

Tracking Chinese Development Finance: An Application of AidData's TUFF 3.0 Methodology

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Introduction

To help those who seek to understand the nature, distribution, and effects of development finance from emerging donors and creditors, AidData developed the Tracking Underreported Financial Flows (TUFF) in collaboration with an international network of researchers from Harvard University, Heidelberg University, the University of Göttingen, the University of Cape Town, Brigham Young University, and William & Mary. The methodology codifies a systematic, transparent, and replicable set of procedures that facilitate the collection of information about aid and credit from official sector donors and lenders who do not publish comprehensive or detailed information about their overseas activities. It does so by synthesizing and standardizing vast amounts of unstructured, open-source, project-level information published by governments, intergovernmental organizations, companies, nongovernmental organizations, journalists, and research institutions.

The methodology was first introduced in April 2013 as a way of tracking Chinese government-financed development projects in Africa (Strange et al. 2013). It was then revised and extended to track Chinese government-financed development projects in Africa, Asia, Latin America and the Caribbean, the Middle East, Oceania, and Eastern and Central Europe in September 2015, January 2017, and October 2017 (Muchapondwa et al. 2016; BenYishay et al. 2016; Strange et al. 2017; Bluhm et al. 2018; Dreher et al. 2018, 2019, 2021, 2022). These revisions were chronicled in a book entitled *Banking on Beijing: The Aims and Impacts of China's Overseas Development Program* (Dreher et al. 2022). AidData then re-engineered the TUFF methodology to support the creation of AidData's Global Chinese Development Finance (GCDF) Dataset, Version 2.0, which was published in September 2021.¹ This retooling of the methodology involved (a) increased reliance on official sources, (b) the collection of more detailed information on the terms and conditions of the financing agreements issued by Chinese state-owned entities, and (c) a stronger focus on project implementation to improve the reporting of commencement dates, completion dates, and precise geographical locations. To build upon these improvements, capture the changing nature of China's overseas lending and grant-giving portfolio during the late BRI period (2018-2021), and improve the usability of the dataset for analysis, we have introduced new variables and structural changes to the latest (3.0) version of the TUFF methodology.²

We made six major improvements to the 3.0 version of the TUFF methodology to support new types of analysis.³

1. Improved financial instrument coverage and categorization: The 3.0 dataset captures 10,291 grant-financed projects/activities and 4,776 loan-financed projects/activities that were formally approved, active, or completed. Given that China relies on an increasingly diverse set of debt instruments to finance its overseas development program in low-income countries (LICs) and middle-income countries (MICs), we have introduced a

¹ The 1.0, 1.1, 1.2, 1.3, and 2.0 versions of the TUFF methodology are available on the aiddata.org website. The 3.0 version of the TUFF methodology was used to create the 3.0 version of AidData's GCDF dataset. For analysis of key patterns and trends from the 3.0 version of AidData's GCDF dataset, we encourage readers to consult Parks et al. (2023).

² Appendix F provides an overview of the similarities and differences between the 2.0 and 3.0 versions of AidData's GCDF Dataset.

³ For detailed descriptions of each field in the dataset, refer to Section 1.4.

new loan categorization scheme that allows users to isolate 23 specific types of loan instruments: (1) bilateral loans ("Number of Lenders" field), (2) syndicated/club loans ("Number of Lenders" field), (3) export buyer's credits, (4) supplier's credits/export seller's credits, (5) interest-free loans, (6) loans for debt refinancing purposes ("Refinancing" field), (7) investment project loans ("Investment" field), (8) loans that support a merger or acquisition ("M&A" field), (9) working capital loans ("Working Capital" field), (10) Engineering, Procurement, and Construction Plus Finance arrangements ("EPCF" field), (11) lease agreements ("Lease" field), (12) foreign currency swap borrowings or loans for balance of payments (BOP) support ("FXSL/BOP" field), (13) cross-currency interest-rate swaps ("CC IRS" field), (14) revolving credit facilities ("RCF" field), (15) government concessional loans ("GCL" field), (16) preferential buyer's credits ("PBC" field), (17) pre-export financing or commodity prepayment financing arrangements ("PxF/Commodity Prepayment" field) (18) inter-bank loans, (19) overseas project contracting loans, (20) deferred payment agreements ("DPA" field), (21) non-recourse or limited-recourse project finance transactions ("Project Finance" field), (22) short-term loans ("Short-term"), and (23) emergency rescue loans ("Rescue" field). Additionally, the 3.0 dataset flags loans that involve multilateral institutions as loan administrators, co-financiers, insurers, and/or advisers ("Involving Multilateral" field), and loans that involve co-financing agencies which are not of Chinese origin ("Involving Non-Chinese Financier" field).

2. Improved tracking of debt repayment obligations and liabilities: To help users of the 3.0 dataset better understand how Chinese lenders use credit enhancements, we identify four distinct types of organizations ("Guarantor," "Insurance Provider," "Collateral Provider," and "Security Agent/Collateral Agent") that were previously identified in a single "Accountable Agencies" field in the 2.0 version of the GCDF dataset. Additionally, for users who wish to analyze on-lending arrangements, the 3.0 dataset now includes two different categories of receiving agencies ("Direct Receiving Agencies" and "Indirect Receiving Agencies") and a flag for loans that involve on-lending arrangements ("On-Lending" field). To better track debt repayment obligations in cases when the direct receiving agency is a joint venture or special purpose vehicle (JV/SPV), we have introduced new variables that track the extent of host government ownership ("Host Government Ownership" field) and Chinese government ownership ("Chinese Government Ownership" field) of the JV/SPV. To support analysis of the actual and potential debt repayment obligations of host governments, we have introduced a "Level of Public Liability" marker that assigns each loan to one of six categories: Central government debt, Central government-guaranteed debt, Other public sector debt, Potential public sector debt, Private debt, or Unallocable.⁴ We have also included a "Financial Distress" flag that identifies whether, for a given loan, there is any indication that the borrower had difficulty repaying the loan or was financially distressed during the loan's repayment

⁴ Users of the 3.0 dataset can identify PPG debt by aggregating lending commitments to government and majority state-owned institutions as well as other institutions that secured central government repayment guarantees or repayment guarantees from state-owned entities other than the central government in the host country (i.e., by using the "Level of Public Liability" variable to identify all loan commitments assigned to the "Central government debt," "Central government-guaranteed debt," and "Other public sector debt" categories. In addition to PPG debt, the "Level of Public Liability" variable allows users to identify loans to minority state-owned institutions without public sector repayment guarantees ("Potential public sector debt").

period (according to the project/transaction life-cycle information that is identified in the “description” field)

3. Expanded and enhanced spatial granularity: Another important value addition to the 3.0 dataset is the level of geographical detail regarding where projects/activities take place. As we describe in greater detail in Goodman et al. (2023), for 9,497 projects/activities that have physical footprints or involve specific locations, the 3.0 dataset extracts point, polygon, and line vector data via OpenStreetMap URLs and provides a corresponding set of GeoJSON files and geographic precision codes.⁵ 72% (6,919) of these projects/activities include “precise” or “approximate” geocodes; the remaining 28% (2,578 projects) are measured at an administrative unit level.⁶ Measuring the spatio-temporal rollout of project/activity implementation with a high level of precision is important because it creates new opportunities to identify cause-and-effect relationships in rigorous ways.⁷
4. Expanded and enhanced project implementation and temporal coverage: To better document the full timeline of the project/activity from official financing commitment to the completion of implementation, we have introduced new variables and conducted a systematic review of project/activity records from the 2.0 dataset to record any new details regarding implementation. While prior versions of the GCDF dataset included only a “Commitment Year” field, the 3.0 dataset now includes a “Commitment Date” field that records the precise calendar day on which the official financing agreement was issued. The 3.0 dataset also provides an unprecedented level of detail on project/activity commencement (implementation start) dates and completion (implementation end) dates. It identifies precise, calendar day-level commencement dates for 11,286 projects/activities, and calendar day-level completion dates for 11,542 projects/activities. By way of comparison, the 2.0 version of the GCDF dataset identified calendar day-level commencement dates for 5,539 projects/activities, and calendar day-level completion dates for 6,061 projects/activities. The 3.0 dataset provides data on the originally scheduled project/activity commencement dates and completion dates, which has paved the way for the introduction of two new measures (“Deviation from Planned Implementation Start Date” and “Deviation from Planned Completion Date”) of the degree to whether and to what degree projects/activities ran (or are running) ahead of schedule or behind schedule. Additionally, to support users who wish to study loan repayment schedules, AidData has introduced variables that capture the first (originally scheduled) loan repayment date and the last (originally scheduled) loan repayment date. These variables are automatically calculated based on the values captured in the commitment date field, the grace period field, and the maturity field.

⁵ Users who wish to conduct analysis at higher levels of spatial aggregation can find the ADM1s (provinces) and ADM2s (districts) that correspond to these project locations in the 3.0 version of the GCDF dataset.

⁶ A project/activity with “precise” geocodes is one for which have highly precise boundaries of the geofeature(s). A project/activity with “approximate” geocode is one identified within a 5 km radius of the precise boundaries of the geofeature(s). For more details, see Goodman et al. (2023).

⁷ To better understand how highly precise data on the spatio-temporal rollout of Chinese grant- and loan-financed projects/activities make it possible to estimate the causal effects of such projects/activities on intended and unintended outcomes, see Dreher et al. (2019, 2022), Marty et al. (2019); Blair et al. (2022); Baehr et al. (2022), Isaksson and Kotsadam (2018a, 2018b), Isaksson (2020), Martorano et al. (2020), Iacoella et al. (2021), Malik et al. (2021), Bluhm et al. (2020), Anaxagorou et al (2020), Wellner et al. (forthcoming), and Asmus et al. (forthcoming).

5. **Tracking China's COVID-19 response efforts:** The 3.0 dataset includes a marker of whether it is known that a given project/activity was part of China's global COVID-19 response efforts. The "COVID Flag" field is set to "Yes" if the purpose of the project/activity was related to COVID-19 control, including providing information, education, and communication as well as activities or materials enabling testing, prevention, immunization, treatment, or care. In cases where we identified the type and amount of the item that was transferred in-kind but found no credible reporting regarding the monetary value of the donation, we calculated estimated monetary values based on the per-unit prices reported in the World Health Organization's Emergency Global Supplies Catalogues. In cases where we were able to estimate the monetary value of the donation, we recorded the value in the "Transaction Amount" field and set the "Amount Estimated" field to "Yes."
6. **Infrastructure project flag:** With a new infrastructure marker, the 3.0 dataset identifies 4,800 active and completed infrastructure projects, and an additional 94 infrastructure projects for which grants and loans were issued but which were subsequently suspended or canceled. We define "infrastructure projects" as those that involve physical construction activities (e.g. roads, railways, pipelines, transmission lines, fiber optic networks, etc.). More specifically, we capture projects that involve (1) building a new physical structure, (2) rehabilitating or adding onto an existing physical structure, and (3) maintaining an existing physical structure.

In addition, we have introduced a number of supplemental variables and structural changes, as described below, to enhance the usability of the 3.0 dataset for analysis.

1. **AidData Parent ID:** To better represent the linkages between project/activity records, the 3.0 dataset includes an "AidData Parent ID" variable. Project/activity records that are related to each other are assigned to the same parent identification number. Examples of cases in which project/activity records may be assigned to the same Parent ID include (1) the records capture separate loans from Chinese state-owned financiers which are allocated to the same project/activity, (2) the records capture separate tranches of financing from the same framework agreement, (3) the records capture financing to different phases of the same project/activity, (4) the records capture financing that is derived from a special fund or joint fund.
2. **Amount estimated:** The 3.0 dataset includes a marker which designates whether AidData estimated the monetary amount that the funding agency committed or pledged. There are a number of circumstances in which AidData estimates transaction (financial commitment) amounts. Examples include (1) If the precise face value of a Preferential Buyer's Credit (PBC) or Buyer's Credit Loan (BCL) from China Eximbank is unknown but the total cost of the commercial (EPC) contract is known, AidData assumes that the face value of the PBC/BCL is equivalent to 85% of the total commercial (EPC) contract cost; (2) If the face value of a syndicated loan (involving one or more official sector creditors from China) is known and the total number of participants in the loan syndicate is known, AidData assumes that each bank provided equal contributions to the syndicated loan; (3) If material is transferred in-kind and there is no credible reporting on the monetary value of the in-kind transfer, AidData calculates the monetary value of the in-kind materials by multiplying the number of units of donated material by the market value of those materials (in unit cost terms). Whenever a transaction (financial commitment) amount has been estimated, AidData includes an explanation in the "Description" or "Staff Comments" field.

3. **Grant element calculation and flow class determination:** In previous versions of the GCDF dataset, we calculated the grant element of each loan based on the OECD's cash-flow methodology and determined its flow class accordingly. Now, the 3.0 dataset also provides a grant element variable based on the OECD's grant-equivalent methodology, and a grant element variable based on the current (post-2013) World Bank/IMF methodology. These two additional grant element measures allow users to select the method of measurement that best supports their research objectives and ensures comparability across a wider range of datasets. It also ensures adherence to newly established OECD standards. In order to make flow class determinations for flows reported between commitment years 2000 and 2017, we follow the OECD's practice of using the cash-flow methodology to define ODA, which relies on a 25% grant element threshold and a discount rate of 10% for all loans. For flows reported in commitment years 2018 and beyond, we use the OECD's grant-equivalent methodology, which relies on a tiered concessionality threshold system for loans. Under the grant-equivalent methodology, the threshold level of concessionality for loans to the official sector in the recipient country is 45% for LDCs and other LICs (using a discount rate of 9%), 15% for LMICs (using a discount rate of 7%) and 10% for UMICs (using a discount rate of 6%).
4. **Flow type simplified:** To more easily facilitate the aggregation of data for certain types of analysis, the 3.0 dataset includes a "Flow Type Simplified" field in addition to the standard "Flow Type" field that was included in previous versions of the dataset. This field captures the type of financial or in-kind transfer supporting the project/activity in a smaller number of categories than the "Flow Type" field. Each flow is assigned to one of four categories: Grant, Loan, Debt Rescheduling, or Vague. Unlike the "Flow Type" field, the "Grant" category in the "Flow Type Simplified" field encompasses "Grant," "Debt Forgiveness," "Scholarships/Training in Donor Country," and "Free-standing technical assistance" flows.
5. **Recipient ISO-3 and income group:** The 3.0 dataset includes the ISO Alpha-3 Country Code for the recipient country of each project/activity, and a field that captures the recipient country income status based on the OECD's ODA Eligibility lists. The "OECD ODA Income Group" field records whether a country is low income (LIC), lower middle income (LMIC), upper middle income (UMIC), or high income (HIC).⁸ AidData uses this field for the calculation of the grant element according to the OECD grant-equivalent methodology (in the "Grant Element (OECD Grant-Equiv)" field), which uses a fixed discount rate that depends on the recipient country income level (9% for LICs, 7% for LMICs, and 6% for UMICs). The OECD income brackets also inform AidData's classification of projects as ODA-like, whereby loans must have a concessionality level of at least 45% for LICs, 15% for LMICs, and 10% for UMICs.
6. **Organizational presentation:** Rather than separating the names, types and origins of organizations into three separate fields, the 3.0 version of the dataset combines them into two columns in the dataset: one column that displays the name of the organization (e.g., Angola Ministry of Finance), and a subsequent column that displays both the country of origin and the organization type (e.g., Recipient Government Agency).⁹

⁸ Note that the "OECD ODA Income Group" field does not align with the World Bank income group classification. The list of countries eligible to receive ODA, as published by the OECD, is updated every three years and thus there is a delay in registering income bracket changes.

⁹ In the 2.0 version of the dataset, the country of origin and organization type were captured in two separate columns.

This paper has four sections. Section 1 provides an overview of the scope parameters and key features of the 3.0 dataset as well as guidance regarding how the dataset should be used in different types of applications. Section 2 explains how Chinese ODA and OOF is designed and delivered to other countries, and the coding rules and procedures that AidData used to capture and categorize projects financed with Chinese ODA and OOF. Section 3 describes the sources and methods that AidData used to assemble a comprehensive and detailed picture of Chinese ODA- and OOF-financed activities around the globe. Section 4 describes the methods that AidData used to collect precise geographic locational details and geocode the dataset.

Section 1 - AidData's Global Chinese Development Finance Dataset, Version 3.0

1.1 - Scope Parameters of the 3.0 Dataset

When we set out to build Version 3.0 of AidData's GCDF dataset, our goal was to create a comprehensive and detailed picture of China's overseas development finance program. The dataset that we constructed covers all regions, all sectors, and all sources and types of financial and in-kind transfers from government and state-owned institutions in China. There are other datasets that capture official financial transfers from China to a single sector (e.g., energy) or region (e.g., Latin America), or that only track certain types of financial flows (e.g. loans) and funding sources (e.g. China's policy banks). However, the 3.0 version of AidData's GCDF dataset is unique in that it covers every major world region, every low-income and middle-income country, all sectors, and all types of financial and in-kind transfers from government and state-owned institutions in China. It is also different from other Chinese development finance datasets in that it measures financial commitments in *constant* (i.e. inflation-adjusted) U.S. dollars (USD), which ensures that reliable comparisons can be made over time and geographic space.¹⁰

Prospective users should be aware of several scope parameters of the dataset:

- **Financiers:** The 3.0 dataset captures the full range of projects/activities that align with the OECD's definition of Official Development Assistance (ODA) and Other Official Flows (OOF). Therefore, any project/activity that benefits from financial or in-kind support from any official sector institution in China is included, regardless of its purpose, level of financial concessionality, funding source, and overseas destination. The only type of Official Financing we do not seek to capture is Official Investment, although we do capture debt financing that facilitates investment. The 3.0 dataset captures projects supported by 791 different official sector institutions in China, including central government agencies (like the Ministry of Commerce, the Ministry of Foreign Affairs,

¹⁰ It does so by capturing official financial commitments in their original currencies of denomination, converting these financial amounts into nominal USD values at the average exchange rates that were in effect during the commitment years, and subsequently converting the nominal USD values to constant 2021 USD values using the OECD's deflation methodology (to adjust for inflation and ensure comparability over time and geographic space). See Appendix D.

and the Ministry of Agriculture), regional and local government agencies (like Chongqing Municipal Health Commission and Tianjin Municipal Government), state-owned enterprises (like CNPC, CMEC, CATIC, and CRBC), state-owned policy banks (like China Development Bank and China Eximbank), state-owned commercial banks (like ICBC, BoC, and CCB), and state-owned funds (like the Silk Road Fund).

- **Types of Flows:** The 3.0 dataset captures grants, technical assistance, loans (with categorization of 23 distinct loan instruments), debt forgiveness, debt rescheduling, debt refinancing, scholarships, and training activities.¹¹ By monetary value, the majority of the ODA and OOF transfers (“flows”) that are captured in the dataset come from official sector loans. Yet the majority of the project/activity records in the dataset represent other types of financial or in-kind support. For many flow types other than loans, AidData was not able to identify monetary commitment values. However, these project/activity records still provide valuable information for users who are interested in capturing the full set of Chinese ODA- and OOF-financed activities in a given world region, country, or subnational area.
- **Sectors:** We capture all officially-financed projects/activities related to ODA and OOF, regardless of the sector that they support. We classify each project/activity in the 3.0 dataset according to the OECD’s 3-digit sector classification scheme.¹² AidData coders follow the OECD’s classification guidelines to identify the sector that a given project/activity is meant to support.
- **Recipients:** AidData used the 3.0 version of the TUFF methodology to systematically search for projects/activities supported by official financial and in-kind transfers from China across 165 countries and territories. The resulting dataset covers official financial and in-kind transfers from China to every low-income, lower-middle income, and upper-middle income country and territory across every major world region, including Africa, Asia, Oceania, the Middle East, Latin America and the Caribbean, and Central and Eastern Europe. It also covers 28 high-income countries (as of their 2021 OECD ODA income status) that were included to help ensure comprehensive coverage in each world region to the extent possible. In total, the dataset identifies Chinese government-financed projects/activities in 146 countries and territories, meaning that no projects were identified in 19 countries and territories despite systematic searches. See Appendix B for a full list of the countries systematically included in the 3.0 dataset.
- **Temporal Coverage:** The 3.0 dataset captures the known universe of projects (with development, commercial, and representational intent) supported by official financial and in-kind commitments (and pledges) from China over a 22-year period (2000-2021), with details on the timing of project implementation over a 24-year period (2000-2023). The dataset also assigns every project/activity to one of six status categories (Pipeline: Commitment, Implementation, Completed, Suspended, or Canceled) based on sources that were available as late as August 2023.

¹¹ See Section 2.5.3.3 for a detailed description of the loan instruments covered by the GCDF 3.0 dataset.

¹²See

<https://www.oecd.org/dac/financing-sustainable-development/development-finance-standards/purposeclassification.htm>

1.2 - Key Features of the Dataset

The 3.0 dataset includes 126 fields (variables), each seeking to capture a different aspect of a project/activity or provide information about the sources used to compile the record. A complete list of field names and definitions is provided in Section 1.4. The fields in the dataset capture the following types of information about each project/activity:

- **Basic Project/Activity Information:** The dataset provides foundational information about each project/activity, including its title in English, Chinese, and host country languages, a unique and stable project/activity record identification number, the date of the official commitment, the monetary value of the official commitment, the currency in which the official commitment was denominated, the identity of the funder and recipient, the primary purpose of the project/activity, the current status of the project/activity, and URLs for all sources that supported the creation of the project/activity record.
- **Transactional Details:** The dataset identifies the nature of the financial or in-kind transfer (e.g., grant, loan, technical assistance, debt forgiveness, debt rescheduling, scholarship/training) supporting each project/activity in the dataset. Whenever applicable, it documents loan pricing details (interest rate, default interest rate, grace period, maturity, commitment fee, management fee, insurance fee); levels of financial concessionality, as measured by the grant element calculators of the OECD and the IMF; the first loan repayment date; the last loan repayment date; the monetary value and timing of disbursements and repayments; the use of credit enhancements, including guarantees, insurance, and collateral; the establishment of special purpose vehicles, subsidiary on-lending arrangements, and escrow/revenue/special accounts; and the monetary value and timing of underlying commercial contracts. The dataset also provides stable URLs to unredacted grant, loan, and debt forgiveness/rescheduling agreements whenever they have been successfully retrieved.
- **Loan Type Categorization:** Given that Chinese state-owned creditors rely on an increasingly diverse set of loan instruments to finance projects/activities in low- and middle-income countries, AidData has introduced a new loan categorization scheme in the 3.0 version of the dataset that allows users to isolate 23 specific types of loan instruments. See Section 2.5.3.3 for more details. Additionally, the 3.0 version of the dataset identifies loans that involve an on-lending arrangement (in the "On-Lending" field); loans that involve multilateral institutions as a loan administrator, co-financier, insurer, and/or financial technical adviser ("Involving Multilateral" field); loans that involve co-financing agencies from countries other than China (in the "Involving Non-Chinese Financier" field); and loans that allow sovereign debtors to (i) service existing debts, (ii) finance general budgetary expenditures and/or, (iii) shore up foreign reserves (in the "Rescue" field).
- **Development Finance Categorization:** AidData seeks to designate each project/activity in the 3.0 dataset as Official Development Assistance (ODA) or Other Official Flows (OOF) based on measurement of the primary intent of the project/activity and the concessionality level of the financing provided for the project/activity. AidData adheres closely to the OECD-DAC reporting directives that outline the financial, structural, and intent-related eligibility criteria for ODA and OOF. This unique feature of the dataset allows users to make cross-donor and cross-lender comparisons at global, regional, national, and subnational scales and over time. The 3.0 version of the dataset is aligned with the OECD's newly established ODA thresholds (for loans issued in 2018 and

subsequent years), which are based upon a tiered grant-equivalent methodology. See Section 2 for more details. AidData has also included three different grant element variables in the 3.0 dataset based on OECD and IMF methods of measuring financial concessionality. See Section 1.4 for "Grant Element (OECD Cash-Flow)," "Grant Element (OECD Grant-Equiv)," and "Grant Element (IMF)" field definitions.

- **Sectoral Categorization:** AidData assigns 3-digit OECD sector codes and names to all projects/activities in the 3.0 dataset using the OECD's classification criteria. This unique feature of the dataset enables cross-donor and cross-lender comparisons—at global, regional, national, and subnational scales—since most official sources of international development finance (including all of the members of the OECD-DAC and the most multilateral institutions) use the same criteria. It also facilitates analysis of sectoral patterns and trends over geographic space and time.
- **Stakeholder Organizations:** Another feature that sets the 3.0 dataset apart is the level of detail that it provides about the organizations involved in Chinese ODA- and OOF-financed projects and activities. It provides information about nine potential types of organizations for each project/activity: (1) the official sector institution in China that is responsible for providing funding and/or in-kind support for the project/activity; (2) the co-financing institutions from inside and outside of China that are supporting the same project/activity; (3) the recipient institutions that are responsible for managing incoming funds and in-kind transfers; (4) the agency or agencies that receive and manage a financial transfer (loan) from the entity captured in the 'Direct Receiving Agencies' field (as part of an on-lending arrangement); (5) the contractors and subcontractors that are responsible for project/activity implementation; (6) the agency that provided a repayment guarantee; (7) the third-party (accountable agency) that provided a credit insurance policy to the borrower; (8) the agency that provided one or more sources of collateral that can be seized in the event the borrower defaults on its repayment obligation; and (9) the security agent or collateral agent that was appointed to enforce rights against the collateral in the event that the borrower defaults on its debt repayment obligations. The 3.0 dataset also categorizes each of these organizations by type (i.e., Government Agency, State-Owned Bank, State-Owned Policy Bank, State-Owned Commercial Bank, State-Owned Company, State-Owned Fund, Intergovernmental Organization, Special Purpose Vehicle/Joint Venture, Private Sector, NGO/CSO/Foundation, Other, or No Organization Type Specified) and country of origin (i.e., China, Recipient Country, or Other). In the latest version of the dataset, AidData identifies 791 official sector financing institutions from China, 1,225 co-financing institutions, 5,037 recipient institutions, 4,933 implementing institutions, and 422 institutions that provide guarantees, insurance, or sources of collateral.
- **Actual and Potential Loan Repayment Obligations:** To facilitate more analysis of (actual and potential) loan repayment obligations in cases when the borrower (direct receiving agency) is a JV/SPV, the 3.0 version of the dataset has introduced new variables that identify the extent of host government ownership (in the "Host Government Ownership" field) and Chinese government ownership (in the "Chinese Government Ownership" field) of the JV/SPV. The 3.0 version of the dataset also includes a new "Level of Public Liability" field, which assigns each loan record to one of six categories: Central government debt, Central government-guaranteed debt, Other public sector debt, Potential public sector debt, Private debt, or Unallocable. Users who wish to isolate all loans that qualify as public and publicly-guaranteed debt (PPG)—that is to say, loans to government and majority state-owned institutions in the host country as well as other institutions that secured central government repayment guarantees or repayment

guarantees from state-owned entities other than the central government in the host country—should identify all loan commitments assigned to the “Central government debt,” “Central government-guaranteed debt,” and “Other public sector debt” categories. The “Potential public sector debt” category captures loans to special purpose vehicles (SPV) or joint ventures (JV) that are minority-owned by one or more public sector institutions in the host country and that do not benefit from a central government repayment guarantee or a repayment guarantee from a state-owned entity other than the central government in the host country. The “Level of Public Liability” field also allows for the identification of official sector loans to privately-owned entities that do not benefit from repayment guarantees from public sector institutions in the host country (“Private debt”) and loans that cannot be easily categorized based on the level of public liability (“Unallocable” debt).

- **Timing of Project/Activity Implementation:** The 3.0 dataset now includes a “Commitment Date” field which records the calendar day on which the official financing agreement was signed and provides an unprecedented level of detail on project/activity commencement (implementation start) dates and project completion (implementation end) dates. AidData identifies precise, calendar day-level commencement dates for 11,286 projects/activities, and calendar day-level completion dates for 11,542 projects/activities. By way of comparison, the 2.0 version of the dataset included calendar day-level commencement dates for 5,539 projects/activities, and calendar day-level completion dates for 6,061 projects/activities. The 3.0 dataset also includes two new fields (“Deviation from Planned Implementation Start Date” and “Deviation from Planned Completion Date”) so that users can easily determine if projects/activities have been implemented on schedule, behind schedule, or ahead of schedule.
- **Location Details:** For projects/activities that have physical footprints or involve specific locations, the 3.0 version of the dataset provides precise locational information that technical users can use to conduct geospatial analysis and non-technical users can use to easily view where projects/activities are taking (or have taken) place. Written descriptions of the geographical locations and features of projects/activities and OpenStreetMap links are available in the ‘Location Narrative’ field. The 3.0 dataset extracts point, polygon, and line vector data via OpenStreetMap URLs and provides a corresponding set of GeoJSON files and geographic precision codes for 9,497 projects/activities. 72% (6,919) of these projects/activities include “precise” or “approximate” geocodes; the remaining 28% (2,578 projects/activities) are measured at an administrative unit level. The separate dataset that provides precise geospatial features (along with usage tips and related documentation) is accessible via <https://www.aiddata.org/data/aiddatas-geospatial-global-chinese-development-finance-dataset-version-3-0>. For those interested in ADM-level geographic analysis, AidData has generated two new files included in the GCDF 3.0 zip file download: (1) GCDF_3.0_ADM1_Locations and (2) GCDF_3.0_ADM2_Locations. See the GCDF 3.0 ADM Files README included in the GCDF 3.0 file download.
- **Risks, Achievements, Failures, and Setbacks:** The 3.0 dataset provides a suite of variables (e.g., Commitment Year, Implementation Start Year, Completion Year, Status) that allow users to track projects/activities over their full life-cycles. Whenever possible, it also provides a detailed overview (in the “Description” field) of project/activity achievements and failures, contractor performance vis-à-vis deadlines and deliverables, findings from audits and evaluations, a summary of the various challenges that arose during project/activity design and implementation (such as strikes, riots, public protests, wars, corruption scandals, natural disasters, public health restrictions, political

transitions, bankruptcies, loan defaults, contractual disputes, lawsuits, and ruptures in diplomatic relations), and a description of how funding, receiving, implementing, and accountable institutions responded to these challenges. The 3.0 dataset also includes a “Financial Distress” flag that identifies whether, for a given loan, there is an indication that the borrower had difficulty repaying the loan or was financially distressed during the loan’s repayment period (according to the project/activity life-cycle information that is identified in the description field).

- **Sources:** One of the hallmarks of the TUFF 3.0 methodology is source transparency. For each record in the 3.0 dataset, a complete list of the sources is provided, including public URLs, the title of the source, the publisher, and the type of source. In total, the 20,985 project/activity records in the dataset rely upon 147,703 sources, including 99,393 unique sources.¹³ The number of sources attached to each record vary from 1 to 124, with an average of 7 sources per record. The sources used to create the dataset include both official and non-official sources.¹⁴ In constructing the 3.0 dataset, we sought to identify and integrate as many official sources as possible. These sources are authoritative in that they provide data and documentation from funding agencies, recipient agencies, and implementing agencies that are directly involved in the project/activity or have firsthand knowledge of the financial/in-kind transfer supporting the project/activity.¹⁵ We assigned special priority to the use of these sources during the construction of the 3.0 dataset. 87% of the project/activity records in the 3.0 dataset were constructed with at least 1 official source.

1.3 - Guide to Using the Dataset

Given the comprehensive nature of the 3.0 dataset and some of the unique challenges that arise when data on Chinese ODA- and OOF-financed projects/activities are collected from a highly decentralized set of open sources, we have created six fields to help users easily identify the subset of project/activity records that they wish to analyze. These fields include:

- **Umbrella:** This field is designed to capture hierarchical relationships between projects/activities and various types of agreements. This field identifies projects and/or activities that fall within “umbrella” agreements (with a “Yes” designation) in two circumstances. The first circumstance is when a financial agreement was signed by at least one party in the donor/creditor country and one party in the receiving country, but funds were not allocated for a specific purpose (or set of purposes) until a subsequent date. These types of umbrella agreements include Economic and Technical Cooperation Agreements (ECTA) issued by China’s Ministry of Commerce (MOFCOM), master facility agreements issued by China Eximbank, lines of credit issued by China Development

¹³ In many cases, official sources provide information about *multiple* projects, which is one of the main reasons why the total number of unique sources is 99,393 but the total number of sources is 147,703.

¹⁴ Official source types include “Donor/Recipient Official Source,” “Implementing/Intermediary Organization Source,” and “Other Official Source (non-Donor, non-Recipient, non-Implementing).” Non-official source types include “NGO/Civil Society/Advocacy (non-Donor, non-Recipient, non-Implementing),” “Media Report,” “Social Media, including Unofficial Blogs,” “Academic Journal Article,” “Other Academic (Working Paper, Dissertation),” and “Other.”

¹⁵ We also treat intergovernmental organizations—like the World Bank and the International Monetary Fund—with aid and debt monitoring responsibilities as official sources.

Bank, and Framework Agreements issued by a variety of official sector institutions in China. Due to the nature of the TUFF data collection process, the subsidiary transactions and projects/activities approved and financed under these types of umbrella agreements are likely captured elsewhere in the dataset. The second circumstance is when a single project/activity is financed by multiple Chinese government or Chinese state-owned institutions. In these cases, AidData creates one umbrella record to record the full amount of the financial commitment for the project/activity and a linked set of subsidiary project/activity records to capture the respective financial commitments of each Chinese government or Chinese state-owned institution. Umbrella records are included in the 3.0 dataset to clarify linkages between projects/activities and to capture relevant activities without double-counting financial amounts or project counts. As a general rule, no umbrella records should be included in financial analysis or analysis of project counts as doing so will almost certainly result in double-counting. All umbrella agreements in the dataset are assigned a designation of "No" in the "Recommended for Aggregates" field to help users avoid double counting.

- **Status:** The 3.0 dataset captures the full range of potential, active, completed and suspended/canceled projects/activities, and it distinguishes among them using the status field. This field identifies the latest status of a project/activity. Each project/activity is assigned to one of six categories: Pipeline: Pledge, Pipeline: Commitment, Implementation, Completed, Suspended, Canceled (see Section 1.4 for a full description of each status). Projects/activities assigned to the Pipeline: Commitment, Implementation, and Completed categories represent active or completed projects/activities that either benefit(ed) from (1) a binding, written agreement that governs the provision of financial or in-kind support from an official sector donor or lender in China (especially for loans and large grants), or (2) the provision of financial or in-kind support that has already taken place (e.g., humanitarian aid or small donations that were handed over to the recipient). As such, we consider the portfolio of projects/activities assigned to the Pipeline: Commitment, Implementation, and Completed categories to represent the actual portfolio of Chinese ODA and OOF (i.e., financial and in-kind transfers that have already happened, are underway, or scheduled to take place in the future). In contrast, projects/activities assigned to the "Pipeline: Pledge" category represent projects/activities that official sector institutions in China have indicated interest in supporting but have no binding legal obligation to do so. These projects/activities may benefit from financial and in-kind transfers in the future, but additional steps need to be taken by the official sector institutions in China and/or recipient country counterparts before the projects/activities can move forward with support from Chinese ODA or OOF. Similarly, projects/activities assigned to the Suspended and Canceled categories represent those that were backed by an official commitment but subsequently suspended or canceled (typically due to project design or implementation problems or disagreements). For analysis that requires the aggregation of projects supported by Chinese ODA or OOF commitments, including analysis of monetary amounts and project counts, only projects assigned to the Pipeline: Commitment, Implementation, and Completed categories should be included. However, given that some analysts are interested in better understanding China's portfolio of pledged, canceled, and suspended projects, we have included them in the full dataset to provide flexibility to users.
- **Recommended for Aggregates:** We recommend using this field for analysis that requires the aggregation of projects/activities supported by official financial (or in-kind) commitments from China, including analysis of monetary amounts and project/activity

counts. It is useful for identifying formally approved, active, and completed Chinese ODA- and OOF-financed projects/activities – and excluding all canceled projects/activities, suspended projects/activities, and projects/activities that never reached the formal approval (official commitment) stage. The field is set to "Yes" for all projects/activities with a status designation of Pipeline: Commitment, Implementation, and Completion that have not also been designated as umbrella agreements. It is set to "No" for all canceled projects/activities, suspended projects/activities, and projects/activities that never reached the official commitment stage (i.e. those projects/activities with a status designation of Pipeline: Pledge, Suspended, and Canceled). Additionally, to avoid double-counting, the field is set to "No" for all umbrella agreements. Also, note that not all projects/activities with a "Recommended for Aggregates" value of "Yes" identify a financial transaction value (since some transactions are difficult to monetize, such as in-kind donations, technical assistance, scholarships, and training activities).

- **Flow Type:** This field captures the type of financial or in-kind transfer supporting the project/activity. Each project/activity is assigned to one of seven categories: Loan, Debt Forgiveness, Debt Rescheduling, Grant, Scholarships/Training in Donor Country, Free-standing Technical Assistance, and Vague TBD. For projects/activities that are assigned to the "Loan" category, the dataset includes a host of other variables that capture the type of loan, the borrowing terms, the use of credit enhancements, and the involvement of co-financiers, among other things. See Section 2 for a more detailed description.
 - In cases of debt forgiveness, the Umbrella field is set to "Yes" if the original contracted loan could be captured elsewhere in the dataset as a loan record. This is done to avoid double counting. If the original contracted loans occurred before 2000 (when the dataset begins to track Chinese ODA and OOF), then the Umbrella field is set to "No." As such, if users are interested in isolating all cases of debt forgiveness, AidData recommends turning the "Recommended for Aggregates" filter off and then using the "Flow Type" field to identify all projects/activities assigned to the "Debt Forgiveness" category (irrespective of whether they are coded as umbrella records).
 - Also, to help users avoid double-counting, AidData does not populate any fields related to transaction amounts [Amount (Original Currency), Adjusted Amount (Original Currency), Amount (Constant USD 2021), Adjusted Amount (Constant USD 2021), Amount (Nominal USD), and Adjusted Amount (Nominal USD)] for projects/activities assigned to the "Debt Rescheduling" category. However, users who wish to undertake analysis of debt reschedulings can find detailed information about the terms and conditions of these reschedulings in the "Description" fields of the projects/activities that are assigned to the "Debt Rescheduling" category.
- **Flow Class:** Based on OECD-DAC guidelines for Official Development Assistance (ODA) and Other Official Flows (OOF), this field assigns projects to one of three categories: ODA-like, OOF-like, Vague (Official Finance). See Section 2 for full descriptions of each category, including the concessionality thresholds for ODA/OOF and how AidData has applied them to the dataset. Flow class is a useful distinction for users who wish to (a) distinguish between "development aid" in the strict/traditional sense of the term (i.e., ODA) and official sector loans that are non-concessional or semi-concessional in nature (i.e., OOF); or (b) compare Chinese development finance to other sources of

development finance that are categorized according to OECD-DAC definition and measurement criteria.

