Hidden debt exposure to China: What is it, where is it, and should we be concerned?

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In September 2021, AidData released a report entitled *Banking on the Belt and Road* that provides global and country-specific estimates of hidden debt exposure and unreported debt exposure to China.[1] The report, which is based on a new dataset of 13,427 Chinese development projects worth $843 billion, has instigated an important public debate in the Global North and the Global South.[2] However, some key points have gotten lost in the discussions that have taken place among pundits and politicians via social media, op-eds, press conferences, and television and radio programs. In this note, we provide additional details and clarifications about our methods and findings.

One of the core findings from *Banking on the Belt and Road* is that a major transition has taken place in China's overseas lending program. Prior to the introduction of the Belt and Road Initiative (BRI), most of China's overseas lending was directed to central government institutions (i.e., sovereign debtors). However, nearly 70% of China's overseas lending is now directed to state-owned companies, state-owned banks, special purpose vehicles (SPVs), joint ventures (JVs), and private sector institutions. These debts, for the most part, do not appear on government balance sheets in low-income and middle-income countries (LMICs). However, most of them benefit from implicit or explicit forms of host government liability protection, which has blurred the distinction between public debt and private debt. Even though central government institutions are not the primary borrowers responsible for the repayment of these debts, central government institutions will in many cases be expected to step into the breach in the event the primary borrowers go into default or become financially distressed.

Banking on the Belt and Road also takes a close look at the World Bank's Debtor Reporting System (DRS), which since 1951 has served as the primary mechanism through which sovereign borrowers voluntarily disclose their actual and potential repayment obligations to external creditors. We find that LMIC governments are underreporting their true levels of Chinese debt exposure to the DRS by $385 billion. That's slightly more than 50% of all official sector lending from China to state-owned entities in LMICs, which is consistent with an earlier estimate published by Sebastian Horn, Carmen M. Reinhart, and Christoph Trebesch in the *Journal of International Economics*. Another key finding from *Banking on the Belt and Road* is that government underreporting of actual and potential repayment obligations to China has gotten substantially worse during the BRI era. During the pre-BRI era, average annual underreporting of repayment liabilities to official sector creditors in China was $13 billion. However, this figure skyrocketed to $40 billion during the first 5 years of BRI implementation.

There are seven major questions about hidden debt exposure and unreported debt exposure to China that we think merit clarification.

- Are AidData's estimates of unreported debt exposure to China exaggerated and based on a small number of outliers?
- Does AidData claim that all hidden debts—and unreported debts—to China involve intentional efforts to conceal repayment obligations?
- Is it possible to differentiate between intentionally and unintentionally unreported or hidden debts to China?
- Should we be concerned about the public financial management risks of (Chinese) loans contracted by entities that are not majority-owned by governments in low-income and middle-income countries?
- Even if these off-government balance sheet transactions *could* become repayment obligations of the central government, do we really need to worry that these contingent liabilities will be realized?
- Is AidData overcounting or undercounting hidden debt exposure to China?
- Going forward, will the issues of hidden debt exposure and unreported debt exposure to China become more or less important?

[1] In *Banking on the Belt and Road*, we provide a global estimate of hidden debt exposure to China and a global estimate of unreported debt exposure to China based on two different methodological approaches. Our estimate of hidden debt exposure to China ($309 billion) is based on the volume of lending from official sector institutions in China to borrowing institutions that stand to benefit from implicit forms of host government liability protection (i.e., loans to state-owned entities that did *not* receive explicit host government repayment guarantees). Our estimate of unreported debt exposure to China ($385 billion) is based on the difference between (a) the amount of debt from official sector institutions in China that low-income and middle-income governments have voluntarily disclosed through the World Bank's Debtor Reporting System (DRS) and (b) the amount of debt from official sector institutions in China that was contracted by borrowers in low-income and middle-income with explicit or implicit host government liability protection (as measured by AidData). In other words, the difference between (a) and (b) is the total amount of public sector debt to China that governments have opted not to report to the DRS.

[2] An illustrative set of reactions from journalists, policymakers, and academics can be found here, and here.

1. Are AidData's estimates of unreported debt exposure to China exaggerated and based on a small number of outliers?

SAIS-CARI recently published a briefing paper arguing that our report is "unduly alarmist" about LMIC governments having high levels of unreported debt exposure to China.[3] To support their argument, they point out that while the average LMIC government is underreporting its actual and potential repayment obligations to China by an amount that is equivalent to 5.8% of its GDP, the median figure is substantially lower (1.8%). SAIS-CARI is correct that there are some countries—like Venezuela, Kazakhstan, the Republic of Congo, and Equatorial Guinea—with particularly high levels of hidden debt exposure to China. However, the fact that the global distribution of unreported debt exposure to China is right skewed (rather than following a bell-shaped curve) does not imply that the problem is isolated to a small number of outlier countries.[4] Countries with high levels of unreported debt exposure to China—measured as a percentage of debtor country GDP—are spread across all continents and include small and large economies.[5] 29 LMICs are underreporting their actual and potential repayment obligations to China by an amount that is equivalent to or greater than 6.3% of their GDP and an additional 16 LMIC are underreporting their actual and potential repayment obligations to China by somewhere between 1.8% and 5.2% of their GDP (see Table A-27 in the *Banking on the Belt and Road* report).

Also, when SAIS-CARI uses the term "outliers," it's important to remember what this means: in some countries, there is a particularly large gap between the actual and potential repayment obligations to China that a government has voluntarily reported to the World Bank's DRS and the actual and potential government repayment obligations that AidData has independently documented (in its 2.0 dataset).[6] SAIS-CARI seems to think that we need not be concerned about "outliers" like Equatorial Guinea and the Republic of Congo.

