwe	ZESA	CATIC	2004	Tobacco
29	Zimbabwe	Government	Eximbank	2006	Platinum
30	Zimbabwe	Government	Eximbank	2011	Diamond

Note: RBLs marked with * were subsequently cancelled without disbursement.