- **Adjusted Amount:** This field captures the “adjusted” monetary amount that a funding agency committed (or pledged) in its original currency of denomination. AidData recommends using this field to calculate the cumulative stock of official financial flows (ODA/OOF commitments) from China over multiple years—when one or more of recipient countries secured “rollover” emergency rescue loans and/or swap borrowings from the People’s Bank of China (PBOC) to refinance their maturing debts. For grants and non-emergency loans, the amounts that are recorded in this field are identical to the amounts that are recorded in the Amount field (which is not labeled as “Adjusted”). See Section 1.4 for a more detailed definition of the “Adjusted Amount” field, and see Section 2 for further details regarding Chinese lending instruments.

While users of the 3.0 dataset may rely on additional fields to identify the subset of transfers (flows) they are interested in better understanding, the above-mentioned fields should be carefully considered before conducting any analysis.

1.4 - Field Definitions

The 3.0 dataset includes 126 separate fields (variables) to document a detailed picture of each Chinese ODA- and OOF-financed project/activity. Field names and definitions are provided in the table below.

Field Name	Description
AidData Record ID	This field provides the unique identification number that AidData has assigned to every project/activity record in the dataset.
Recommended For Aggregates	This field identifies projects/activities that AidData recommends including in analysis that requires the aggregation of projects/activities supported by official financial (or in-kind) commitments from China, including analysis of monetary amounts and project/activity counts. It is useful for identifying formally approved, active, and completed Chinese ODA- and OOF-financed projects/activities—and excluding all canceled projects/activities, suspended projects/activities, and projects/activities that never reached the formal approval (official commitment) stage. The field is set to “Yes” for all projects/activities with a status designation of Pipeline: Commitment, Implementation, and Completion that have not also been designated as umbrella agreements. It is set to “No” for all canceled projects/activities, suspended projects/activities, and projects/activities that never reached the official commitment stage (i.e. those projects/activities with a status designation of Pipeline: Pledge, Suspended, and Canceled). Additionally, to avoid double-counting, the field is set to “No” for all umbrella agreements. For more information on umbrella agreements, see the description of the “Umbrella” field in this file. Also, note that not all projects/activities with a “Recommended for Aggregates” value of “True” identify a financial transaction value (since

	some transactions are difficult to monetize, such as in-kind donations, technical assistance, scholarships, and training activities).
AidData Parent ID	This field captures the linkages between project/activity records, whereby project/activity records that are related to each other are assigned to the same linked package. Each linked package is assigned a unique parent identification number.
Umbrella	This field identifies projects and/or activities that fall within "umbrella" agreements (with a "Yes" designation) in two circumstances. The first circumstance is when a financial agreement was signed by at least one party in the donor/creditor country and one party in the receiving country, but funds were not allocated for a specific purpose (or set of purposes) until a subsequent date. These types of umbrella agreements include Economic and Technical Cooperation Agreements (ECTA) issued by China's Ministry of Commerce (MOFCOM), master facility agreements issued by China Eximbank, lines of credit issued by China Development Bank, and Framework Agreements issued by a variety of official sector institutions in China. Due to the nature of the TUFF data collection process, the subsidiary transactions and projects/activities approved and financed under these types of umbrella agreements are likely captured elsewhere in the dataset. The second circumstance is when a single project/activity is financed by multiple Chinese government or Chinese state-owned institutions. In these cases, AidData creates one umbrella record to record the full amount of the financial commitment for the project/activity and a linked set of subsidiary project/activity records to capture the respective financial commitments of each Chinese government or Chinese state-owned institution. All umbrella agreements in the dataset are assigned a designation of "No" in the "Recommended for Aggregates" field to help users avoid double counting.
Financier Country	This field captures the country from which the official financial or in-kind transfer originated.
Recipient	This field captures the country from which the entity receiving the official financial or in-kind transfer is located. If multiple entities from multiple recipient countries are involved, this field records the geographical region to which the recipient countries belong.
Recipient ISO-3	This field captures the three-letter code for the country identified in the 'Recipient' field, according to the standards set by the International Organization for Standardization (ISO). In cases where the 'Recipient' field records the geographical region from which multiple recipient countries belong (such as "Africa, Regional"), the 'Recipient ISO Alpha-3 Country Code' field is left blank.
Recipient Region	This field captures the geographical region to which the recipient country belongs: Africa, Americas, Asia, Europe, Middle East, Oceania, or Multi-Region.

Commitment Year	<p>This field captures the year in which an official financial commitment (or official commitment to provide in-kind support) was codified through the signing of a formal agreement by an official donor/lender in China and one or more entities in a recipient country or a set of recipient countries. Whenever possible, this field is based on the precise calendar day when the official commitment was issued, which is captured in the 'Commitment Date' field. In the event an official commitment was made for a project/activity that entered implementation, but the official commitment year is not identifiable, AidData records the first year of project/activity implementation as a proxy for the official commitment year. In the event an official commitment was made for a project/activity that has not yet reached implementation, and the official commitment year is not identifiable, AidData records the year in which the underlying commercial contract (supported by the official commitment) was issued. If this information is unavailable, AidData records the first year in which an informal pledge was made as a proxy for the official commitment year. For projects/activities with a status designation of Pipeline: Pledge (i.e. cases in which an official commitment was not made), AidData records the year in which the informal pledge was made.</p>
Implementation Start Year	<p>This field captures the year in which a project/activity supported by an official financial (or in-kind) commitment from China began implementation. Whenever possible, this field is based on the precise calendar day when project/activity implementation began, which is captured in the 'Actual Implementation Start Date' field. For projects/activities that involve the construction of buildings or infrastructure, the 'Implementation Start Year' field seeks to capture the first year of construction. In cases when the first year of construction is unavailable but a proxy for the first year of construction (e.g., the year in which a formal groundbreaking ceremony took place, a project/activity commencement order was issued to the contractor responsible for implementation, or a project/activity implementation agreement was signed) can be identified, AidData records the proxy for the first year of construction. For projects/activities that do not involve construction but involve the provision of personnel, training, analytical/advisory support, equipment, supplies, or commodities, the 'Implementation Start Year' field captures the first year in which some type of support was delivered to an entity in the recipient country. For projects/activities that only involve financial transactions (e.g., cash donations, loans issued to shore up a country's foreign exchange reserves, forgiveness or rescheduling of outstanding debts), the 'Implementation Start Year' field captures the year in which the first disbursement was made (or the year in which new terms and conditions went into effect for a previously signed loan agreement).</p>

Completion Year	<p>This field captures the year in which a project/activity supported by an official financial (or in-kind) commitment from China was completed. Whenever possible, this field is based on precise calendar day when a project/activity was completed, which is captured in the 'Actual Completion Date' field. For projects/activities that involve the construction of buildings or infrastructure, the 'Completion Year' field seeks to capture the last year of construction. In cases when the last year of construction is unavailable but a proxy for the last year of construction (e.g., a road or railway is opened for use, a power plant reaches its commercial operation date and begins selling electricity to customers) can be identified, AidData records the proxy for the last year of construction. For projects/activities that do not involve construction but involve the provision of personnel, training, analytical/advisory support, equipment, supplies, or commodities, the 'Completion Year' field captures the last year in which some type of support was delivered to an entity (or set of entities) in the recipient country. For projects/activities that only involve financial transactions (cash donations, loans issued to shore up foreign exchange reserves, forgiveness or rescheduling of outstanding debts), the 'Completion Year' field captures the year in which the last disbursement was made (or the year in which new terms and conditions went into effect for a previously signed loan agreement).</p>
Title	<p>This field briefly describes the name or nature of the project/activity. The identification numbers of other transactions that are linked to the project/activity are also recorded in this field.</p>
Description	<p>This field provides a detailed summary of the main purposes and activities of the project/activity; the funding, receiving, and implementing agencies involved in the project/activity; the terms and conditions of the financial transaction(s) supporting the project/activity; the timing of project/activity implementation and completion; the challenges that arose during project/activity implementation and how funding, receiving, and implementing agencies responded to these challenges; and main achievements and shortcomings of the project/activity. For loan-financed projects/activities, AidData also records the monetary value and timing of underlying commercial contracts, disbursements, and repayments in this field.</p>
Staff Comments	<p>This field captures comments from AidData staff that clarify the assumptions, logic, and evidence used to address challenging coding and categorization determinations. It also provides foreign translations of project/activity titles (used for source identification purposes), information about related transactions and projects/activities, and information about the ownership structures of funding, receiving, and implementing agencies.</p>

Status	<p>This field identifies the latest status of a project/activity. Each project/activity is assigned to one of six categories: Pipeline: Pledge, Pipeline: Commitment, Implementation, Completed, Suspended, Canceled. A project/activity assigned to the "Pipeline: Pledge" category is one that an official sector institution in China indicated it was interested in supporting (or willing to consider supporting) but did not result in an official commitment. Projects/activities assigned to this category include those that are identified in letters of intent, term sheets, memoranda of understanding, and non-binding announcements. All projects/activities given a status designation of Pipeline: Commitment, Implementation, Completed, Suspended, or Canceled reached the official commitment stage (i.e., a binding, written agreement that governs the provision of financial or in-kind support for a specific purpose was signed by an official sector donor or lender in China and an entity in a recipient country). A project/activity assigned to the "Pipeline: Commitment" category is one that is backed by an official commitment but has not yet entered implementation. A project/activity assigned to the "Implementation" category is one that is backed by an official commitment and has begun implementation with financial or in-kind support from the source of the commitment. A project/activity assigned to the "Completion" category is one that is backed by an official commitment and that reached completion with financial or in-kind support from the sources of the commitment. Projects/activities assigned to the "Suspended" and "Canceled" categories are those that were backed by an official commitment but subsequently suspended or canceled. The coding of the "Status" field in the dataset is based on sources that were available as late as August 2023.</p>
Intent	<p>This field seeks to measure the primary purpose of the project/activity. Each project/activity is assigned to one of five categories: Development, Commercial, Representational, Mixed, or Military. Projects/activities assigned to the "Development" category are those that are primarily oriented towards the promotion of economic development and welfare in the recipient country. Projects/activities assigned to the "Commercial" category are those that primarily seek to promote the commercial interests of the country from which the financial transfer originated (e.g., encouraging the export of Chinese goods and services). Projects/activities assigned to the "Representational" category are those that primarily seek to promote a bilateral relationship with another country or promote the language, culture, or values of the country from which the financial transfer originated (e.g., the establishment of a Confucius Institute or Chinese cultural center). If a project/activity is assigned to the "Mixed" category, this designation indicates that it was not possible for AidData to identify the primary purpose of the project/activity and the project/activity has multiple purposes (i.e., some combination of development, commercial, and/or representational intent). Projects/activities assigned to the "Military" category are those that seek to promote the security interests of the country from which the financial transfer originates or strengthen the capabilities of military institutions in the recipient country.</p>

Flow Type	<p>This field captures the type of financial or in-kind transfer supporting the project/activity. Each project/activity is assigned to one of seven categories: Loan, Debt Forgiveness, Debt Rescheduling, Grant, Scholarships/Training in Donor Country, Free-standing Technical Assistance, and Vague TBD. For projects/activities that are assigned to the "Loan" category, the dataset includes a host of other variables that capture the type of loan, the borrowing terms, the use of credit enhancements, and the involvement of co-financiers, among other things. In cases of debt forgiveness, the Umbrella field is set to "Yes" if the original contracted loan could be captured elsewhere in the dataset as a loan record. This is done to avoid double counting. If the original contracted loans occurred before 2000 (when the dataset begins to track Chinese ODA and OOF), then the Umbrella field is set to "No." As such, if users are interested in isolating all cases of debt forgiveness, AidData recommends turning the "Recommended for Aggregates" filter off and then using the "Flow Type" field to identify all projects/activities assigned to the "Debt Forgiveness" category (irrespective of whether they are coded as umbrella records). Also, to help users avoid double-counting, AidData does not populate any fields related to transaction amounts [Amount (Original Currency), Adjusted Amount (Original Currency), Amount (Constant USD 2021), Adjusted Amount (Constant USD 2021), Amount (Nominal USD), and Adjusted Amount (Nominal USD)] for projects/activities assigned to the "Debt Rescheduling" category. However, users who wish to undertake analysis of debt reschedulings can find detailed information about the terms and conditions of these reschedulings in the "Description" fields of the projects/activities that are assigned to the "Debt Rescheduling" category.</p>
Flow Type Simplified	<p>This field captures the type of financial or in-kind transfer supporting the project/activity in a smaller number of categories than the 'Flow Type' field in order to facilitate the aggregation of flows based on certain criteria. Each flow is assigned to one of four categories: Grant, Loan, Debt Rescheduling, and Vague. Compared with the 'Flow Type' field, the "Grant" category in this data field includes the "Grant," "Debt Forgiveness," "Scholarships/Training in Donor Country," and "Free-standing technical assistance" flows.</p>

<p>OECD ODA Concessional Threshold</p>	<p>This field identifies the concessional threshold applied to any loan record to determine if it met the concessional threshold to qualify as ODA. This threshold is based on the year in which the project/activity secures a Chinese ODA or OOF commitment, the income level of the borrowing recipient country, and the receiving agency type. For all loans issued between 2000 and 2017, the threshold is always 25% (using a unified 10% discount rate). For loans issued between 2018 and 2021, the threshold is determined based on the information below. For loans to official sector institutions, the following concessional thresholds apply: (1) Least-developed countries and low-income countries: a minimum grant element of 45% (calculated using a 9% discount rate), (2) Lower-middle income countries: a minimum grant element of 15% (calculated using a 7% discount rate), and (3) Upper-middle income countries: a minimum grant element of 10% (calculated using a discount rate of 6%), (4) Loans to private sector institutions (regardless of the income level of the recipient country): a minimum grant element of 25% (using a unified 10% discount rate).</p>
<p>Flow Class</p>	<p>Based on the OECD-DAC methodology between 2000-2021 to measure Official Development Assistance (ODA) and Other Official Flows (OOF), this field assigns projects/activities to one of three categories: ODA-like, OOF-like, or Vague (Official Finance). Projects/activities are assigned to the ODA-Like category if they meet three criteria. First, the primary purpose of the project/activity must be the promotion of economic development and welfare in the recipient country (i.e., have development intent). Second, the project/activity must take place in a country that qualifies for ODA based on its income level. Third, the official commitment supporting the project/activity must be concessional in nature (i.e., grant, technical assistance, scholarship, debt forgiveness, or loan with a grant element meeting a specified threshold). For official commitments issued (flows reported) between 2000 and 2017, we follow the OECD's practice to use the cash-flow methodology to define ODA, which included a threshold level of 25% grant element with a discount rate of 10% for all loans. For official commitments issued (flows reported) in 2018 and subsequent years, we use the OECD's grant-equivalent methodology, which relies upon a tiered concessional threshold system for loans. Under the grant-equivalent methodology, the threshold concessional for loans to the official sector in the recipient country is 45% for LDCs and other LICs (using a discount rate of 9%), 15% for LMICs (using a discount rate of 7%) and 10% for UMICs (using a discount rate of 6%). Loans to the private sector, however, continue to use the 25% threshold used in the cash-flow methodology (in alignment with OECD-DAC practices). Users can refer to the "OECD ODA Concessional Threshold" field to identify the threshold used for a particular loan record in the dataset. Projects/activities that are supported by an official financial or in-kind transfer but do not meet all three of these criteria are assigned to the OOF-Like category. Projects/activities that are backed by an official commitment but cannot be reliably categorized as ODA-like or OOF-like because of insufficiently detailed information are</p>

	<p>assigned to the “Vague (Official Finance)” category. Projects/activities in this residual category primarily consist of (a) those with an unspecified “Flow Type” (i.e., values of “Vague TBD”); and (b) those financed with development-intent loans for which AidData lacks the borrowing terms (interest rates, grace periods, or maturity dates) needed for concessionality determinations. Users who would like to use one concessionality threshold for the entire time period (or a subset) can use the relevant grant element calculator to re-classify ODA/OOF loan records where necessary.</p>
Sector Code	<p>This field provides a 3-digit sector code based upon the primary sectoral focus of the project/activity. It is based upon the OECD’s sector categorization scheme. There are 24, three-digit OECD sector codes: education (110), health (120), population policies/programs and reproductive health (130), water supply and sanitation (140), government and civil society (150), other social infrastructure and services (160), transport and storage (210), communications (220), energy (230), banking and financial services (240), business and other services (250), agriculture, forestry and fishing (310), industry, mining, and construction (320), trade policies and regulation (330), general environmental protection (410), other multisector (430), general budget support (510), developmental food aid/food security assistance (520), other commodity assistance (530), action relating to debt (600), emergency response (720), reconstruction relief and rehabilitation (730), disaster prevention and preparedness (740), and unallocated/unspecified (998).</p>
Sector Name	<p>This field provides a sector name based upon the primary sectoral focus of the project/activity. It is based upon the OECD’s sector categorization scheme. There are 24, three-digit OECD sector codes: education (110), health (120), population policies/programs and reproductive health (130), water supply and sanitation (140), government and civil society (150), other social infrastructure and services (160), transport and storage (210), communications (220), energy (230), banking and financial services (240), business and other services (250), agriculture, forestry and fishing (310), industry, mining, and construction (320), trade policies and regulation (330), general environmental protection (410), other multisector (430), general budget support (510), developmental food aid/food security assistance (520), other commodity assistance (530), action relating to debt (600), emergency response (720), reconstruction relief and rehabilitation (730), disaster prevention and preparedness (740), and unallocated/unspecified (998).</p>
Infrastructure	<p>This flag provides a marker of whether a project/activity is an infrastructure project. In the 3.0 version of the dataset, "infrastructure projects" generally include those that involve physical construction activities (e.g. roads, railways, pipelines, transmission lines, fiber optic networks). More specifically, "infrastructure projects" include those that involve (1) building a new physical structure, (2) rehabilitating or adding onto an existing physical structure, and/or (3) maintaining an existing physical structure. The 3.0 version of the dataset does not include projects/activities that</p>

	involve the provision of cash, technical assistance, scholarships, equipment, or supplies in its definition of "infrastructure projects." The field is set to "Yes" if a project/activity is classifiable as an infrastructure project.
COVID	This field provides a marker of whether it is known that the project/activity is part of China's global COVID-19 response efforts. The field is set to "Yes" if the purpose of the project/activity is related to COVID-19 control, including providing information, education and communication as well as activities or materials enabling testing, prevention, immunization, treatment, or care.
Funding Agencies	This field captures the name of the agency that issued the official financial or in-kind commitment. The agency identified in this field must be based in the country (the People's Republic of China) from which the official financial or in-kind commitment originated. For projects/activities assigned to the Pipeline: Pledge category, this field captures the name of the official sector agency that issued the pledge. The same "origin rule" applies to funding agencies that issued pledges rather than commitments. If multiple Chinese funding agencies are involved, the entries are pipe-delimited.
Funding Agencies Type	This field captures the type of funding agency that issued the commitment or pledge. Each project/activity is assigned to one of seven categories: Government Agency, State-Owned Policy Bank, State-Owned Commercial Bank, State-Owned Bank, State-Owned Company, and State-Owned Fund. If multiple official sector funding agencies from China are involved, the entries recording their types are pipe-delimited.
Cofinanced	This marker indicates whether a separate funding agency (belonging to the financier country or another country) provided funding for the project/activity.
Cofinancing Agencies	This field provides the names of the cofinancing agencies providing funding for the project/activity. If multiple cofinancing agencies are involved, the entries are pipe-delimited.
Cofinancing Agencies Type	This field captures the type of cofinancing agency that provided funding, as well as the agency's country of origin. Each cofinancing agency is assigned to one of twelve categories: Government Agency, State-Owned Bank, State-Owned Policy Bank, State-Owned Commercial Bank, State-Owned Company, State-Owned Fund, Intergovernmental Organization, Special Purpose Vehicle/Joint Venture, Private Sector, NGO/CSO/Foundation, Other, or No Organization Type Specified. Each cofinancing agency is also categorized based on whether it is from the financier country, the recipient country, or another country. The organization type is preceded by one of three descriptors regarding the country of origin: Chinese, Recipient, or Other (e.g. Chinese State-Owned Commercial Bank). If multiple cofinancing agencies are involved, the entries are pipe-delimited.

Direct Receiving Agencies	This field provides the name of the agency designated to receive and manage the financial or in-kind transfer. For projects/activities that are financed with loans, the receiving agency is the entity responsible for debt repayment. If a receiving agency (borrower) on-lends the proceeds of a loan to an additional entity or entities, then the borrower is captured in the 'Direct Receiving Agencies' field and the additional entity or entities which receive loans from the borrower is captured in the 'Indirect Receiving Agencies' field. If more than one entity is responsible for receiving and managing incoming grant funds or an in-kind transfer, all of these entities are identified in the 'Direct Receiving Agencies' field (as pipe-delimited entries).
Direct Receiving Agencies Type	This field captures the type of agency designated to receive and manage the financial or in-kind transfer, as well as the agency's country of origin. Each direct receiving agency is assigned to one of twelve categories: Government Agency, State-Owned Bank, State-Owned Policy Bank, State-Owned Commercial Bank, State-Owned Company, State-Owned Fund, Intergovernmental Organization, Special Purpose Vehicle/Joint Venture, Private Sector, NGO/CSO/Foundation, Other, or No Organization Type Specified. Each direct receiving agency is also categorized based on whether it is from the financier country, the recipient country, or another country. The organization type is preceded by one of three descriptors regarding the country of origin: Chinese, Recipient, or Other (e.g. Recipient Government Agency). If multiple direct receiving agencies are involved, the entries are pipe-delimited.
Indirect Receiving Agencies	This field provides the name of the agency or agencies that receive and manage a financial transfer (loan) from the entity captured in the 'Direct Receiving Agencies' field (as part of an on-lending arrangement). If multiple indirect receiving agencies are involved, the entries are pipe-delimited.
Indirect Receiving Agencies Type	This field captures the type of agency that received a financial transfer from the entity captured in the 'Direct Receiving Agencies' field, as well as the indirect receiving agency's country of origin. Each indirect receiving agency is assigned to one of twelve categories: Government Agency, State-Owned Bank, State-Owned Policy Bank, State-Owned Commercial Bank, State-Owned Company, State-Owned Fund, Intergovernmental Organization, Special Purpose Vehicle/Joint Venture, Private Sector, NGO/CSO/Foundation, Other, or No Organization Type Specified. Each indirect receiving agency is also categorized based on whether it is from the financier country, the recipient country, or another country. The organization type is preceded by one of three descriptors regarding the country of origin: Chinese, Recipient, or Other (e.g. Recipient Government Agency). If multiple indirect receiving agencies are involved, the entries are pipe-delimited.

On-Lending	This field provides a marker of whether it is known that the loan involves an on-lending arrangement, which is an arrangement in which a receiving agency (borrower) uses the proceeds of a loan to lend to one or more additional entities. In an on-lending arrangement, the borrower is captured in the 'Direct Receiving Agencies' field, and the entity or entities which receive a loan from the borrower is captured in the 'Indirect Receiving Agencies' field. The On-Lending field is set to "Yes" if the loan involves an on-lending arrangement.
Implementing Agencies	This field provides the name of the agency responsible for implementing the project/activity. If more than one agency is responsible for implementing the project/activity, all such agencies are identified in the 'Implementing Agencies' field (as pipe-delimited entries).
Implementing Agencies Type	This field captures the type of agency that is responsible for implementing project/activity, as well as the agency's country of origin. Each implementing agency is assigned to one of twelve categories: Government Agency, State-Owned Bank, State-Owned Policy Bank, State-Owned Commercial Bank, State-Owned Company, State-Owned Fund, Intergovernmental Organization, Special Purpose Vehicle/Joint Venture, Private Sector, NGO/CSO/Foundation, Other, or No Organization Type Specified. Each implementing agency is also categorized based on whether it is from the financier country, the recipient country, or another country. The organization type is preceded by one of three descriptors regarding the country of origin: Chinese, Recipient, or Other (e.g. Chinese State-Owned Company).
Guarantee Provided	This field provides a marker of whether it is known that a loan repayment guarantee was issued by a third-party (accountable agency). It assumes a value of "Yes" whenever a sovereign or corporate guarantee is issued in support of a loan.
Guarantor	This field provides the name of the agency that provided a repayment guarantee in the event the borrower (i.e. direct receiving agency) cannot meet its debt repayment obligations.
Guarantor Agency Type	This field captures the type of agency that issued a guarantee, as well as the agency's country of origin. Each agency (guarantor) is assigned to one of twelve categories: Government Agency, State-Owned Bank, State-Owned Policy Bank, State-Owned Commercial Bank, State-Owned Company, State-Owned Fund, Intergovernmental Organization, Special Purpose Vehicle/Joint Venture, Private Sector, NGO/CSO/Foundation, Other, or No Organization Type Specified. Each agency (guarantor) is also categorized based on whether it is from the financier country, the recipient country, or another country. The organization type of the agency (guarantor) is preceded by one of three descriptors regarding the country of origin: Chinese, Recipient, or Other (e.g. Recipient Government Agency).
Insurance Provided	This field provides a marker of whether it is known that a third-party (accountable agency) provided a credit insurance policy to the borrower (receiving agency). For example, it assumes a value of "Yes" whenever a

	loan is backed by credit insurance policy from China Export & Credit Insurance Corporation (Sinosure).
Insurance Provider	This field provides the name of the agency that provided a credit insurance policy to ensure repayment in the event the borrower (i.e. direct receiving agency) cannot meet its debt repayment obligations.
Insurance Provider Agency Type	This field captures the type of agency that provided a credit insurance policy, as well as the agency's country of origin. Each agency (insurance provider) is assigned to one of twelve categories: Government Agency, State-Owned Bank, State-Owned Policy Bank, State-Owned Commercial Bank, State-Owned Company, State-Owned Fund, Intergovernmental Organization, Special Purpose Vehicle/Joint Venture, Private Sector, NGO/CSO/Foundation, Other, or No Organization Type Specified. Each agency (insurance provider) is also categorized based on whether it is from the financier country, the recipient country, or another country. The organization type is preceded by one of three descriptors regarding the country of origin: Chinese, Recipient, or Other (e.g. Chinese State-Owned Company).
Collateralized/Securitized	This field provides a marker of whether it is known that one or more sources of collateral (security) can be seized in the event the borrower defaults on its loan repayment obligations. It assumes a value of "Yes" when (i) a loan is collateralized through a formal lien or security interest; (ii) a borrower is required to deposit project-related revenues or unrelated revenues in a special account, escrow account, revenue account, proceeds account, payment account, reserve account, or repayment reserve account that can be accessed (and debited) by the lender; and/or (iii) a security agent is appointed (to enforce rights against the collateral in the event that the borrower defaults on its repayment obligations). AidData also codes all pre-export finance (PXF) facilities as collateralized since they are almost always secured by (1) an assignment of rights by the producer under an 'offtake contract' (i.e., a sale and purchase contract between the producer and a buyer of that producer of goods or commodities), and (2) a collection account charge over a bank account into which proceeds due to the producer from the buyer of the goods or commodities under the offtake contract are credited.
Collateral Provider	This field provides the name of the agency that provided one or more sources of collateral (e.g., an assignor, mortgagor, pledgor, transferor, lienee) that can be seized in the event the borrower defaults on its repayment obligations.
Collateral Provider Agency Type	This field captures the type of agency that provided collateral, as well as the agency's country of origin. Each agency that provided collateral is assigned to one of twelve categories: Government Agency, State-Owned Bank, State-Owned Policy Bank, State-Owned Commercial Bank, State-Owned Company, State-Owned Fund, Intergovernmental Organization, Special Purpose Vehicle/Joint Venture, Private Sector, NGO/CSO/Foundation, Other, or No Organization Type Specified. Each agency that provided collateral is also categorized based on whether it is

	from the financier country, the recipient country, or another country. The organization type is preceded by one of three descriptors regarding the country of origin: Chinese, Recipient, or Other (e.g. Recipient Private Sector).
Security Agent/Collateral Agent	This field provides the name of the security agent or collateral agent that was appointed to enforce rights against the collateral in the event that the borrower defaults on its debt repayment obligations.
Security Agent/Collateral Agent Type	This field captures the type of security agent or collateral agent, as well as its country of origin. Each security agent or collateral agent is assigned to one of twelve categories: Government Agency, State-Owned Bank, State-Owned Policy Bank, State-Owned Commercial Bank, State-Owned Company, State-Owned Fund, Intergovernmental Organization, Special Purpose Vehicle/Joint Venture, Private Sector, NGO/CSO/Foundation, Other, or No Organization Type Specified. Each security agent or collateral agent is also categorized based on whether it is from the financier country, the recipient country, or another country. The organization type is preceded by one of three descriptors regarding the country of origin: Chinese, Recipient, or Other (e.g. Chinese State-Owned Commercial Bank).
Collateral	This field describes the nature of the collateral (security) that can be seized in the event the borrower defaults on its debt repayment obligations.
Amount (Original Currency)	This field captures the monetary amount that the funding agency committed (or pledged) in its original currency of denomination. For projects/activities that were at some point supported by an official commitment (i.e., projects/activities with status designations of Pipeline: Commitment, Implementation, Completed, Suspended, Canceled), this field captures the original commitment amount. For projects/activities with status designations of Pipeline: Pledge, this field captures the amount of funding that was pledged.
Original Currency	This field captures that currency of denomination associated with the monetary amount that the funding agency committed (or pledged), as recorded in the Amount (Original Currency) field.

Amount Estimated	<p>This marker designates whether AidData estimated the monetary amount that the funding agency committed (or pledged), as captured in the 'Amount (Original Currency)' field. The field is set to "Yes" when the 'Amount (Original Currency)' field is estimated by AidData. It is otherwise set to "No," which indicates that AidData has reported the actual monetary amount that the funding agency committed (or pledged) based on explicit, official source documentation. There are a number of circumstances under which AidData estimates transaction (financial commitment) amounts. Examples include: (1) If the precise face value of a Preferential Buyer's Credit (PBC) or Buyer's Credit Loan (BCL) from China Eximbank is unknown, but the total cost of the commercial (EPC) contract is known, AidData assumes that the face value of the PBC/BCL is equivalent to 85% of the total commercial (EPC) contract cost; (2) If the face value of a syndicated loan (involving one or more official sector creditors from China) is known and the total number of participants in the loan syndicate is known, AidData assumes that each bank provided equal contributions to the syndicated loan; (3) If material is transferred in-kind and there is no credible reporting on the monetary value of the in-kind transfer, AidData calculates the monetary value of the in-kind materials by multiplying the number of units of donated material by the market value of those materials (in unit cost terms). Whenever a transaction (financial commitment) amount has been estimated, AidData includes an explanation in the 'Description' and/or 'Staff Comments' field.</p>
Amount (Constant USD 2021)	<p>This field captures the monetary value of the official commitment (or pledge) issued by the funding agency in constant 2021 U.S. dollars. To calculate this value, AidData first converts the financial commitment (or pledge) amount in its original currency of denomination to nominal U.S. dollars at the average exchange rate in effect during the commitment (or pledge) year, and then converts this amount to constant 2021 U.S. dollars using the OECD's deflation methodology to adjust for inflation and ensure comparability over time and space.</p>
Amount (Nominal USD)	<p>This field captures the monetary value of the official commitment (or pledge) issued by the funding agency in nominal U.S. dollars. It is one of the inputs used to calculate financial commitment (and pledge) amounts in constant 2021 U.S. dollars, as recorded in the Amount (Constant USD 2021) field.</p>

Adjusted Amount (Original Currency)	<p>This field captures the “adjusted” monetary amount that a funding agency committed (or pledged) in its original currency of denomination. AidData recommends using this field to calculate the cumulative stock of official financial flows (ODA/OOF commitments) from China over multiple years—when one or more of recipient countries secured “rollover” emergency rescue loans and/or swap borrowings from the People’s Bank of China (PBOC) to refinance their maturing debts. For grants and non-emergency loans, the amounts that are recorded in this field are identical to the amounts that are recorded in the Amount (Original Currency) field. However, for emergency rescue loans and swap borrowings from the PBOC (with de jure maturities of one year or less), this field excludes so-called “rollover” amounts that refinance maturing debts. The monetary amounts in the Adjusted Amount (Original Currency) field are calculated, whenever possible, by taking the difference between the level of outstanding debt in the current year and the previous year. This approach is consistent with the one used to derive net (new) PBOC swap borrowings in the following publication: Horn, S., Parks, B., Reinhart, C. M., and Trebesch, C. 2023. China as an International Lender of Last Resort. NBER Working Paper No. 31105. Cambridge, MA: National Bureau of Economic Research (NBER). In cases when this approach cannot be applied but there is evidence of the same lender providing a series of short-term emergency rescue loans (with identical face values and de jure maturities of 1 year or less) to the same borrower that are repaid on their original contractual maturity dates and subsequently reissued in consecutive years, the Adjusted Amount (Original Currency) field records the face value of the original loan commitment in the first year but not the face values of the loan commitments in subsequent years. For projects/activities that were at some point supported by an official commitment (i.e., projects/activities with status designations of Pipeline: Commitment, Implementation, Completed, Suspended, Canceled), the Adjusted Amount (Original Currency) field captures the original commitment amount. For projects/activities with status designations of Pipeline: Pledge, the Adjusted Amount (Original Currency) captures the amount of funding that was pledged.</p>
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Adjusted Amount
(Constant USD
2021)

This field captures the “adjusted” monetary amount of the official commitment (or pledge) issued by the funding agency in constant 2021 U.S. dollars. To calculate this value, AidData first converts the “adjusted” financial commitment (or pledge) amount in its original currency of denomination—as recorded in the Adjusted Amount (Original Currency) field—to nominal U.S. dollars at the average exchange rate in effect during the commitment (or pledge) year. AidData then converts this “adjusted” monetary amount to constant 2021 U.S. dollars using the OECD’s deflation methodology to account for inflation and ensure comparability over time and space. AidData recommends using the Adjusted Amount (Constant USD 2021) field to calculate—in constant 2021 U.S. dollars—the cumulative stock of official financial flows (ODA/OOF commitments) from China over multiple years—when one or more of recipient countries secured “rollover” emergency rescue loans and/or swap borrowings from the People's Bank of China (PBOC) to refinance their maturing debts. For grants and non-emergency loans, the amounts that are recorded in this field are identical to the amounts that are recorded in the Amount (Constant USD 2021) field. However, for emergency rescue loans and swap borrowings from the PBOC (with de jure maturities of one year or less), this field excludes so-called “rollover” amounts that refinance maturing debts. The monetary amounts in the Adjusted Amount (Original Currency) field are calculated, whenever possible, by taking the difference between the level of outstanding debt in the current year and the previous year. This approach is consistent with the one used to derive net (new) PBOC swap borrowings in the following publication: Horn, S., Parks, B., Reinhart, C. M., and Trebesch, C. 2023. China as an International Lender of Last Resort. NBER Working Paper No. 31105. Cambridge, MA: National Bureau of Economic Research (NBER). In cases when this approach cannot be applied but there is evidence of the same lender providing a series of short-term emergency rescue loans (with identical face values and de jure maturities of 1 year or less) to the same borrower that are repaid on their original contractual maturity dates and subsequently reissued in consecutive years, the Adjusted Amount (Original Currency) field records the face value of the original loan commitment in the first year but not the face values of the loan commitments in subsequent years.