We respectfully disagree. The severity of these underreporting problems was not fully known before AidData published its dataset and the *Banking on the Belt and Road* report. Indeed, AidData's 2.0 dataset provides evidence of many large-scale official sector loans from China to African borrowers that are either not recorded or undercounted in the Chinese Loans to Africa Database developed by SAIS-CARI.[7] Consider the following illustrative cases:

- Equatorial Guinea: In 2009, China Eximbank provided a $550 million loan to the Government of Equatorial Guinea for the Djibloho Power Transmission and Transformation Project. This loan is recorded by AidData via ID#62082. However, it is not recorded in the SAIS-CARI database. Nor are any of the following China Eximbank loans recorded in the SAIS-CARI database: the $170 million loan for the Malabo International Airport Expansion Project, the $174 million loan for the Malabo Electrification Project, the $105.74 million loan for the Malabo Natural Gas Power Plant Construction Project, the $93.5 million loan for the Bata Five-Star Hotel Construction Project, and the EUR 78.3 million loan for the SIPOPO International Convention Center Construction Project. These loans are recorded by AidData via ID#61136, ID#62264, ID#61634, ID#67139, and ID#61637.
- Republic of Congo: In 2005, China Machinery Engineering Corporation (CMEC) extended a $551,507,000 supplier's credit to the Republic of Congo for an electricity transmission line project that evacuated power from the Imboulou hydropower plant (as documented by AidData via ID#1049). Until recently, the SAIS-CARI database identified a $264 million China Eximbank loan in 2009 for this project. The CMEC supplier's credit

[3] In fairness, SAIS-CARI is narrowly focused on Chinese lending to Africa and the global problem of unreported debt exposure to China is not heavily concentrated in Africa. We find that all LMIC governments are collectively underreporting their actual and potential repayment obligations to China by $385 billion. However, only 11% of these actual and potential repayment obligations to China ($41.2 billion out of $385 billion) are underreported by African governments. See Table A-27 in the *Banking on the Belt and Road* report.

[4] SAIS-CARI has correctly noted that several large, middle-income countries—like Russia and Venezuela—have high absolute levels of unreported debt exposure to China. However, it is not especially surprising that large, middle-income countries account for a larger share of Chinese lending and a larger share of unreported Chinese lending.

[5] See Table A-27 in *Banking on the Belt and Road* report. Sebastian Horn, Carmen Reinhart, and Christoph Trebesch provide corroborating evidence in a forthcoming article in the *Journal of International Economics*.

[6] A key limitation of the DRS is that it conflates official loan commitments from the People's Republic of China (PRC) and the Republic of China (ROC). AidData's estimates of unreported debt exposure to the PRC should therefore be treated as lower-bound estimates (since the official sector loan commitments from China that are reported in the DRS include loan commitments issued by Taiwan).

[7] We systematically document these cases in the "Staff Notes" field of the 2.0 dataset. In March 2021, SAIS-CARI announced that it had transitioned management of the Chinese Loans to Africa (CLA) Database to the Global Development Policy Center at Boston University. The CLA Database is based upon a double verification methodology (described here) and AidData's dataset is based upon the Tracking Underreported Financial Flows (TUFF) methodology (described here).

agreement can be accessed in its entirety (here) and it clearly shows that SAIS-CARI underreported the face value of the loan and misrecorded the identity of the creditor and the loan commitment year.[8] SAIS-CARI corrected the error in March 2021 after AidData and the Center for Global Development identified it in a November 2020 publication (here). A series of additional loans that China Eximbank issued to the Republic of Congo for the Maya-Maya International Airport Project, Phase 3 of the National Telecommunication Coverage Project, and Djiri Water Supply Projects remain unrecorded or undercounted in the SAIS-CARI database.

- Angola: In 2017, the Industrial and Commercial Bank of China (ICBC) issued two loans collectively worth $2 billion to the (state-owned) National Bank of Angola. Neither of these loans are recorded in the SAIS-CARI database. They are documented by AidData via ID#66876 and ID#66878. In 2006, five Chinese state-owned banks contributed $700 million to a $1.4 billion syndicated loan for the Block 18 Oilfield Development Project. The syndicated loan, which was issued to a special purpose vehicle jointly owned by Sinopec (a Chinese-state-owned oil company) and Sonangol (an Angolan state-owned company), is not captured in the SAIS-CARI database.[9] There are also projects for which SAIS-CARI identifies the existence of a Chinese loan but undercounts the monetary value of the loan. For example, in 2013, China Eximbank provided a $1 billion buyer's credit loan for 400kv Soyo-Kapary Power Transmission and Transformation Project (as documented by AidData via ID#43782). The SAIS-CARI database records the face value of the loan as $118 million.

- Egypt: In 2016, China Development Bank provided a $1 billion loan to the Central Bank of Egypt to shore up the country's foreign exchange reserves. It subsequently "upsized" the loan from $1 billion to $2 billion (as documented by AidData via ID#52881). The SAIS-CARI database records a single $900 million loan commitment.

- Sierra Leone: In 2017, ICBC and the China Eximbank provided a $659 million syndicated loan to National Port Development (SL) Ltd.—a special purpose vehicle—for the Port Elizabeth II Upgrading Project. The loan agreement, which is backed by a sovereign guarantee, is publicly accessible in its entirety (here) but it is not recorded in the SAIS-CARI database. AidData has documented the respective contributions of ICBC and China Eximbank to the syndicated loan via ID#62223 and ID#62224.

- Sudan: In 2012, China Development Bank provided a $1.5 billion loan to the Sudan National Petroleum Corporation (Sudapet), which is a state-owned oil company. This loan, which is captured by AidData via ID#30440, is not recorded in the SAIS-CARI database.

- Tanzania: In 2014, China Development Bank issued a $300 million loan to the Government of Tanzania to support infrastructure investment projects (as documented by AidData via ID#61018). This loan is not recorded in the SAIS-CARI database.