Adjusted Amount (Nominal USD)	<p>This field captures the “adjusted” monetary amount of the official commitment (or pledge) issued by the funding agency in nominal U.S. dollars. It is one of the inputs used to calculate financial commitment (and pledge) amounts in constant 2021 U.S. dollars, as recorded in the Adjusted Amount (Constant USD 2021) field. AidData recommends using the Adjusted Amount (Nominal USD) field to calculate—in nominal U.S. dollars—the cumulative stock of official financial flows (ODA/OOF commitments) from China over multiple years—when one or more of recipient countries secured “rollover” emergency rescue loans and/or swap borrowings from the People’s Bank of China (PBOC) to refinance their maturing debts. For grants and non-emergency loans, the amounts that are recorded in this field are identical to the amounts that are recorded in the Amount (Nominal USD) field. However, for emergency rescue loans and swap borrowings from the PBOC (with de jure maturities of one year or less), the Adjusted Amount (Nominal USD) field excludes so-called “rollover” amounts that refinance maturing debts. The monetary amounts in the Adjusted Amount (Original Currency) field are calculated, whenever possible, by taking the difference between the level of outstanding debt in the current year and the previous year. This approach is consistent with the one used to derive net (new) PBOC swap borrowings in the following publication: Horn, S., Parks, B., Reinhart, C. M., and Trebesch, C. 2023. China as an International Lender of Last Resort. NBER Working Paper No. 31105. Cambridge, MA: National Bureau of Economic Research (NBER). In cases when this approach cannot be applied but there is evidence of the same lender providing a series of short-term emergency rescue loans (with identical face values and de jure maturities of 1 year or less) to the same borrower that are repaid on their original contractual maturity dates and subsequently reissued in consecutive years, the Adjusted Amount (Original Currency) field records the face value of the original loan commitment in the first year but not the face values of the loan commitments in subsequent years.</p>
Financial Distress	<p>This field identifies whether, for a given loan, there is an indication that the borrower had difficulty repaying the loan or was financially distressed during the loan’s repayment period (according to the project/transaction life-cycle information that is identified in the description field). The field is coded only for loans with status designations of Pipeline: Commitment, Implementation, Completed, Suspended, and Canceled. Umbrella records are not coded.</p>

Commitment Date (MM/DD/YYYY)	<p>This field seeks to capture the day on which an official financial commitment (or official commitment to provide in-kind support) was codified through the signing of a formal agreement by an official donor/lender in China and one or more entities in a recipient country or a set of recipient countries. Whenever possible, this field is based on the precise calendar day on which the official commitment was made. However, in cases when AidData is only able to identify the month and year in which the formal agreement signed (e.g. May 2018), the "Commitment Date" field is set to the first day of the month (01/01/2018). In cases when AidData is only able to identify the year in which the formal agreement was signed, the "Commitment Date" field is set to the first day of the first month (e.g. 01/01/2018). In the event an official commitment was made for a project/activity that entered implementation, but the official commitment year is not identifiable, AidData records the first year of project/activity implementation as a proxy for the official commitment year. In the event an official commitment was made for a project/activity that has not yet reached implementation, and the official commitment year is not identifiable, AidData records the year in which the underlying commercial contract (supported by the official commitment) was issued. If this information is unavailable, AidData records the first year in which an informal pledge was made as a proxy for the official commitment year. For projects with a status designation of Pipeline Pledge (i.e. cases in which an official commitment was not made), AidData records the date on which the informal pledge was made.</p>
Commitment Date Estimated	<p>For projects with a status designation of Pipeline: Commitment, Implementation, Completion, Suspended, and Cancelled, this marker designates whether AidData estimated the commitment date or reported the actual date on which the official commitment was made. The field is set to "Yes" when the "Commitment Date" field is estimated by AidData. It is otherwise set to "No," which indicates that AidData has reported the actual commitment date. For projects/activities with status designations of Pipeline: Pledge, this marker designates whether AidData estimated the pledge date or reported the actual date on which the informal pledge was made.</p>
Planned Implementation Start Date (MM/DD/YYYY)	<p>This field seeks to capture the day on which a project/activity supported by an official financial (or in-kind) commitment from China was originally scheduled to begin implementation. Whenever possible, this field is based on the precise calendar day when the project/activity was originally scheduled to begin implementation. However, in cases when AidData is only able to identify the month and year in which project/activity implementation was scheduled to begin (e.g., May 2018), the "Planned Implementation Start Date" field is set to the first day of the month (e.g., 05/01/2018).</p>

Actual Implementation Start Date (MM/DD/YYYY)	This field seeks to capture the day on which a project/activity supported by an official financial (or in-kind) commitment from China began implementation. Whenever possible, this field is based on the precise calendar day when project/activity implementation began. However, in cases when AidData is only able to identify the month and year in which project/activity implementation began (e.g., May 2018), the "Actual Implementation Start Date" field is set to the first day of the month (e.g. 05/01/2018). For projects/activities that involve the construction of buildings or infrastructure, the "Actual Implementation Start Date" field seeks to capture the first day of construction. In cases when the first day of construction is unavailable but a proxy for the first day of construction (e.g., the date on which a formal groundbreaking ceremony took place, a project/activity commencement order was issued to the contractor responsible for implementation, or a project/activity implementation agreement was signed) can be identified, AidData records the proxy for the first date of construction. For projects/activities that do not involve construction but involve the provision of personnel, training, analytical/advisory support, equipment, supplies, or commodities, the "Actual Implementation Start Date" field captures the first day in which some type of support was delivered to an entity (or set of entities) in the recipient country. For projects/activities that only involve financial transactions (cash donations, loans issued to shore up a country's foreign exchange reserves, forgiveness or rescheduling of outstanding debts), the "Actual Implementation Start Date" field captures the day on which the first disbursement was made (or the day on which new terms and conditions went into effect for a previously signed loan agreement).
Actual Implementation Start Date Estimated	This marker designates whether AidData estimated the implementation start date or reported the actual date on which project/activity implementation began. The field is set to "Yes" when the 'Actual Implementation Start Date' field is estimated by AidData. It is otherwise set to "No," which indicates that AidData has reported the actual implementation start date.
Deviation from Planned Implementation Start Date	This field captures the difference between the "Planned Implementation Start Date" and the "Actual Implementation Start Date" when values are recorded for both variables. It captures the difference as the number of days, whereby positive values represent cases where the project/activity started implementation ahead of schedule and negative values represent cases where the project/activity started implementation behind schedule.
Planned Completion Date (MM/DD/YYYY)	This field seeks to capture the day on which a project/activity supported by an official financial (or in-kind) commitment from China was originally scheduled to reach completion. Whenever possible, this field is based on the precise calendar day when the project/activity was originally scheduled to reach completion. However, in cases when AidData is only able to identify the month and year in which a project/activity was scheduled to reach completion (e.g., May 2018), the "Planned Completion Start Date" field is set to the first day of the month (e.g., 05/01/2018).

Actual Completion Date (MM/DD/YYYY)	<p>This field seeks to capture the day on which a project/activity supported by an official financial (or in-kind) commitment from China was completed. Whenever possible, this field is based on the precise calendar day when a project/activity was completed. However, in cases when AidData is only able to identify the month and year in which a project/activity was completed (e.g., May 2018), the "Actual Completion Date" field is set to the first day of the month (e.g., 05/01/2018). For projects/activities that involve the construction of buildings or infrastructure, the "Actual Completion Date" field seeks to capture the last day of construction. In cases when the last day of construction is unavailable but a proxy for the last day of construction (e.g., a road or railway is opened for use, a power plant reaches its commercial operation date and begins selling electricity to customers) is available, AidData records the proxy for the last day of construction. For projects/activities that do not involve construction but involve the provision of personnel, training, analytical/advisory support, equipment, supplies, or commodities, the "Actual Completion Date" field captures the last day on which some type of support was delivered to an entity (or set of entities) in the recipient country. For projects/activities that only involve financial transactions (cash donations, loans issued to shore up foreign exchange reserves, forgiveness or rescheduling of outstanding debts), the "Actual Completion Date" field captures the day on which the last disbursement was made (or the day on which new terms and conditions went into effect for a previously signed loan agreement).</p>
Actual Completion Date Estimated	<p>This marker designates whether AidData estimated the project/activity completion date or reported the actual date on which project/activity implementation was completed. The field is set to "Yes" when the "Actual Completion Date" field is estimated by AidData. It is otherwise set to "No," which indicates that AidData has reported the actual completion date.</p>
Deviation from Planned Completion Date	<p>This field captures the difference between the "Planned Completion Date" and the "Actual Completion Date" when values are recorded for both variables. It captures the difference as the number of days, whereby positive values represent cases where the project/activity was completed ahead of schedule and negative values represent cases where the project/activity was completed behind schedule.</p>
Maturity	<p>This field captures the total number of years it will take the borrower to repay a loan, as specified in the original loan agreement. These de jure maturity values are inclusive of grace periods. Users should keep in mind that the rescheduling of a loan can result in a de facto maturity that is substantially different from its de jure maturity. In cases when a loan's maturity is modified after an official commitment is issued, AidData captures the maturity modification through a separate record in the dataset that is given a flow type designation of "Debt Rescheduling."</p>

Interest Rate	This field captures the rate of interest (in percentage terms) that applies to a loan, as specified in the original loan agreement. In cases when the interest rate is tied to a floating rate such as LIBOR or EURIBOR, AidData calculates the value of the floating rate in the month (or year) when the official commitment was issued. Users should keep in mind that the rescheduling of a loan can result in a de facto interest rate that is substantially different from its de jure interest rate. In cases when a loan's interest rate is modified after an official commitment is issued, AidData captures the interest rate modification through a separate record in the dataset that is given a flow type designation of "Debt Rescheduling."
Grace Period	This field captures the number of years for which the borrower (receiving agency) is not expected to make principal repayments to the creditor (funding agency), as specified in the original loan agreement. Users should keep in mind that the rescheduling of a loan can result in a de facto grace period that is substantially different from its de jure grace period (especially for short-term loans that are rolled over year over year). In cases when a loan's grace period is modified after an official commitment is issued, AidData captures the grace period modification through a separate record in the dataset that is given a flow type designation of "Debt Rescheduling."
Management Fee	This field captures the management fee (in percentage terms) that applies to the loan, as specified in the original loan agreement. A management fee is a one-time, lump sum fee that is charged as a percentage of the face value of the loan. In cases when a loan's management fee is modified after an official commitment is issued, AidData captures the management fee modification through a separate record in the dataset that is given a flow type designation of "Debt Rescheduling."
Commitment Fee	This field captures the commitment fee (in percentage terms) that applies to the loan, as specified in the original loan agreement. A commitment fee is a fee that a borrower must pay to compensate the lender for its commitment to lend; it is usually payable semi-annually and the size of the fee is usually based on a fixed percentage of the undisbursed loan amount. In cases when a loan's commitment fee is modified after an official commitment is issued, AidData captures the commitment fee modification through a separate record in the dataset that is given a flow type designation of "Debt Rescheduling."
Insurance Fee (Percent)	This field captures the insurance fee (premium) that applies to the loan, as specified in the original loan agreement. It is measured as a percentage of total estimated debt service (i.e. the loan's principal plus total estimated interest payments over the lifetime of the loan). The insurance fee/premium is typically payable in a single lump sum, but in some cases it is payable in installments at different points in time or rolled into the principal of the loan.

Insurance Fee (Nominal USD)	This field captures the nominal USD value of the insurance fee (premium) that applies to the loan, as specified in the original loan agreement. The nominal USD value of the insurance fee/premium is usually based on a percentage of total estimated debt service (i.e. the loan's principal plus total estimated interest payments over the lifetime of the loan). The insurance fee/premium is typically payable in a single lump sum, but in some cases it is payable in installments at different points in time or rolled into the principal of the loan.
Default Interest Rate	This field captures the default (penalty) interest rate applied to the loan in the event of default (i.e., non-payment of principal, interest, or fees on their scheduled payment dates).
First Loan Repayment Date	This field captures the date on which the first loan repayment should be made by the borrower (as specified in the original loan agreement). It is automatically calculated by adding the grace period to the commitment date.
Last Loan Repayment Date	This field captures the date on which the final loan repayment should be made by the borrower (as specified in the original loan agreement). It is automatically calculated by adding the maturity to the commitment date.
Grant Element (OECD Cash-Flow)	This field captures the grant element of the loan according to the OECD cash-flow methodology, at the time that the original loan agreement was signed. To calculate the grant element of a loan, which is a measure that varies from 0 percent to 100 percent, AidData calculates the discounted cost (or "net present value") of the future debt service payments that will be made by the borrower. This calculation requires information about the loan's face value, maturity length, grace period, and interest rate. When AidData has access to the loan's face value, maturity length, grace period, and interest rate, it uses the OECD's grant element calculator from the cash-flow methodology (assuming a fixed, 10 percent discount rate, two repayments per year, and equal principal repayments). In theory, a grant element calculator can generate values above 100% or below 0%. However, AidData bounds grant element values so that they cannot assume values that exceed 100% or negative values (since negative values imply lending terms that are "less favorable than market terms," which does not logically make sense because market terms are risk-adjusted prices agreed to by willing buyers and sellers of credit).

Grant Element (OECD Grant-Equiv)	<p>This field captures the grant element of the loan according to the OECD grant-equivalent methodology, at the time that the original loan agreement was signed. To calculate the grant element of a loan, which is a measure that varies from 0 percent to 100 percent, AidData calculates the discounted cost (or “net present value”) of the future debt service payments that will be made by the borrower. This calculation requires information about the loan’s face value, maturity length, grace period, and interest rate. When AidData has access to the loan’s face value, maturity length, grace period, and interest rate, it uses the OECD’s grant element calculator from the grant-equivalent methodology, assuming (a) a fixed discount rate which depends on the recipient country income level (9% for LDCs and other LICs and 6% for UMICs), (b) two repayments per year, and (c) equal principal repayments. In theory, a grant element calculator can generate values above 100% or below 0%. However, AidData bounds grant element values so that they cannot assume values that exceed 100% or negative values (since negative values imply lending terms that are “less favorable than market terms,” which does not logically make sense because market terms are risk-adjusted prices agreed to by willing buyers and sellers of credit).</p>
Grant Element (IMF)	<p>This field captures the grant element of the loan according to the current (post-2013) World Bank/IMF methodology, at the time that the original loan agreement was signed. To calculate the grant element of a loan, which is a measure that varies from 0 percent to 100 percent, AidData calculates the discounted cost (or “net present value”) of the future debt service payments that will be made by the borrower. This calculation requires information about the loan’s face value, maturity length, grace period, and interest rate. When AidData has access to the loan’s face value, maturity length, grace period, and interest rate, it uses the IMF’s post-2013 grant element calculator (assuming a fixed, 5 percent discount rate, two repayments per year, and equal principal repayments). In theory, a grant element calculator can generate values above 100% or below 0%. However, AidData bounds grant element values so that they cannot assume values that exceed 100% or negative values (since negative values imply lending terms that are “less favorable than market terms,” which does not logically make sense if market terms are risk-adjusted prices agreed to by willing buyers and sellers of credit).</p>
Number of Lenders	<p>This field captures whether the loan record has one or more lenders by way of two categories: Bilateral Loan or Syndicated/Club Loan. A bilateral loan is issued by one lender to a single borrower. A syndicated loan or club loan is issued by a consortium ('syndicate' or 'club') of lenders to a single borrower.</p>
Export Buyer's Credit	<p>This field provides a marker of whether it is known that the loan record is classifiable as an Export Buyer's Credit, which is a loan that is issued by Chinese state-owned policy banks and Chinese state-owned commercial banks to overseas borrowing institutions to facilitate their acquisition of goods/services from a Chinese supplier. The field is set to "Yes" if the loan record is classifiable as an Export Buyer's Credit.</p>

Supplier's Credit/Export Seller's Credit	This field provides a marker of whether it is known that the loan record is classifiable as either an Export Seller's Credit or a Supplier's Credit. An Export Seller's Credit is a loan issued by a Chinese state-owned bank to a Chinese company for the purpose of increasing its exports. The proceeds of export seller's credits are to be used by borrowers (Chinese exporters) to finance their foreign sales. Chinese exporters usually secure export seller's credits when they need liquidity to offer a supplier's credit to an overseas buyer. If a Chinese company extends a loan to a borrower and the borrower is expected to use the loan proceeds to purchase goods and services from that Chinese company, then the loan is a supplier's credit (also known as a seller's credit or vendor financing). The field is set to "Yes" if the loan record is classifiable as either Export Seller's Credit or Supplier's Credit.
Interest-Free Loan	This field provides a marker of whether it is known that the loan record is classifiable as an Interest-Free Loan, which is a loan that is issued to a borrower without any interest accruing. The borrower is only responsible for repaying the loan's principal amount. The field is set to "Yes" if the loan record is classifiable as an Interest-Free Loan.
Refinancing	This field provides a marker of whether it is known that the loan record captures debt refinancing, which is a new loan for the purpose of repaying one or more existing loans/debts. The field is set to "Yes" if the loan is used for debt refinancing.
Investment Project Loan	This field provides a marker of whether it is known that the loan record is classifiable as an Investment Project Loan, which is a loan that is provided to finance the provision of goods, works, or services to support a public or private investment project. The field is set to "Yes" if the loan record is classifiable as an Investment Project Loan.
M&A	This field provides a marker of whether it is known that the loan record is classifiable as a Mergers and Acquisitions (M&A) Loan, which is a loan that is issued to a borrower to facilitate its acquisition of an equity stake in a company and/or to facilitate the consolidation of multiple companies (i.e., a merger). The field is set to "Yes" if the loan record is classifiable as a M&A Loan.
Working Capital	This field provides a marker of whether it is known that the loan record is classifiable as a Working Capital Loan, which is a loan that provides funds for a borrower's day-to-day operations but not for making capital investments or facilitating the acquisition of long-term assets. The field is set to "Yes" if the loan record is classifiable as a Working Capital Loan.
EPCF	This field provides a marker of whether it is known that the loan record involves an Engineering, Procurement and Construction Plus Finance (EPC+F or EPCF) Agreement arrangement. In a typical EPC+F arrangement, a project owner in the host country has selected a Chinese company as its engineering, procurement, and construction (EPC) contractor, and a Chinese bank issues a loan to that EPC contractor but with a sovereign guarantee from the host government. The field is set to "Yes" if the loan record involves an EPC+F arrangement.

Lease	<p>This field provides a marker of whether it is known that the loan record captures a lease agreement. A lease is a contractual arrangement calling for the lessee (user) to pay the lessor (owner) for use of an asset. The lessor is the legal owner of the asset, while the lessee obtains the right to use the asset in return for regular rental payments. Under a capital lease (a financial arrangement where the lessee/borrower uses an asset and pays regular installments plus interest to the lender/lessor), rental payments are usually classified as interest and obligation payments, similarly to a mortgage (with the interest calculated each rental period on the outstanding obligation balance). The field is set to "Yes" if the loan record captures a lease agreement.</p>
FXSL/BOP	<p>This field provides a marker of whether it is known that the loan record captures a borrowing under a Foreign Currency Swap Line (FXSL) or a Balance of Payments (BoP) Loan. An FXSL agreement is an agreement between the central banks of two countries to exchange cash flows in different currencies at predetermined rates over a specified period of time. Central banks participate in these agreements to (a) facilitate bilateral trade settlements using their national currencies (rather than relying upon a third-party currency such as the U.S. dollar), (b) manage demands from their local banks, and (c) provide liquidity to support financial market stability. The party that draws down on the swap line becomes the borrower and the other party becomes lender. During the term of the swap, the party that draws down on the swap line makes either fixed or floating interest payments on the principal amount. If both parties draw down on the swap line, then both parties exchange fixed or floating interest payments on the principal amounts. A Balance of Payments (BoP) Loan, Liquidity Support Facility (LSF), or Foreign Currency Deposit Loan, is a loan issued by a Chinese state-owned policy bank, a Chinese state-owned commercial bank, or China's State Administration of Foreign Exchange (SAFE) to a central bank or finance ministry in another country that explicitly authorizes the borrower to use the proceeds of the loan to (a) shore up foreign exchange reserves, (b) repay existing debts, and/or (b) finance general budgetary expenditures. The field is set to "Yes" if the loan record captures a FXSL borrowing or a BoP Loan.</p>
CC IRS	<p>This field provides a marker of whether it is known that the loan record captures a Cross-Currency Interest Rate Swap. A cross-currency interest rate swap is an off-balance sheet way of hedging against interest rate risk and foreign exchange risk. In a typical cross-currency interest rate swap agreement, both parties to the transaction are simultaneously lending to each other. That is to say, each party is both a lender and a borrower. The field is set to "Yes" if the loan record captures a Cross-Currency Interest Rate Swap.</p>

RCF	<p>This field provides a marker of whether it is known that the loan record involves a Revolving Credit Facility (RCF) arrangement. In a typical RCF arrangement, the lender commits funding up to a certain level, but unlike a "term loan" (that is repaid in regular payments over a set period of time), the borrower can draw down, repay, and redraw on an irregular/as-needed basis. It provides liquidity for day-to-day operations, and the borrower is charged an annual commitment fee on unused amounts (a "facility fee"). The field is set to "Yes" if the loan record involves a RCF arrangement.</p>
GCL	<p>This field provides a marker of whether it is known that the loan record is classifiable as a Government Concessional Loan (GCL), which is an RMB-denominated loan that the Export-Import Bank of China (China Eximbank) issues to government institutions on below-market terms (typically 20-year maturities, 5-year grace periods, and 2% interest rates) to facilitate their acquisition of goods/services from a Chinese supplier. The proceeds of a GCL can be used by government borrowing institutions to finance up to 100% of the total cost of a commercial contract with a Chinese supplier. The field is set to "Yes" if the loan record is classifiable as a GCL.</p>
PBC	<p>This field provides a marker of whether it is known that the loan record is classifiable as a Preferential (Export) Buyer's Credit (PBC), which is a USD-denominated or EUR-denominated loan that the Export-Import Bank of China (China Eximbank) issues to government institutions to facilitate their acquisition of goods/services from a Chinese supplier. The borrowing terms of these loans vary, but they are offered with fixed rather than floating (market) interest rates (such as LIBOR or EURIBOR), which are usually more generous than prevailing market rates. China Eximbank has a policy of allowing borrowers to use PBC proceeds to finance 85% of the total cost of a commercial contract with a Chinese supplier. China Eximbank usually requires that the remaining 15% of the commercial contract cost be financed with "counterpart funding" from the borrowing institution. The field is set to "Yes" if the loan record is classifiable as a PBC.</p>
PxF/Commodity Prepayment	<p>This field provides a marker of whether it is known that the loan record involves a Pre-Export Financing (PxF) or Commodity Prepayment Financing arrangement, which is an arrangement in which a commodity (e.g. oil) producer gets up-front cash from a customer in return for a promise to repay the customer with that commodity (possibly at a discount) in the future. PxF funds may be advanced by a lender or syndicate of lenders to a commodity producer to assist the company in meeting either its working capital needs (for example, to cover the purchase of raw materials and costs associated with processing, storage and transport) or its capital investment needs (for example, investment in plant and machinery and other elements of infrastructure). The field is set to "Yes" if the loan record involves a PxF or Commodity Prepayment Financing arrangement.</p>

Inter-Bank Loan	This field provides a marker of whether it is known that the loan record is classifiable as an Inter-Bank Loan, which is a loan issued by one bank (lender) to another bank (borrower). All inter-bank loans are by nature on-lending arrangements, and will be captured as such in the "On-Lending" field. The field is set to "Yes" if the loan record is classifiable as an Inter-Bank Loan.
Overseas Project Contracting Loan	This field provides a marker of whether it is known that the loan record is classifiable as an Overseas Project Contracting Loan, which is a loan issued by the Export-Import Bank of China (China Eximbank) to a Chinese company to help it finance an overseas project contract. This loan can be denominated in USD or RMB. Per China Eximbank policy, the contract cost that is financed with the loan should not be lower than 1 million USD, and goods and services exported from China under the contract should not be lower than 15% of contract cost. The field is set to "Yes" if the loan record is classifiable as an Overseas Project Contracting Loan.
DPA	This field provides a marker of whether it is known that the loan record involves a Deferred Payment Agreement (DPA) arrangement. In a typical DPA arrangement, the Chinese company that the project owner in the host country has selected as its engineering, procurement, and construction (EPC) contractor is also a lender to the project owner. The Chinese company assigns receivables under its EPC contract with the project owner to one or more Chinese banks. Upon assignment of receivables, the Chinese bank or banks will release funds to the Chinese company so it can discharge its obligations under the DPA as a lender. The field is set to "Yes" if the loan record involves a DPA arrangement.
Project Finance	This field provides a marker of whether it is known that the loan record involves a Non-Recourse or Limited-Recourse Project Finance transaction. When a project is financed with a limited-recourse or non-recourse structure, the loan that is used to finance the acquisition, construction, and/or maintenance of an asset—such as a toll road, a seaport, or an electricity grid—is exclusively repaid with the cash flow generated by the asset (e.g., toll revenue, container fees, or electricity sales), and the creditor either has no claim ("recourse") or a limited claim to any other assets as a basis for recovering the debt. In a standard, limited-recourse or non-recourse project finance transaction, a creditor lends to an independent legal entity that is established for the express purpose of developing, owning, and operating a specific project. This entity is often called a special purpose vehicle (SPV) because it is only allowed to engage in activities that relate to a specific purpose (project), and it is legally prohibited from incurring debts or obligations that are not related to that purpose (project). The field is set to "Yes" if the loan record involves a Non-Recourse or Limited-Recourse Project Finance transaction.

Involving Multilateral	This field provides a marker of whether it is known that the loan involves a multilateral (inter-governmental) organization in one or more of the following capacities: as (a) a loan administrator (such as the Africa Growing Together Fund or the China Co-Financing Fund for Latin America and Caribbean), (b) a co-financier (through a syndicated loan, club loan, or parallel co-financing arrangement), (c) an insurer (such as the World Bank Group's Multilateral Investment Guarantee Agency), and/or (d) a financial or technical adviser. The field is set to "Yes" if the record involves a multilateral organization.
Involving Non-Chinese Financier	This field provides a marker of whether it is known that the loan involves co-financing agencies which are not of Chinese origin. The field is set to "Yes" if there is at least one co-financing agency from a country other than China.
Short-Term	This field provides a marker of whether it is known that the loan is classifiable as a short-term loan. The field is automatically set to "Yes" if the loan's de jure maturity is 1 year or less. Users should keep in mind that loans with de jure maturities of 1 year or less may be "rolled over" or otherwise rescheduled, resulting in longer de facto maturities.
Rescue	This field provides a marker for rescue loan records. In the 3.0 version of the dataset, rescue lending (also known as bailout lending) is defined as any loan that allows a sovereign debtor to (i) service existing debts, (ii) finance general budgetary expenditures and/or (iii) shore up foreign reserves. Any loan in the dataset that meets at least one of two criteria is designated as a rescue loan: (1) any loan where the FXSL/BOP marker is checked, and (2) any loan where AidData's Sector Code and Sector Name fields are set to 510 and General Budget Support, respectively. However, in the time period covered by the dataset, loans to two sovereign debtors that met the first criterion (PBOC swap line borrowings by Malaysia's central bank and Thailand's central bank) are not classified as rescue lending, as evidence shows these debtors did not utilize their foreign currency swap lines with the PBOC during periods of macroeconomic distress. The central banks of Malaysia and Thailand likely used the foreign currency swap lines for trade and investment purposes. See Horn et al. (2023) at https://docs.aiddata.org/ad4/pdfs/WPS124_China_as_an_International_Lender_of_Last_Resort.pdf for more details.

JV/SPV Host Government Ownership	<p>This field captures the extent of host government ownership of the Joint Venture/Special Purpose Vehicle (JV/SPV)—in cases where the JV/SPV is recorded as a receiving agency (borrowing institution) for the loan. Each JV/SPV is assigned to one of four categories: Majority Host Government-Owned, Minority Host Government-Owned, No Host Government Ownership, or No Ownership Information Available. The value in this field is set based on the following criteria: (1) It is classified as "Majority Host Government-Owned" if government agencies, state-owned companies or state-owned banks from the recipient country have a combined JV/SPV ownership stake greater than 50%; (2) It is classified as "Minority Host Government-Owned" if government agencies, state-owned companies or state-owned banks from the recipient country have a combined JV/SPV ownership stake that is greater than 0% but less than or equal to 50%; (3) It is classified as "No Host Government Ownership" if government agencies, state-owned companies or state-owned banks from the recipient country hold no stake in the JV/SPV; and (4) Lastly, if information is not available to determine the host government ownership stake, then it is classified as "No Ownership Information Available."</p>
JV/SPV Chinese Government Ownership	<p>This field captures the extent of Chinese government ownership of the Joint Venture/Special Purpose Vehicle (JV/SPV)—in cases where the JV/SPV is recorded as a receiving agency (borrowing institution) for a loan. Each JV/SPV is assigned to one of four categories: Majority Chinese Government-Owned, Minority Chinese Government-Owned, No Chinese Government Ownership, and No Ownership Information Available. The value in this field is set based on the following criteria: (1) It is classified as "Majority Chinese Government-Owned" if government agencies, state-owned companies or state-owned banks from China have a combined JV/SPV ownership stake greater than 50%; (2) It is classified as "Minority Chinese Government-Owned" if government agencies, state-owned companies or state-owned banks from China have a combined JV/SPV ownership stake that is greater than 0% but less than or equal to 50%; (3) It is classified as "No Chinese Government Ownership" if government agencies, state-owned companies or state-owned banks from China hold no stake in the JV/SPV; and (4) Lastly, if information is not available to determine the Chinese government ownership stake, then it is classified as "No Ownership Information Available."</p>

<p>Level of Public Liability</p>	<p>This field captures the extent to which the host government may eventually be liable for debt repayment. Each loan record is assigned to one of six categories: Central government debt, Central government-guaranteed debt, Other public sector debt, Potential public sector debt, Private debt, or Unallocable. The value in this field is hierarchically and automatically determined based on the following criteria: (1) The loan record is classified as "Central government debt" if it is an official sector loan to a central government institution in the recipient country, measured by whether there is at least one receiving agency (direct or indirect) from the recipient country that is classified as a government agency; (2) If the loan record does not meet the first (1) criterion, it is classified as "Central government-guaranteed debt" if it is an official sector loan to a state-owned entity (e.g. state-owned enterprise and state-owned bank) or privately-owned entity in the recipient country that benefits from a sovereign (central government) repayment guarantee; (3) If the loan record does not meet the first (1) criterion or the second (2) criterion, it is classified as "Other public sector debt" if (a) it is an official sector loan to a state-owned entity (such as a city/municipal government, a state-owned bank, or a state-owned enterprise) in the recipient country that does not benefit from a sovereign (central government) repayment guarantee; (b) it is an official sector loan to a private entity or state-owned entity in the recipient country that is backed by a repayment guarantee from a state-owned entity other than the central government in the recipient country (such as a city/municipal government, a state-owned bank, or a state-owned enterprise), OR (c) it is an official sector loan to a special purpose vehicle (SPV) or joint venture (JV) that is majority-owned by one or more public sector institutions in the recipient country and that does not benefit from a sovereign (central government) repayment guarantee or a repayment guarantee from a state-owned entity other than the central government in the recipient country (such as a city/municipal government, a state-owned bank, or a state-owned enterprise). (4) If the loan record does not meet the first (1) criterion, the second (2) criterion, or the third (3) criterion, it is classified as "Potential public sector debt" if it is an official sector loan to a special purpose vehicle (SPV) or joint venture (JV) borrower that is minority-owned by one or more public sector institutions in the recipient country and that does not benefit from a sovereign (central government) repayment guarantee or a repayment guarantee from a state-owned entity other than the central government in the recipient country (such as a city/municipal government, a state-owned bank, or a state-owned enterprise). (5) If the loan record does not meet the first (1) criterion, the second (2) criterion, the third (3) criterion, and the fourth (4) criterion, it is classified as "Private debt" if it is an official sector loan to a privately-owned entity that does not benefit from a repayment guarantee from a public sector institution in the recipient country (this includes lending to a private entity, or lending to a Joint Venture or Special Purpose Vehicle with no level of host government ownership (i.e. the "JV/SPV Host Government Ownership" variable is set to "No Host Government Ownership"); (6) If the loan record</p>
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	does not meet the first (1) criterion, the second (2) criterion, the third (3) criterion, the fourth (4) criterion, or the fifth (5) criterion, then it is classified as "Unallocable" due to a lack of information.
Total Source Count	This field provides a count of the total number of sources used to create the project/activity record (including official and other source types).
Official Source Count	This field provides a count of the total number of official sources used to create the project/activity record. Official source types include Donor/Recipient Official Source, Implementing/Intermediary Organization Source, and Other Official Source (non-Donor, non-Recipient, non-Implementing).
Source URLs	This field provides URLs to the sources that were used to create the project/activity record. The entries are pipe-delimited
Source Titles	This field provides the titles of the source articles, reports, and websites used to create the project/activity record. The entries are pipe-delimited.
Source Publishers	This field provides the names of the publishers of the source articles, reports, and websites used to create the project/activity record. The entries are pipe-delimited.
Source Type	This field identifies the type of sources that were used to create the project/activity record. The entries are pipe-delimited.
Contact Name	This field records the names of the people who were involved in the project/activity and/or the financial (or in-kind) transfer for the project/activity whenever this information is available.
Contact Position	This field records the position titles of the people who were involved in the project/activity and/or the financial (or in-kind) transfer for the project/activity whenever this information is available.
ODA Eligible Recipient	This field designates whether the recipient country was eligible for ODA (based on income level and OECD DAC categorizations) in the year that the official commitment was issued. For projects/activities with a status designation of "Pipeline: Pledge," this field designates whether the recipient country was eligible for ODA (based on income level and OECD DAC categorizations) in the year that the informal pledge was issued.
OECD ODA Income Group	This field provides the income status of the recipient country for each project/activity at the time that it secured a Chinese ODA or OOF commitment (or pledge). The classification is based on the OECD's ODA Eligibility lists. It records whether a country is low income (LIC), lower middle income (LMIC), upper middle income (UMIC), or high income (HIC). High-income countries are not eligible for ODA flows in the OECD's classification scheme.

Location Narrative	<p>This field provides a description of the locations of project activities. Whenever possible, AidData captures geographical information that makes it possible to identify (i) the precise physical boundaries and exact locations of buildings and facilities (e.g. schools, hospitals, stadiums, government buildings, power plants, and factories); (ii) the precise geographical scope of special economic zones, industrial parks, mining concessions, protected areas, and plots of land under cultivation; and (iii) the exact routes of linear infrastructure (e.g., roads, bridges, tunnels, railways, power lines, canals, and pipelines). Whenever possible, AidData also records OpenStreetMap and GoogleMaps URLs that capture the geographical locations and features of projects. An important caveat is that AidData is only able to provide precise details for the subset of projects in the dataset that have physical footprints (e.g. roads, railways, transmission lines) or involve activities at specific locations (e.g. medical teams stationed at a given hospital, equipment given to park rangers to patrol a protected area). Less precise location information may also be recorded for projects, such as the general area or administrative zone associated with a project.</p>
Geographic Level of Precision Available	<p>This field indicates the finest level of geographical precision AidData was able to pinpoint for each project feature (or set of features). When identifying OSM features captured in the 'Location Narrative' field, coders seek to identify features at the highest level of precision as possible. Given data limitations though, precise locations are not always available. This field indicates the finest level of precision the geographical information achieved. If multiple features were captured for one project, this reports the highest level of precision achieved across the project's features. The level of precision values includes the following categories: precise, approximate (5km buffer), or ADM-level.</p>
ADM1 Level Available	<p>This field is marked "Yes" for projects where there are associated sub-national locations at the ADM1 level (a first-order administrative division such as a province, state, or governorate) available in the associated GCDF_3.0_ADM1_Locations.csv file. ADM1 locations are only made available when the project was geocoded at the ADM1 level or finer. These ADM1 locations are constructed by AidData by using the OpenStreetMap URLs that are recorded in the "Location Narrative" field and seek to represent the geographical locations of each project where available (see the GCDF3.0 ADM Files README included in the GCDF 3.0 file download). AidData has made the full dataset of geospatial features, as well as usage tips and related documentation accessible via https://www.aiddata.org/data/aiddatas-geospatial-global-chinese-development-finance-dataset-version-3-0.</p>

ADM2 Level Available	<p>This field is marked "Yes" for projects where there are associated sub-national locations at the ADM2 level (a second-order administration division such as a district, municipality, or commune) available in the associated GCDF_3.0_ADM2_Locations.csv. ADM2 locations are only made available when the project was geocoded at the ADM2 level or finer. These ADM2 locations are constructed by AidData by using the OpenStreetMap URLs that are recorded in the "Location Narrative" field and seek to represent the geographical locations of each project where available (see the GCDF3.0 ADM Files README included in the GCDF 3.0 file download). AidData has made the full dataset of geospatial features, as well as usage tips and related documentation accessible via https://www.aiddata.org/data/aiddatas-geospatial-global-chinese-development-finance-dataset-version-3-0.</p>
Geospatial Feature Available	<p>This field is marked "Yes" for projects where there is a geospatial feature available in Version 3.0 of AidData's Geospatial Global Chinese Development Finance Dataset (Goodman et al., 2023). These geospatial features were constructed by AidData by using the OpenStreetMap URLs that are recorded in the "Location Narrative" field and seek to represent the geographical locations of each project where available. AidData has made the complete set of geospatial features along with usage tips and related documentation accessible via https://www.aiddata.org/data/aiddatas-geospatial-global-chinese-development-finance-dataset-version-3-0.</p>
Source Quality Score	<p>This metric varies on a scale of 1 to 5, with 1 indicating that the project/activity record is exclusively underpinned by unofficial sources and 5 indicating reliance upon multiple, official sources.</p>
Data Completeness Score	<p>This metric varies on a scale of 0 to 5, with 5 indicating that the basic fields of the project/activity record are complete. The "threshold" for a score of 5 is similar to the key fields in the OECD-DAC's Creditor Reporting System: an actual rather than estimated commitment year, a non-missing transaction amount, a flow type/flow class that is not defined as "Vague," and identifiable funding, implementing, and receiving agencies.</p>
Implementation Detail Score	<p>This metric varies on a scale of 0 to 5, with higher scores indicating that more implementation details have been captured in the project/activity record. The following implementation details are considered: whether the implementing agency (or agencies), implementation start and completion dates (actual or planned), and geographical locations of the project/activity are specified; and whether the project/activity has a specified sector allocation. Project Implementation Scores are only calculated for project/activity records with a "Recommended for Aggregates" value of "True" and a "Status" value of "Implementation" or "Completion."</p>

Loan Detail Score	This metric varies on a scale of 0-5, with higher values indicating that more financial transaction details are captured in the project/activity record. Loan Detail Scores are only calculated for project/activity records with a "Recommended for Aggregates" value of "True" and a "Flow Type" designation of "Loan." A score of 5 indicates that a loan's interest rate, maturity, transaction value, loan type, funding agencies, and receiving agencies are all specified (i.e., not missing).
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Section 2 - Capturing Chinese ODA and OOF

With the 3.0 version of the TUFF methodology, we seek to identify overseas projects/activities supported by financial or in-kind transfers from official sector institutions in China (i.e., Chinese government and state-owned institutions). With respect to temporal coverage, we aim to identify all projects/activities backed by official commitments that took place between 2000 and 2021, with details on the timing of implementation over a 24-year period (2000-2023). With respect to spatial coverage, we aim to capture projects/activities in every low-income, lower-middle income, and upper-middle income country and territory across every major world region, including Africa, Asia, Oceania, the Middle East, Latin America and the Caribbean, and Central and Eastern Europe. In total, AidData's GCDF Dataset, Version 3.0 covers 165 countries: 147 countries where systematic searches were undertaken and Chinese government-financed projects/activities were identified and 18 countries where systematic searches were undertaken but no Chinese government-financed projects/activities were identified.

Our goal is to capture a comprehensive and detailed picture of projects/activities backed by Chinese ODA and OOF but not Chinese Official Investment (see Appendix A). Consistent with OECD definitions, we use the terms "Chinese Official Finance" or "Official Financial Flows from China" to refer to financial or in-kind transfers (or "flows") from official sector institutions in China (i.e., Chinese government and state-owned institutions) to another country or territory. Official Finance (Official Financial Flows) consists of Official Development Assistance (ODA), Other Official Flows (OOF), and Official Investment. However, AidData only systematically tracks and publishes data on Chinese ODA and OOF. It does not systematically track and publish data on Chinese Official Investment. In the remainder of this paper, we document our efforts to define and measure Chinese ODA and OOF in support of the construction of AidData's GCDF Dataset, Version 3.0.

The challenge of measuring ODA and OOF from China is not only capturing the full range of flows, but also classifying these flows accurately and in ways that make comparisons between different financiers valid. To make the study of financial and in-kind transfers from China more comparable with those from OECD-DAC donors and creditors, the 3.0 version of the TUFF methodology uses OECD definitions and measurement criteria, as outlined in the OECD-DAC Directives. We use these standards to classify each project according to its source of financing, type of financing, intent, and level of concessionality.

2.1 - Measuring Concessionality and Intent

As part of its data collection and classification system, AidData designates each financial and in-kind transfer (“flow”) from an official sector institution as Official Development Assistance (ODA) or Other Official Flows (OOF). The OECD’s Development Assistance Committee (DAC) has used these designations since 1972 to distinguish between flows from official sector institutions that (a) are provided on concessional terms and that promote and specifically target the economic development and welfare of developing countries (ODA), and (b) are provided on non-concessional terms or do not specifically target the economic development and welfare of developing countries (OOF). The sum of ODA and OOF is sometimes referred to as Official Financial Flows, Official Financing, or Overseas Development Finance. Many DAC countries, non-DAC countries, and multilateral institutions report the volume and composition of their official sector flows according to these categories and criteria. In alignment with the OECD-DAC’s own definitions, AidData classifies each project/activity record in the 3.0 dataset as either “ODA-like” or “OOF-like.” This unique feature of the 3.0 dataset sets it apart from other publicly available datasets that measure Chinese development finance in that it allows analysts to make “apples-to-apples” comparisons of Chinese development finance and other international sources of development finance (that report their ODA and OOF flow data to the OECD-DAC).

The criteria for whether a flow qualifies as ODA or OOF is determined by the OECD-DAC. It is based on (1) the intent of the flow (whether its primary intent was development or not), (2) the income classification of the receiving country, and (3) the concessionality level of the flow.¹⁶ All grants and in-kind transfers are treated as concessional. However, a “grant element” measure is used to calculate the concessionality level of all loans. This measure, which varies from 0 percent to 100 percent, seeks to capture the generosity of a loan—or the extent to which it is priced below market rates. In principle, any loan provided on entirely non-concessional terms should have a grant element of 0 percent.

While the first two criteria have remained consistent since the concept of ODA was introduced more than five decades ago, the OECD-DAC recently made changes to the third (concessionality) criterion. Until 2017, a loan from an official sector institution to a low-income or middle-income country had to meet a concessionality (grant element) threshold of 25% to qualify as ODA. However, in 2018, the OECD-DAC introduced a tiered system of discount rates and concessionality thresholds based on the income classifications of borrower countries and whether borrowing institutions are official sector or private sector institutions. The 2018 definition of concessionality is based on the following criteria:

- For loans to official sector institutions, the following concessionality thresholds apply:
 - Least-developed countries and low-income countries: a minimum grant element of 45% (calculated using a 9% discount rate).

¹⁶ An additional criteria is that the flow must be provided by official agencies, including state and local governments or their executive agencies. AidData’s GCDF 3.0 only tracks official Chinese agencies, so this criteria is always met.

- Lower-middle income countries: a minimum grant element of 15% (calculated using a 7% discount rate).
- Upper-middle income countries: a minimum grant element of 10% (calculated using a discount rate of 6%).
- For loans to private sector institutions, the OECD-DAC maintains the pre-2018 definition of concessionality and requires a grant element of at least 25% (that is calculated using a 10% discount rate).¹⁷

To ensure comparability between the flows documented in the 3.0 version of the GCDF dataset and the flow data published by the OECD-DAC, AidData has applied these definitions in the following manner:

Intent: AidData codes the intent of each financial and in-kind transfer (“flow”). Flows with “development intent” are those that are primarily oriented toward the promotion of economic development and welfare in the recipient country. Flows with “commercial intent” are those that primarily seek to promote the commercial interests of the country from which the financial transfer has originated (e.g., encouraging the export of Chinese goods and services). Flows with “representational intent” are those that primarily seek to promote a bilateral relationship with another country or otherwise promote the language, culture, or values of the country from which the financial transfer has originated (e.g., the establishment of a Confucius Institute or Chinese cultural center). Flows with “military intent” are those that seek to promote the security interests of the country from which the financial transfer originates or strengthen the lethal force capabilities of military institutions in the recipient country.

ODA Income Classification: AidData reports the income classification group of the borrowing country. Flows to countries not eligible for ODA are automatically assigned to the “OOF-like” category.

Concessionality:

- For flows committed between 2000 and 2017, a flow is classified as “ODA-like” when it (1) has development intent, (2) has a grant element of at least 25% (using a 10% discount rate), and (3) supports a country that is ODA-eligible according to the OECD-DAC’s ODA income classification list.
- For flows committed between 2018 and 2021, a flow is classified as “ODA-like” when it (1) has development intent, (2) has a concessionality level that meets the new criteria (established in 2018 definition), and (3) supports country that is ODA-eligible according to the OECD-DAC’s ODA income classification list.

By definition, any international official sector flows not classified as ODA-like are classified as OOF-like. The OOF-like flows in the 3.0 version of AidData’s GCDF dataset largely consist of export credits and non-concessional loans.

¹⁷ According to the OECD, the method for calculating the ODA grant equivalent for loans to private sector institutions has not yet been formalized, and discussions to do so are currently ongoing at the OECD-DAC. Until an agreement has been formalized, the pre-2018 concessionality definition still applies.

In some cases, we are not able to determine if an international official sector flow would qualify as ODA or OOF because of insufficiently detailed information in source documentation. In such cases, the flow in question is categorized as Vague (Official Finance).

2.2 - Measuring Emergency Rescue Loans and the Cumulative Stock of Official Financial Flows from China to LICs and MICs

As explained at greater length in AidData's *Belt and Road Reboot* report, emergency rescue loans represent an increasingly important part of China's overseas portfolio of loans to LICs and MICs (Parks et al. 2023). Nearly all of these borrowings, which are typically used to refinance maturing debts, carry *de jure* maturities of one year or less (i.e., they are initially scheduled for repayment in 12 months or less). However, it is not unusual for financially-distressed LICs and MICs to receive short-term emergency rescue loans from the same Chinese creditor in a series of consecutive years (Horn et al. 2023). So-called "rollover" emergency rescue loans come in two varieties: (1) those that reach their original contractual maturity dates and secure final maturity date extensions; and (2) those that are repaid on their original contractual maturity dates and reissued (with similar or different face values and borrowing terms) and assigned new maturity dates.¹⁸ However, among serial recipients of short-term emergency rescue loans, it is seldom possible—with publicly available sources of information—to differentiate between those who had their final maturity dates extended and those who fully repaid on their original contractual maturity dates but were reissued new loans.

This relatively new feature of China's overseas lending program raises an important question about how to accurately estimate the cumulative stock of official financial flows—or lending commitments—from China to LICs and MICs. Neither the OECD's Creditor Reporting System (CRS) nor the World Bank's Debtor Reporting System (DRS) ask lenders or borrowers to disclose loans with maturities of one year or less.¹⁹ However, most of China's short-term emergency rescue loans have *de facto* maturities that substantially exceed one year (Horn et al. 2023), which makes it difficult to justify the exclusion of all emergency rescue loans from stock- or flow-based measures of official financial commitments (or lending commitments) from China to LICs and MICs.²⁰

At the same time, rollover debt presents an overcounting risk because it straddles a fine line between new lending commitments and maturity extensions of existing lending commitments. This risk is particularly relevant to estimations of the cumulative stock of official financial flows

¹⁸ The 3.0 version of AidData's GCDF dataset captures the full range of China's international rescue lending operations. Parks et al. (2023) demonstrate that an increasing proportion of China's official sector lending to LICs and MICs consisted of "rollover" emergency rescue loans during the early BRI period of 2014-2017 (8%) and the late BRI period of 2018-2021 (34%).

¹⁹ The reporting directives of the OECD's Creditor Reporting System (CRS) specify that "[l]oans with a maturity of one year or less are not reportable in DAC statistics" (OECD 2021: 51). Similarly, governments that participate in the World Bank's Debtor Reporting System (DRS) are asked to report their long-term debt repayment obligations to external creditors on an annual basis. Long-term debt is defined in the DRS reporting manual as debt "with an original contractual or extended maturity of more than one year [...]" (World Bank 2000: 4).

²⁰ Central banks that borrow from the PBOC frequently see their final maturity dates extended—or they repeatedly receive short-term loans to refinance maturing debts. Horn et al. (2023) provide evidence that the *de facto* maturity of the average PBOC swap line borrowing is 3.5 years.

(or lending commitments) from China. In order to address this challenge, the 3.0 version of AidData's GCDF dataset includes three new variables (fields) that measure transaction amounts without including any rollover amounts from PBOC swap line borrowings or emergency rescue loans from other creditors (with maturities of one year or less).²¹ These amounts are reported in their original currencies of denomination, nominal USD, and constant 2021 USD via the "Adjusted Amount (Original Currency)," "Adjusted Amount (Constant USD 2021)," and "Adjusted Amount (Nominal USD)" variables.

Users of the 3.0 version of AidData's GCDF dataset can estimate "rollover" loan amounts (in their original currencies of denomination) by subtracting the values in the Adjusted Amount (Original Currency) field from the values in the Amount (Original Currency) field. Nominal USD "rollover" loan amounts can be estimated by subtracting the values in the Adjusted Amount (Nominal USD) field from the values in the Amount (Nominal USD) field. Constant 2021 USD "rollover" loan amounts can be estimated by subtracting the values in the Adjusted Amount (Constant USD 2021) field from the values in the Amount (Constant USD 2021) field.

Additionally, the 3.0 version of the GCDF dataset includes a new variable (the "Rescue" field) that identifies emergency rescue loans from official sector lenders in China. Consistent with the method of measurement that was first introduced in Horn et al. (2023), this variable captures any loan that allows a sovereign debtor to (1) service existing debts, (2) finance general budgetary expenditures and/or (3) shore up foreign reserves. Any loan in the dataset that meets at least one of two criteria is designated as a rescue loan: (1) any loan where the FXSL/BOP marker is checked, and (2) any loan where AidData's Sector Code and Sector Name fields are set to 510 and General Budget Support, respectively. However, during the time period covered by the 3.0 version of the GCDF dataset (commitment years 2000-2021), loans to two sovereign debtors that met the first criterion (PBOC swap line borrowings by Malaysia's central bank and Thailand's central bank) are not classified as rescue lending, as evidence shows these debtors did not utilize their foreign currency swap lines with the PBOC during periods of macroeconomic distress (Horn et al. 2023). The central banks of Malaysia and Thailand likely used the foreign currency swap lines for trade and investment purposes.

2.3 - Categorizing Chinese Lending to Different Types of Borrowers

In the 3.0 version of the GCDF dataset, we have introduced new variables that identify the extent of host government ownership (in the "JV/SPV Host Government Ownership" field) and Chinese government ownership (in the "JV/SPV Chinese Government Ownership" field) of the

²¹ Whenever possible, for each emergency rescue loan (PBOC swap borrowing) of the rollover variety, we calculate a transaction amount that excludes the rollover amount by taking the difference between the level of outstanding debt in the current year and the previous year. This approach is consistent with the one taken by Horn et al. (2023) to derive net (new) PBOC swap borrowings. In cases when this approach cannot be applied but there is evidence of the same lender providing a series of short-term emergency rescue loans (with identical face values and de jure maturities of 1 year or less) to the same borrower that are repaid on their original contractual maturity dates and subsequently reissued in consecutive years, we record the face value of the original loan commitment in the first year but not the face values of the loan commitments in subsequent years.

JV/SPV in order to facilitate more analysis of (actual and potential) loan repayment obligations in cases when the borrower (direct receiving agency) is a JV/SPV. This field is automatically generated at the organization-level with four options:

1. **Majority Host Government-Owned:** The sum of all owners for the JV/SPV where origin = recipient and type = government agency, state-owned company, and/or state-owned bank is more than 50%.
2. **Minority Host Government-Owned:** The sum of all owners for the JV/SPV where origin = recipient and type = government agency, state-owned company, and/or state-owned bank is between .01-49.99%.
3. **No Host Government Ownership:** If the owner organization type for any owners of the SPVs does not involve a host government type (e.g origin = recipient and type = government agency, state-owned company, and/or state-owned bank).
4. **No Ownership Information Available:** If the ownership information = "No Information Available."

At the project/activity-level, one value is shown for this variable. If one JV/SPV is involved, then the category assigned to that JV/SPV is presented. When multiple JV/SPVs are identified as receiving agencies, the ownership category is assigned at the project/activity-level that is highest among the JV/SPVs -- e.g., if one is "Majority Host Government-Owned" and one is "No host government ownership," then the "Majority Host Government-Owned" designation would be assigned for that specific project/activity.

The "Level of Public Liability" field in the 3.0 version of AidData's GCDF dataset captures the extent to which the host government may eventually be liable for debt repayment. It is hierarchically and automatically determined based on the following criteria:

1. The loan record is classified as "Central government debt" if it is an official sector loan to a central government institution in the recipient country, measured by whether there is at least one receiving agency (direct or indirect) from the recipient country that is classified as a government agency;
2. If the loan record does not meet the first (1) criterion, it is classified as "Central government-guaranteed debt" if it is an official sector loan to a state-owned entity (e.g., state-owned enterprise and state-owned bank) or privately-owned entity in the recipient country that benefits from a sovereign (central government) repayment guarantee;
3. If the loan record does not meet the first (1) criterion or the second (2) criterion, it is classified as "Other public sector debt" if (a) it is an official sector loan to a state-owned entity (such as a city/municipal government, a state-owned bank, or a state-owned enterprise) in the recipient country that does not benefit from a sovereign (central government) repayment guarantee; (b) it is an official sector loan to a private entity or state-owned entity in the recipient country that is backed by a repayment guarantee from a state-owned entity other than the central government in the recipient country (such as a city/municipal government, a state-owned bank, or a state-owned enterprise), OR (c) it is an official sector loan to a special purpose vehicle (SPV) or joint venture (JV) that is majority-owned by one or more public sector institutions in the recipient country and that does not benefit from a sovereign (central government) repayment guarantee or a repayment guarantee from a state-owned entity other than the central government in the recipient country (such as a city/municipal government, a state-owned bank, or a state-owned enterprise).

4. If the loan record does not meet the first (1) criterion, the second (2) criterion, or the third (3) criterion, it is classified as "Potential public sector debt" if it is an official sector loan to a special purpose vehicle (SPV) or joint venture (JV) borrower that is minority-owned by one or more public sector institutions in the recipient country and that does not benefit from a sovereign (central government) repayment guarantee or a repayment guarantee from a state-owned entity other than the central government in the recipient country (such as a city/municipal government, a state-owned bank, or a state-owned enterprise).
5. If the loan record does not meet the first (1) criterion, the second (2) criterion, the third (3) criterion, and the fourth (4) criterion, it is classified as "Private debt" if it is an official sector loan to a privately-owned entity that does not benefit from a repayment guarantee from a public sector institution in the recipient country (this includes lending to a private entity, or lending to a Joint Venture or Special Purpose Vehicle with no level of host government ownership (i.e., the "JV/SPV Host Government Ownership" variable is set to "No Host Government Ownership");
6. If the loan record does not meet the first (1) criterion, the second (2) criterion, the third (3) criterion, the fourth (4) criterion, or the fifth (5) criterion, then it is classified as "Unallocable" due to a lack of information.

2.4 - Identifying when China's Borrowers are Experiencing Financial Distress

The 3.0 version of AidData's GCDF dataset includes a "Financial Distress" flag that identifies whether, for a given loan, there is an indication that the borrower had difficulty repaying the loan or was financially distressed during the loan's originally scheduled repayment period (according to the project/transaction life-cycle information that is identified in the description field). This field is set to "Yes" for loans that showed signs of distress (within their originally scheduled repayment periods). Examples of distress include the borrower accruing principal or interest arrears, defaulting on its repayment obligations, experiencing bankruptcy, or seeking/securing a rescheduling of the loan's repayment terms. Other examples include Sinasure making indemnity payments under the loan's insurance policy or lower-than-expected levels of revenue generation from the project/activity funded by the loan.²²

²² For some types of analysis in the *Belt and Road Reboot* report, Parks et al. (2023) modifies the financial distress measure to more clearly differentiate between repayment risks and repayment risk mitigation efforts. Instead of using all loan records where the "Financial Distress" variable is set to "Yes," they exclude all observations for which the only source of evidence of the borrower having difficulty making repayments or experiencing financial distress is an attempted or actual debt rescheduling.

2.5 - Chinese ODA and OOF Agencies and Instruments

2.5.1 - Sources of Chinese ODA and OOF

2.5.1.1 - Overview

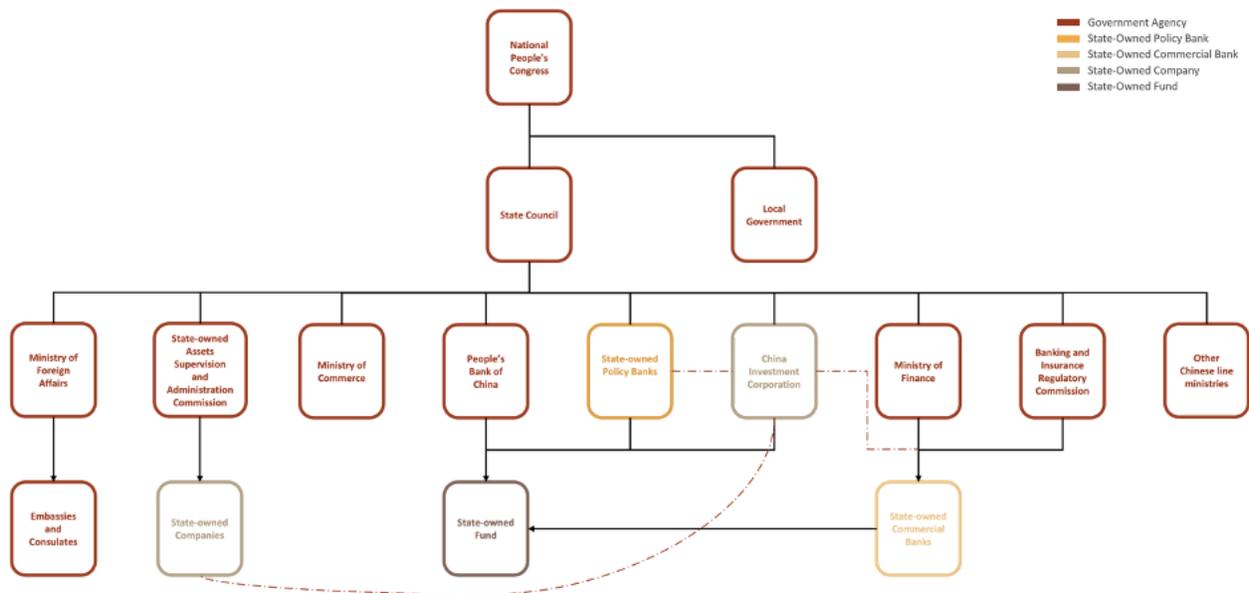
The OECD defines “Official Financing” as “transactions undertaken by the official sector (i.e. Government) at their own risk and responsibility, regardless of the source of funds (taxation of or borrowing from the private sector). Official agencies include federal, state and local departments and agencies.”²³ The OECD also considers autonomous and semi-autonomous state-owned entities—like KfW, the German state-owned investment and development bank—to be official sector institutions. Therefore, the 3.0 version of the TUFF methodology seeks to capture ODA and OOF from all Chinese government and state-owned entities, including central government agencies (like the Ministry of Commerce, the Ministry of Foreign Affairs, and the Ministry of Agriculture), regional and local government agencies (like Chongqing Municipal Health Commission and Tianjin Municipal Government), state-owned enterprises (like CNPC, CMEC, CATIC, and CRBC), state-owned policy banks (like China Development Bank and China Eximbank), state-owned commercial banks (like ICBC, BoC, and CCB),²⁴ and state-owned funds (like the Silk Road Fund).²⁵ The specific agency or set of agencies that provide financial or in-kind support is captured in the “Funding Agency” field. Each funding agency is also assigned to one of six “Funding Agency Type” categories: Government Agency, State-Owned Policy Bank, State-Owned Commercial Bank, State-Owned Bank, State-Owned Company, and State-Owned Fund.

²³ See OECD factsheet at https://www.sheffield.ac.uk/polopoly_fs/1.659262!/file/Is_it_ODA.pdf.

²⁴ AidData classifies the following institutions as Chinese state-owned commercial banks: China Construction Bank Corporation (CCB), Industrial and Commercial Bank of China (ICBC), Bank of China (BOC), China Bank of Communications (BoCom or BoComm), Agricultural Bank of China, Postal Savings Bank of China (PSBC), China Bohai Bank, Bank of Shanghai, China CITIC Bank, China Merchants Bank, Huaxia Bank Co., Ltd., and China Everbright Bank Co., Ltd. This group of banks includes so-called shareholding commercial banks that are subsidiaries of state-owned enterprises (e.g., China CITIC Bank) and city commercial banks (i.e., Bank of Shanghai).

²⁵ We consider institutions to be “state-owned” if the government has the largest ownership stake compared to all other owners. Due to a lack of agreement about whether Huawei Technologies Co., Ltd. (“Huawei”) should be treated as an official sector institution, we do not include projects financed with aid or debt from Huawei or any of its subsidiaries in the 3.0 version of AidData’s Chinese Global Development Finance Dataset. AidData published a separate Global Huawei Finance Dataset in September 2021 that captures 153 Huawei-financed projects worth \$1.4 billion in 64 countries from commitment years 2000-2017.

Figure 1: Chinese Official Sector Agencies



2.5.1.2 - China's Ministry of Commerce (MOFCOM)

MOFCOM is the lead administrator of the country's interest-free (or "zero-interest") loan and grant program for developing countries.²⁶ While there are many different Chinese government institutions that provide small-scale grants and donations, MOFCOM is the primary Chinese government institution responsible for providing large-scale, RMB-denominated grants to host government institutions that support the construction, maintenance, upgrading, or expansion of infrastructure and other physical assets (like schools, hospitals, convention centers, and government buildings).²⁷

As part of its outreach to other countries, MOFCOM officials often meet with government counterparts in developing countries and sign Economic and Technical Cooperation Agreements (ETCAs, in Chinese: 经济技术合作协议). When MOFCOM signs an ETCa with a foreign government, it is issuing an official grant or interest-free loan *commitment*. The interest-free loan commitments that are issued via ETCAs are typically denominated in RMB with the following borrowing terms: 20 year maturities, 10 year grace periods, and 0% interest

²⁶ In August 2021, China International Development Agency (CIDCA), MOFCOM, and the Ministry of Foreign Affairs (MOFA) reviewed and approved a new set of foreign aid administration measures. These measures specify that, as of October 1, 2021, CIDCA will be responsible for all planning, policymaking, regulatory, and supervisory functions that support the country's foreign aid program. MOFCOM will continue to implement foreign aid projects, among other line ministries (including MOFA). See http://www.cidca.gov.cn/2021-08/31/c_1211351312.htm

²⁷ An illustrative MOFCOM grant agreement can be accessed here: <https://www.dropbox.com/s/fv965ko40q88pp7/01.12.2020.%20ENG.pdf?dl=0>. MOFCOM grants and interest-free loans usually support projects with development intent, although there are some cases when it finances projects with representational, commercial, or military intent.

rates.²⁸ Counterpart funding is not required, and when borrowers have difficulty repaying their debts to the Chinese government, these are often the first loans to be forgiven or rescheduled (Morris et al. 2020).

ETCAs are often signed with recipient governments for unspecified purposes (or generically worded purposes, such as economic development or disaster relief and reconstruction). Then, a bank account is set up between a Chinese state-owned bank (usually China Development Bank or Bank of China) and the recipient country's central bank or finance ministry to facilitate the transfer of funds. In many cases, a bank/loan agreement and/or "letters of exchange" are subsequently signed (sometimes multiple years after the original ETCA was signed). However, not every ETCA is implemented in this way. Sometimes, the ETCA, the bank account agreement, and letters of exchange are simultaneously approved. The vast majority of Chinese government grants and interest-free loans are funded through ETCAs, so AidData coders are informed that if a project is financed by a Chinese government grant or interest-free loan, there is a high likelihood that the project was funded through an ETCA (and supplemental online searches will most likely be necessary to determine if that project was funded through an ETCA and the specific date when the ETCA was signed).²⁹

Although ETCAs represent official financial commitments, AidData coders are instructed to treat them as "umbrella" agreements—meaning that ETCAs are effectively framework agreements that govern follow-on grants and zero-interest loans for specific projects, but those projects are not specified at the time of ETCA signing. Also, recipient governments often sign multiple ETCAs over time, which means that one of the most challenging tasks associated with ETCAs is accurately tracking all of the subsidiary projects that they have funded.³⁰ AidData coders are instructed to track down the exact ETCA that is financing a project if it is reported that the project was financed through an ETCA.

AidData has several coding guidelines that are specific to ETCAs:

- The funding agency for an ETCA that has committed a grant or interest-free loan should always be coded as "China Ministry of Commerce." When a funding agency is not explicitly identified in the source materials, AidData coders are instructed to assign "China Ministry of Commerce" as the funding agency if the following criteria are met: (1) The grant or zero-interest loan is denominated in RMB, (2) the receiving agency is a government institution from the developing country, (3) the project has development intent, (4) the project involves the provision of large-scale funding for infrastructure or a physical asset. Chinese government grant- and loan-financed project activities/events

²⁸ An illustrative MOFCOM loan agreement can be accessed here:

https://www.documentcloud.org/documents/20485643-cmr_2011_518. Based on the OECD-DAC concessionality calculator, these loans usually have a grant element of approximately 75% (Malik 2021).

²⁹ In many cases, MOFCOM's support for a specific project that is financed with the grant or loan proceeds from previously signed ETCAs will be codified in "letters of exchange," an "exchange of notes," or an "implementation agreement." For illustrative financing agreements that followed the signing of ETCAs, see <https://www.dropbox.com/s/fv965ko40q88pp7/01.12.2020.%20ENG.pdf?dl=0> and

<https://www.dropbox.com/s/t86s480xiqyvzih/Supplemental%20Implementation%20Agreement%20for%20China%20Aided%20Ministry%20of%20Foreign%20Affairs%20Construction%20Project.pdf?dl=0>

³⁰ This is especially true because (a) ETCAs and subsidiary agreements are often agreed upon in different years, and (b) it is not always immediately obvious that a project was funded by a particular ETCA (which itself may have been signed years ago).

that involve a MOFCOM representative are treated by AidData coders as evidence that MOFCOM is the funding agency. Additionally, when the underlying source materials used to construct project descriptions refer to MOFCOM as issuing project design or implementation contracts to Chinese firms or MOFCOM deploying personnel to conduct on-site project inspections or post-project evaluations, AidData coders are instructed to treat this as a evidence that MOFCOM is the funding agency.

- The ETCA should be explicitly identified by its full name in both the title and the project description. An ETCA should not be referred to as just “an agreement.” AidData coders are instructed to differentiate ETCA’s by specifying the year of signing of an individual ETCA in the project title. They are also instructed to specify the exact date of the ETCA signing in the description field if that information is available (as sometimes multiple ETCA’s are signed in a given year).
- The commitment date of an ETCA should be the date on which the ETCA was signed and countersigned, and not the date on which the ETCA was ratified by the recipient government’s legislature.
- When an ETCA is issued for an unspecified purpose at the time of its signing, AidData coders are instructed to adhere to the following guidelines:
 - It should always be coded as an umbrella record.
 - The status of the ETCA should be coded as an official commitment and not as a pledge.
 - If it is found that the funds committed through the ETCA supported multiple, subsidiary projects, those projects should be created as separate records, and linked back to the ETCA umbrella record.
 - If it is found that the funds committed through the ETCA supported a single project, then the ETCA record should not be marked as an umbrella record, and all of the other project fields should be populated/updated.
- When specific projects are identified at the time of the ETCA signing, AidData coders are instructed to adhere to the following guidelines:
 - If multiple projects are specified, then AidData coders are instructed to create one umbrella record for the ETCA, and one record for each of the specified projects. Umbrella records should be status-coded as official commitments.
 - If there is only one specific project receiving the full amount of funding that was committed through the ETCA, then AidData coders are instructed to create only one record (non-umbrella), with a description that specifies that the financial commitment for the project came from an ETCA.

2.5.1.3 - Export-Import Bank of China

The Export-Import Bank of China (or “China Eximbank”) is one of two state-owned policy banks in China that provide overseas financing. It is designated as China’s official export credit agency and recognized as an official bilateral creditor. China Eximbank is also unique in that it is responsible for the implementation of the “two preferential loans” program, which consists of Government Concessional Loans (GCLs) and the Preferential Buyer’s Credits (PBCs). These are sometimes referred to in Chinese as 两优贷款. In addition to the loans provided through this program, AidData captures Buyer’s Credit Loans (BCLs), Overseas Investment Loans, and Overseas Project Contracting Loans from China Eximbank. These lending instruments are described in greater detail below with the specific guidelines that AidData coders use to classify projects that are financed with these instruments.

Government Concessional Loans (GCLs): The GCL (in Chinese: 优惠贷款) is a loan that China Eximbank issues to foreign governments maintaining diplomatic ties with China.³¹ These RMB-denominated loans are granted on below-market terms (typically 20-year maturities, 5-year grace periods, and 2% interest rates).³² China's Ministry of Finance calculates the difference between the interest rates attached to these loans and the central bank's benchmark rate and reimburses China Eximbank accordingly.³³ GCL proceeds can be used by borrowing institutions to finance up to 100% of the total cost of a commercial contract with a Chinese supplier. China Eximbank does not expect the borrowing institution to provide any "counterpart funding." The Chinese government characterizes the GCL as a form of ODA. Similar to preferential buyer's credits, GCLs will usually be explicitly identified as such in official sources.³⁴

AidData has several coding guidelines that are specific to GCLs:

- **Currency:** The currency of denomination should be represented in RMB, unless the only information about the transaction amount is denominated in USD (or another currency).
- **Flow Type:** All GCLs should be coded as loans.
- **GCL Flag:** With the new loan categorization scheme introduced in TUFF 3.0, all GCLs are flagged as such in the corresponding "GCL" field.
- **Intent:** AidData coders are instructed to categorize the intent variable according to the primary purpose of the project being financed with a GCL. Even though the Chinese government refers to GCLs as foreign aid or ODA, GCL-financed projects may be coded as having development, commercial, representational, military, or mixed intent. In cases where GCL-financed projects are coded as having commercial, representational, military, or mixed intent, they are not given a flow class designation of ODA-like.
- **Title and Description:** If a project is financed with a GCL, AidData coders are instructed to make this clear in the project title and description. That is to say, if a GCL agreement was signed, it should be described as such and not simply referred to as a "loan agreement."

Preferential Buyer's Credit (PBC) and Nonpreferential Buyer's Credit Loan (BCL) Program: PBCs (In Chinese: 优惠出口买方信贷) are USD-denominated loans that are granted to foreign government institutions.³⁵ When China Eximbank issues a PBC, it provides a loan to a foreign government institution (in a country that maintains diplomatic ties with China) and that government institution uses the loan proceeds to buy goods or services from a Chinese supplier. The borrowing terms of these loans vary, but they are offered with fixed rather than floating interest rates that are usually more generous than prevailing market rates.³⁶ China Eximbank has a policy of allowing borrowers to use PBC proceeds to finance 85% of the total cost of a commercial contract (often an Engineering, Procurement, and Construction contract)

³¹ An illustrative GCL can be found accessed here:

https://www.documentcloud.org/documents/20485597-cmr_2011_172

³² See Morris et al. (2020) and Export-Import Bank of China (n.d.).

³³ See

<https://www.dropbox.com/s/ctvqu1jmopny6vw/392125599-Key-Points-of-Evaluation-pptx.pdf?dl=0>

³⁴ For example, the loan agreement ID number may contain the abbreviation "GCL" (referring to Government Concessional Loan)—e.g., CHINA EXIMBANK GCL NO.1 (2011) TOTAL NO. (351).

³⁵ An illustrative PBC agreement can be found accessed here:

https://www.documentcloud.org/documents/20488747-phl_2018_422

³⁶ See Morris et al. (2020) and Export-Import Bank of China (n.d.).

with a Chinese supplier. China Eximbank usually requires that the remaining 15% of the commercial contract cost be financed with “counterpart funding” from the borrowing institution. There are cases when China Eximbank deviates from this norm (e.g., by allowing a borrower to use up to 95% of the proceeds of a PBC to finance a commercial contract), but most PBCs adhere to this policy. Similar to GCLs, PBCs will usually be explicitly identified as such in official sources.³⁷

China Eximbank also has a (non-preferential) buyer’s credit loan (BCL) program that shares many of the same features as the PBC program.³⁸ However, BCLs can be denominated in USD or EUR; they are usually priced at a floating market interest rate (LIBOR or EURIBOR) plus a margin; they often have shorter maturity lengths and grace periods than PBCs; and the borrowers need not be government institutions.³⁹

AidData has several coding guidelines that are specific to PBCs and BCLs:

- **Transaction amount:** If the precise face value of the PBC or BCL is unknown but the total cost of the commercial (EPC) contract is known, AidData coders are instructed to assume that the face value of the PBC/BCL is equivalent to 85% of the total EPC cost. AidData coders are also instructed to note any such assumptions were made in the “Description” field or “Staff Comments” field.
- **Flow Type:** All PBCs and BCLs should be coded as loans.
- **Export Buyer’s Credit Flag:** PBCs and BCLs are both flagged as export buyer’s credit in the corresponding field.
- **PBC Flag:** With the new loan categorization scheme introduced in TUFF 3.0, all preferential buyer’s credit records are flagged as such in the corresponding “PBC” field. For all PBC records, the “Export Buyer’s Credit” field will automatically be set to “Yes.”
- **Currency:** Eximbank PBCs are exclusively denominated in USD, so AidData coders are instructed to populate the amount field and the currency field accordingly.
- **Intent:** PBCs and BCLs are trade promotion instruments. As such, projects financed with PBCs and BCLs should never be given a development intent designation. The possible intent values for PBCs and BCLs (as well as export seller’s credits) are mixed or commercial. If a PBC/BCL is sufficiently concessional and it is financing a project that seeks to improve economic development or welfare in the recipient country, AidData coders are instructed to code it as having mixed intent (i.e., both commercial intent and development intent). However, in cases when a PBC or BCL supports a project that *only* has commercial intent (for example, a loan to help a shipping company acquire vessels that will allow it to move ocean containers from country to country, a loan to help a company finance its general operations, or a loan to help a company service its existing debts), AidData coders are instructed to designate the project as having commercial intent.

³⁷ For example, a PBC agreement ID number may contain the abbreviation “PBC” (referring to Preferential Buyer’s Credit)—e.g., CHINA EXIMBANK PBC NO. (2016) 33 TOTAL NO. (421). Buyer’s credit loans are usually referred to with the abbreviation “BCL” in official sources. However, among buyer’s credit loans that were issued by China Eximbank in the early 2000s, it is not uncommon to see the abbreviation “BLA” in official sources.

³⁸ See <https://www.dropbox.com/s/mlg5lz5fqnh8aef/China%20Eximbank%20Pitch%20Deck.pdf?dl=0>

³⁹ An illustrative BCL agreement can be found accessed here:
https://www.documentcloud.org/documents/20488172-ecu_2010_444

- **Flow Class:** All export credits, PBCs and BCLs issued by China Eximbank, should be assigned to the flow class category of OOF-like.
- **Title and Description:** If a project is financed with a PBC or BCL, AidData coders are instructed to make this clear in the project title and description. That is to say, if a PBC or BCL agreement was signed, it should be described as such and not simply referred to as a “loan agreement” or an “export credit agreement.”

Overseas Investment Loans Program: Overseas Investment Loans (In Chinese: 境外投资贷款) are RMB and foreign-currency denominated loans issued by China Eximbank to support Chinese enterprises’ overseas investments.⁴⁰ The proceeds of these loans can be used to fund acquisitions, fixed asset investments, and overseas equity investments approved by Chinese authorities.⁴¹ These loans can also be used for working capital needs and be used to cover fees associated with overseas investments. The face value of an overseas investment loan can cover up to 70% of total contract value.

AidData has several coding guidelines that are specific to Overseas Investment Loans:

- **Flow Type:** The flow type field should be coded based on the nature of financing (debt), not how loan proceeds are used (equity/investment). As such, AidData coders are instructed to assign these loans to the flow type category of “loan” (rather than “FDI”). These loans enable equity investments (FDI), but they are not themselves FDI.
- **M&A Flag:** All Overseas Investment Loans should be flagged as Mergers and Acquisitions (M&A) Loans in the corresponding “M&A” field.
- **Intent:** The intent of Overseas Investment Loans should always be coded commercial since they enable commercial investments.
- **Title and Description:** If a project is financed with an Overseas Investment Loan, AidData coders are instructed to make this clear in the project title and description. That is to say, if an Overseas Investment Loan agreement was signed, it should be described as such and not simply referred to as a “loan agreement.”
- **Flow Class:** All Overseas Investment Loans should be assigned to the flow class category of OOF-like.

Overseas Project Contracting Loans (In Chinese: 对外承包工程贷款): These loans are provided by China Eximbank to help Chinese companies finance overseas project contracts.⁴² They can be denominated in USD or RMB. Per China Eximbank policy, the contract cost that is financed by the loan should not be lower than 1 million USD. Goods and services exported from China under the contract should not be lower than 15% of contract cost.