- Ghana: In 2016, a syndicate of banks (including the International Finance Corporation, FMO, Bank of China, ICBC, and Standard Bank) signed a $667 million loan agreement with Meridian Port Services Ltd (MPS)—a project company and special purpose vehicle that is jointly owned by Ghana Ports and Harbours Authority (a state-owned entity) and Meridian Port Holdings Limited (a joint venture between APM Terminals and Bolloré Africa Logistics)—for the Tema Port Expansion Project. The SAIS-CARI database records the $243 million contribution from Bank of China but omits the $144 million contribution from ICBC to the syndicated loan that supported the project. The ICBC and Bank of China contributions to the syndicated loan are recorded by AidData via ID#59302 and ID#73212.

To be clear, our intent is not to criticize SAIS-CARI (or its partners at Boston University) for being insufficiently attentive to the completeness and accuracy of their data. Quite the opposite: our point is that, even in spite of their significant efforts to collect reliable and comprehensive data on official sector lending from China to government agencies and state-owned agencies in Africa, SAIS-CARI and Boston University are still not capturing the true extent of Africa's public debt exposure to China (due to the fact that a significant number of large-scale loans are not fully discoverable through their double verification methodology).[10] Therefore, the notion that we have published "unduly alarmist" estimates of hidden and unreported debt exposure to China strikes us as odd and misplaced (since

[8] A time-stamped version of the Chinese Loans to Africa (CLA) database from before the error correction was made can be accessed here. The latest version of the CLA database can be accessed here.

[9] AidData has documented the respective contributions of China Eximbank, China Development Bank, China Construction Bank, Bank of China, and Agricultural Bank of China via ID#67024, ID#67022, ID#67027, ID#67025, and ID#67026.

[10] The latest version of the CLA database captures loans from Chinese state-owned policy banks, state-owned commercial banks, and state-owned enterprises. However, future annual updates of the CLA database will only capture loans from two Chinese state-owned policy banks (China Eximbank and China Development Bank), with updates for a "broader set" of Chinese lenders taking place every few years (author correspondence with Rebecca Ray on 25 October 2021). China's state-owned commercial banks—rather than its state-owned policy banks (China Eximbank and China Development Bank)—represent the fastest growing source of official sector lending from China.

our newly published dataset identifies many large-scale, official sector loans from China that are unidentified or undercounted by SAIS-CARI and other publishers of Chinese development finance data).[11]

It is true that some journalists, civil society organizations, members of parliament, and government ministry officials have responded to the findings of the *Banking on the Belt and Road* report with alarm, while others have responded with indifference (see examples here, here, here, here, here, here, here, and here). However, we take issue with the idea that the report itself is "unduly alarmist." We are dyed-in-the-wool empiricists and our findings in the *Banking on the Belt and Road* report are based on five years of careful data collection and analysis. If anyone identifies errors in our dataset (or in our analysis of the dataset) that would lead to a different set of empirical findings about hidden and unreported debt exposure to China, we invite them to bring forward such evidence. We have made all of our sources, methods, and data public (here, here, and here) in order to expose our analysis to external scrutiny and promote more evidence-based discussion and debate around this important policy issue.[12]

2. Does AidData claim that all hidden debts—and unreported debts—to China involve intentional efforts to conceal repayment obligations?

No, we do not. Some LMIC governments are intentionally underreporting their repayment obligations to Chinese state-owned lenders (because of concerns about how full disclosure would affect the availability and cost of credit in the future). However, there are several other reasons why governments do not fully disclose their actual and potential repayment obligations to China and other creditors.

One reason is that some finance ministries are not always aware of the debts that state-owned companies, state-owned banks, and other (state-owned and privately-owned) entities have contracted, which may become central government repayment obligations in the future. Finance ministries typically keep relatively good records of loans that benefit from central government repayment guarantees (i.e., "sovereign guarantees"), which represent an explicit form of liability protection. By contrast, they rarely keep good records of loans contracted by state-owned entities that do not benefit from sovereign guarantees. In the event these borrowing institutions become insolvent, central government institutions often face public/political pressure to bail them out. However, they have weak incentives to acknowledge that such debts could become central government repayment obligations in the future (lest they create a self-fulfilling prophecy).

A second reason is that governments may not have obligations to disclose debts to the World Bank's DRS. Participants in the DRS are only required to disclose debts that are contracted by "public sector [entities] in which the government holds a fifty percent or more share (whether, or not, the obligation relates to a loan guaranteed by the state)." The $3.54 billion debt financing package that China Eximbank issued to a joint venture for the China-Laos Railway Project is a case in point. The borrowing institution—the Laos-China Railway Company Limited (LCRC)—is jointly owned by three Chinese state-owned companies that hold a 70% equity stake and a Laotian state-owned enterprise that holds a 30% equity stake. As such, the Laotian authorities did not disclose this debt to the DRS as an actual or potential repayment obligation of the government. However, as we argue at greater length below, the "majority state ownership" rule that governs voluntary disclosure efforts under the DRS is ultimately arbitrary.[13] If the purpose of an international reporting system for public debt is to provide an accurate and comprehensive record of the actual and potential repayment obligations of LMIC governments, the "majority state ownership" rule does not effectively serve this objective.

A third reason is that when governments are not actively borrowing from the World Bank, they have no obligation to participate in the DRS. The Venezuelan government, for example, stopped borrowing from the World Bank in 2007. It also stopped disclosing its debts to the DRS. Official sector institutions in China lent record amounts of money to the Venezuelan government (and various Venezuelan state-owned entities) over the next ten years, but none of these debts were ever recorded in the DRS. According to AidData's 2.0 dataset, Venezuela contracted $74.7 billion of sovereign debt (i.e.,

[11] SAIS-CARI has previously expressed skepticism that "half of China's overseas loans to the developing world are 'hidden.'" However, our analysis of AidData's 2.0 dataset is consistent with this finding, which was first made by Horn, Reinhart, and Trebesch (here and here).

[12] Much of the existing literature on Chinese development finance does not adhere to particularly high standards of research transparency and replicability.

[13] Public debt disclosure through the DRS is mandatory for World Bank borrowers. In principle, if an LMIC government does not comply with this requirement, then no new IDA or IBRD loans/credits can go to the World Bank's Executive Board for approval. However, in practice, the World Bank staff who manage the DRS do not have the administrative discretion to independently correct errors of omission or commission in the data that are reported by LMIC governments (author interview of World Bank official with direct involvement in DRS on 22 October 2021).

government and government-guaranteed debt) and an additional $16.3 billion of hidden debt (i.e., potential government repayment obligations resulting from debts contracted by state-owned banks, enterprises, and SPVs) from official sector institutions in China between 2000 and 2017. Yet, the DRS only captures $699 million of official sector loan commitments from China to Venezuela between 2000 and 2017. Venezuela's true level of public debt exposure to China is therefore underreported in the DRS by a staggering $90.3 billion, which is equivalent to roughly 20% of Venezuela's GDP.

3. Is it possible to differentiate between intentionally and unintentionally unreported or hidden debts to China?

In most cases, it is not. By way of illustration, consider the $943 million China Eximbank loan that the Government of Montenegro contracted in 2014 for the Smokovac-Matesevo Section of the Bar-Boljare Highway Project. This loan, worth roughly 20% of the country's GDP, represents the largest repayment obligation of the Government of Montenegro. Yet the loan commitment is not recorded in the DRS. In the Federation of Bosnia and Herzegovina (FBiH), China Eximbank issued a loan worth EUR 613.9 million loan to Elektroprivreda BiH (the country's state-owned power utility) in 2017 for the 450MW Tuzla Thermal Power Plant Unit 7 Project and the FBiH Ministry of Finance issued a sovereign guarantee. The loan should have been recorded in the DRS according to the World Bank's reporting rules, but for reasons that remain unknown, the authorities in Bosnia and Herzegovina did not voluntarily disclose the repayment obligation. The Government and Montenegro and the FBiH, it should be noted, are both active World Bank borrowers. Also, the China Eximbank loan agreements for these two projects are publicly accessible (here and here).

Did either of these governments intentionally conceal these sovereign debts from the World Bank's DRS? It's hard to say. In Montenegro's case, it appears that the central government is now reporting *disbursements* from the China Eximbank loan that was issued for the Smokovac-Matesevo Section of the Bar-Boljare Highway Project, even though it did not disclose the loan *commitment* in the year (2014) when it was contracted. This pattern could be the result of insufficient technical expertise within the Government of Montenegro to comply with the World Bank's Debtor Reporting System Manual. However, it's also not possible to rule out the possibility of intentional non-disclosure (by the government that was in power when the loan was first contracted).

4. Should we be concerned about the public financial management risks of (Chinese) loans contracted by entities that are not majority-owned by governments in low-income and middle-income countries?

Yes, we think so. SAIS-CARI is concerned that AidData may be exaggerating the scale of the hidden debt problem by counting the face value of loans contracted by entities that are minority-owned by LMIC governments. As a matter of practice, SAIS-CARI does not record the face values of loans that are issued to joint ventures (JVs) and special purpose vehicles (SPVs) that are minority-owned by LMIC governments. Instead, it identifies the share of the JV/SPV that is owned by a host government institution and multiplies that share by the face value of the loan to estimate the host government's repayment obligation. As explained in the SAIS-CARI Loan Database Research Guidebook, "if a [joint venture] with 10% ownership by an African government borrows US$ 100 million from a Chinese financier, we record this as a loan of US$ 10 million."

We think this approach is wrong-headed for two reasons. First, it has no legal foundation. JVs/SPVs are usually established as limited liability corporations (LLCs), which means that in the event of insolvency/default, the co-owners (equity holders) of these entities are shielded from legal liability for any outstanding debts. A host government's level of legal liability is not proportional to the size of its ownership stake in the JV/SPV. So, in the hypothetical example that SAIS-CARI provides in its Loan Database Research Guidebook, there is no legal basis for estimating the host government's repayment obligation by taking 10% of $100 million. If the JV/SPV goes bankrupt or defaults on its repayment obligations, all bets are off: any repayment obligations assumed by the co-owners of the JV/SPV would be the result of public/political pressures to bail out the financially distressed JV/SPV, rather than legal liabilities.

Second, the historical record of contingent liability realizations[14] suggests that if one wants to fully account for the actual and potential repayment obligations of host governments, the face value of loans contracted by entities that are minority-owned by LMIC governments should be counted.[15] Most of these loans support public-private partnership (PPP) projects, so it is important to remember how PPPs work: when LMIC governments engage in PPPs, they usually provide explicit or implicit forms of liability protection to the project companies (JVs/SPVs) that own public infrastructure assets. Explicit forms of liability protection are codified in laws and contracts, while implicit forms of liability protection are based upon expectations that the host government will bail out a project company (JV/SPV) if it cannot repay its debts. In a new publication entitled *Hidden Debt*, the World Bank emphasizes that PPPs are especially dependent upon *implicit* forms of host government liability protection: "even though the government might not contractually promise any guarantees to the private party in the event of a default, given that the government is the ultimate guarantor of public services in most societies, the government might have to bail out the private party or assume the remaining debt and service obligations of the private party to avoid service disruption. This means that when a PPP contract is agreed upon, the government assumes the ultimate insolvency risk." The best available historical evidence also underscores the importance of *implicit* forms of host government liability protection: Elva Bova, Marta Ruiz-Arranz, Frederik Toscani, and H. Elif Ture have constructed a comprehensive dataset of contingent liability realizations in developed and developing countries over a 25-year period, and their analysis of the dataset demonstrates that *80% of all contingent liability realizations result from implicit forms of liability protection.*

In order to illustrate the practical implications of this debate about how to characterize a host government's actual and potential repayment obligations in a Chinese government-financed PPP project, let's consider a specific case: the China-Laos Railway Project. To finance the construction of a 418-km railway segment between the Laotian capital of Vientiane and the China-Laos border, a shell company called the Laos-China Railway Company, Limited (LCRC) was created. The LCRC is a limited liability corporation and joint venture between three Chinese state-owned companies (with a 70% ownership stake) and a Laotian state-owned enterprise (with a 30% ownership stake). China Eximbank issued $3.54 billion of debt to the LCRC to support the construction of the railway (a public infrastructure asset).