AidData has several coding guidelines that are specific to Overseas Project Contracting Loans:

- **Flow Type:** The flow type field should always be set to loan.
- **Overseas Project Contracting Loan Flag:** With the new loan categorization scheme introduced in the 3.0 version of the TUFF methodology, all Overseas Project Contracting Loans are flagged as such in the corresponding field.
- **Intent:** The intent of Overseas Project Contracting Loans should be coded as mixed when they seek to facilitate the export of Chinese goods and services and promote

⁴⁰ See the following website for more information about Overseas Investment Loans:

http://english.eximbank.gov.cn/Business/CreditB/SupportingCrossBI/201810/t20181016_6967.html

⁴¹ See <https://www.dropbox.com/s/r5xhu7zdzqiebbn3/2.EXIM-Bank.pptx?dl=0>

⁴² See <https://www.dropbox.com/s/r5xhu7zdzqiebbn3/2.EXIM-Bank.pptx?dl=0>

economic development or welfare in the recipient country through the project that is being financed. The intent of Overseas Project Contracting loans should be coded as commercial if the loans only seek to facilitate the export of Chinese goods and services.

- **Title and Description:** If a project is financed with an Overseas Project Contracting Loan, AidData coders are instructed to make this clear in the title field and description field. That is to say, if an Overseas Project Contracting Loan agreement was signed, it should be described as such and not simply referred to as a “loan agreement.”
- **Flow Class:** All Overseas Project Contracting Loans should be assigned to the flow class category of OOF-like.

In addition to the types of loans that we have described, China Eximbank provides a range of other loans for various purposes (some concessional, some not). These include export seller’s credits, which are loans to a Chinese company that the Chinese company may on-lend to a buyer/borrower who wishes to buy goods or services from that company. These types of loans from China Eximbank can be denominated in local or foreign currency.⁴³

2.5.1.4 - China Development Bank (CDB)

CDB is one of two state-owned policy banks in China that provides overseas financing. It has a wide array of lending instruments, including but not limited to term loans, bridge loans, revolving credit facilities, working capital loans, commodity-backed loans, club loans, syndicated loans, and buyer’s credits. Its RMB-denominated and foreign-currency denominated loans are generally provided on less concessional terms than China Eximbank loans because, unlike China Eximbank, CDB must maintain its own balance sheets and lend without receiving official subsidies from the state.⁴⁴ Typically, the base interest rate on a CDB loan is tethered to the (floating) London Interbank Offered Rate (LIBOR) or Euro Interbank Offered Rate (Euribor), with an additional margin incorporated to account for borrower-specific risk and repayment capacity (Morris et al. 2020). While “all-in” interest rates on CDB loans usually fall somewhere in the 4.5% to 6% range, maturities and grace periods can vary widely. Loans from CDB are granted to both government agencies and companies. Debt collateralization is often required by the bank as a way to limit repayment risk. Whereas 29% of China Eximbank’s overseas lending portfolio is collateralized, 70% of CDB’s overseas lending portfolio is collateralized (Malik et al. 2021). China Development Bank also engages in inter-bank lending far more frequently than China Eximbank.⁴⁵

CDB is characterized by the Chinese government as a bank that follows commercial lending practices. However, using the OECD’s grant element calculator, AidData has found that some of its loans do qualify as concessional loans.⁴⁶ CDB’s lending portfolio has also become significantly concessional over time (see Malik et al. 2021).

AidData has several coding guidelines that are specific to China Development Bank loans:

⁴³ This means that export seller’s credits may be denominated in RMB. See Section 2.5.3.3 for more guidance regarding how export seller’s credits are coded.

⁴⁴ An illustrative CDB loan agreement can be found at https://www.documentcloud.org/documents/20488181-ecu_2010_462_1_of_2

⁴⁵ Inter-bank lending involves one bank providing a loan to another, typically with higher interest rates and short maturities.

⁴⁶ See Section 2.1 for a detailed description on how AidData determines loan concessionality.

- Intent: AidData codes the intent of all loans according to the purpose of the project that is being financed. Even though the Chinese government claims that CDB follows commercial lending practices, loans from CDB can be coded as having development, commercial, representational, military, or mixed intent, depending on the primary purpose of the project that is being financed. In cases where loans from CDB are identified as having development intent and a grant element which meets the concessionality threshold described in the OECD's guidelines, AidData coders are instructed to make a flow class designation of ODA-like.
- ETCAs: As the bank accounts that are used to disburse ETCAs are often opened with CDB, there is a risk of CDB being identified as the funding agency responsible for providing grants or interest-free loans through ETCAs. This is incorrect. AidData coders are therefore instructed to consistently identify MOFCOM as the funding agency responsible for providing grants or interest-free loans through ETCAs.

2.5.1.5 - State-Owned Commercial Banks

AidData defines Chinese state-owned commercial banks as Chinese banks that are majority-owned by the Chinese government or one of its subsidiaries. The three largest state-owned commercial banks are the Industrial and Commercial Bank of China (ICBC), the Bank of China (BOC), and the China Construction Bank Corporation (CCB). There are some banks that are not officially designated as Chinese state-owned commercial banks but that are consistent with AidData's definition.⁴⁷ AidData classifies the following institutions as Chinese state-owned commercial banks: China Construction Bank Corporation (CCB), Industrial and Commercial Bank of China (ICBC), Bank of China (BOC), China Bank of Communications (BoCom or BoComm), Agricultural Bank of China, Postal Savings Bank of China (PSBC), China Bohai Bank, Bank of Shanghai, China CITIC Bank, China Merchants Bank, Huaxia Bank Co., Ltd., and China Everbright Bank Co., Ltd. This group of banks includes so-called shareholding commercial banks that are subsidiaries of state-owned enterprises (e.g., China CITIC Bank) and city commercial banks (i.e., Bank of Shanghai).

Loans from Chinese state-owned commercial banks include term loans, bridge loans, revolving credit facilities, working capital loans, commodity-backed loans, club loans, syndicated loans, and buyer's credits.⁴⁸ They are typically denominated in USD or EUR. They are generally provided on less concessional terms than China Eximbank loans because, unlike China Eximbank, these institutions must maintain their own balance sheets and lend without receiving official subsidies from the state. The base interest rate on a loan from a Chinese state-owned commercial bank is usually tethered to the (floating) London Interbank Offered Rate (LIBOR) or Euro Interbank Offered Rate (Euribor), with an additional margin incorporated to account for borrower-specific risk and repayment capacity. Maturities and grace periods vary widely. These loans are granted to both government agencies and companies.⁴⁹

⁴⁷ For example, China Merchants Bank is officially classified as a joint-stock commercial bank, but its parent company, China Merchants Group, is under the direct supervision of State-owned Assets Supervision and Administration Commission of the State Council (SASAC) and is classified as a state-owned enterprise. As such, China Merchants Bank fits AidData's definition of a state-owned enterprise, but has been coded as a state-owned commercial bank for the purposes of analysis.

⁴⁸ See, for example, <https://www.dropbox.com/s/ekijqc9ubp1bdb7/ICBC%20Pitch%20Deck.pdf?dl=0>

⁴⁹ See Morris et al. (2020).

2.5.1.6 - People's Bank of China (PBOC)

In recent years, China has ramped down its lending for infrastructure projects and ramped up emergency rescue lending operations in LICs and MICs (Horn et al. 2023). The People's Bank of China (PBOC)—China's central bank—is by far the most important financier of international emergency rescue lending operations, which it provides in the form of drawdowns under foreign currency swap line (FXSL) agreements.⁵⁰

An FXSL agreement—also known as a bilateral currency swap (BCS) agreement or a central bank liquidity swap agreement—is an agreement between the central banks of two countries to exchange cash flows in different currencies at predetermined rates over a specified period of time. Central banks participate in these agreements to facilitate bilateral trade settlements using their national currencies (rather than relying on a third-party currency such as the U.S. dollar), manage demands from their local banks, and provide liquidity support to financial markets. The party that draws down on the swap line becomes the borrower and the other party becomes lender. During the term of the swap, the party that draws down on the swap line makes either fixed or floating interest payments on the principal amount. If both parties draw down on the swap line, then both parties exchange fixed or floating interest payments on the principal amounts.⁵¹

AidData has several coding guidelines that are specific to FXSL agreements:

- **Drawdowns under FXSL Agreements:** AidData should not capture the signing of FXSL agreements as records in the dataset. Rather, it should only capture drawdowns (borrowings) under FXSL agreements.
- **Funding Agency:** An FXSL agreement is by definition an agreement between the central banks of two countries. As such, PBOC should be the funding agency for all FXSL agreements.
- **Receiving Agency:** The receiving agency of all borrowings via FXSL agreements should be the central bank of the recipient country.
- **Flow Type:** The flow type field should be set to loan.
- **FXSL/BOP Flag:** With the new loan categorization scheme introduced in the 3.0 version of the TUFF methodology, all drawdowns under FXSL agreements are flagged as such in the corresponding "FXSL/BOP" field.
- **Collateralization:** AidData should treat drawdowns under FXSL agreements with the PBOC as collateralized loans because, in a FXSL arrangement, the currency of the borrower is held as collateral while the lender receives interest on the amount drawn down by the borrower until repayment is made. The "Collateralized" field should be set to "Yes" for all such records.
- **Collateral Provider:** The receiving agency should be coded as the "Collateral Provider".
- **Collateral:** The source of collateral should be recorded as the receiving agency's deposit in a bank account accessible to PBOC (e.g., "SBE deposit of Pakistani rupees equivalent to RMB 5 billion in a bank account accessible to the PBOC").

⁵⁰ In 2013, the PBOC and SAFE (its subsidiary) were responsible for only 6% of China's official sector lending commitments to LICs and MICs. By 2021, that figure reached 54% (Parks et al. 2023).

⁵¹ More detailed information about currency swaps with the PBOC can be found at <https://www.imf.org/-/media/Files/Publications/WP/2021/English/wpiea2021210-print-pdf.ashx> and <https://thechinaguys.com/the-rise-of-the-renminbi-the-reality-of-bilateral-swap-agreements/> and <https://www.imf.org/external/pubs/ft/bop/2017/pdf/17-25a.pdf>.

- **Intent:** The intent for all drawdowns under FXSL agreements should be coded as “Mixed.”
- **Flow Class:** The flow class for all drawdowns under FXSL agreements should be coded as “OOF-like,” because the intent is “Mixed” and the loans are non-concessional (with short maturities).
- **Sector:** The flow class for all drawdowns under FXSL agreements should be coded as “Banking and Financial Services.”
- **Title:** AidData coders are instructed to make it clear in the title field if the record captures a drawdown under an FXSL agreement. The title should adhere to a format in line with the following example: “SBP makes RMB 5 billion drawdown under currency swap agreement with PBOC in Fiscal Year 2013.”

In addition to the described lending under FXSL arrangements, PBOC has established funds through intergovernmental organizations to provide lending for projects/activities, such as the China Co-Financing Fund for Latin America and the Caribbean (CHC) which is administered by the Inter-American Development Bank.

AidData has several coding guidelines that are specific to PBOC funds administered by intergovernmental organizations:

- **Funding Agency:** The funding agency for the record should be the People’s Bank of China.
- **Co-Financing Agencies:** If the fund supports co-financed projects/activities, then the intergovernmental organization which administers the fund and/or any other organizations providing financing in support of the project/activity should be included in the “Co-Financing Agencies” field.
- **Implementing Agencies:** The fund (e.g. CHC) should be included in the “Implementing Agencies” field with the Organization Type set to “Intergovernmental Organization,” along with any other organizations involved in the implementation of the project/activity.
- **Flow Type:** The flow type field should be set to loan because PBOC exclusively supports lending activities.
- **Umbrella Record:** Coders should create an umbrella record which captures the total allocation made by PBOC to the fund. The specific projects/activities financed through the fund should be captured as separate non-umbrella records.
- **Parent ID:** Coders should create a Parent ID for the fund, and all projects/activities supported by the fund should be assigned to this Parent ID.⁵²
- **Title and Description:** If a project/activity is financed through one of these funds, AidData coders are instructed to refer to the name of the fund (or an abbreviated version thereof) in brackets at the start of the title (e.g. “[China Co-Financing Fund]”).

2.5.2 - Recipients of Chinese ODA and OOF

In tracking Chinese ODA and OOF, we seek to capture the provision of funding and in-kind transfers of goods and services from official sector institutions in China to any entity overseas (excluding transfers for investment purposes). Therefore, consistent with OECD-DAC guidelines, we seek to capture Chinese ODA and OOF flows to public sector and private

⁵² For example, all projects/activities financed from the China Co-Financing Fund for Latin America and the Caribbean are assigned to Parent ID 8.

sector agencies in recipient countries including but not limited to government agencies, state-owned banks, state-owned companies, private companies, and special purpose vehicles (including joint ventures). To capture the specific entities responsible for receiving and managing these incoming financial and in-kind transfers, the 3.0 dataset includes a “Direct Receiving Agencies” and “Indirect Receiving Agencies” fields. The “Direct Receiving Agencies” field provides the name of the agency designated to receive and manage the financial or in-kind transfer. For projects/activities that are financed with loans, the receiving agency is the entity responsible for debt repayment. If a receiving agency (borrower) on-lends the proceeds of a loan to an additional entity or entities, then the borrower is captured in the “Direct Receiving Agencies” field and the additional entity or entities which receive loans from the borrower is captured in the “Indirect Receiving Agencies” field. If more than one entity is responsible for receiving and managing incoming grant funds or an in-kind transfer, all of these entities are identified in the “Direct Receiving Agencies” field (as pipe-delimited entries).

Each receiving agency is also assigned to one of ten organization type categories in the “Direct Receiving Agencies Type” and “Indirect Receiving Agencies Type” fields: Government Agency, State-Owned Bank, State-Owned Company, State-Owned Fund, Intergovernmental Organization, Special Purpose Vehicle/Joint Venture, Private Sector, NGO/CSO/Foundation, Miscellaneous, or Unspecified. The organization type is preceded by one of three descriptors regarding the country of origin: Chinese, Recipient, or Other (e.g. Recipient Government Agency).

AidData codes the recipient country based on where the project/activity took place (or is scheduled to take place) and not where the borrowing institution is legally incorporated/domiciled. However, in cases where the project/activity is not taking place in a particular jurisdiction (e.g. when a shipping vessel or an airplane is being purchased to facilitate trade/travel between multiple countries), we code the recipient country by identifying the owner of the borrowing institution (receiving agency) and its country of origin. If the borrowing institution is wholly-owned or majority-owned by an entity in Country A, we code Country A as the recipient country. If the borrowing institution is legally incorporated in Country B and is a publicly traded company (not majority-owned by a company or resident from one country), we code Country B as the recipient. AidData Record ID #62763 is one example of this type of record.

2.5.3 - Chinese ODA and OOF Financing Mechanisms

2.5.3.1 - AidData’s “Flow Type” Categorization

In an effort to capture all Chinese ODA and OOF, we record a wide range of projects and activities that benefit from transfers (“flows”) of goods, services, or funding from official sector institutions in China. These flows include loans, grants, technical assistance, scholarships or training provided in China to citizens of other countries, debt forgiveness, and debt rescheduling. In the 3.0 dataset, these types of activities and flows are captured as a record’s “Flow Type.” Below is an overview of each flow type category:

- **Grant:** The donation of money or an in-kind donation of goods from an official sector institution in China. Chinese grant assistance commonly includes donations of supplies or equipment, the provision of humanitarian aid or disaster relief, the establishment of a

Confucius Institute within the host country, or financing for the construction of a government building, school, hospital, or sports stadium.

- **Technical Assistance:** The formal provision of skills training, instruction, consulting services, and information sharing by official sector entities and experts from China.
- **Scholarships:** Funding from an official sector institution in China that allows a citizen from the host country to study at a Chinese university or other educational institution.
- **Training in Donor Country:** Training programs and activities that are sponsored by an official sector institution in China held for host country citizens in China. Training provided by Chinese entities outside of China is classified as technical assistance.
- **Loan:** A financial transfer from an official sector institution in China to an overseas entity under certain terms and conditions of repayment. See Section 2.5.3.3 for a detailed description of the types of loans included in the 3.0 dataset.
- **Debt Forgiveness:** The total or partial cancellation of debt owed by a borrowing institution in the host country to a Chinese government or state-owned entity.
- **Debt Rescheduling:** Changes to the terms of a loan issued by an official sector institution in China, such as interest rate, grace period, or maturity date. This is usually meant to ease the repayment burden of a borrower institution in the host country.

To facilitate the aggregation of flow types based on certain criteria, we have introduced a “Simplified Flow Type” field in the 3.0 version of the dataset. The table below displays a side-by-side comparison of the two flow type fields.

Flow Type	Simplified Flow Type
Free-standing Technical Assistance	Grant
Grant	
Scholarships/Training	
Debt Forgiveness	
Loan	Loan
Debt Rescheduling	Debt Rescheduling
Vague	Vague

2.5.3.2 - Financing Agreements

Official sector institutions in China have developed several different types of “standard” financing agreements. These agreement types are described in greater detail below, with coding guidance for each type of agreement.

Framework Agreement (In Chinese: 框架协议): This is a non-binding agreement that memorializes the intent of the lender and the prospective borrowing institution. These agreements typically precede the signing of an actual loan agreement and sometimes identify the expected face value of the loan and its borrowing terms. Framework agreements often correspond to a single project that will be financed with a single loan, but they can also serve as umbrella agreements through which multiple projects will be financed. Under a framework agreement, the borrowing institution (receiving agency) typically must request and secure approval for a specific loan/project from the official sector financing institution in China before the transfer of funds can occur.⁵³

AidData coders are instructed to follow several coding guidelines that are specific to framework agreements (in 3 different scenarios):

- *Scenario 1: Only a framework agreement is signed.* If there is no evidence of a subsequent financing agreement being signed or a subsidiary project being approved under the framework agreement, the framework agreement should be coded as an umbrella project. The financing amount that is referenced in the framework agreement should be coded as the transaction amount. If the financing amount is unknown, the transaction amount should be set to missing. If only a framework agreement was signed, the status field should be coded as Pipeline: Pledge. If a framework agreement was signed for a single project, it should not be coded as an umbrella project.
- *Scenario 2: A single financing agreement for the full financial amount referenced in the framework agreement is signed.* The status field should be coded as Pipeline: Commitment. The commitment year field should be set to the year in which the financing agreement was signed and not the year in which the framework agreement was signed.
- *Scenario 3: Multiple projects are financed under the framework agreement.* The framework agreement should be retained as an umbrella record, and separate (linked) records should be created for any subsequent financing agreements and subsidiary projects.

Economic and Technical Cooperation Agreements (In Chinese: 经济技术合作协定): See Section 2.5.1.2 for coding guidance.⁵⁴

Letters of Intent: Letters of Intent (and “term sheets”) are usually pre-commitment documents that are issued unilaterally by official sector institutions in China to indicate interest in financing a project or an intention to finance a project.⁵⁵ Sometimes letters of intent from official sector institutions in China are characterized as a memorandum of understanding (MOU).⁵⁶

⁵³ By way of illustration, a concessional loan framework agreement can be accessed via https://www.dropbox.com/s/oc69pos782xj3sx/China_Framework%20agreement%20on%20concessional%20loan%20for%20Malekula%20and%20Tanna%20roads_09112018.pdf?dl=0

⁵⁴ An illustrative ETCA can be found here: <https://www.dropbox.com/s/pfuan0lxsmxosg/Law%20for%2010%20million%20yuan%20loan%20in%202009.pdf?dl=0>

⁵⁵ An illustrative pre-commitment document is accessible via https://www.dropbox.com/s/r608h03z7pjj4hy/2015.06.08%20ICBC%20_%20Amu%20Power%20Term%20Sheet.pdf?dl=0

⁵⁶ An illustrative MOU from China Eximbank can be accessed here: <https://www.dropbox.com/s/l9hnqq9bzwxb61w/2015%20China%20Eximbank%20Loan%20for%20Central%20Termoelectica%20Manuel%20Belgrano%20Project%20in%20Argentina.pdf?dl=0>

AidData coders are instructed to follow one guideline that is specific to letters of intent (and term sheets):

- The status field should be set to Pipeline: Pledge.

Letters of Exchange (In Chinese: 项目换文 or 换文): Letters of Exchange constitute an agreement between the Chinese government and a recipient government institution regarding one or more specific projects. These documents provide explanations, detailed elaborations, or amendments to projects financed with Chinese government grants or interest-free loans (usually from MOFCOM) that have been agreed upon by both governments. Letters of Exchange are sometimes referred to as an Exchange of Notes. Letters of Exchange can supplement an existing agreement, or serve as a stand-alone agreement.⁵⁷

AidData coders are instructed to follow several guidelines that are specific to Letters of Exchange:

- Letters of exchange provide formal documentation that codifies and elaborates the Chinese government's official commitment to support a specific project. While the projects described in Letters of Exchange are sometimes funded with the grant or loan proceeds from an ETCA, they can also be supported through separate, stand-alone funding (usually from MOFCOM).
- Letters of Exchange provide evidence that an official commitment has taken place. Therefore, the status field should be set to Pipeline: Commitment (unless there is evidence that the project in question has progressed beyond the official commitment stage).
- If an ETCA was signed prior to the signing of Letters of Exchange, the project described in the Letters of Exchange should be linked to the ETCA record.

2.5.3.3 - Loan Flow Type

Number of Lenders

- **Bilateral loan**
 - A loan issued by one lender to a borrower. A bilateral loan can coexist with co-financiers, but these co-financing institutions must provide financing via legally separate mechanisms, i.e. an entirely separate loan agreement.
 - The full loan amount can be offered in several tranches that need not have identical terms (e.g., Tranche A is a term loan with a 2% interest rate and a 10 year maturity, Tranche B is a working capital loan with a 4% interest rate and a 5 year maturity; Tranche C is a bridge loan with a 7% interest rate and a 1 year maturity).

⁵⁷ For more information about different types of Letters of Exchange, see Subsection 3 (国际发展援助换文) of

https://books.google.com/books?id=vFP1e9HQXNcC&pg=PA230&lpg=PA230&dq=%E6%94%BF%E5%BA%9C%E9%A1%B9%E7%9B%AE%E6%8D%A2%E6%96%87&source=bl&ots=TR03fKDb_y&sig=ACfU3U2dSs4DLDFLynnQBoMQDGG1LyGoJw&hl=en&sa=X&ved=2ahUKEwjX-aD3vqToAhUDmHIEHfAJA-AQ6AEwAHoECAkQAAQ#v=onepage&q=%E6%94%BF%E5%BA%9C%E9%A1%B9%E7%9B%AE%E6%8D%A2%E6%96%87&f=false

- Nearly all of the official sector Chinese lenders—Chinese state-owned policy banks and commercial banks, as well as other lenders including China’s Ministry of Commerce and other state-owned enterprises—participate in bilateral loans.
- If there is only one funding agency, no co-financing agencies, and the flow type = loan, then the “Number of Lenders” field auto-populates as “Bilateral Loan,” because the record is likely a bilateral loan. However, AidData coders can manually change it to “Syndicated/Club Loan” (such as in cases where it is known a Chinese bank participated in a syndicated loan, but the specific lenders are unknown).
- **Syndicated Loan or Club Loan**
 - A loan issued by a consortium (‘syndicate’ or ‘club’) of lenders to a borrower.
 - Syndicated loans are offered by a group of lenders and are an attractive option when one lender does not have the capacity to finance a large project on its own and/or wishes to share credit risk. The full loan amount can be offered in several tranches that need not have identical terms (e.g., Tranche A is a term loan with a 2% interest rate and a 10 year maturity, Tranche B is a working capital loan with a 4% interest rate and a 5 year maturity; Tranche C is a bridge loan with a 7% interest rate and a 1 year maturity); nor does each member of the syndicate need to participate in each tranche. Lenders can also sell their shares of a syndicated loan in the secondary market. China’s state-owned policy banks and commercial banks are the main official sector financing institutions in China that participate in syndicated loans.
 - Known in Chinese as 银团贷款.
 - AidData coders are instructed to follow several coding guidelines that are specific to syndicated loans:
 - i. *Scenario 1: Each official sector financing institution from China and its financial commitment amount to the syndicate is known.* In this scenario, separate records should be created for each official sector financing institution from China. *The transaction amounts in these records should be populated with the financial amount that each official sector financing institution from China committed to the syndicated loan.* All of the records should be linked through the title and project description fields (referencing each AidData Record ID number), and they should be assigned to the same Parent ID. For each record, the official sector financing institution from China whose loan is being captured should be coded as the funding agency, and other lenders that participate in the syndicate should be coded as co-financing agencies.
 - ii. *Scenario 2: Every official sector financing institution from China (or the total number of official sector financing institutions from China in the syndicate) is known but the individual financial contributions (commitments) of each participant in the syndicate are not known.* In this scenario, AidData coders are instructed to (a) assume that each official sector financing institution from China contributed (committed) an equal amount to the syndicated loan and (b) estimate the contributions (commitments) of each financier by dividing the total face value of the loan with the total number of financiers in the syndicate. AidData coders are additionally instructed to create a single record that captures the total amount contributed (committed) by all of the official sector financing institutions from China that participated in the syndicate. In this

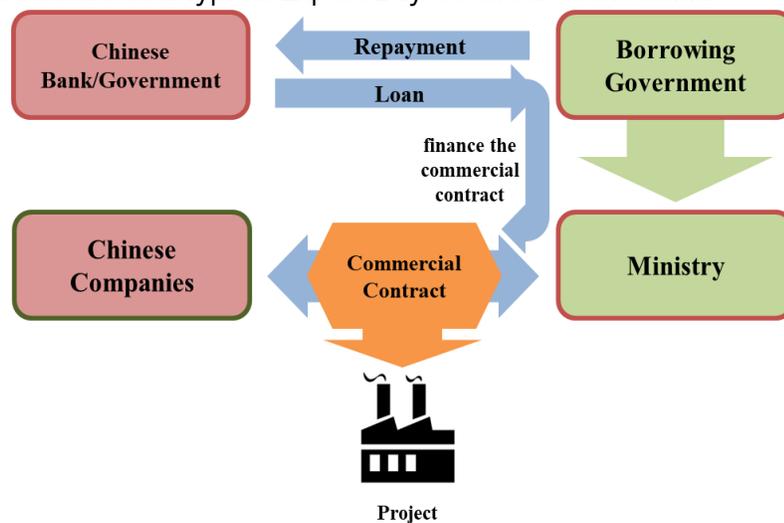
scenario, all official sector financing institutions from China are coded as funding agencies. Participants in the loan syndicate that are not official sector financing institutions from China are coded as co-financing agencies.

- iii. *Scenario 3: Every official sector financing institution from China (or the total number of official sector financing institutions from China in the syndicate) is known and the individual financial contributions (commitments) of each participant in the syndicate are also not known.* AidData coders are instructed to create a single record with no transaction amount. The official sector financing institutions from China of the syndicated loan are coded as funding agencies. Participants in the loan syndicate that are not official sector financing institutions from China are coded as co-financing agencies.

Loan Type Definitions

- **Export Buyer's Credit**
 - A loan that is issued by Chinese state-owned policy banks and Chinese state-owned commercial banks to overseas borrowing institutions to facilitate their acquisition of goods and services from a Chinese supplier (i.e. export promotion).
 - These loans are typically denominated in USD or EUR; they are usually issued with a floating market interest rate (such as LIBOR or EURIBOR) plus a margin; they often have shorter maturity lengths and grace periods than preferential buyer's credits (PBCs); and the borrowers need not be government institutions.
 - The lender usually authorizes the borrower to use the proceeds from the export buyer's credit to finance 85% of the total cost of a commercial contract with a Chinese supplier.
 - In a typical export buyer's credit (loan) agreement, there are four parties (see Figure 2):
 1. Chinese State-Owned Bank (Lender)
 2. Chinese Company (Supplier)
 3. Foreign Government (Borrower)
 4. Foreign Government Ministry or SOE (Importer)

Figure 2: The Structure of a Typical Export Buyer's Credit from China



- Between these four parties, two agreements are concluded: (1) a commercial contract between the Chinese supplier and the foreign importer, and (2) a loan agreement between the Chinese state-owned bank and foreign borrower to partially finance the commercial contract. Typically, the borrower can use the proceeds of the loan to finance up to 85% of the total cost of the commercial contract between the Chinese supplier (exporter) and the foreign importer. However, this percentage can be higher or lower than 85%, depending on the policies and practices of the official sector financing institution in China. The borrower is expected to provide counterpart funding to cover the percentage of the total cost of the commercial contract that is not covered by the loan. Counterpart funding is sometimes used to provide an advance payment to the Chinese supplier so that project implementation can commence before the loan agreement is finalized.
- The signing of the commercial contract usually predates the loan agreement, but discussions/negotiations with the Chinese state-owned bank are often underway at the time that the commercial contract is signed (or being negotiated). Consequently, it is not unusual for the foreign importer or Chinese supplier to publicly reference a loan agreement *before it is finalized*. AidData coders are therefore instructed not to automatically treat the signing of a commercial contract (that a foreign importer or Chinese supplier says will be financed by a Chinese state-owned bank) as evidence that an official financial commitment has taken place (i.e., a loan agreement has been signed).
- China Eximbank provides two types of export buyer's credit facilities: preferential buyer's credits (PBC) and buyer's credit loans (BCLs). Sinosure provides credit insurance for both loan types.⁵⁸ China Development Bank and multiple Chinese state-owned banks also provide export buyer's credits.
- Export buyer's credits are frequently referred to as "buyer's credits," "buyer's credit loans," and BCLs. In Chinese, export buyer's credits are referred to as 优惠出口买方信贷.

⁵⁸ The full name of Sinosure (中国出口信用保险公司) is China Export & Credit Insurance Corporation.

- *Determining if a loan record is an export buyer's credit.* Export buyer's credits are usually identified as such in source materials, but this is not always the case.⁵⁹ If a loan is not explicitly identified as an export buyer's credit, AidData coders are instructed to mark a loan as an export buyer's credit only if it meets four criteria:
 - i. The loan is denominated in USD or EUR.
 - ii. The borrower is a foreign company or foreign government.
 - iii. The face value of the loan is explicitly identified in an official source, and it is not estimated or assumed.
 - iv. The reported face value of the loan is worth less than 100% of the commercial contract cost.
 - AidData coders are also instructed that the following conditions provide evidence that a loan may be an export buyer's credit, but none of these conditions should be considered to be sufficient to assume so:
 - i. The loan is covered by buyer's credit insurance.
 - ii. The loan is insured by Sinosure, and the insurance appears to be credit insurance rather than investment insurance.⁶⁰
 - iii. The proceeds of the loan are to be used by the borrower to procure goods, equipment, or services from a Chinese company.
 - AidData coders are instructed to follow several coding guidelines when working with export buyer's credits:
 - i. **Loan Categorization:** The "Export Buyer's Credit" field should be coded as "Yes" for any loan that is an export buyer's credit.
 - ii. **Intent:** Export buyer's credits can either have commercial intent or mixed intent.
 - Commercial intent should be identified when there is no evidence that the project is seeking to improve economic development or welfare in the recipient country.
 - Mixed intent should be identified when there is at least some evidence that the project is seeking to improve economic development or welfare in the recipient country.
 - Export buyer's credits should never be coded as having only development intent as they are explicitly designed to promote the export of Chinese goods and services.
 - **Title and Description:** If an export buyer's credit (loan) agreement was signed, it should be explicitly identified as such in the project title and description and not referred to as simply a "loan agreement."
 - **Flow class:** All loans that are export buyer's credits should be assigned to the "OOF-like" flow class category.
- **Supplier's Credit/Export Seller's Credit**
 - An export seller's credit (In Chinese: 出口卖方信贷) is a loan issued by a Chinese state-owned bank (usually China Eximbank) to a Chinese company for the

⁵⁹ They are usually identified in official source materials as "buyer's credits" or "buyer's credit loans" rather than "export buyer's credits."

⁶⁰ If there is evidence of Chinese investment, then the provision of investment insurance from Sinosure cannot be ruled out. See <https://www.dropbox.com/s/uziiuht4wtuyzsg/Sinosure%20pitch%20deck.pdf?dl=0> and <https://www.dropbox.com/s/g4wvemp0txonztm/CDB%20and%20Sinore%20Pitch%20Deck.pdf?dl=0>

purpose of increasing its exports. The proceeds of export seller's credits are to be used by borrowers (Chinese exporters) to finance their foreign sales. Chinese exporters usually secure export seller's credits when they need liquidity to offer a supplier's credit to an overseas buyer. Export seller's credits can be denominated in both local and foreign currency.

- If a Chinese company extends a loan to a borrower and the borrower is expected to use the loan proceeds to purchase goods and services from that Chinese company, then the loan is a supplier's credit. Supplier's credits are also known as seller's credits or vendor financing.
- Supplier's credits from Chinese state-owned enterprises (e.g. ZTE, CATIC, NORINCO, AVIC International, and Poly Technologies) are granted to both public and private sector customers. Their terms vary widely, but they usually have shorter maturities and grace periods, and interest rates are typically tethered to LIBOR or EURIBOR plus a margin.⁶¹
- There are typically 2 scenarios involving supplier's credits (issued by Chinese state-owned enterprises) and export seller's credits (issued by Chinese state-owned banks):
 - i. *Scenario 1.* A Chinese state-owned enterprise (exporter) provides supplier's credit to a buyer (borrower) in the recipient country for the purchase of its goods and/or services. This scenario involves 1 agreement (i.e., the supplier's credit agreement).
 - ii. *Scenario 2.* A Chinese state-owned bank provides an export seller's credit to a Chinese state-owned enterprise (exporter) to finance its sales to a buyer in the recipient country. The Chinese state-owned enterprise, in turn, uses the proceeds of the export seller's credit to issue a supplier's credit to the buyer (borrower) in the recipient country. This scenario involves 2 agreements (i.e., the supplier's credit agreement between the Chinese state-owned enterprise and the buyer/borrower in the recipient country and the export seller's credit agreement between the Chinese state-owned enterprise and the Chinese state-owned bank).
- AidData coders are instructed to follow several coding guidelines that are specific to supplier's credits and export seller's credits:
 - i. **Loan Categorization:** The "Export Seller's Credit/Supplier's Credit" field should be coded as "Yes" for any loan that is a supplier's credit or export seller's credit.
 - ii. When a Chinese supplier receives an export seller's credit from a Chinese state-owned policy bank (or any other Chinese state-owned bank) and uses the proceeds of the export seller's credit to on-lend to its foreign customers, it is ultimately funding from the Chinese government that is being transferred to the recipient country. The funding agency in this case should only be coded as the bank that provides the export seller's credit. The Chinese supplier that receives the export seller's credit should be coded as the direct receiving agency and the foreign customer in the recipient country that in turn receives the supplier's credit from the Chinese supplier should be coded as the indirect receiving agency.

⁶¹ An illustrative supplier's credit agreement can be accessed at https://www.documentcloud.org/documents/20488282-gha_2019_485

- iii. In the event that a supplier's credit is provided by a Chinese state-owned enterprise (supplier) and there is no evidence of the provision of an export seller's credit from a Chinese state-owned bank to that Chinese supplier, then the Chinese state-owned enterprise should be coded as the funding agency and the foreign customer (borrower) that received the supplier's credit should be coded as the direct receiving agency.
- iv. Intent: Supplier's credits and export seller's credits can either have commercial intent or mixed intent.
 - Commercial intent should be coded when there is no evidence that the project is seeking to improve economic development or welfare in the recipient country.
 - Mixed intent should be coded when there is evidence that the project is seeking to improve economic development or welfare in the recipient country.
 - Supplier's credits and export seller's credits should never be coded as having only development intent since they explicitly promote the export of Chinese goods and services.
 - Title and Description: When a supplier's credit/export seller's credit agreement is issued, it should be explicitly identified as such in the project title and description and not referred to as simply a "loan agreement."
 - Flow class: All supplier's credits and export seller's credits should be assigned to the "OOF-like" flow class category.
- Cross-Currency Interest Rate Swap (CC IRS)
 - A cross-currency interest rate swap (CC IRS) is an off-balance sheet way of hedging against interest rate risk and foreign exchange risk. In a typical cross-currency interest rate swap agreement, both parties to the transaction are simultaneously lending to each other. That is to say, each party is both a lender and a borrower, because they are lending to each other. The parties to the transaction can lend to each other at different interest rates.
 - Cross-currency interest rate swaps are sometimes referred to simply as "hedging arrangements," "interest rate swaps," or "cross-currency swaps."
 - AidData coders are instructed to follow several coding guidelines that are specific to cross-currency interest rate swaps:
 - i. Flow Type: The flow type of cross-currency interest rate swaps is loan.
 - For purposes of capturing *outbound* official financial flows from China, AidData codes cross-currency interest rate swaps as one-way loans from China, and the project title, maturity period, interest rate, currency, etc. should be reflective of this.
 - ii. Loan Categorization: The "CC IRS" field should be coded as "Yes" for any loan that is a CC IRS.
 - iii. Transaction Amount: The transaction amount for cross-currency interest rate swap records is the lending amount that the Chinese creditor extends to the recipient as part of the swap.
 - iv. Interest Rate: The "hedge interest rate payable" of the CC IRS should be coded as the interest rate, as it represents the interest rate that the borrower has to pay the Chinese bank.