How should the Laotian government's repayment obligation for this project be characterized? Given that it does not hold a majority (greater than 50%) ownership stake in the LCRC, no government repayment obligation is recorded in the World Bank's DRS. However, the proposition that the LCRC poses no insolvency risk to the Laotian government strains credulity. SAIS-CARI's recommendation is to characterize the Laotian government's repayment obligation as $1.06 billion (30% of $3.54 billion). However, to the best of our knowledge, SAIS-CARI has never provided a legal, policy, or evidentiary justification for why this approach is appropriate. The more prudent approach, we believe, is to acknowledge that the Laotian government's repayment obligation could be as large as the entire face value of the loan ($3.54 billion), which is why we treat this loan (and others like it) in the *Banking on the Belt and Road* report as a *potential* repayment obligation of the government.

Here's our reasoning: none of the equity holders in the LCRC have legal liability for any unpaid debts of the project company since it was established as a limited liability corporation (LLC). However, the China-Laos Railway is a public infrastructure asset being financed through a PPP arrangement, and there is considerable uncertainty about whether the Chinese side or the Laotian side would feel more compelled to bail out the LCRC if it became insolvent and defaulted on its repayment obligations to China Eximbank. If the Chinese side was less willing than the Laotian side to abandon the railway, the host government would potentially have no liability at all for the $3.54 billion debt that was contracted by the LCRC. However, if the Laotian side had less appetite than the Chinese side to let the railway fail, the host government could end up assuming responsibility for the entire $3.54 billion debt.

In a recent briefing paper, SAIS-CARI claims that "AidData researchers argue that […] if the railway is unable to repay the loan, the Laos government will likely face pressure to cover *all of the losses*, despite the majority ownership by the three Chinese firms […]."[16] To be clear, we have never made this claim. As we explain on pages 47-49 of the *Banking on the Belt and Road* report, if the LCRC goes bankrupt or defaults on its repayment obligations, the Laotian government's 30% ownership stake in the shell company will be irrelevant. The key factor that will determine the host government's level of responsibility for repayment is the amount of public/political pressure that it faces to rescue the public infrastructure asset and minimize railway service disruptions.[17] If the host government is willing to abandon the railway (and/or wait to see if the Chinese

[14] See Diaz-Alejandro (1985); Polackova (1999); Kharas and Mishra (2001); Campos et al. (2006); and Bova et al. (2018).

[15] It is important to keep in mind that the DRS, which has served as the primary international reporting system for public debt since 1951, seeks to capture the actual *and* potential repayment obligations of LMIC governments.

[16] Emphasis added.

[17] As Irwin (2007) puts it, "[g]overnments sometimes bailout firms in financial distress even when they have no obligation to do so, which implies that they were bearing insolvency risk implicitly. Although they may have given no commitment to protect the lenders from insolvency —and may have expressly refused to do so—they may still find the prospect of the firm's bankruptcy politically unpalatable. … When the services in question are as vital as water and power, even the possibility of disruption can cause the government to intervene."

government will intervene), then it may end up having no repayment responsibility (the best-case scenario). However, if the host government faces pressure to ensure the continued operation and maintenance of the railway (and the Chinese government is willing to abandon the railway), then it could be responsible for as much as 100% of the shell company's outstanding debts to China Eximbank (the worst-case scenario).

The fact that the Laotian government's level of responsibility for repayment could be anywhere between 0% and 100% of the $3.54 billion debt highlights the importance and the complexity of this public financial management challenge. Hidden public debt is like a phantom menace: the problem is not so much one of the host government knowing that it will need to service undisclosed debts (with known monetary values) to China, than it is about the host government not knowing the monetary value of debts to China that it may or may not have to service in the future. We do not consider the DRS approach (pretending that the host government assumes no insolvency risk) to be defensible, as it flies in the face of decades of experience with infrastructure PPP projects.[18] Nor do we consider SAIS-CARI's recommended approach—estimating the Laotian government's potential repayment obligation by multiplying its (30%) ownership stake in the LCRC by the value of the total amount of debt that the LCRC owes to China Eximbank ($3.54 billion)—to be useful or appropriate, since it creates a false sense of certainty about the host government's true level of repayment liability with a lower-end estimate.

5. Even if these off-government balance sheet transactions *could* become repayment obligations of the central government, do we really need to worry that these contingent liabilities will be realized?

Yes, we should be worried. The vast majority (80%) of contingent liability realizations are based on implicit forms of host government liability protection (e.g., bailouts of borrowing institutions that did *not* secure explicit repayment guarantees from the central government).[19]

Consider the cautionary tale of the Jakarta-Bandung High-Speed Railway (HSR) Project. The Indonesian government wanted to work around its public debt ceiling by financing this $5.29 billion mega-project through an off-government balance sheet transaction. So, it decided to finance the construction of the railway on a PPP basis. A group of Indonesian and Chinese state-owned enterprises created an SPV—called PT Kereta Cepat Indonesia China—and China Development Bank (CDB) lent $4 billion to the SPV. All of the remaining project costs were supposed to be covered by the owners of the SPV via equity contributions. Indonesian President Joko Jokowi signed a decree prohibiting the use of government funds for the project. However, during implementation, the project encountered major cost overruns worth approximately $2 billion. Then, in October 2021, President Jokowi reversed course, issuing a new decree and authorizing a government bailout of the Jakarta-Bandung HSR Project. The Indonesian government reportedly plans to take $286.7 million out of state coffers in 2022 and inject the funds into PT Kereta Cepat Indonesia China. It has also made clear that it is prepared to provide additional funding on an as needed basis.[20]

Another case in point is the Yamal Liquefied Natural Gas (LNG) Project in Russia. In late 2015 and early 2016, CDB, China Eximbank, and the Silk Road Fund issued a raft of loans worth approximately $12 billion to JSC Yamal LNGfor this mega-project involving the construction of an LNG plant, seaport, and airport on Russia's Yamal Peninsula. JSC Yamal LNG is a JV of Novatek (a private Russian gas company with a 50.1% ownership stake), Total S.A. (a French oil and gas company with a 20% ownership stake), China National Petroleum Corporation (a state-owned Chinese oil company with a 20% ownership stake), and Silk Road Fund (a state-owned Chinese entity with a 9.9% ownership stake). The loans were issued as part of a

[18] Consider this excerpt from the World Bank's latest publication on *Hidden Debt*: "Infrastructure PPPs are no free lunch. They create liabilities for governments, including contingent (hidden) ones. To share risk appropriately between the public and private parties, governments tend to provide explicit guarantees to the private party, such as revenue or credit guarantees. The government, as the ultimate guarantor of the public infrastructure service, also provides an implicit guarantee to backstop the fiscal and economic consequences of any failures by the partnership. … The rising popularity of PPPs, and thus the increase in the contingent liabilities associated with them, warrant careful management of the fiscal and economic risks they pose. The opacity of financial records, confidentiality of most PPP contracts, and prevalence of cash rather than accrual accounting systems in emerging markets and developing economies hide the fiscal risks for government finances until the contingent liability materializes."

[19] See Bova et al. (2018).

[20] According to a spokesperson for the Indonesian Ministry of State-Owned Enterprises (SOEs), "Like it or not, … we have to ask the government to participate in funding the project if we want it to be finished on time."

larger, no-recourse project finance transaction. The Russian government does not have an ownership stake in the borrowing institution (JSC Yamal LNG). However, when the project stalled because of Western sanctions on Novatek, the Russian government quietly injected 150 billion rubles (approximately 2.1 billion euros) into JSC Yamal LNG by tapping its rainy-day fund (the so-called "National Wealth Fund"). The Russian government never provided an explicit justification for the bailout, but Leonid Michelson and Gennady Timchenko are major shareholders of Novatek and personal friends of Vladimir Putin.

These cases call attention to several important points about hidden public debt exposure. First, host governments typically bear insolvency risk in opaque, indirect, and even surreptitious ways. The Indonesian government repeatedly assured taxpayers that they would not be responsible for the debts of PT Kereta Cepat Indonesia China (the SPV/JV responsible for the Jakarta-Bandung high-speed railway), which was true in a very narrow sense: President Jokowi's recent decision to authorize the provision of state funds to PT Kereta Cepat Indonesia China does not explicitly state that the SPV/JV can use state funds to repay its outstanding debts to CDB. However, money is fungible, so a taxpayer-funded bailout of PT Kereta Cepat Indonesia China will help the company remain solvent—or at least liquid—and thereby allow for the continued construction of the railway.[21] PT Kereta Cepat Indonesia China cannot repay its outstanding debts to CDB unless the railway is completed and there are sufficient customers willing to pay for its use, so any injection of Indonesian government funds into the SPV/JV effectively represents an indirect (hidden) form of public debt. Similarly, when the Russian government discreetly provided a grant worth 2.1 billion euros for the Yamal LNG Project, it did so without specifying how the SPV/JV responsible for the project should use the additional liquidity. If hidden debt is like a thief coming to raid the public treasury, it is not going to knock on the front door and announce its arrival; it is going to sneak in through the back door and take special care to leave no fingerprints.

Second, when SPVs/JVs are financially distressed, bailout costs are rarely meted out to project sponsors in proportion to their ownership stakes. SAIS-CARI has argued that the host government's level of insolvency risk is proportional to its ownership stake in the borrowing institution (SPV/JV). However, there is no legal liability basis for this claim. Nor is it a norm commonly followed in cases of (actual or anticipated) SPV/JV insolvency.

6. Is AidData overcounting or undercounting hidden debt exposure to China?

If anything, we think that AidData's 2.0 dataset may underestimate hidden debt exposure to China. Our estimates in *Banking on the Belt and Road* are conservative, in that they exclude all official sector loans from China that were contracted by SPVs that are wholly owned by entities other than the host government.[22] If past is prologue, host governments will most likely end up (directly or indirectly) assuming responsibility for some of these "private" debts, which are spread across 65 countries and collectively worth $103 billion (according to AidData's 2.0 dataset).[23]

By way of illustration, consider the 554MW Attarat Oil Shale Fired Power Plant Project in Jordan, which is *excluded* from our estimates of hidden debt exposure to China. In March 2017, four Chinese state-owned banks signed a $1.582 billion syndicated loan agreement with Attarat Power Company (APCO)—an SPV and joint venture of YTL Power International Bhd of Malaysia (45% ownership stake), Guangdong Yudean Group Co. Ltd of China (45% ownership stake), and Eesti Energia AS of Estonia (10% ownerships stake)—for the 554MW Attarat Oil Shale Fired Power Plant Project. The $2.11 billion project was designed as a PPP and financed according to a debt-to-equity ratio of 75:25. To facilitate repayment of the loan (and provide a financial return to its equity holders), APCO entered into a 30-year power purchase agreement (PPA) with National Electric Power

[21] A separate, but related, observation is that rather than waiting for an SPV/JV to go bankrupt or default on its repayment obligations, host governments often take pre-emptive action to prevent bankruptcy or default.

[22] There are three additional reasons why our estimates of hidden debt exposure to China are conservative. First, our definition of "hidden debt" is conservative in that it excludes loans from official sector institutions in China that benefit from explicit host government guarantees (i.e., government-guaranteed debt). Second, for 10% of the loans to SPVs in the 2.0 dataset, it was not possible to identify if the host government holds an ownership stake in the SPV, so we err on the side of caution and classify all these loans as "private" (thus excluding them from our estimates of hidden debt exposure to China). Third, we conservatively assume that none of China's official sector lending to SPVs wholly owned by entities other than the host government involve indirect collateral arrangements (wherein a state-owned entity assigns collateral to an SPV, which in turns pledges the collateral to its creditors). According to the World Bank, in these situations, even though "the SPV is responsible for servicing the debt, this should be [treated as public sector debt], given the government can become liable for the SPV's obligations even if the SPV is a separate and fully independent entity from the government."