- The “hedge interest rate receivable” is the interest rate the Chinese bank has to pay to the *recipient lender*.
 - v. Intent: CC IRS loans should be coded as having commercial intent.
 - Cross-currency interest rate swaps are a form of corporate financing and such they represent transactions with commercial intent, such as helping local companies hedge against foreign exchange risk and interest rate risks associated with foreign currency-denominated borrowings).
 - vi. Flow class: All CC IRS loans should be assigned to the “OOF-like” flow class category.
 - vii. Funding agency: The Chinese state-owned bank involved in the cross-currency interest rate should be coded as the funding agency.
 - viii. Staff Comments: Coders are to use the staff comment field to describe the inbound financial flow to China (i.e. the amount that the recipient lent to the Chinese lender, the borrowing terms of that loan, and the currency of denomination).
- Deferred Payment Agreement (DPA)
 - In a typical DPA, the Chinese company that the project owner in the host country has selected as its engineering, procurement, and construction (EPC) contractor is furthermore a lender to the project owner. The Chinese company assigns receivables under its EPC contract with the project owner to one or more Chinese banks. Upon assignment of receivables, the Chinese bank(s) will release funds to the Chinese company so it can discharge its obligations under the DPA as a lender.
 - DPAs are sometimes referred to as receivables loans, receivables financing (finance), accounts receivable financing (finance), or A/R financing (finance). In Chinese, they are known as 应收账款融资. These other terms are used because the accounts receivable of a company (i.e., unpaid invoices) are being used as collateral to unlock working capital—typically in the form of a bank loan (“receivables loan”). Sellers often face cash flow problems when their buyers do not make full payment at the due date of the invoice. A DPA—or receivables financing arrangement—addresses this problem by allowing them to sell their outstanding invoices to a bank at a discounted rate. This approach allows the seller to receive the remaining invoice amount before the due date of the invoice. The bank either gets its money back at invoice maturity through the seller (acting as a collecting agent) or directly from the debtor.
 - AidData coders are instructed to follow several coding guidelines that are specific to deferred payment agreements:
 - i. Flow Type: The flow type of DPAs is loan.
 - ii. Loan Categorization: The “DPA” field should be coded as “Yes” for any loan that is a DPA.
 - iii. Intent: DPAs can either have commercial intent or mixed intent.
 - Commercial intent should be coded when there is no evidence that the project is seeking to improve economic development or welfare in the recipient country.
 - Mixed intent should be coded when there is evidence that the project is seeking to improve economic development or welfare in the recipient country.

- **Government Concessional Loan (GCL) [Only from China Eximbank]**
 - An RMB-denominated loan that China Eximbank issues to government institutions on below-market terms (typically 20-year maturities, 5-year grace periods, and 2% interest rates) to facilitate their acquisition of goods/services from a Chinese supplier. The proceeds of a GCL can be used by government borrowing institutions to finance up to 100% of the total cost of a commercial contract with a Chinese supplier. China Eximbank does not expect the borrowing institution to provide any “counterpart funding.”
 - In Chinese, GCLs are referred to as 优惠贷款.
 - See Section 2.5.1.3 for a more detailed description of GCLs, including the guidelines AidData coders should follow.

- **Inter-Bank Loan**
 - A loan issued by one bank (lender) to another bank (borrower). All inter-bank loans should also be coded as on-lending arrangements, but the opposite is not true (i.e., not all on-lending arrangements should be treated as inter-bank loans).
 - In Chinese, inter-bank lending is known as 同业拆借.
 - AidData coders are instructed to code the “Inter-Bank Loan” field in the Loan Categorization section as “Yes” for any loan that is an inter-bank loan.

- **Balance of Payments (BoP) Loan, Liquidity Support Facility (LSF), or Foreign Currency Deposit Loan**
 - A loan issued by a Chinese state-owned policy bank, a Chinese state-owned commercial bank, or China’s State Administration of Foreign Exchange (SAFE) to a central bank or finance ministry in another country that explicitly authorizes the borrower to use the proceeds of the loan to (a) shore up foreign exchange reserves, (b) repay existing debts, and/or (b) finance general budgetary expenditures.
 - BOP loans, LSFs, and foreign currency deposit loans usually have short maturities and high interest rates. They are often referred to as “rescue” or “emergency” loans (see Horn et al. 2023). In Chinese, they are sometimes referred to as “sovereign loans” (主权贷). They do not support individual projects or investments.
 - AidData coders are instructed to follow several coding guidelines that are specific to BoP Loans, LSFs, and Foreign Currency Deposit Loans.
 - i. **Loan Categorization:** The “FXSL/BOP” field should be coded as “Yes” for any loan that is a BoP Loan, LSF, or Foreign Currency Deposit Loan.
 - ii. **Receiving Agency:** The receiving agency should always be either the central bank or finance ministry of a given recipient country.

- **Interest-Free Loan [Automatically Populated]**
 - A loan that is issued to a borrower without any interest accruing. The borrower is only responsible for repaying the loan’s principal amount.
 - China’s Ministry of Commerce (MOFCOM) is the lead administrator of the country’s interest-free (or “zero-interest”) loan program, often through Economic and Technical Cooperation Agreements (ETCAs). However, MOFCOM is not the only official sector institution in China that offers interest-free loans. For a full

discussion of interest-free loans from the Ministry of Commerce, see Section 2.5.1.2 MOFCOM section.

- In Chinese, interest-free loans are referred to as 无息贷款、零息贷款、or 免息贷款.
- The interest rate field for interest-free loans should be set to zero, and the “Interest-free Loan” field should be coded as “Yes”.
- Investment Project Loan
 - A loan that is provided to finance the provision of goods, works, or services to support a public or private investment project. These types of loans usually involve building, rehabilitating, or upgrading physical assets and infrastructure.
 - These types of loans are sometimes referred to as capital expenditure (capex) loans, project loans, or investment loans.
 - AidData coders are instructed to code the “Investment Project Loan” field in the Loan Categorization section as “Yes” for any loan determined to be an Investment Project Loan.
- Lease
 - A lease is a contractual arrangement calling for the lessee (user) to pay the lessor (owner) for use of an asset. The lessor is the legal owner of the asset, while the lessee obtains the right to use the asset in return for regular rental payments. Under a capital lease (a financial arrangement where the lessee/borrower uses an asset and pays regular installments plus interest to the lender/lessor), rental payments are usually classified as interest and obligation payments, similarly to a mortgage (with the interest calculated each rental period on the outstanding obligation balance).
 - Many Chinese state-owned commercial and policy banks (i.e. ICBC’s wholly owned subsidiary ICBC Financial Leasing Co., Ltd.) have their own leasing arms and subsidiaries that provide financial leasing services.
 - AidData coders are instructed to follow several coding guidelines that are specific to leases:
 - i. Flow Type: The flow type of leases is loan.
 - ii. Loan Categorization: The “Lease” field should be coded as “Yes” for any lease project.
 - iii. Funding Agency: The specific leasing company involved in the transaction (lessor) and not its banking parent (e.g. China Development Bank Leasing Co., Ltd. instead of its parent CDB).
 - iv. Receiving Agency: The lessee should be coded as the receiving agency of a lease agreement.
 - v. Title: The title should explicitly state the transaction is a lease (e.g. “ICBC Leasing leases 6 Airbus A321 passenger jets to Transaero”).
 - vi. Maturity: The maturity period for leases is the length of the lease agreement.
 - vii. Staff Comments: The following should be added to the Staff Comments field: “AidData treats this lease as a loan. A lease is a contractual arrangement calling for the lessee (user) to pay the lessor (owner) for use of an asset. The lessor is the legal owner of the asset, while the lessee obtains the right to use the asset in return for regular rental payments. Under a capital lease (a financial arrangement where the lessee/borrower

uses an asset and pays regular installments plus interest to the lender/lessor), rental payments are usually classified as interest and obligation payments, similarly to a mortgage (with the interest calculated each rental period on the outstanding obligation balance)."

- **Sale-and-leaseback agreements**

- Sale-and-leaseback agreements (SLBs)—also known as purchase-and-leaseback agreements (PLBs), sale-leaseback agreements, and leasebacks— are specific types of lease agreements in which the original owner sells an asset to a leasing entity, which, in turn, leases the asset back to the original owner, allowing the original owner to raise upfront capital for the asset, without taking on a loan, while still continuing to operate it, using the rental payments to repay the value of the asset. At the end of a SLB, the original owner typically has an option or obligation to repurchase the asset from the leasing entity. SLBs are generally considered to be off-balance-sheet hybrid debt products.⁶²
- SLBs can be conducted for a variety of assets including real estate (i.e. a freehold property), equipment (e.g. a drilling rig), and vehicles (e.g. an aircraft or container ship).
- AidData coders are instructed to follow several coding guidelines that are specific to SLBs:
 - i. **Flow Type:** The flow type of SLBs is loan.
 - ii. **Funding Agency:** The specific leasing company involved in the transaction and not its banking parent (e.g. China Development Bank Leasing Co., Ltd. instead of its parent CDB).
 - iii. **Loan Categorization:** The "Lease" field should be coded as "Yes" for any SLB agreement.
 - iv. **Transaction Amount:** The value of the SLB agreement, i.e. the purchase consideration paid by the leasing company to the original owner for the asset.
 - v. **Receiving Agency:** The lessee should be coded as the receiving agency of a lease agreement.
 - vi. **Maturity:** Length of the SLB agreement.
 - vii. **Title:** The title should explicitly state the transaction is a SLB, (e.g. "ICBC Financial Leasing enters into three sale and leaseback agreements worth \$93.15 million USD with Star Bulk Carriers Corp").
 - viii. **Description:** If the SLB includes details on the existence of a bareboat charter or security, these should be included in the description.
 - ix. **Collateral and Accountable Agencies:** Should the lessor or another entity provide security for the SLB, that entity should be coded as the "Collateral Provider", and a description of the collateral should be entered into the "Collateral" field.
 - x. **Start Implementation and End Implementation Dates:** The start and end date of a sale-leaseback agreement is similar to the loan commitment date and end date, and so does not correspond to the database's Actual Implementation Start Date and Actual Completion Date fields (which

⁶² See <https://www.nreionline.com/mag/sale-leaseback-king-balance-sheet-financing> and <https://www.investopedia.com/terms/l/leaseback.asp>

should capture actual implementation start and end date). As such, start and end dates for sale-leaseback agreements should not be included.

- xi. **Staff Comments:** The following should be added to the Staff Comments field: “Sale and leaseback (or sale-leaseback) agreements are generally considered to be off-balance-sheet hybrid debt products.”

- **Mergers and Acquisitions (M&A) Loan**

- A loan that is issued to a borrower to facilitate its acquisition of an equity stake in a company and/or to facilitate the consolidation of multiple companies (i.e., a merger).
- M&A loans—also known as “acquisition loans” or “acquisition financing” or **并购贷款** in Chinese—are typically issued to Chinese companies with short maturities and high interest rates. They are sometimes referred to as “bridge loans” because they provide short-term cash flow until a borrower can secure permanent financing or remove an existing obligation (although not all bridge loans are M&A loans).
- One particular type of M&A loan is China Eximbank’s Overseas Investment Loan (In Chinese: **境外投资贷款**), which is used to support Chinese enterprises’ overseas investments. These loans can be used to fund acquisitions, fixed asset investments, and overseas equity investments approved by the Chinese authorities. For further information and coding instructions on the Overseas Investment Loan, see Section 2.5.1.3.
- AidData coders are instructed to follow several coding guidelines that are specific to M&A loans.
 - i. **Loan Categorization:** The “M&A” field should be coded as “Yes” for any loan that is an M&A.
 - ii. **Intent:** M&A loans have commercial intent, as they support purely commercial interests.
 - iii. **Flow Class:** All M&A loans should be assigned to the “OOF-like” flow class category.

- **Preferential (Export) Buyer’s Credit (PBC)**

- A USD-denominated loan that China Eximbank issues to government institutions to facilitate their acquisition of goods/services from a Chinese supplier. The borrowing terms of these loans vary, but they are offered with fixed rather than floating (market) interest rates (such as LIBOR or EURIBOR), which are usually more generous than prevailing market rates. China Eximbank has a policy of allowing borrowers to use PBOC proceeds to finance 85% of the total cost of a commercial contract with a Chinese supplier. China Eximbank usually requires that the remaining 15% of the commercial contract cost be financed with “counterpart funding” from the borrowing institution.
- In Chinese, PBCs are referred to as **优惠出口买方信贷**.
- For further information and coding instructions on the PBC, see Section 2.5.1.3.

- **Pre-Export Financing (PxF) or Commodity Prepayment Financing**

- A PxF facility is an arrangement in which a commodity (e.g. oil) producer gets up-front cash from a customer in return for a promise to repay the customer with that commodity (possibly at a discount) in the future. PxF funds may be advanced by a lender or syndicate of lenders to a commodity producer to assist

the company in meeting either its working capital needs (for example, to cover the purchase of raw materials and costs associated with processing, storage and transport) or its capital investment needs (for example, investment in plant and machinery and other elements of infrastructure).

- PxF facilities are also known as commodity prepayment financing arrangements. In Chinese, PxF facilities are known as 出口前融资 or 预出口融资.
- AidData coders are instructed to follow several coding guidelines that are specific to PxFs:
 - i. Flow Type: The flow type of PxFs is loan.
 - ii. Loan Categorization: The "PxF/Commodity Prepayment" field should be coded as "Yes" for any loan that is a PxF or commodity prepayment financing.
 - iii. Intent: PxFs can either have commercial intent or mixed intent.
 - Commercial intent should be coded when there is no evidence that the project is seeking to improve economic development or welfare in the recipient country.
 - Mixed intent should be coded when there is evidence that the project is seeking to improve economic development or welfare in the recipient country.
 - EPCFs should never be coded as having only development intent since they promote commercial interests, often imports to China.
 - iv. Flow Class: All PxFs should be assigned to the "OOF-like" flow class category.
- On-Lending Arrangement
 - An arrangement in which a borrower uses the proceeds of a loan to lend to one or more additional entities.
 - Also known as a "re-lending" arrangement.
 - AidData coders are instructed to follow several coding guidelines that are specific to loans with on-lending.
 - i. Loan Categorization: The "On-Lending" field should be coded as "Yes" for any loan that includes on-lending.
 - ii. Receiving agencies: The direct borrower of the loan (i.e. the institution that signed the loan contract with a Chinese bank) should be coded as a direct receiving agency. Any entities that the direct borrower on-lends to should be added coded as indirect receiving agencies.
- Revolving Credit Facility (RCF)
 - In a typical RCF arrangement, the lender commits funding up to a certain level, but unlike a "term loan" (that is repaid in regular payments over a set period of time), the borrower can draw down, repay, and redraw on an irregular/as-needed basis; an RCF provides liquidity for day-to-day operations; it functions like a credit card, except that the borrower is charged an annual commitment fee on unused amounts (a "facility fee").
 - RCFs are commonly known as "revolvers" and "revolving loans."
 - AidData coders are instructed to code the "RCF" field in the Loan Categorization section as "Yes" for any loan that is a revolving credit facility.

- Debt Refinancing
 - A new loan for the purpose of repaying one or more existing loans/debts.
 - Debt refinancing can occur when a borrower decides to change the source of its financing for a project or activity (e.g., to a different bank, or from a loan to a bond).
 - AidData coders are instructed to code the “Refinancing” field in the Loan Categorization section as “Yes” for any loan intended to refinance existing debt.

- Working Capital Loan
 - A loan that provides funds for a borrower’s day-to-day operations (including general corporate purposes) but not for making capital investments or facilitating the acquisition of long-term assets.
 - AidData coders are instructed to code the “Working Capital” field in the Loan Categorization section as “Yes” for any loan intended for working capital purposes.

- Non-Recourse or Limited-Recourse Project Finance Transaction
 - When a project is financed with a limited-recourse or non-recourse structure, the loan that is used to finance the acquisition, construction, and/or maintenance of an asset—such as a toll road, a seaport, or an electricity grid—is exclusively repaid with the cash flow generated by the asset (e.g., toll revenue, container fees, or electricity sales), and the creditor either has no claim (“recourse”) or a limited claim to any other assets as a basis for recovering the debt. In a standard, limited-recourse or non-recourse project finance transaction, a creditor lends to an independent legal entity that is established for the express purpose of developing, owning, and operating a specific project. This entity is often called a special purpose vehicle (SPV) because it is only allowed to engage in activities that relate to a specific purpose (project), and it is legally prohibited from incurring debts or obligations that are not related to that purpose (project).
 - In a non-recourse or limited recourse project finance arrangement, the borrowing institution is always a special purpose vehicle (SPV) or joint venture (JV).
 - Unlike non-recourse or limited recourse project finance arrangements, the repayment of a full-recourse sovereign loan (i.e. a loan directly to a government agency) does not depend upon the financial viability of a project or the cash flow generated by any particular asset. A sovereign government borrower guarantees the repayment of the loan, regardless of whether the asset supported by the loan generates enough revenue to facilitate repayment, and the creditor has a legal right to seize any and all assets of the borrower until the full amount of the debt is covered (i.e. it has “full recourse” to the assets of the borrowing government).
 - Limited-recourse and no-recourse project finance transactions usually involve a mix of equity from the project sponsor⁶³ (also known as equity investors or

⁶³ In a public-private partnership (PPP) context, the terms project sponsor, project owner and concessionaire are often used interchangeably. That being said, a concessionaire is slightly different (from a typical project sponsor/owner) because its ownership of the project is time-limited (as determined by the concession agreement). So, ownership of the project can return to the host government at the end of the concession agreement.

project founders) and debt from banks/financial institutions. Common debt-to-equity ratios are 90:10, 80: 20, and 70:30. More often than not, project sponsors have limited financial means and cannot on their own provide the total capital required for the construction, development and operation of the project/asset.

- An example of a limited-recourse project finance transaction that is supported by an official sector financing institution in China is the China-Laos Railway Project (captured via AidData Record IDs #33726 and #85304).⁶⁴ To implement this project, three Chinese state-owned companies and a Lao state-owned enterprise established a joint venture (SPV) called the Laos-China Railway Company Limited (LCRC). The LCRC was established as a limited liability corporation (LLC) to finance, design, construct, and manage a 418 kilometer railway between the Chinese city of Kunming and the Laotian capital of Vientiane on a public-private partnership (PPP) basis. The total cost of the China-Laos Railway Project is \$5.9 billion—equivalent to roughly one-third of Laos’ GDP—and it is being financed according to a 60:40 debt-to-equity ratio (\$3.54 billion of debt and \$2.36 billion of equity). LCRC directly secured \$3.54 billion of debt financing from China Eximbank, and the Government of Laos and the Chinese Government contributed \$730 million and \$1.63 billion of equity financing, respectively. In order to make its \$730 million equity contribution to the project, the Government of Laos secured a \$480 million loan from China Eximbank and it agreed to provide \$250 million of its own funding (in annual installments). The \$3.54 billion debt secured by LCRC, which is jointly owned by three Chinese state-owned companies that collectively hold a 70% equity stake and one Lao state-owned enterprise that owns a 30% equity stake, is not backed by a sovereign guarantee.
- In Chinese, no-recourse or limited-recourse project finance transactions are known as 项目融资.
- AidData coders are instructed to follow several coding guidelines that are specific to limited-recourse and no-recourse project finance transactions:
 - i. **Loan Categorization:** The “Project Finance” field should be coded as “Yes” for any loan that is a limited-recourse and no-recourse project finance transaction.
 - ii. **Receiving Agency:** The receiving agency should have an organization type of “Joint Venture/Special Purpose Vehicle”.
 - iii. **Description:** The ownership of the JV/SPV involved in the project finance must be explicitly stated in the description.
 - iv. **Estimation of Transaction Amount:** If the debt component of the project was exclusively financed by an official sector financing institution from China and no information on the exact amount of debt financing is identified, coders should use the debt-to-equity ratio and the total project cost to estimate the transaction (debt financing) amount. For example, if the total project cost is 100 million USD and the project is financed through a debt-equity ratio of 80:20, and the debt financing is

⁶⁴ For an illustrative loan agreement issued by official sector financing institutions in China in support of a limited-recourse project finance transaction, see https://www.documentcloud.org/documents/20488803-sle_2017_468

exclusively provided by an official sector financing institution from China. The transaction amount should be coded as 80 million USD.

- Overseas Project Contracting Loan
 - A loan issued by China Eximbank to a Chinese company to help it finance an overseas project contract. This loan can be denominated in USD or RMB. Per China Eximbank policy, the contract cost that is financed with the loan should not be lower than 1 million USD, and goods and services exported from China under the contract should not be lower than 15% of contract cost.
 - In Chinese, overseas project contracting loans are referred to as 对外承包工程贷款.
 - For further information and coding instructions on the Overseas Project Contracting Loan, see Section 2.5.1.3.

- Collateralized Lending
 - Collateral is a right to an asset or a revenue stream that a creditor can rely upon to secure repayment in the event that a borrower defaults on its payment obligations. Collateral can come in many forms including “cash, stocks, and negotiable bonds; irrevocable letters of credit; certificates of deposit; assignment of receivables such as export earnings, electricity generation charges, road tolls, and telecoms receipts; as well as physical assets such as buildings, ports, and industrial plants. [...] Collateral can be (i) an existing or future asset (stock) or (ii) a future flow or stream. The latter case, also called future receipts or future receivables, can be defined as a financial amount (e.g. USD) or a physical amount of goods to be delivered (e.g. barrels of crude oil)” (IMF and World Bank 2020: 4, 6).
 - In a legal sense, collateralized debt “entails a borrower granting liens over specific existing assets or future receivables to a lender as security against repayment of the loan” (IMF and World Bank 2020: 4). However, collateralized debt “also includes arrangements that do not constitute granting of a formal security interest, but that have an equivalent effect.” For example, regardless of whether a formal security interest is granted over an escrow account (or a so-called “revenue account,” “special account,” or “proceeds account”) with a minimum cash balance requirement, *a loan is de facto (rather than de jure) collateralized if the account is controlled by the lender* (Gelpern et al. 2022).
 - According to the IMF and the World Bank (2020: 6), “[c]ollateral can be related or unrelated to the purpose of the loan. Collateralized debt is considered to have ‘related collateral’ if the loan is used to purchase or construct a new asset (e.g. an airplane, an oil platform), and the asset or the future receipts it is expected to generate (e.g., airline ticket sales, the revenues from the sale of oil) serve as collateral to secure the debt. An example of ‘unrelated collateral’ is a budget loan collateralized with oil receivables.”
 - An example of a collateralized loan is the buyer’s credit loan (BCL) that China Eximbank issued to the Government Ghana for the Bui Dam Construction Project (ID#183). It was collateralized with (a) net revenue from a Power Purchase Agreement (PPA) between Bui Power Authority, an organization with a mandate to plan, execute and manage the Bui Hydroelectric Project, and the Electricity Company of Ghana (ECG) for the purchase of the energy to be generated from

- the Bui hydroelectric power plant, and (b) receivables from the Ghana Cocoa Board's sale of cocoa beans to Genertec International Corporation of Beijing.
- Sometimes official sector lenders in China will demand an escrow account (or a so-called "revenue account," "special account," or "proceeds account") as a form of collateral (Gelpern et al. 2022). These are often offshore bank accounts (located in the lending country) into which project revenues or the proceeds from export sales are deposited. The funds held in the account can then be used to service the loans and/or serve as collateral (sometimes called a "security package").
 - i. For example, as a guarantee for a \$1 billion China Eximbank loan, the Republic of Congo is required to keep a minimum deposit balance equivalent to 20% of total outstanding China Eximbank loans in an escrow account (that China Eximbank controls) from the proceeds of its oil sales to China.
 - Collateral requirements in loan agreements do not affect the way that a loan's grant element is calculated. However, they do influence the favorability of lending terms in a broader sense. If two loans have identical interest rates, maturities, grace periods, and fees, but one requires the borrower to provide a source of collateral that China can seize in the event of default (e.g., foreign currency earnings in an escrow account, a revenue-generating infrastructure asset) and the other does not, the borrower would almost certainly consider the loan with the collateral requirement to be less favorable than the one without such a requirement (Morris et al. 2020).
 - *Determining whether a loan involves collateralization.* When source materials do not specify if a loan is collateralized, AidData coders are instructed to follow several guidelines to determine if the loan is collateralized in a de facto or de jure sense:
 - If a source indicates that the borrower granted a formal lien or security interest to the lender, the loan should be coded as collateralized.
 - If a source mentions a source of "security" for the loan or characterizes the loan as "securitized," this should be treated as evidence that the borrower granted security interest to the lender and the loan should be coded as collateralized (e.g., "The escrow account will provide a source of security for the loan.").
 - If a source indicates that a security agent was appointed (to enforce rights against the collateral in the event that the borrower defaults on its repayment obligations), the loan should be coded as collateralized.
 - If a special account, escrow account, revenue account, or proceeds account (into which the borrower is required to deposit project-related revenues or unrelated revenues) is mentioned, and the account is either (a) controlled by the Chinese lender or (b) located in China, then the loan should be coded as (de facto) collateralized. Under these conditions, it is not difficult for the Chinese lender to seize or debit the account without the consent of the borrower. However, when the account is controlled by the borrower or a third party (or the account is located in the borrower country or a third country), the Chinese lender does not have a de facto source of collateral.
 - All pre-export finance (PXF) facilities should be coded as collateralized since they are almost always secured by (1) an assignment of rights by

the producer under an 'offtake contract' (i.e., a sale and purchase contract between the producer and a buyer of that producer of goods or commodities), and (2) a collection account charge over a bank account into which proceeds due to the producer from the buyer of the goods or commodities under the offtake contract are credited.

- If the word 'guarantee' is mentioned in relation to the repayment of the loan by a non-English language source, this *may* indicate collateralization. In languages other than English, collateralized debt arrangements are sometimes referred to as 'guarantee' or 'guaranteed.' However, in English, a (third-party) guarantee is a concept that is distinct from collateralization. Whenever a loan guarantee is issued, an entity other than the primary borrower (or 'the primary obliger') agrees to repay the loan if the primary obliger goes into default. So if the primary obliger is a government line ministry, subnational government, or state-owned enterprise and a sovereign guarantee is issued in support of the loan, that means that a central government entity (usually the Ministry of Finance) has agreed to serve as the loan guarantor. As such, whenever a guarantee is issued, there has to be an additional entity responsible for repayment in the event that the primary obliger goes into default. It is possible for a loan to be both guaranteed (in the English-language sense) and collateralized. China Eximbank's 2004 MLFA with the Government Angola was guaranteed by Sonangol (the country's state-owned oil company) and collateralized with future revenues from the sale of oil exports.
 - If the word 'guarantee' is mentioned in relation to a specific asset/revenue stream, it is most likely referring to collateral. A third-party repayment guarantee (e.g., a sovereign guarantee or corporate guarantee) is not related to a specific asset or revenue stream. The issuance of a third-party repayment guarantee allows the creditor to secure repayment by pursuing *any* assets or revenue streams controlled by the guarantor in the event of default (assuming the assets/revenue streams in question are not protected by sovereign immunity). E.g., "The Government of Togo agreed to establish an airport fee (RDIA) to guarantee the repayment of the PBC and the GCL." In this case the airport fee reported is a form of loan collateral, instead of a third-party guarantee.
 - If a source refers to a lending arrangement that is following the 'Angola model' or the 'resources-for-loan' model, this should be treated as evidence of collateralization. The resources-for-loan model pioneered by China Eximbank in Angola, or the 'Angola model,' involves collateralization. In Chinese, the resources-for-loan model is sometimes called "互惠贷款" (reciprocal loan) or "资源与贷款合作框架协议" or "'资源、信贷、项目'一揽子合作模式" or "'石油、信贷、工程'一揽子合作模式" (oil-backed loan) or "安哥拉模式."⁶⁵
- AidData coders are also instructed to follow several additional guidelines that are specific to collateralized loans:

⁶⁵ See <https://www.dropbox.com/s/r5xhu7zdzqiebbn3/2.EXIM-Bank.pptx?dl=0>

- The “Collateralized/Securitized” field should be set to “Yes” and the specific source(s) of collateral should be identified in the Collateral Description field.
 - The organization(s) responsible for providing the collateral should be coded as the “Collateral Provider.”
 - The organization(s) responsible for acting as a Security/Collateral Agent, if identified, should be coded as the “Security agent/Collateral Agent.”
 - Collateralization should not be used to determine a project’s intent designation, concessionality designation, or flow class designation.
- Master Loan Facility Agreements and Credit Lines
 - Master loan facilities and lines of credit are not loan agreements and are not treated as such in the 3.0 methodology. They are agreements designed to support multiple subsidiary projects with multiple loans that must be individually approved by the lender. In a typical master loan facility agreement or credit line agreement, the lender and borrower first agree on the types of allowable projects and the terms and conditions of lending. Then, the borrower prepares individual project loan applications to give to the lender for approval under the parameters established in the master facility agreement. Master loan facilities and lines of credit typically identify the total amount of funding that can be accessed, the types of projects that can be supported, and the borrowing terms (e.g., interest rate, maturity, grace period) for subsidiary projects under the agreement. Master loan facilities are sometimes called master facilities, master loan agreements, or framework agreements.⁶⁶
 - A single loan can have multiple purposes or components. The key distinction between a single loan with multiple components and a master loan facility is that the latter involves subsidiary loan agreements that must be individually approved by the lender.
 - AidData coders are instructed to follow several guidelines that are specific to master loan facilities and lines of credit:
 - *Scenario 1: If the master loan facility (or line of credit) is for unspecified purposes, and there is information about how much has been drawn down from the facility. Create one umbrella record for the master loan facility, and one subsidiary record for the drawn down amount.*
 - *Scenario 2: If the master loan facility (or line of credit) is for specified purposes, and coders know the exact number of subsidiary projects/activities financed through the facility. Create one umbrella record for the master loan facility, and subsidiary records for each project/activity that was financed through the facility with separate transaction amounts.*
 - *Scenario 3: If the master loan facility (or line of credit) is for specified purposes, and coders are unable to identify all subsidiary projects/activities financed through the facility (i.e., coders only find information on one or a few of the subsidiary projects/activities financed through the facility). Create one record to capture the entire transaction*

⁶⁶ These should not be confused with “facility agreements,” which is a shorthand term that is often used by (Chinese state-owned) banks to refer to loan (or export credit) agreements. See, for example, https://www.documentcloud.org/documents/20488803-sle_2017_468

amount and set the umbrella field to “No.” For any subsidiary projects/activities financed by the facility that coders are able to find, create subsidiary records for each project/activity that was financed through the facility but do not record their specific transaction amounts to avoid duplication of transaction amounts.

- *Scenario 4: If the master loan facility (or line of credit) is for unspecified purposes, and there is evidence that the facility has been completely (100%) drawn down. Create one record to capture the entire transaction amount and set the umbrella field to “No.”*
- *Scenario 5: If the master loan facility (or line of credit) is for unspecified purposes, and we are confident that (1) there is no risk of duplication with existing flows, (2) the financing is going to one specific recipient entity, (3) there is little to no chance of coders identifying the specific, subsidiary projects/activities funded through the facility, and (4) there is no evidence that the financing was provided through a cooperation agreement. Create one record to capture the entire transaction amount and set the umbrella field to “No.”*
- *Scenario 6: If the master loan facility (or line of credit) is provided to the Central Bank of the recipient country. Create one record to capture the entire transaction amount and set the umbrella field to “No.”*

Section 3 - TUFF 3.0 Data Collection Process

The TUFF 3.0 data collection process is undertaken in three stages: (1) project identification, (2) project verification and enhancement, (3a) project-level data quality assurance, and (3b) quality assurance of the dataset as a whole. In this section, we document each of the stages, which were followed to construct the 3.0 version of AidData’s GCDF dataset.

3.1 - Stage 1: Identifying New Projects and Sources

The objective of Stage 1 is to first identify the universe of Chinese ODA- and OOF-financed projects and/or activities.⁶⁷ This is done on a recipient country-by-recipient country basis, so each step of Stage 1 is repeated for each of the 165 countries included in the 3.0 dataset.

⁶⁷ In early iterations of the TUFF methodology, AidData relied on global databases of news reports (Factiva, DNA) to identify Chinese ODA- and OOF-financed activities during stage 1. Then, during the project verification and enhancement stage (Stage 2), AidData would use additional sources to find and verify project details. These additional sources in Stage 2 often included “official” sources—such as official publication from Chinese government agencies or data and documentation from recipient government agencies. However, the 3.0 version of the TUFF methodology takes a different approach. In Stage 1, we use a large catalogue of official sources (that covers 165 countries) to identify projects, and then supplement the list of Chinese ODA- and OOF-financed projects that are identified via official sources with media-based sources to identify any remaining missing projects.

Stage 1 is completed in three steps:

1. Coders review a catalogue of official sources that AidData faculty and staff have assembled in order to (a) identify projects/activities that are supported by official sector institutions in China and consistent with OECD-DAC definitions of ODA and OOF; and (b) document any basic/foundational information about these projects/activities (e.g., funding agency, receiving agency, commitment year, transaction amount) that is specified by these official sources. Coders then create a unique record in AidData's data management platform for each project/activity with a unique identification number ('AidData Record ID') and populate as many fields as possible for those records with the information that is provided by the official sources.
2. Coders review a fixed and pre-processed set of media articles from Factiva/DNA in order to identify (a) any additional projects/activities that are supported by official sector institutions in China and consistent with OECD-DAC definitions of ODA and OOF; and (b) any additional details about the projects/activities exclusively identified via Factiva/DNA and the projects/activities jointly identified by official sources and Factiva/DNA.
3. AidData faculty and staff conduct supplemental searches to identify any major sources of Chinese ODA or OOF—and specific Chinese ODA- and OOF-financed projects—that were not identified during the first two steps of Stage 1.

A description of each of these steps is detailed in the next section.

3.1.1 - Official Country Profiles

Before Stage 1 is initiated, AidData faculty and staff create or update an Official Country Profile (OCP) for each recipient country. The OCP is a catalogue of all known official sources that may provide information about Chinese ODA- or OOF-financed projects and/or activities in a given recipient country. Each OCP identifies websites, documents, and datasets from official sources, such as the Chinese government, the recipient government, and official sector entities with international aid and debt monitoring responsibilities (e.g., the World Bank and the IMF). On average, each recipient country's OCP includes around 100 sources.

- Each OCP includes key Chinese government sources, such as the Chinese Embassy and Economic and Commercial Counselor (ECCO) websites in the given recipient country, MOFCOM investment guides, and the annual reports of Chinese state-owned banks and state-owned companies. These sources typically demonstrate that a project/activity exists; provide precise official commitment dates and project implementation start and end dates (e.g., the calendar days on which the loan agreement was signed and construction started/ended); identify a official project title (in Mandarin Chinese); and provide information about the funding agency, the receiving agency, and/or the nature of the flow type (e.g., a preferential buyer's credit from China Eximbank was issued to the Ministry of Finance in the recipient country to support the project).
- Every country's OCP identifies key recipient government sources, such as the Ministry of Foreign Affairs website, the debt registry and budget documents of the Ministry of Finance, government registers and gazettes that publish information about foreign loan and grant agreements, the government's aid and debt information management system, and the websites of legislative and executive oversight institutions in host countries (e.g. Public Accounts Committee, Office of the Auditor General). These sources often identify official commitment dates, funding agencies, receiving agencies, transaction amounts, borrowing terms, information about the timing and value of

disbursements, information about project implementation progress (including but not limited to construction start and end dates), and official project titles in local languages.

- Official sources that are not from the Chinese government or recipient government—like International Monetary Fund’s (IMF) Article IV Staff Reports—also appear in each country’s OCP.
- Additional sources include major implementing organizations and Chinese state-owned enterprises operating in the recipient country, as well as government-affiliated media and/or major media outlets in the recipient country. These sources typically provide supplemental information about a project’s implementation progress.

Coders are instructed to take a source-specific approach to data collection, which means that they retrieve information from one official source at a time, compiling an initial project list that is de-duplicated as they review additional official sources

Within each OCP, AidData faculty and staff provide coders with specific descriptions of each official source and source-specific instructions, which is important because the sources that are identified in the OCP often contain a great deal of information that is *not* related to Chinese ODA- or OOF-financed projects/activities.⁶⁸ Therefore, AidData faculty and staff review each source in advance and specify which particular sections require the attention of coders.

- Source-specific instructions also include guidelines for navigating websites, documents, and datasets, as well as tips for conducting searches in foreign languages:
 - E.g. “肯尼亚” is the Chinese name for Kenya
 - E.g. Google this search term: “http://dj.china-embassy.org/chn/” 贷款 (Loan in chinese)
 - E.g. Use Ctrl+F in this French-language document to search for “Chine” and “Chinois”
- Coders are instructed to download especially useful sources and add them to OCPs for future rounds of data collection (e.g., a time-stamped export of a recipient country’s Aid Management Platform).

3.1.2 - DNA/Factiva Articles

After AidData coders conduct a systematic review of official sources that provide information about Chinese ODA- and OOF-projects/activities in each recipient country, they search for additional projects/activities and project-level information through targeted searches in Factiva and Dow Jones DNA⁶⁹. Factiva—a Dow Jones-owned media database that draws on approximately 33,000 media sources worldwide in 28 languages, including newspapers and radio and television transcripts—is the primary database that AidData has historically used for the systematic review of media articles that report on Chinese ODA- and OOF-financed

⁶⁸ AidData researchers update the OCPs on an annual basis as additional sources are identified or become available. OCPs for the 2.0 dataset contained about 25 sources each, whereas OCPs for the 3.0 dataset include over 100 sources on average. The latest OCPs also contain archived records from previous OCPs so that country-specific data collection information, advice, and challenges can be passed on to future coding teams. [noffi](#)

⁶⁹ Factiva and Dow Jones DNA sources often provide coverage of smaller grants, in-kind contributions, technical assistance and medical team projects. The articles help identify or confirm implementation details of potential projects (e.g., dates of signing or handover ceremonies, officials and ministries present at these ceremonies, and other organizations or contractors involved in the project).

projects/activities. However, as the scope of our data collection efforts has expanded to a larger number of recipient countries and a wider set of commitment years, we have turned to Dow Jones DNA to more efficiently extract and process media articles when our Factiva queries return more than 1,000 results for a single recipient country in a single commitment year. Whereas Factiva was not designed to support machine learning applications, Dow Jones DNA—a cloud-based content processing and storage platform—makes the entire, 30-year Factiva archive and approximately 1 million income news articles per day accessible to users who wish to use this information in machine learning applications.

We use a standardized set of search criteria to query Factiva and Dow Jones DNA.⁷⁰ The queries generate a long list of media articles, but only a subset of these “candidate sources” contain information about Chinese ODA- and OOF-financed projects/activities. We therefore use a machine learning algorithm⁷¹ to identify the subset of DNA articles that are most likely to contain information about Chinese government-financed projects/activities.⁷² We refer to this machine learning tool as the “TUFF Robot.” It combs through millions of search results at a rate of approximately 115,000 results per hour—or 2.7 million results a day. It categorizes search results as either “relevant” or “irrelevant” based on whether they seem to contain information about Chinese ODA- and OOF-financed projects/activities. AidData coders then review each of the Factiva articles returned by the query and Dow Jones DNA records that the machine learning algorithm has classified as “relevant” and make case-by-case determinations about whether those sources do indeed contain information about Chinese ODA- and OOF-financed projects/activities.