[23] On the issue of how and why Chinese debts contracted by private entities can become public debts and financial liabilities, Bandiera and Tsiropolous (2020) note that many of these debts are backed by power purchase agreements with state-owned electricity companies, government-guarantee returns on equity, or other types of government payment/revenue guarantees.

Corporation (NEPCO), the Jordanian state-owned power utility. NEPCO agreed to serve as the sole offtaker (i.e., single buyer) and purchase all power generated by the oil shale-fired power plant in Attarat at a price of approximately $0.17 per kilowatt hour (kWh). However, NEPCO signed several other PPAs with private companies around the same time, which resulted in too much power generation capacity and not enough customers. Now, many of APCO's competitors are selling electricity at $0.10 per kilowatt hour (kWh), which has put NEPCO between a rock and a hard place: it is contractually obligated to purchase power from APCO at $0.17 per kWh, without enough customers to whom it can resell the power. In December 2020, NEPCO and the Government of Jordan (GOJ) initiated international arbitration proceedings against APCO with respect to the PPA and the GOJ guarantee of NEPCO's payment obligations. NEPCO and the GOJ are seeking declaratory judgments that (a) the $0.17 per kWh tariff is "grossly unfair" and (b) NEPCO can terminate the PPA if its "gross unfairness" is not addressed.[24] APCO insists that its loan agreement with ICBC, China Eximbank, Bank of China, and China Construction Bank was based on an internal rate of return (IRR) calculation of 17% (which in turn is based on the $0.17 per kWh tariff) and that it won't be able to repay its debts if the IRR and tariff rate are downwardly revised.[25]

This project calls attention to an inconvenient truth: when Chinese state-owned banks issue loans to SPVs/JVs that are wholly owned by entities other than the host government, they often create indirect (hidden) financial liabilities for the host government. SAIS-CARI, which does not track these types of loans in its database, seems to think that policymakers need not worry about Chinese government lending to SPVs/JVs that are wholly owned by entities other than the host government. However, we find it difficult to reconcile cases like the 554MW Attarat Oil Shale Fired Power Plant Project with SAIS-CARI's "case closed, nothing to see here" argument.[26]

We also think it is important to keep in mind that the power sector is growing faster than any other sector in China's overseas lending portfolio (on this point, see pg. 25 in *Banking on the Belt and Road*), and most of these loans are being issued to SPVs/JVs responsible for independent power projects (IPPs), which are typically underpinned by power purchase agreements (PPAs).[27] When a host government signs a PPA with an SPV/JV that is responsible for an IPP, it is effectively guaranteeing a revenue stream that will help the SPV/JV to consistently service its debts to China. This is why the World Bank describes a PPA as "an economic liability [that is] similar to debt."[28]

7. Going forward, will the issues of hidden debt exposure and unreported debt exposure to China become more or less important?

Since we published *Banking on the Belt and Road*, some observers have questioned whether concerns about hidden/unreported public debt exposure to China are overblown, since in many cases these debts in question represent potential rather than actual host government repayment obligations. Our view on this issue is that public policy should be guided by the best available empirical evidence, and the historical record does not leave a lot of room for disagreement about whether hidden public debt exposure—especially hidden public

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[24] NEPCO and the GOJ are seeking a $0.07 per kWh tariff reduction (from $0.17 per kWh to $0.10 per kWh).

[25] According to a source with firsthand knowledge of the dispute and ongoing negotiations, the GOJ and NEPCO are taking the position (in arbitration proceedings at the International Court of Arbitration in Paris) that the IRR estimate was artificially inflated at the time that the PPA and loan agreement were signed because the entity that performed the IRR analysis assumed a 5% rate of national economic growth. Since then, Jordan has registered an average rate of economic growth that is closer to 0%, which has led to substantially lower levels of demand for electricity (fewer customers) than projected in the IRR analysis. The Covid-19 pandemic has made this problem even more acute.

[26] The case of the 554MW Attarat Oil Shale Fired Power Plant Project is reminiscent of the various independent power projects (energy sector PPPs) that became major public sector liabilities after the Asian Financial Crisis. For example, in Indonesia, two SPVs—Himpurna California Energy (Himpurna) and Patuha Power Ltd. (Patuha)—were established to manage the financing, construction, and operation of power generation projects near the Dieng geothermal field and Patuha geothermal field on the island of Java. The SPVs signed power purchase agreements with PT Perusahaan Listruik Negara (PLN), Indonesia's state-owned power company. However, when the Indonesian economy collapsed in 1997 and 1998, PLN failed to honor its contractual obligations to purchase power from Himpurna and Patuha. An arbitration tribunal ruled in 1999 that PT Perusahaan Listruik Negara (PLN), Indonesia's state-owned power company, was required to pay $391 million in damages to Himpurna and $180 million to Patuha.

[27] As Irwin (2007) puts it, "[i]n infrastructure, governments and customers can bear some insolvency risk normally borne by creditors. If the firm cannot pay its debts, the government and customers may share the losses normally borne by creditors. Creditors may even lose nothing, payments from the government or customers keeping them whole."

[28] Also, when a state-owned power company signs a PPP with an independent power producer (SPV/JV), the host government will often guarantee the payment obligations of the state-owned power company. This is why Irwin (2007: 81) says that, "[i]nsofar as [PPAs] resemble debt, the [host government] guarantees [of the payment obligations of the state-owned power company] resemble debt guarantees."

debt exposure related to infrastructure PPPs—should be treated as a fiscal risk (liability) with a low probability of being realized.[29] When a public infrastructure asset is financed off the host government's balance sheet, policymakers should not labor under the illusion that the host government is free of insolvency risk. Decades of research and experience demonstrate that the host government is the ultimate guarantor of public infrastructure services and insolvency risk for infrastructure PPPs. When SPVs/JVs that are established to provide public infrastructure services become financially distressed, it is not unusual for host governments to bail them out. This is true in developed and developing countries even during normal times. However, at a time when many infrastructure PPPs are financially underperforming (due to factors related to the pandemic), we think it is especially important that host governments pay close attention to debts that they may not consider to be their own but that may eventually be put on their balance sheets.

Hidden public debt exposure—to China or any other creditor, for that matter—merits the attention of policymakers and taxpayers in LMICs for three reasons. First, when a central government assumes responsibility for unplanned debt service payments (or provides other cash infusions to keep borrowing institutions afloat), it effectively displaces other public spending priorities that were planned and budgeted. Second, if the central government has a high level of debt exposure that is underreported or hidden from public view, it will most likely continue to borrow from other lenders who are not fully aware of the risks, thereby leading to an unsustainable accumulation of public debt. Once these unreported/hidden debts are discovered, higher levels of risk aversion among external creditors typically lead to higher risk premiums, which make it more expensive for sovereigns to borrow and more difficult to avoid debt distress (or exit a debt crisis).[30] Third, it is more difficult for governments to resolve debt crises when they have high levels of hidden/unreported public debt exposure. Collective restructuring typically requires a credible assurance from the sovereign that an orderly process and reasonable burden-sharing arrangement will be put in place for all major creditors. However, in the absence of reliable and detailed information about the sovereign's outstanding debts, creditors often engage in holdout and litigation tactics, which makes it more difficult to resolve the crisis in a timely and effective manner.[31]

The challenge of managing hidden/unreported public debt is also particularly important right now because we are approaching the end—or perhaps the beginning of the end—of the third boom-bust cycle in international lending since World War II. According to the IMF, it has counseled the Chinese government to "[g]et ready for […] restructurings" and explained that "what we are seeing since roughly the late 2000s is the third boom-bust cycle in international finance since the Second World War. The first was the first big boom-bust cycle of the 1980s driven […] mostly by bank lending to Latin America. Then we had one mostly to emerging markets and based on bond financing […] that went bust around 2000. […] This is number three. This time we have this very interesting mix of non-Paris Club, semi-concessional official borrowing, commercial borrowing, and with one very large lender playing a role. So, unless history has changed completely, this cycle is going to come to end, and when it does, there will be a wave of defaults, and we are seeing the beginning of that wave." Reinhart and Rogoff (2011) provide a useful reminder from history about why hidden debts become especially important during sovereign debt crises: "[h]idden debts include […] private debt that becomes public (and publicly known) as the crisis unfolds. […] In a crisis, government debt burdens often come pouring out of the woodwork, exposing solvency issues about which the public seemed blissfully unaware [...] Indeed, in many economies, the range of implicit government guarantees is breathtaking."

The reckoning that lies ahead raises a fundamental question about the international community's preparedness to effectively engage in collective action and bring a diverse set of sovereign debt crises to resolution in a timely manner. Since the end of World War II, bilateral creditors have worked together on a consensus basis to help low-income and middle-income governments escape situations of debt distress through the Paris Club, which in turn has coordinated its restructuring efforts with the IMF, World Bank, and other major multilateral creditors. However, China has rejected invitations to join the Paris Club, effectively freeing it from any requirement to share information about its overseas lending activities or coordinate its debt restructuring efforts with other official creditors. AidData's work with an interdisciplinary group of researchers from the Peterson Institute for International Economics, Georgetown Law School, the Center for Global Development, and the Kiel Institute for the World Economy also demonstrates that China has taken

[29] See Diaz-Alejandro (1985); Polackova (1999); Kharas and Mishra (2001); Campos et al. (2006); and Bova et al. (2018).

[30] Hidden public debt discoveries can also plunge sovereign borrowers into full-blown crises. Mozambique is a case in point. As described by Lupo-Pasini (2021: 168), "[i]n the course of a sovereign debt restructuring … the IMF discovered two large unreported loans, amounting to US$1.15 billion—around 9 percent of the entire country's GDP. The loans were part of a larger financing operation that included an additional US$800 million loan with government guarantee, organized by two state-owned enterprises. The discovery of the hidden loan created a budget hole of around US$1 billion, which plunged the African country into default. The subsequent investigation reported that the guarantees were not subject to any scrutiny by the Ministry of Finance before being approved nor were they subject to oversight by the Parliament. The outcome of the scandal was that Mozambique was denied market access by markets and could not obtain additional finance from the IMF."

[31] In January 2020, the Deputy Director of the IMF's Strategy and Policy Review Department announced that his organization's "number one message" to the Chinese authorities is that "[i]f you are a big lender, there is no free-riding. [...] If you fail to be transparent, you make it more difficult for everyone else—borrowers and lenders—to take the right decisions, which makes it more likely that there will be a big blow up, which makes it more likely that you as the big lender will get hurt. So, your transparency decisions can actually influence outcomes."

extraordinary measures to shield its loans—via "no Paris Club" and "no comparable treatment" contractual clauses, as well as stringent confidentiality requirements—from collective restructuring efforts.[32] Further complicating matters, Chinese state-owned lenders are increasingly issuing debt via instruments—like deferred payment agreements and commodity prepayment facilities—that LMIC governments do not want to acknowledge as government repayment obligations (in their own public debt records/databases or in international reporting systems like the DRS).[33]

[32] The *How China Lends* study was published in April 2021. It was the result of a collaboration between researchers from AidData at William & Mary, the Center for Global Development (CGD), the Kiel Institute for the World Economy, and the Peterson Institute for International Economics (PIIE). The authors of the study include Anna Gelpern (PIIE and Georgetown Law), Sebastian Horn (Kiel Institute for the World Economy), Scott Morris (CGD), Brad Parks (AidData), and Christoph Trebesch (Kiel Institute for the World Economy).

[33] There are also many questions about whether, when, and how governments should disclose these types of debts via international reporting systems like the DRS. The World Bank DRS manual has not been updated in more than two decades. During that period of time, China transitioned from being a net recipient of foreign aid to the world's largest official creditor.