For each commitment year, AidData coders review approximately 32,000 articles from Factiva and 16,000 articles from Dow Jones DNA (across the full set of 165 countries in the dataset)⁷³.

⁷⁰ All of these queries rely on a standardized set of keywords (such as grant, loan, and donate), but we run them independently for each recipient country.

⁷¹ To classify the documents, the machine learning software uses the LGBMClassifier from the lightgbm package, which is a gradient boosting model developed by Microsoft, with balanced TRUE/FALSE files as the training set. To balance these files a targeted artificial data augmentation library was used (NLPAUG), which slightly altered a random selection of the existing TRUE files by replacing a number of words in each selected document with synonyms to generate enough TRUE files to match the number of FALSE files.

⁷² To train the machine learning tool, we use large amounts of training data (articles that we identified via Factiva/Dow Jones DNA and then classified as containing or not containing information about projects financed by the official donor/lender of interest) to “teach” the algorithm to accurately classify hundreds of thousands of articles into “relevant” and “irrelevant” categories. Use of this tool significantly reduces the amount of time that researchers would otherwise spend reviewing false positives—articles that contain no information about projects financed by the official donor/lender of interest. To continuously improve the accuracy of the TUFF Robot in classifying articles as either relevant or irrelevant, we update the training set each data collection cycle with all new articles that our team of coders manually sorted during the previous data collection cycle.

⁷³ In cases where Factiva returns less than 1,000 search results for a single recipient country in a single commitment year, we prefer to use this database for the systematic review of media articles. This database is designed to have a user-friendly interface which is ideal for this type of manual review process, and coders can easily manage the systematic review of less than 1,000 search results in this interface while working in a time-efficient manner. Performing a systematic review of thousands of search results per recipient country per commitment year would be too costly and less than ideal for this kind of interface, which is why in cases where Factiva returns more than 1,000 search results for a single recipient country in a single commitment year we employ the use of Dow Jones DNA and the TUFF Robot.

Across 22 commitment years (2000-2021), this amounts to over one million articles. In order to conduct this manual review process, the coder assigned to the OCP for a specific recipient country will also review the news article search results for that specific country. To conduct this review in a time efficient manner, coders are advised to scan article titles, and if the title indicates the possibility that the article may contain information on Chinese ODA- or OOF-financed activities in the recipient country, the coder will then scan the text of the article. If the coders identify information related to Chinese ODA- or OOF-financed activities in the text of the article, they conduct a more thorough review and ensure the relevant information from the news report is added to the relevant project/activity records in AidData's data management platform. In cases where multiple news reports provide the exact same text (e.g., republished stories from the Associated Press), coders are instructed to include only attach one of these sources to the relevant record, with the objective of identifying the article from the original news outlet that reported the information, or otherwise from the donor/creditor country news outlet or recipient country news outlet that would be more closely tied to the project/activity.

When these news databases are queried, AidData coders search for media reports that include (a) some derivation of the name of the country/government from which the financial or in-kind transfer originates; (b) some derivation of the name of the country/government to which the financial or in-kind transfer is directed; and (c) at least one keyword related to financing or development projects, such as "grant," "loan," or "medical team." An illustrative set of search terms for Chinese ODA- and OOF-financed activities in Chile is provided below:

(China or chinese or chin*) near5 (Chile or Chilean or Chile* or Santiago) AND (assist* or grant* or loan* or lend* or lent or donat* or donor* or fund* or invest* or financ* or economic package or development package or aid or scholarship* or capacity building or training* or joint* near5 train* or train* near5 program* or technical cooperat* or exchange* or medical team* or experts or provid* or provision* or support or debt* near5 forgive* or debt* near5 relie* or debt* near5 cancel* or export credit* or mixed credit* or buyer* credit* or disburse* or feasibility stud* or relief effort* or disaster relief or humanitarian relief or emergency relief or relief supplies or relief materials or sign* near5 agreement)

The TUFF Robot uses a similar query for Dow Jones DNA but only includes some derivation of the name of the country/government from which the financial or in-kind transfer originates.

3.2 - Stage 2: Record Enhancement and Verification

In Stage 2, AidData coders populate as many "empty" dataset fields (i.e., financing and implementation details) as possible for each project/activity record that was identified in Stage 1. They also seek to corroborate key project details by cross-checking them with new sources. Additionally, in Stage 2, AidData coders identify and remove duplicate project/activity records.

3.2.1 - De-duplication and Detailed Searches

Stage 2 is undertaken in four steps:

1. Coders review the project information collected during Stage 1 and conduct duplicate checks to ensure that newly-generated project/activity records capture new/unique

projects/activities that are not already captured elsewhere in the data management platform.

2. Coders review and seek to verify the coding and categorization determinations that were made during Stage 1 with the same set of sources that were identified during Stage 1. They also review the "Staff Comments" field to identify key information gaps that need to be addressed.
3. Coders conduct targeted searches with English, Mandarin Chinese, and local language terms. These searches include the following steps:
 - a. With English and Mandarin Chinese terms, search Chinese government sources⁷⁴ to verify the existence of the project/activity, dates related to key variables, the flow type, the transaction amount, and the official project title in Mandarin Chinese;
 - b. With English and local language terms, search recipient government sources⁷⁵ to verify transaction amounts, borrowing terms, loan disbursements, locational details, and the official project title in local language of the recipient country;
 - c. With English, Mandarin Chinese, and local language terms, search implementing agency sources⁷⁶ (e.g. annual reports of Chinese state-owned enterprises) to collect locational details and up-to-date information about the implementation status/progress of the project;
 - d. With English, Mandarin Chinese, and local language terms, search additional official sources (e.g. IMF Article IV report) to cross-check and verify the transaction amount, the commitment date, loan pricing details, and loan disbursement information; and
 - e. With English and local language terms, search local media to collect information about project implementation progress
4. Coders fix broken sources (hyperlinks) that were identified during Stage 1. They also update the Staff Comments field to flag unresolved discrepancies and key information gaps that require the attention of Stage 3 (Quality Assurance) coders.

As coders conduct these searches and identify new information, they systematically populate 126 fields for each record. That process and the field-specific coding instructions that are given to AidData coders are detailed in the next section.

⁷⁴ One example of using Chinese search terms to identify information from Chinese government sources is as follows: "site:mofcom.gov.cn 中加友谊体育场贷款." This combination of search terms, which includes the url of a Chinese government site, the project name in Chinese (Sino-Gabon Friendship Stadium), and the word "loan" in Chinese, will yield information about loans provided to fund the Sino-Gabon Friendship Stadium.

⁷⁵ One example of using local language search terms to identify information from recipient government sources is as follows: "site:gub.uy acuerdo de cooperación económica y técnica China 2009." This combination of search terms, which includes the url of a recipient government site, the type of agreement in Spanish, the word "China" in Spanish, and the year the agreement was signed, will yield information about the Economic and Technical Cooperation agreement signed between the Chinese government and Uruguayan government in 2009.

⁷⁶ One example of using English language search terms to identify information from implementing organizations' sources is as follows: "site:gwcl.com.gh China Kpong Water Supply Expansion Project." This combination of search terms, which includes the url of a local contractor's web page, the name of the financier, and the project name in English, will yield information about the Kpong Water Supply Expansion Project financed by China Eximbank in Ghana.

3.2.2 - Dataset Variables and Structure

As part of Stage 2, AidData coders seek to verify existing information and collect new information in order to accurately populate all 126 fields (variables) in the 3.0 dataset for each record. See Section 1.4 for a complete set of field names and definitions. AidData coders are instructed to adhere to the following guidelines in order to populate these fields.

- **Umbrella marker (Yes/No):** There are two primary reasons a project and/or activity record's "Umbrella" field can be set to Yes: (1) to avoid double counting commitment amounts across the dataset; and (2) to capture an overarching agreement/pledge of funding that ultimately leads to multiple, subsidiary projects (such as a master loan facility, an Economic and Technical Cooperation Agreement (ETCA), or a framework agreement). The most common types of umbrella projects involve (a) debt forgiveness of loans that were contracted (or may have been contracted) during the 2000-2021 period (and thus may be captured elsewhere in the dataset); and (b) grants/interest-free loans issued through ETCAs for unspecified purposes/projects (which since multiple, unknown projects may have been financed through these agreements, which creates a risk of double-counting of other projects and commitment amounts). There are also a few exceptions where AidData coders confirmed the complete disbursement of a large line of credit, but could not identify the full range of sub-projects.⁷⁷ Umbrella records should be linked to related project/activity records through their title field and description fields by a reference to their unique identification numbers ('AidData Record ID'). They should also be linked by an AidData Parent ID (or IDs).
- **Commitment Year:** The commitment year field captures the year in which an official financial commitment (or official commitment to provide in-kind support) was codified through the signing of a formal agreement by an official donor/lender in China and one or more entities in a recipient country or a set of recipient countries. Whenever possible, this field is based on the precise calendar day when the official commitment was issued, which is captured in the 'Commitment Date' field. However, in some cases, the official commitment date is unknown. In such cases, the commitment year is based on whichever proxy is used for the commitment date. The process for identifying a proxy date is explained in the 'Commitment Date/Commitment Date Estimated' section. For projects/activities that are assigned to the Pipeline: Pledge status category, the commitment year will reflect the year in which the informal pledge was announced.
- **Commitment Date/Commitment Date Estimated:** The commitment date field captures the date on which an official donor/lender in China and one or more entities in a recipient country or set of recipient countries makes an official financial commitment (or official commitment to provide in-kind support) by signing a formal agreement. When the month, day, and year of the formal signed commitment are all known, it is recorded in the commitment date field. If the precise month, day, and/or year is unknown, AidData use the following proxies to estimate the commitment date: (1) The first day of a known month in a known year if we do not know the day (i.e. 04/01/2017); (2) January 1st of a known year if we do not know the month or day (i.e. 01/01/2017); (3) the first day, first month, and first year of a central bank's financial fiscal year (i.e. the State Bank of Pakistan's financial fiscal year is from July 1 to June 30 so AidData would code July 1

⁷⁷ In these rare and specific cases (Project ID#66806 and #40135), AidData coders have marked the main commitment/disbursement project as a non-umbrella project, and removed the transaction amount from any individual subsidiary projects to avoid double-counting.

of the first calendar year as the estimated commitment date) if the fiscal year is known but the month, day, and year of the signed financial agreement is unknown; (4) the first year of project implementation if the month, day, and year of the signed financial agreement are unknown; (5) the year in which the underlying commercial contract (supported by the official financial commitment) was signed if the month, day, and year of the signed financial agreement are unknown; (6) the first year in which an informal pledge was made if the month, day, and year of the signed financial agreement are unknown.

- If any of these proxies are used to estimate the commitment date, the “Commitment date estimated” field is set to “Yes.” For projects that are assigned to the Pipeline: Pledge status category, AidData coders are instructed to record the date on which the informal pledge was announced.
- **Title:** In this field, AidData coders are instructed to include the following information when they create or edit a record title: the funding agency name, the flow type (e.g., loan, grant, technical assistance), the commitment amount (if applicable), and the formal English-language project title. If a formal English-language project title is unavailable, the purpose of the transfer is identified. Example: “China Eximbank provides \$267.2 million preferential buyer's credit for 500 kV North-South Power Transmission Line Project.”
- **Description:** AidData coders are instructed to include the following information when they are creating or editing the description field:
 - *Basic project/activity information.* Coders should identify the funding agencies, direct and indirect receiving agencies, the amount of funding they officially committed for the project/activity, the currency of denomination, the type of financial agreement that was signed, the official commitment date, and a description of the purpose of the funding. Sometimes this is straightforward (e.g., a grant to build a hospital). However, at times, the financial commitment indirectly supports a project/activity (e.g., a loan is issued to a company which then invests in a project/activity). In such cases, coders are instructed to clearly document how the financing is used, and for what purposes.
 - *Financial details.* Coders should identify the specific terms and conditions that govern the financing agreement, the timing and monetary value of commercial contracts and financial disbursements, and the existence of any special arrangements (such as on-lending agreements or offshore escrow accounts into which project revenues must be deposited). They should also document any key calculations or assumptions, such as the way in which an “all in” interest rate was measured. For example: “The CDB loan had a variable interest rate of 6-month LIBOR + a 2.90% margin. The interest rate of the loan that supported this project is coded based on the 6-month LIBOR at time of signing of the loan agreement. The average 6-month LIBOR rate in June 2012 was 0.736%. The interest rate was therefore coded as 0.736% + 2.90%, or 3.636%.”
 - *Physical implementation details.* Coders should provide a description of major project/activity events and the precise calendar dates when they took place (e.g., commercial contract signing date, implementation start date, project completion date, commercial operations date, and major milestones such as when a project passes a midterm or final inspection by the funding agency). Additionally, coders should identify all implementing agencies, co-financing agencies, receiving agencies, or accountable agencies.

- *Financial implementation details.* Whenever possible for loan records, coders should record loan disbursement rate, debt repayment schedule, outstanding debt amount, any events of default, maturity extension, and point to any debt cancellation or debt restructuring records related to this project/activity. (e.g., The \$2.9 billion USD syndicated facility was fully drawn (disbursed) at its 2009 inception. In 2012, Yancoal Australia repaid \$100 million USD of the \$2.9 billion USD facility to CDB. In 2013, it repaid \$100 million USD; in 2014, it repaid \$99 million USD. As of December 31, 2015, the outstanding balance was down to \$2,600,000,000 USD. In 2017, Yancoal repaid \$150 million USD under the syndicated facility, reducing the balance to \$2.450 billion USD. On September 17, 2018, it repaid \$75 million USD; on October 17, 2018, it repaid \$50 million USD, lowering the outstanding balance to \$1.525 billion USD.)
- *Geographical information.* Coders should record geographical details that accurately and precisely document project's physical footprint, including location names and types; the position or distance of the project's location vis-à-vis other geographical features (e.g., the building is located across the street from the country's parliamentary complex in the capital city); the name, length, and start points and end points of physical infrastructure supported by the project (e.g., the 115.85 kilometer A1 highway runs from Colombo to Kandy); the total land area occupied by the project site (e.g., the industrial park occupies a 10 square kilometer area); and latitude and longitude coordinates of specific project features (e.g., the coordinates of Olkaria IV Geothermal Power Station Kenya at Hells Gate National Park are -0.918056, 36.334444).
- *Name the sources.* When key project/activity details are provided in the description (e.g., transaction amounts, commitment years), coders should identify the specific source or sources which provide such information. Example: "According to the 2017 Annual Debt Report published by Sierra Leone's Ministry of Finance, the Government of Sierra Leone signed a government concessional loan (GCL) agreement with China Eximbank on March 13, 2016 for a National Broadband Project that carries the following borrowing terms: 20 year maturity, 5 year grace period. 2% interest rate."
- *Risks, Achievements, Failures, and Setbacks.* Whenever possible, coders should include a detailed overview of the various challenges that arose during project design and implementation (such as controversies, strikes, riots, public protests, wars, corruption scandals, natural disasters, public health restrictions, political transitions, bankruptcies, debt defaults, contractual disputes, lawsuits, and ruptures in diplomatic relations) and how funding, receiving, implementing, and accountable institutions responded to these challenges. Additionally, the description should include information about project achievements and failures, contractor performance vis-à-vis deadlines and deliverables, and findings from project audits and evaluations.
- **Staff Comments:** This field is used to identify the assumptions, logic, and evidence that coders used to address coding and categorization determinations. It also provides contextual information and source materials that users (and future AidData coders) may find helpful if and when they seek to collect supplementary information about the project/activity (or revisit previous coding and categorization determinations). More specifically, this field seeks to document:
 - *Discrepancies between sources:* Coders should explicitly identify discrepancies across different sources when they relate to key fields (such as the commitment

year, the transaction amount, the funding agency, the receiving agency, and loan pricing details). They should also specify how they adjudicated between competing sources and resolved discrepancies. Example: “In the database of Chinese loan commitments that SAIS-CARI released in July 2020, it identifies a \$264 million China Eximbank loan in 2009 for this project. However, AidData relies on the face value of the CMEC supplier’s credit (\$551,507,000) and the commitment year (2005) of the supplier’s credit agreement that is specified in the agreement itself. It is possible that CMEC obtained an export seller’s credit from China Eximbank to finance its supplier’s credit with the Republic of Congo; however, AidData has not yet independently confirmed that this occurred. [...] The CMEC supplier’s credit agreement can be accessed in its entirety via <https://www.dropbox.com/s/g4bkuq71ezrpjoy/L%20n%C2%B019-2019%20du%2024%20mai%202019.pdf?dl=0> or https://www.documentcloud.org/documents/20488096-cog_2005_490.”

- *Project titles in English, Chinese, and local languages.* Example: This project is also known as the Third Bridge Construction Project. The Chinese project title is 马里共和国巴马科第三大桥 or 援马里巴马科第三大桥项目. The French project title is La construction du 3ème pont de Bamako or Pont de l'amitié sino-malienne.
- Any assumptions, logic, and evidence used to calculate the transaction amount, interest rate, or other financial detail variables. For Example: “The individual contributions of China Eximbank, and Credit Suisse AG to the syndicated loan are unknown. For the time being, AidData has estimated the contribution of the China EXIM bank by assuming that the two lenders contributed equal amounts (\$42,000,000) to the loan syndicate.” or “The individual contributions of the syndicate members are unknown. For the time being, AidData has estimated the contribution of the four Chinese state-owned banks by assuming that the thirteen lenders contributed equal amounts (\$76,923,076.92) to the loan syndicate.”
- Specific justifications for challenging coding and categorization determinations. Example: “AidData has coded this transaction as a collateralized loan because ICBC was selected as the security agent (i.e. collateral agent) for the loan. When lenders take collateral as security for their loans, a collateral/security agent is often appointed to enforce rights against the collateral in the event of the borrower’s default under the loan.”
- *Issues that were not fully resolved and/or that require further investigation.* Example: “According to the financial reports published by JP EPS, it contracted a \$35,938,868.58 loan with the Chinese Government on June 25, 2010 to finance the imports of goods and services—including transformers, transmission lines, conveyors and bulldozers—from China. This loan also has an 11 year repayment period (between July 21, 2010 and January 21, 2010) and it also carries an interest rate of 6-month LIBOR plus a 1.3% margin. It is unclear if this loan is distinct from the China Eximbank loan that was rescheduled on February 20, 2009. For the time being, in order to err on the side of caution, AidData does not record a separate loan to capture the loan that JP EPS reportedly contracted on June 25, 2010. However, this issue merits further investigation.”
- *Hyperlinks to uniquely important sources, such as unredacted EPC contracts, unredacted grant and loan agreements, official correspondence between lenders and borrowers, and direct correspondence between AidData and*

government officials in recipient countries. Example: "The 2011 prepayment facility agreement between PetroChina and PetroEcuador can be accessed in its entirety via https://www.dropbox.com/s/gfl6z608d9abalf/CONTRATO_PRINCIPAL_2011048.pdf?dl=0."

- **Status:** AidData coders are instructed to follow a two-step process to make status field determinations. First, coders are instructed to determine if an official commitment has taken place. Second, if an official commitment has taken place, coders are instructed to determine if the project/activity has reached implementation or completion—or if it was subsequently suspended or canceled.
 - Guidance on when to assign records to the Pipeline: Pledge, Pipeline: Commitment, Implementation, or Completed status category:
 - If a commitment from an official sector institution in China took place, and the project/activity was reportedly implemented or completed, assume that the financial or in-kind transfer took place (at least in part) and assign the record to the Implementation or Completion status category.
 - If a pledge was issued by an official sector institution in China, and the project/activity was reportedly implemented or completed, do not assume that the financial or in-kind transfer took place (in part or in whole). Assign the record to the Pipeline: Pledge status category. Additionally, if negotiations with an official sector institution in China are ongoing, keep the record in the Pipeline: Pledge status category. If negotiations with an official sector institution in China do not result in an official commitment, keep the record in the Pipeline: Pledge status category.
 - If a commitment from an official sector institution in China took place but the financial or in-kind transfer never materialized, and the project/activity was reportedly completed (with an alternative source of financing), the record should either be assigned a status code of Pipeline: Commitment (with an explanation that there is no evidence of disbursements taking place) or a status code of Suspended or Canceled (if there is clear evidence that the official sector institution in China withdrew its support).
 - If a project/activity's status is unknown, but sources indicate that an official sector institution from China fully disbursed the funds that it previously committed to the project/activity (with no reports of suspension/cancellation), assign the record to the Completion status category.
 - Guidance on when to assign records to the Suspended or Canceled status category:
 - Only projects/activities that previously secured a commitment from an official sector institution in China can be assigned to the Suspended or Canceled status category. A record that was assigned to the Pipeline: Pledge category and never secured a commitment from an official sector institution in China should not be assigned to the Suspended or Canceled status category (even if it is known that the project/activity was never carried out). Such records should remain in the Pipeline: Pledge category.

- If a loan agreement was signed but subsequently rejected by the parliament or judicial body in the recipient countries, then it should be assigned to the Canceled status category.
 - If a loan agreement was suspended and then a new loan request was made by the borrowing institution, two separate records should be created: one for the suspended loan agreement and another for the new loan request (which should be assigned to the Pipeline: Pledge status category).
 - If financial disbursements took place prior to the cancellation/suspension of a project/activity that previously secured a commitment from an official sector institution in China, coders should record the original financial commitment amount in one record and assign it to the Suspended or Canceled status category, and create a separate record to capture disbursed amount prior to cancellation/suspension and assign it to the Completed status category.
 - If a loan agreement was issued by an official sector institution in China but official sources indicate that no disbursements were ever made, the record should be assigned to the Suspended status category.
 - If no official sources explicitly report a suspension or cancellation of the financing agreement and information about the project/activity's progress is either sparse or absent, coders should seek to identify (1) evidence of the receiving agency (or another entity in the recipient country) identifying an alternative source of funding to finance the commercial contract; (2) evidence of the receiving agency (or another entity in the recipient country) signing a new commercial contract with a different contractor; and (3) whether the financing agreement is recorded from the country's aid/debt information management system (registry). In any of these 3 scenarios, it is possible that the financing agreement was never finalized (i.e., an official commitment never took place), and coders should assign the record to the Pipeline: Pledge status category.
- Intent: Identifying the intent of a project/activity should be based on three considerations:
 - *Does the project/activity seek to improve the economic development or welfare in the host country?* If so, the project/activity should be coded as having development intent, which is consistent with OECD-DAC guidelines. Development intent is determined independently from the concessionality calculation for loans. A project/activity can have development intent and also be non-concessional. Any infrastructure projects that can improve economic development or welfare in host countries that are financed with Chinese debt and without Chinese equity should be coded as development intent, *regardless of whether the debt is offered on concessional or non-concessional terms*. Most projects/activities are assumed to have development intent unless there is specific evidence of commercial, representational, or military intent.
 - *Does the project/activity seek to enhance the commercial interests of the financier country (China)?* If so, the project/activity should be coded as having

commercial intent.⁷⁸ Loans to help shipping companies acquire vessels that will allow them to move ocean containers from country to country or shipping equipment should be coded as commercial intent as they are designed to support the commercial operations of the companies and not to advance an economic development objective in the host country. A loan to help a company finance its general operations, or a loan to help a company service its existing debts should also be coded as having commercial intent. Working capital loans or "working credit facilities" provide funds for a borrower's day-to-day operations should be coded as commercial intent. Cross-currency interest rate swaps are a form of corporate financing and such they represent transactions with commercial intent.

- *Does the project/activity seek to disseminate or promote Chinese culture, language, or values?* If so, the project/activity should be coded as having representational intent. Donations of equipment that apparently will be used to spread Chinese culture, language or values should be coded as representational intent. This includes donations of Chinese books on Chinese traditions, donations of lion dance props, and even donations of luxury items from China (e.g., the Hongqi L5 vehicle). Projects to establish or upgrade Confucius Institutes and Chinese cultural centers are considered projects with representational intent. Projects that involve the dispatch of Chinese language instructors to recipient countries are considered projects with representation intent.
- **Sector Code/Sector Name:** Based on the OECD's 3-digit sector codes and names, AidData coders should assign each project/activity to the sector that it is meant to support. If the specific activities of a transaction are unknown, the record should be assigned to the sector of the receiving agency (i.e., financing with unspecified purpose to a major oil and gas company should be coded to the energy sector). Records with unknown activities/purposes and unknown receiving agencies are assigned to the unspecified sector (998).
- **Infrastructure:** This flag provides a marker of whether a project/activity is an infrastructure project. In order to populate this field in the 3.0 dataset, staff isolated likely infrastructure projects by identifying all projects with title fields or description fields that included one or more of the following keywords: construc*, build, rehabilit*, upgrad*, renovat*, exten*, restor*, built, groundbreaking, fiber, power plant, expansion, electrification, hydro*, instal*, foundation. All projects that are assigned to the following flow type categories: debt forgiveness, debt rescheduling, scholarships, training, or free-standing technical assistance activities, as well as umbrella records, were also excluded. Coders then performed a manual review of the project/activity records that contained keyword matches to determine whether the infrastructure field should be set to 'Yes' or 'No'. This was followed by a review of all project/activity records without a keyword match (though still excluding debt forgiveness, debt rescheduling, scholarships, training, or free-standing technical assistance activities, as well as umbrella records).

⁷⁸ Projects assigned to the "Commercial intent" status category are those that primarily seek to promote the commercial interests of the country from which the financial transfer originated (e.g., encouraging the export of Chinese goods and services).

AidData coders were instructed to read project/activity record title and description fields to make their determinations. More specifically, coders were instructed to set the Infrastructure field to 'Yes' if the project involved one of the following:

- building a new physical structure
- rehabilitating or adding onto an existing physical structure, and/or
- maintaining an existing physical structure.

Coders were instructed to *not* set the infrastructure field to 'yes' when a project/activity involved the provision of cash, technical assistance, scholarships, equipment, or supplies.

- **COVID:** This field provides a marker of whether it is known that the project/activity is part of China's global COVID-19 response efforts. In the 3.0 version of the dataset, this field was populated by first using artificial intelligence (AI) to identify all project/activity records that matched the OECD's 5-digit sector code for COVID-related projects (12264). The COVID field for project/activity records that received this sector designation were systematically set to 'Yes'. In future iterations of the dataset, AidData coders will be instructed to evaluate the sources that describe a project/activity for evidence that the purpose of the project/activity is related to COVID-19 control, including providing information, education and communication as well as activities or materials enabling testing, prevention, immunization, treatment, or care.
- **Funding agency:** Only the official sector institution in China providing the financial or in-kind support should be identified as a funding agency. Co-financing agencies should be identified in the co-financing field (regardless of whether they are official sector institutions from China). The transaction (commitment) amount should correspond to the financial or in-kind transfer from only the official sector institution in China identified as the funding agency. If the project/activity was financed by multiple official sector institutions from China, and the respective financial commitments of each institution are known, a separate project/activity record should be created for each commitment amount and corresponding funding agency; all other contributors should be added as co-financing agencies. If, however, the respective financial commitments of each institution are not known (but the total commitment amount from all official sector institutions in China is known), then the Equal Contribution Assumption should be applied (see 'Equal Contribution Assumption' below).
- **Co-financing agency/marker:** If a project has a co-financier, the co-financing field (marker) should be set to "Yes," including in cases where the specific co-financing agencies are unknown. The co-financing agency name(s), organization type(s), and origin(s) should also be identified. Counterpart funding from the recipient agency/company is not considered co-financing.
- **Direct and Indirect Receiving Agency:** The 'Direct Receiving Agencies' field identifies the agency designated to receive and manage the financial or in-kind transfer. The Indirect Receiving Agencies' field provides the name of the agency or agencies that receive and manage a financial transfer (loan) from the entity captured in the 'Direct Receiving Agencies' field. If a receiving agency (borrower) on-lends the proceeds of a loan to an additional entity or entities, then the borrower is captured in the 'Direct Receiving Agencies' field and the additional entity or entities which receive loans from the borrower is captured in the 'Indirect Receiving Agencies' field. If more than one entity is responsible for receiving and managing incoming grant funds or an in-kind transfer, all of these entities are identified in the 'Direct Receiving Agencies' field. For seller's credits, the Chinese state-owned enterprise receiving an export seller's credit from the Chinese state-owned bank should be coded as direct receiving agencies; and

the foreign customer (borrower) in the recipient country which is in turn receiving the supplier's credit from the Chinese state-owned enterprise should be coded as indirect receiving agencies. When a Chinese state-owned enterprise uses its own funds (without any known export seller's credit from a Chinese state-owned bank) to provide a supplier's own financing to a foreign customer (borrower) in the recipient country, only the foreign customer should be coded as the direct receiving agency. If an official sector institution in China provides a loan to a bank or financial institution in the recipient country, and that bank or financial institution in-turn uses the proceeds of the loan to on-lend to state-owned companies or agencies in the recipient country, then the entity who is on-lending the proceeds of the loan should be coded as the direct receiving agency; and the entity (or entities) receiving the loan should all be coded as indirect receiving agencies.

- **Implementing Agency:** The organizations/entities involved in carrying out the project should be identified in this field (and in the description field).
- **Insurance Provider/Insurance Provided:** An insurance provider is a third-party organization (i.e., not the funding agency or the receiving agency) that issues a credit insurance policy to ensure repayment in the event that the borrower (i.e. direct receiving agency) cannot service its debt. A common scenario is one in which Sinosure issues a credit insurance policy in support of an export buyer's credit from a Chinese state-owned bank. However, the insurer need not be an official sector institution in China. If an insurance provider is identified, the 'insurance provided' field should be set to 'Yes.' If it is known that a credit insurance policy was taken out for a loan but no insurance provider could be identified, the 'insurance provided' field should also be set to 'Yes'. All credit insurance policies correspond to loans; only project/activity records with flow types set to 'loan' should identify insurance provider(s). Insurance provider information should also be recorded in the project/activity record's description field.
- **Guarantor/Guarantee Provided:** A guarantor is an agency that provides a repayment guarantee in the event the borrower (i.e. direct receiving agency) cannot meet its debt repayment obligations. By providing a guarantee, the guarantor is promising to repay the loan if the receiving agency (primary borrower) defaults on its repayment obligations. Government agencies from the recipient country may issue a sovereign guarantee,⁷⁹ though guarantees can also come from private companies, state-owned companies, or other types of agencies (in China, the recipient country, or another country). Coders are provided the following guidance:
 - If a third-party repayment guarantee is issued, the 'guarantee provided' field should be set to 'Yes' and the organization(s) providing the guarantee should be added as agencies, their role set to 'guarantor'. In the case of a sovereign guarantee, the guarantor should be the recipient government.
 - If the recipient government issues a sovereign guarantee in support of a loan issued to another entity, this information should be recorded in the description field.
 - Only project/activity records with flow types set to 'loan' should identify guarantors and/or set the 'guarantee provided' field to 'Yes'.

⁷⁹ Sovereign guarantees are legally binding commitments by a sovereign government to assume responsibility for servicing a debt on behalf of another entity under specific conditions (e.g. default). A sovereign guarantee represents a contingent liability on the recipient government's balance sheet. Sovereign guarantees can be provided to public or private entities. Sovereign guarantees are also sometimes referred to as government guarantees or public guarantees.

- The 'guarantee provided' field may be set to 'Yes' even if no guarantor is identifiable, provided source(s) indicate this is the case. However, coders should verify a guarantee was actually provided, rather than collateral.
- Coders should use caution to prevent mistaking the provision of collateral for a guarantee and vice versa. They are instructed that:
 - A guarantee is typically not related to a specific asset or revenue stream. Rather, the issuance of a sovereign guarantee allows the creditor to secure repayment by pursuing *any* assets or revenue streams controlled by the sovereign government in the event of default (assuming the assets/revenue streams in question are not protected by sovereign immunity). If a guarantee is mentioned in relation to a specific revenue stream, it may be a reference to collateral (see section on "Collateralized Lending" in Section 2.5.3.3).
 - If the word 'guarantee' is mentioned in relation to the repayment of the loan by a non-English language source, this *may* indicate collateralization rather than a guarantee as AidData defines it. In languages other than English, collateralized debt arrangements are sometimes referred to as 'guarantee' or 'guaranteed.' However, in English, a (third-party) guarantee is a concept that is distinct from collateralization. Similarly, if a loan is "guaranteed by" a specific asset, this may indicate collateralization rather than a guarantee.
- **Collateral Provider/Collateralized/Securitized:** If an entity pledges one or more sources of collateral for a loan that can be seized in the event the borrower defaults on its repayment obligations, it should be identified as an accountable agency. The 'Collateralized/Securitized' field should also be set to 'Yes'. When it is known a loan is collateralized, AidData coders should identify the exact source(s) of collateral and populate the 'collateral' field, describing the nature of the collateral that was pledged. However, coders may set the 'Collateralized/Securitized' field to yes without knowing the collateral provider and/or the exact collateral pledged if they cannot be identified. Only project/activity records with flow types set to 'loan' should identify collateral providers, set the 'collateralized/secured' field to 'Yes', and/or list sources of collateral.
 - In order to identify projects that are collateralized but may not explicitly use the term "collateral" or deviations thereof, AidData coders should reference 'Collateralized Lending' in Section 2.5.3.3.
- **Security Agent/Collateral Agent:** The security agent or collateral agent is the organization that was appointed to enforce rights against the collateral in the event that the borrower defaults on its debt repayment obligations. Only project/activity records with flow types set to 'loan' should include agencies with the role 'Security Agent/Collateral Agent'.
- **Agency Type:** For each kind of agency involved in a project (i.e., funding, cofinancing, receiving, implementing, or accountable agency), coders are instructed to identify the agency type. Specific considerations for certain agency types include the following:
 - *Government agencies.* These agency type designations are given to any entities that are a part or an extension of the governmental structure in the country (whether in China or in the recipient country).
 - *State-owned policy bank/state-owned commercial bank.* These agency type designations are only used for Chinese state-owned policy banks and commercial banks that provide overseas funding. The policy banks include

China Eximbank and CDB. The state-owned commercial banks include those that are at least 50% owned by the Chinese government. The state-owned commercial banks also include so-called shareholding commercial banks that are subsidiaries of state-owned enterprises (e.g., China CITIC Bank) and city commercial banks (i.e., Bank of Shanghai).

- *State-owned bank*. This agency type designation is only used in recipient countries when the bank is at least 50% owned by the recipient government.
- *State-owned company*. We consider all companies with the state as their largest shareholder to be state-owned companies. These include companies that are wholly-owned or majority-owned or partially-owned by the state. Wholly-owned subsidiaries of state-owned companies are also coded as state-owned. This definition holds for Chinese and recipient state-owned companies.
- *Private sector*. This agency type designation encompasses all companies with no state ownership or where the state was not the largest shareholder.
- *State-owned fund*. This agency type designation is only used for funds set up and financed by Chinese governmental and state-owned banking entities. Certain funds are region-specific, such as the Africa Growing Together Fund, and the China Co-financing Fund for LAC. Some funds may serve a specific purpose, such as the Silk Road Fund, that is dedicated to providing financing in countries participating in the Belt and Road Initiative. Others are set up to support intergovernmental organizations, such as the People's Republic of China Poverty Reduction and Regional Cooperation Fund, and China Trust Fund.
- *Special purpose vehicle/joint venture*. This agency type designation captures project companies (independent legal entities) that are established to manage the financing and implementation of a particular project. Owner organizations, when known, should be attached to the SPV/JV's organization record with their ownership stake documented. This information should also be noted in the description field of the record(s) associated with the SPV/JV and in the organization's description field.
- *Intergovernmental Organization*. This agency type designation captures organizations made up of governments from multiple countries. Coders should ensure funding agencies do not fall in the intergovernmental organization category.
- *NGO/CSO/Foundation*. This agency type designation captures non-governmental organizations, civil service organizations, and foundations. AidData coders are instructed to ensure funding agencies do not fall into the NGO/CSO/Foundation category, as these fall outside the scope of official sector financing.
- *Miscellaneous Agency Type*. This agency type designation captures all other agencies that do not fit in one of the above categories. AidData coders are instructed to use this designation sparingly.
- **Agency Origin**: For each kind of agency involved in a project/activity (i.e., funding, cofinancing, receiving, implementing, or accountable agency), coders are instructed to identify the agency origin. The agency origin is no longer captured in a separate field. However, it is reflected in the 'Agency Type' fields (i.e. 'Guarantor Agency Type', 'Implementing Agencies Type', etc).
 - For example, for a record where a state-owned enterprise involved in project implementation has its origin set to China, the 'Implementing Agencies Type' variable will be set to 'Chinese state-owned enterprise'.

- Specific considerations for certain agency types include the following:
 - The agency origin field should be set to China if the agency is wholly-owned by the Chinese government or a Chinese company.
 - The agency origin field should be set to “recipient country” if the agency is wholly-owned by the government or companies in the recipient country.
 - The agency origin field should be set to “other” if (1) the organization is wholly-owned by an entity not from the recipient country or China; (2) the organization is an intergovernmental organization; or (3) the organization is partially owned by an entity from China and an entity from the recipient country.
- **Transaction Amount:** In most circumstances, only the face values of loans and grants (or the monetary values of in-kind transfers) from official sector institutions in China should be recorded as transaction amounts. When an official commitment amount is identified, AidData coders are instructed to record it as the official transaction amount even if the disbursed amount is different from the official committed amount. However, if an official commitment amount is not provided and a disbursement amount is provided, AidData coders are instructed to record to use the disbursement amount as a proxy for the official commitment amount.⁸⁰ However, this coding rule only applies to completed projects.
 - There are cases where a separate project/activity record should be created for the sole purpose of capturing disbursements: (1) disbursement (drawn down amount) for a line of credit that has been coded as umbrella project - see section on Master Loan Facilities/Agreements and Credit Lines (see Section 2.1.3.2), and (2) disbursements made prior to a project cancellation (one project/activity record should already be created for the cancelled project).⁸¹
 - If a coder is not certain that an official sector institution in China fully financed the entire project/activity, the total project/activity cost should not be recorded as the transaction amount. The transaction amount should only capture the financial amount provided by the official sector institution in China.
 - If there are two transaction amounts in a single project/activity (e.g. two disbursements in different currencies), coders are instructed to create two separate project/activity records. The title field and description field should identify the project/activity records as linked through their unique identification numbers ('AidData Record ID') and should further share an AidData Parent ID.
 - For transaction amount coding practices associated with specific lending instruments, see Section 2.5.3.3.
- **Amount Estimated:** For the vast majority of project/activity records in the 3.0 dataset, the reported transaction amount is based on information in the primary (hyperlinked) source materials. However, there are a few unique scenarios in which transaction

⁸⁰ Sometimes there are cost overruns on projects and the Chinese government ends up providing top-up funding beyond the original commitment amount to address these cost overruns. So, in effect, a higher disbursement figure compared to the original commitment amount serves as a proxy for the final official commitment amount *after the top-up funding is included*. There is often an agreement revision/addendum to officially increase the face value of the loan (but we usually don't have access to these agreement revisions/addenda).

⁸¹ We do not count the face value of a line of credit (or master loan facility) as an official commitment amount if it is not fully utilized by the borrower.

amounts are estimated by AidData coders using information that is provided in the project/activity record itself. In these cases, the 'Amount Estimated' field should be set to 'Yes' and a Staff Comment should be added explaining how the estimation was generated.

- *Equal Contribution Assumption for Syndicated Loans*

- If the members of a loan syndicate are known but their individual contributions are not known, AidData coders are instructed to divide the total value of the syndicated loan by the total number of known syndicate members. This value is then used as the (estimated) transaction amount for the individual project/activity record capturing the contribution of an individual syndicate member. This is done to avoid artificially deflating commitment aggregates, as would occur if the Chinese official financing was coded as zero for these projects/activities. When applying the equal contribution assumption, coders should leave a staff comment explaining the calculation used.
 - Example, AidData Record ID #89485: "The exact size of Bank of China and ICBC's respective financial contributions to the \$8 billion syndicated bridge loan are unknown. For the time being, AidData assumes that all 19 members of the lending syndicate contributed equal amounts (\$421,052,631)." Coders should add one Chinese bank for that project entry as the funding agency (in this case, Bank of China) and all others as the co-financing agencies (see the linked Record #89485 for an example).
- If coders know some but not all syndicate members, and know the total value of the loan, coders are instructed to estimate individual bank contributions to the syndicated loan based on the total number of known members of the syndicate – even if there are only two or three.
 - For example, in AidData Record ID #98335, it is known that at least twelve banks participated in this syndicate, but the exact number of participants is unknown. AidData applies the equal contribution assumption, and a staff comment notes: "AidData assumes that the twelve known syndicate members each contributed an equal amount to the syndicate (USD 20,833,333)".
- We will not apply the equal contributions assumption if we do not know the total transaction/commitment value of the syndicated loan.
- For each tranche of a loan, the equal contribution assumption is applied independently. This means that if a Chinese bank is not involved in a particular tranche, we do not count it for the purposes of equal contribution assumption calculations.
- If multiple branches of the same bank are participating in a syndicated loan, each branch counts as a distinct lender. For example, a syndicate loan with DBS Bank and three different branches of ICBC has 4 members of a syndicate, not 2. The same rule applies for subsidiaries, e.g. ICBC London PLC and ICBC are two distinct lenders.
 - This impacts how the transaction amount is coded for Chinese banks. If there are three branches of the same Chinese bank, your assumed transaction amount should be the sum of all the branches' loans.

used. In cases where a catalogue was available for a given month but the specific item donated was not included, an average of that items' cost in other CSCS catalogues was used.

- Next, AidData took steps to pinpoint all in-kind donations of COVID-related health supplies for which a transaction amount needed to be, and could be, imputed. First, a broad set of potentially eligible donations were identified using a keyword search in internal databases for "COVID". Additionally, all projects for which the COVID variable field was set to "Yes" were reviewed. Next, AidData coders reviewed these projects to identify which met the following criteria:
 - The number of units donated were known for at least one type of supply
 - No available source provided a monetary value for the donation
 - At least one type of supply donated was included in the WHO's Emergency Global Supplies Catalogue for COVID-19
- AidData coders then multiplied the per-unit price of the relevant item by the number of units donated in order to calculate the estimated transaction amount. Coders were instructed to code certain specific cases in the following ways:
 - In cases where multiple types of supplies were provided in the same donation, the "units donated times per unit price" calculation was repeated for each supply type, and their value summed for the total estimated transaction amount.
 - In cases where the number of units donated are known for some types of medical supplies but not for others, the transaction amount is based only on the supplies with a known number of donated units.
 - In cases where both items that do and do not appear in a price catalogue were donated together, the transaction amount is based only on the known items.
 - In cases where a group of donors provided the in-kind donation jointly, with their respective contributions unknown, the total value of the donation was calculated and split according to the Equal Contribution Assumption (see above).
- The 'Amount Estimated' field was systematically set to 'Yes' for in-kind donations with imputed transaction amounts. Additionally, a staff comment reading the following was systematically populated in the Staff Comments field: "AidData has estimated the transaction amount for this donation based on price catalogues from the World Health Organization (WHO). Please see the TUFF Methodology for additional details." In future iterations of the dataset, coders will be instructed to apply this coding manually to each project/activity record they create for an in-kind COVID-related donation.
- *Other Scenarios:* In all of these cases, AidData coders are instructed to set the 'Amount Estimated' field to 'Yes':
 - *Scenario 1 (estimating transaction amounts for preferential or non-preferential export buyer's credits).* If the underlying source materials confirm that the financing for a project was issued in the form of an export buyer's credit (buyer's credit loan) from an official sector institution

in China, and the face value of the export buyer's credit is unknown, coders assume that it is equivalent to 85% of the commercial contract cost. AidData recognizes that Chinese state-owned banks may sometimes deviate from this practice and provide an export buyer's credit that covers as little as 60% of a commercial contract or as much as 95% of a commercial contract, but for estimation purposes, we adhere to the "85% rule." If coders record a transaction amount that is estimated based on the 85% rule, they should include a staff comment that reads "The face value of the buyer's credit loan is not reported by any of the underlying sources. AidData estimates that the face value by taking 85% of the value of the underlying commercial (EPC) contract supported by the buyer's credit loan." AidData coders are instructed to not make any inferences or assumptions based upon the amount of export credit financing that is insured by Sinosure (since Sinosure typically insures the loan's principal and interest, but the transaction amount field in the 2.0 dataset is only intended to capture the loan's principal).⁸⁴

- *Scenario 2 (estimating transaction amounts for government concessional loans from China Eximbank).* If AidData coders are confident that the financing for a project is in the form of a government concessional loan (GCL) from China Eximbank, they can assume that the proceeds of the GCL were used to finance 100% of the commercial (EPC) contract costs and code the transaction amount field accordingly. The absence of a counterpart financing requirement is a core design feature of the GCL lending instrument/program. If AidData coders record a GCL transaction amount that is estimated, they should include a staff comment that reads "The face value of the government concessional loan is not reported by any of the underlying sources. AidData estimates that the face value by taking 100% of the value of the underlying commercial (EPC) contract supported by the government concessional loan."
- *Scenario 3 (estimating transaction amounts for MOFCOM's interest-free loans).* If AidData coders are confident that the financing for a project is in the form of a interest-free loan from MOFCOM, they can assume that the proceeds of the loan were used to finance 100% of the commercial (EPC) contract cost. The absence of a counterpart financing requirement is a core design feature of MOFCOM's interest-free loan lending instrument/program. Therefore, the transaction amount field can be set to 100% of the commercial contract cost. If AidData coders record a transaction amount that is estimated, they should include a staff comment that reads "The face value of the interest-free loan is not reported by any of the underlying sources. AidData estimates that the face value by taking 100% of the value of the underlying commercial (EPC) contract supported by the interest-free loan."

⁸⁴ If a guarantee was provided for the loan and the guarantee amount is known while the loan's face value is not known, AidData coders are instructed to infer the face value of the loan (commitment amount) from the monetary value of the guarantee. This is because the guarantee amount is equivalent to the face value of the loan (i.e. the loan's principal).

documents published by relevant agencies. If a specific rate is not provided in official sources, then AidData coders use the rate at the time that the project agreement was finalized (i.e., the time of the official commitment).

- To calculate the “all in” interest rate of a loan with a floating rather than fixed interest rate, AidData coders anchor the floating market interest rate to the value of the rate at the time the loan was issued. They first identify the average rate during the month of the official commitment (e.g. average 6-month LIBOR rate in January 2017 of 1.34%), and then add it to the margin specified in the loan agreement. If a loan or swap was committed in a specific calendar year, and the specific month is unspecified (e.g. 2017 as opposed to March 2017), the average monthly rate during that calendar year is used. If a floating interest rate is calculated in this manner, the details should be included in the project description.
 - Website for LIBOR and EURIBOR:
<https://www.global-rates.com/en/interest-rates/libor/american-dollar/historical/>
 - Website for JIBAR:
<https://www.jse.co.za/downloadable-files?RequestNode=/Safex/mtmdat>
a
- **Grant Element:** This field captures the grant element of a loan or export credit at the time that the original loan or export credit agreement was signed. For each loan where AidData coders identify loan pricing details (in particular the maturity and interest rate), AidData uses the OECD’s grant element formula to calculate the grant element. If a grace period is available, the grant element formula will include that information. However, if no grace period is available, AidData assumes a grace period of 0 years.⁸⁷
- **JV/SPV Government Ownership:** For each project/activity received by a JV or SPV, AidData coders are instructed to record the ownership breakdown of the recipient JV/SPV, including ownership organization name, organization type, percentage of ownership, and country of origin. These variables subsequently determine the value of the JV/SPV Host Government Ownership field, JV/SPV Chinese Government Ownership field, and Level of Public Liability field.⁸⁸
- **Source information:** For each source identified in any stage of data collection or verification, AidData coders are instructed to attach the source to the record. Included in the source material is the public URL where the source can be accessed, title, author(s), published date, publisher name and location, language of source and type of source (including whether it is an official donor or recipient source, a media article, an academic source, etc). The information on a project’s sources is published alongside the project information to allow for transparency in how the record was compiled.
- **Geographic location:** Coders should record geographical details that accurately and precisely document project/activity’s physical footprint, including location names and types; the position or distance of the project/activity’s location vis-à-vis other geographical features (e.g., the building is located across the street from the country’s parliamentary complex in the capital city); the name, length, and start points and end

⁸⁷ See Section 2.1 for further details regarding the calculation of the grant element.

⁸⁸ The value of the “Level of Public Liability” field in the 3.0 version of AidData’s GCDF dataset captures the extent to which the host government may eventually be liable for debt repayment. See Section 2.3 for more details on the “Level of Public Liability” field.

points of physical infrastructure supported by the project (e.g., the 115.85 kilometer A1 highway runs from Colombo to Kandy); the total land area occupied by the project site (e.g., the industrial park occupies a 10 square kilometer area); and latitude and longitude coordinates of specific project features (e.g., the coordinates of Olkaria IV Geothermal Power Station Kenya at Hells Gate National Park are -0.918056, 36.334444). Whenever possible, coders should record OpenStreetMap URLs that capture the geographical locations and the following features of projects (see section 4.1 for a full description): (i) the precise physical boundaries and exact locations of buildings and facilities (e.g., schools, hospitals, stadiums, government buildings, power plants, and factories) with polygons or points; (ii) the precise geographical scope of special economic zones, industrial parks, mining concessions, protected areas, and plots of land under cultivation via polygons or points; and (iii) the exact routes of linear infrastructure (e.g., roads, bridges, tunnels, railways, power lines, canals, and pipelines) via line vectors.

3.3 - Stage 3a: Project-Level Quality Assurance

Once Stage 2 is completed for a given record, it advances to Stage 3a (Quality Assurance, or QA).⁸⁹ AidData coders assigned to Stage 3a should assess (a) whether a record's sources, variables, title, and description tell a coherent narrative; (b) whether the record is complete (with respect to the 127 fields in the 3.0 dataset); and (c) whether the underlying sources support the coding and categorizations determinations that were made in prior stages. Every record newly created or amended during the 3.0 data collection process is subjected to Stage 3a.

Stage 3a consists of a series of rigorous and systematic QA procedures that are designed to identify and eliminate common mistakes, coding errors, biases, false assumptions, and information gaps. Stage 3a coders also ensure that there is sufficient evidence from official sources to confirm key project details. AidData staff conduct Stage 3a for (a) countries receiving especially high volumes of Chinese ODA and OOF and (b) and countries with many complex transactions. AidData's strongest and most experienced coders quality assure the remaining project/activities records.

- **Logical consistency:** Some fields depend on the coding of other fields. For example, a record's flow class is a function of intent, concessionality, flow type, and funding agency. Therefore, export credits by definition cannot have an ODA-like flow class, regardless of concessionality, because they can only have commercial or mixed intent. Stage 3a coders are responsible for resolving these logical inconsistencies.
 - **Auto-fill logic:** In 2021, AidData transitioned to a new internal data management platform. One of the most consequential upgrades involved the introduction of "auto-fill logic," which has reduced the frequency of Stage 1 and Stage 2 coding errors and made it easier for Stage 3a coders to perform logical consistency checks. For example, if Sinosure is coded as an Insurance Provider, then the Insurance Provided field automatically populates to "Yes." In other cases, the coding of one field limits the coding options for a different field. For

⁸⁹ Records with flow type equal to Foreign Direct Investment (FDI), Joint Venture (JV), or Official Investment undergo Stage 2 but not QA because they are excluded from AidData's final Global Chinese Development Finance Dataset, 3.0.

instance, if a private entity is coded as the Funding Agency, then only unofficial flow classes can be selected by coders.

- However, the auto-fill logic does not address record titles or descriptions, so Stage 3a coders must carefully scrutinize those fields. For example, if a description field mentions a handover ceremony for a finished project, then the Actual Completion Date field should not be blank and the Status field should be coded as Completed. If the description field mentions linked records, then those project identification numbers should be added to the same Parent ID.
- Reduce and eliminate double counting: In light of the fact that the TUFF methodology draws information from a range of sources and tracks Chinese ODA- and OOF-financed projects/activities over time, there is a risk of capturing the same transactions multiple times. AidData staff and coders eliminate instances of double-counting by deactivating duplicates and assigning some records to the Umbrella category.
 - Duplicate checks: During Stage 1 and Stage 2, the data management platform is searched for duplicates before further amending or creating records. Stage 3a coders practice strategic filtering and keyword searches to identify and sometimes deactivate duplicate records.
 - Umbrella: When a record's Umbrella field is set to "Yes," it usually means that it is capturing a signed financial agreement but the funds are not allocated for a specific project/purpose until a subsequent date. Umbrella records serve as a placeholder until separate, subsidiary records are created recording the entire financial breakdown. Stage 3a coders verify whether the umbrella marker is necessary or not.⁹⁰
- High value checks: Stage 3a coders are instructed to pay special attention to records with transaction amounts over \$100 million. This means verifying the financial details in official donor/creditor and/or recipient government sources but also ensuring that the record as a whole is as close to correct and complete as possible.
- Verify calculations: Some record entries demand a little arithmetic. Stage 3a coders performing QA should always check a loan's floating interest rate calculations to make sure the previous coder(s) correctly identified the "all in" interest rate.
- Clarify assumptions: Only AidData staff and coders who have demonstrated the strongest grasp of the TUFF methodology and most reliable judgment are asked to conduct QA activities because this stage requires making judgements that other coders cannot not be expected to make. For example, if a loan meets the minimum requirements for assuming that it is an export buyer's credit, the Stage 3a coder is responsible for recognizing that possibility, re-coding fields, and justifying their assumptions in the description or staff comments fields.⁹¹

Once Stage 3a is complete, records are passed on to senior AidData faculty and staff for review and feedback. Those records are then passed back to AidData staff and coders for feedback incorporation and another round of QA. Stage 3a is the last comprehensive record-by-record review before regional and global checks are undertaken.

⁹⁰ See Section 1.4 for more details on the Umbrella field.

⁹¹ See Section 2.5.3.3 for more details on these minimum requirements.

3.4 - Stage 3b: Dataset-Level Quality Assurance

Following Stage 3a, AidData staff perform a rigorous set of protocols (Stage 3b) to remove any errors and biases in order to produce the most consistent, complete and replicable dataset possible. These procedures are detailed below:

- **Targeted Review:** After a record-by-record review during Stage 3a, the dataset undergoes another layer of review that focuses on high-value projects/activities (as indicated by especially large commitment amounts). A staff member reviews all records greater than \$1 billion for accuracy and missing information. This review is meant to add an additional layer of scrutiny to ensure no additional data can be identified, field codings are correct, financial values are accurate, and no duplication of records has occurred. A staff member will also review any records still marked as “suspicious” after the QA stage and update records as needed. In addition, a staff member reviews the dataset for any incorrect inclusions or exclusions of projects/activities that could substantially influence analysis that involves aggregate financial commitment amounts. .
- **Data Logical Consistency Checks:** After Stage 3a is completed and the Targeted Review is carried out, AidData staff perform a series of data checks to make sure all fields are correctly coded and to any outstanding information gaps (of special importance to analysts) are addressed. This process include (1) reviewing variable fields such as Commitment Date, Flow Type, Flow Class, and Sector Code that were not coded; (2) reviewing records with Flow Type designations of Vague TBD; (3) reviewing the flow class of loan projects/records; (4) reviewing any Grants/Technical Assistance/Scholarships with non-ODA/non-OOF/non-Vague OF Flow Class designations for funding agencies that should be set as official funding agencies (thus updating the Flow Class coding); (5) reviewing records that have a status designation of Pipeline: Pledge and Pipeline: Vague *and* specific implementation dates or completion dates; (6) reviewing records with Suspended or Canceled status designations that should have been assigned to the Pipeline: Pledge category (because no financial commitment was ever issued); (7) reviewing records with Pipeline: Commitment stage designations where only a framework agreement was signed; (8) reviewing any ETCAs that were assigned to the Pipeline: Pledge or Pipeline: Vague status categories; (9) reviewing any lines of credits that should not be coded as umbrella projects; (10) ensuring consistent coding between official flow type and flow class; (10) ensuring consistent coding of participating organizations (e.g. funding agencies, co-financing agencies), including their organization type and origin designations; (11) ensuring consistent application of coding guidelines to key variable fields (e.g., guidelines to estimate transaction amounts); and (12) reviewing health of record scores for each record and targeting an extra layer of review for records with lower scores on any of the 4 measures (see Appendix E for more details on the Health of Record scores).
- **Extended Review:** Once the dataset has gone through all of the previously described steps, it is reviewed by a new set of AidData staff and a different cohort of external coders. These reviewers vet the dataset using various methods, including but not limited to (1) generating descriptive statistics with the dataset to identify anomalies or suspicious results; (2) comparing the dataset and the resulting financial amounts to other published estimates of Chinese development finance (or subsets thereof) to identify significant deviations from other estimates, including White Papers published

by the Chinese Government and estimates published by third parties; (3) comparing individual records to official sources to ensure comprehensive and accurate coverage; (4) reviewing individual records for errors or missing data; and (5) identifying biases in the data and identify potential ways to address them.

- **Deflation & Financial Review:** To ensure the financial commitment values are comparable across years, all of these values are calculated in constant 2021 U.S. dollars using the deflation methodology that is described in Appendix D. As part of this process, potential local currency changes and revaluations are identified and the currency exchange rates are adjusted accordingly.

Section 4 - Geospatial Data Collection Process

Upon completion of Stage 3 (Quality Assurance, or QA) for a designated region, projects/activities advance to the geospatial data collection stage. This data collection stage is geared towards identifying financial and in-kind transfers that frequently underpin physical assets or activities at specific locations characterized by geographical features, serving as the ultimate destination for the financial transfer (flow). Projects/activities with no geolocation information or geofeatures available or Projects/activities without specific financial destinations are not included in the geospatial data collection process.

To compile projects/activity locations for the 3.0 version of the GCDF dataset, we leverage existing features from OpenStreetMap (OSM, the world’s largest catalogue of open source, community-driven geospatial information), and contribute updates or new features reflecting projects/activities. OSM records countless geographic features, from jurisdictional borders to the exact routes of roads and the precise locations of individual buildings. The geospatial data that are provided by OSM (referred to as features in OSM) fall into three primary categories: nodes, areas, and ways. Below is a description of the four types of OSM geographical features representing physical footprints of Chinese ODA- and OOF-financed projects/activities:

OSM Geographical Feature	Example assets/activities
Node (point)	Water wells, oil derricks, wind turbines, statues/monuments, telecommunication towers, and (some) buildings. Also used to represent administrative areas without exact area definitions.
Opened Way (line)	Roads, bridges, tunnels, railways, electricity transmission lines, canals, and pipelines
Closed Way (polygon)	Schools, hospitals, airports, seaports, dams, power plants, substations, factories, stadiums, and office buildings, zoos, public parks, protected areas, special economic zones, farms, mining concessions, and industrial parks, as well as administrative areas.

Relationship (Mixed)	A combination of one or more nodes/ways/relationships.
----------------------	--

AidData’s process for identifying, collecting, and conducting quality assurance on the geofeatures of Chinese ODA- and OOF-financed projects/activities involves three stages of workflow.

4.1 - Stage 1: Geospatial Data Collection and Precision Level Labeling

To identify OSM features associated with projects/activities, AidData utilizes documentation from established quality assured records and sources to conduct targeted searches. For example, a project description of a hydropower station being built in the east of a city along a river would be cross-referenced with satellite imagery of the area and site photos provided in the project sources to determine its exact location. Coders then search OSM for existing features associated with the hydropower station, edit or add new features if needed, and record the corresponding OSM feature IDs and URLs. Due to limits on the availability of information on open source platforms, it is not always possible to identify or track a precise geofeature. A larger ADM area (or administrative boundaries) may be available in some cases to fill the informational gap. The objective of AidData coders is to identify geofeatures at the most precise level possible. Whenever geofeatures are unavailable at the most precise level, coders follow a hierarchical order (described below) to fill in less precise geolocational information. Below is a description of the various levels of precision that AidData identifies in the dataset, based on the availability of information.

Level of Precision	Feature	Example
Precise	The precise boundary of the feature itself	The boundaries of an airport.
Approximate (5km buffer)	Areas, landmarks near the target feature within a 5km radius.	A power station is not identifiable with existing information but a substation is identifiable in a 5km radius. In this case, the substation would be retrieved and Approximate level will be labeled.
ADM 8	Village/City/Town (Refer to the OSM ADM level ⁹²)	Neither the precise boundary nor a nearby landmark could be identified. A smallest ADM level boundary will be the next priority.

⁹² OSM ADM level for all countries: <https://wiki.openstreetmap.org/wiki/Tag:boundary%3Dadministrative>

ADM 6	City/County (Refer to the OSM ADM level)	Neither the precise boundary nor a nearby landmark could be identified. A smallest ADM level boundary will be the next priority.
ADM 4	Province/Territory (Refer to the OSM ADM level)	Neither the precise boundary nor a nearby landmark could be identified. A smallest ADM level boundary will be the next priority.
ADM 3 (*rare)	Region (Refer to the OSM ADM level)	Neither the precise boundary nor a nearby landmark could be identified. A smallest ADM level boundary will be the next priority.

After coders record the OSM feature IDs and URLs, they then refer to the level of precision system to label each project accordingly.

4.2 - Stage 2: Geospatial Data Enhancement and Quality Assurance

Once the Stage 1 geospatial data collection is completed for a designated region, AidData coders conduct a review of all the retrieved geospatial data to ensure the geofeatures accurately reflect the final destination of the ODA/OOF flows at the most precise level available. During this Stage 2 review process, AidData coders cross-check OSM features and the level of precision system with the established records.

4.3 - Stage 3: Geospatial Data Cleaning and Dataset Generation

Once all regions are reviewed and quality assured, AidData staff reformat the data collection worksheet with R scripts to automatically check for human error. Projects/activities with missing or mismatched levels of precision with OSM features are flagged for a second round of review and troubleshooting.

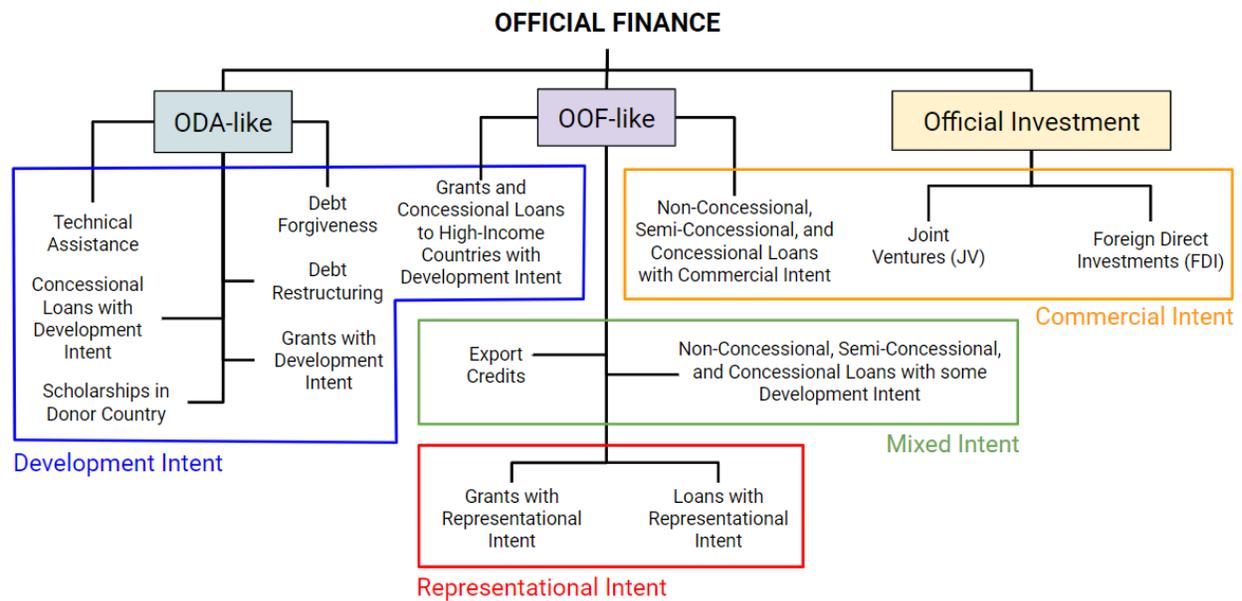
After cleaning the OSM feature data, AidData staff generate GeoJSONs using the OSM URLs through a Python workflow leveraging a combination of web scraping, the Overpass API, and the `osm2geojson` package. Individual GeoJSONs are then combined into multi-polygons, allowing AidData to represent various features within a project/activity as a single multi-polygon, as well as ensure a consistent feature type across all extracted geospatial features (lines, points, and polygons) in the final dataset. During the process, AidData staff flag

a subset of invalid OSM links/features for a third round of review and troubleshooting. Since OSM is an open source community, a previous feature may have been revised/removed by other collaborators, which would result in the previous OSM link being invalid. The third round of review aims to find alternative valid OSM features and code corresponding levels of precision and rerun to get the updated GeoJSONs (Goodman et al. 2023). The code to replicate the GeoJSON generation can be found at: <https://github.com/aiddata/gcdf-geospatial-data>.

After the GeoJSONs are processed, AidData processes ADM files with centroid points for data users. See detailed documentation in the read.me file in the download.

Appendices

Appendix A: Classification of Official Finance



AidData seeks to assign projects/activities to an official finance classification (for the ODA and OOF projects/activities we capture) based on the OECD-DAC guidelines. Doing so allows users to make comparisons between Chinese development finance and development finance from other donors. Projects/activities are assigned to the ODA-Like category if they meet three criteria. First, the primary purpose of the project/activity must be the promotion of economic development and welfare in the recipient country (i.e., have development intent). Second, the project/activity must take place in a country that qualifies for ODA based on its income level. Third, the official commitment supporting the project/activity must be concessional in nature (i.e., grant, technical assistance, scholarship, debt forgiveness, or loan with a grant element meeting a specified threshold). For official commitments issued (flows reported) between 2000 and 2017, we follow the OECD's practice to use the cash-flow methodology to define ODA, which included a threshold level of 25% grant element with a discount rate of 10% for all loans. For official commitments issued (flows reported) in 2018 and subsequent years, we use the OECD's grant-equivalent methodology, which relies upon a tiered concessional threshold system for loans. Under the grant-equivalent methodology, the concessional threshold for loans to the official sector in the recipient country is 45% for LDCs and other LICs (using a discount rate of 9%), 15% for LMICs (using a discount rate of 7%) and 10% for UMICs (using a discount rate of 6%). Loans to the private sector, however, continue to use the 25% threshold used in the cash-flow methodology (in alignment with OECD-DAC practices). Users can refer to the "OECD ODA Concessional Threshold" field to identify the threshold used for a particular loan record in the dataset. Projects/activities that are supported by an official financial or in-kind transfer but do not meet all three of these criteria are assigned to the OOF-Like category. Projects/activities that are backed by an official commitment but cannot be reliably categorized as ODA-like or OOF-like because of insufficiently detailed information are

assigned to the “Vague (Official Finance)” category. Projects/activities in this residual category primarily consist of (a) those with an unspecified “Flow Type” (i.e., values of “Vague TBD”); and (b) those financed with development-intent loans for which AidData lacks the borrowing terms (interest rates, grace periods, or maturity dates) needed for concessionality determinations. We do not capture Official Investment flows at this time.

Appendix B: Geographic Coverage of the 3.0 Dataset

List of Countries Covered in AidData's Global Chinese Development Finance Dataset, Version 3.0

Country	Record Count
Afghanistan	169
Albania	64
Algeria	57
American Samoa	No projects/activities found
Angola	403
Antigua and Barbuda	76
Argentina	189
Armenia	52
Aruba	No projects/activities found
Azerbaijan	53
Bahamas	47
Bangladesh	175
Barbados	109
Belarus	159
Belize	No projects/activities found
Benin	174

Bhutan	No projects/activities found
Bolivia	147
Bosnia and Herzegovina	55
Botswana	131
Brazil	200
British Virgin Islands	No projects/activities found
Brunei Darussalam	53
Bulgaria	60
Burkina Faso	62
Burundi	156
Cabo Verde	108
Cambodia	417
Cameroon	203
Cayman Islands	No projects/activities found
Central African Republic	159
Chad	144
Chile	78
Colombia	101
Comoros	96
Congo	232
Cook Islands	41
Costa Rica	81

Cote d'Ivoire	189
Cuba	145
Curacao	5
Democratic People's Republic of Korea	149
Democratic Republic of the Congo	298
Djibouti	123
Dominica	110
Dominican Republic	32
Ecuador	232
Egypt	119
El Salvador	58
Equatorial Guinea	185
Eritrea	100
Eswatini	No projects/activities found
Ethiopia	311
Fiji	211
French Polynesia	2
Gabon	109
Gambia	61
Georgia	52
Ghana	254
Grenada	141

Guam	1
Guatemala	No projects/activities found
Guinea	143
Guinea-Bissau	123
Guyana	125
Haiti	35
Honduras	5
India	113
Indonesia	437
Iran	113
Iraq	52
Israel	30
Jamaica	114
Jordan	100
Kazakhstan	184
Kenya	249
Kiribati	52
Kosovo	No projects/activities found
Kyrgyz Republic	143
Lao People's Democratic Republic	347
Lebanon	99
Lesotho	155

Liberia	213
Libya	14
Madagascar	165
Malawi	215
Malaysia	176
Maldives	101
Mali	178
Marshall Islands	66
Mauritania	158
Mauritius	162
Mexico	94
Micronesia	183
Moldova	61
Mongolia	232
Montenegro	34
Morocco	78
Mozambique	160
Myanmar	495
Namibia	232
Nauru	14
Nepal	222
New Caledonia	No projects/activities found

Nicaragua	4
Niger	156
Nigeria	197
Niue	27
North Macedonia	62
Northern Mariana Islands	No projects/activities found
Oman	27
Pakistan	496
Palau	1
Panama	70
Papua New Guinea	200
Paraguay	4
Peru	165
Philippines	267
Puerto Rico	No projects/activities found
Romania	42
Russia	295
Rwanda	152
Saint Lucia	18
Samoa	167
Sao Tome and Principe	77
Senegal	132

Serbia	99
Seychelles	170
Sierra Leone	229
Sint Maarten (Dutch part)	1
Solomon Islands	40
Somalia	65
South Africa	314
South Sudan	189
Sri Lanka	301
St. Kitts and Nevis	No projects/activities found
St. Martin (French part)	No projects/activities found
St. Vincent and the Grenadines	No projects/activities found
Sudan	337
Suriname	106
Syrian Arab Republic	84
Tajikistan	172
Tanzania	290
Thailand	116
Timor-Leste	131
Togo	165
Tonga	159
Trinidad and Tobago	58

Tunisia	94
Turkey	152
Turkmenistan	53
Turks and Caicos Islands	No projects/activities found
Tuvalu	No projects/activities found
Uganda	213
Ukraine	123
Uruguay	89
Uzbekistan	196
Vanuatu	157
Venezuela	179
Viet Nam	191
Virgin Islands (U.S.)	No projects/activities found
West Bank and Gaza Strip	52
Yemen	89
Zambia	246
Zimbabwe	273

Appendix C: TUFF Source Prioritization Protocol

It is common for sources to have conflicting information on a certain project. In this case, it is necessary to have a hierarchical ranking of how much we weigh in each source.

Ranking of Resource Types based on Reliability of Project Data

1. Official government source, from a donor or recipient government agency
2. Implementing or intermediary agency report/website
3. Other official source (e.g. IMF, World Bank, CIA, etc.)
4. Peer-reviewed scholarly article
5. Other scholarly output, including working papers and dissertations
6. NGO, civil society, or advocacy group report/website
7. Media reports, including Wikileaks
8. Social media, including blogs from any unofficial source

If any conflicting information exists on a project detail, then the AidData coder or staff member will arbitrate by explicitly stating within the project description a) the source of this conflict and b) the reasoning for the proposed solution in the Staff Comments field.

Appendix D: AidData's Deflation Methodology

1. Currency Conversion and Deflation Purpose

Financial values collected as part of AidData's data collection activities, including TUFF, must be converted and deflated so that they are comparable across currencies and years. AidData's methodology follows after the OECD's methodology.⁹³ The full methodology involves two steps: 1) Calculating nominal exchange rates and 2) calculating deflation rates detailed below. We calculate the deflators based on the OECD's methodology using World Bank sources for exchange rates and inflation.

2. Exchange Rates

2.1 Exchange Rate Methodology

Before deflation, all values must first be expressed in nominal (current) U.S. dollars (USD). This is done with an LCU per USD exchange rate, applied by:

$$(\text{original value}) / (\text{LCU per USD}) = (\text{new value})$$

For example:

$$100 \text{ EU} / .7 = 142.57 \text{ USD}$$

⁹³ Available at <http://www.oecd.org/dac/aidstatistics/informationnoteonthedacdeflators.htm>

2.2 Exchange Rate Sources

Global Economic Monitor -- Official exchange rate, LCU per USD, period average (annual), [https://databank.worldbank.org/source/global-economic-monitor-\(gem\)](https://databank.worldbank.org/source/global-economic-monitor-(gem))

2.3 Currency Revaluations/Changes in Currencies

The standard data from the World Bank does not take into consideration currency revaluations and currency changes. So to reflect this nuance, we identified the complete list of countries that had undergone currency changes or revaluations that would affect the exchange rates used in TUFF datasets. In cases where the financial amount was quoted in old currencies, we used historical exchange rates (annual period average) from OANDA to calculate the exchange rate to USD.

3. Deflators

Deflation is necessary to take the USD nominal amount and deflate (or inflate) that amount into a constant year across the whole dataset so all the financial values are comparable despite year values. Deflators control for two changes over time: inflation in the donor country and change in buying power in the donor country relative to the United States. Both of these changes are calculated separately, and then multiplied together to get the final deflator used by AidData. The formula is the following:

$$\text{Inflation} * \text{Change in Buying Power} = \text{Deflator}$$

3.1 Inflation

The first part of the deflator formula is to calculate the inflation value from the base year to the constant year.

Inflation is measured as relative to a given base year. The below example calculations use a base year of 2014.⁹⁴ Percentages are then generated using the following formula:

$$\text{Percentage}_{\text{Year}} = \text{Percentage}_{\text{Previous Year}} + (\text{Percentage}_{\text{Previous Year}} * \text{Inflation}_{\text{Year}})$$

For example, in 2014, Colombia's GDP inflation was 4.2%. Taking 2014 as the base year, the percentage for 2014 is 100%. So, to calculate the percentage for 2010, using 2014 as the start year:

$$100 = P_{\text{previous}} + (P_{\text{previous}} * .04)$$

$$P_{\text{year}} / I_{\text{year}}$$

This yields 96% as Colombia's percentage for 2012. (Decimals have been rounded for this example, but were not rounded for AidData's deflator table.) In 2012, Colombia's GDP inflation was 8%. Then, to calculate 2012, 2013 is the start year:

$$96 = P_{\text{previous}} + (P_{\text{previous}} * .08)$$

$$P_{\text{year}} / I_{\text{year}}$$

This yields 89% as Colombia's percentage for 2012.

⁹⁴ AidData's GCDF 3.0 dataset uses a base year of 2021 for constant USD amounts.

The following sources are used to compile the inflation values: World Bank GDP Inflation -- <http://data.worldbank.org/indicator/NY.GDP.DEFL.KD.ZG>

3.2 Change in Buying Power

The second part of the deflators formula is to calculate the change in Buying Power for the donor country.

The change in buying power is taken from the LCU per USD rate and expressed as:

$$\text{Exchange Rate}_{\text{Base Year}} / \text{Exchange Rate}_{\text{Transaction Year}} = \text{Change in Buying Power}$$

For example, the Korean Won to USD rate was 1273.9 in 2014 and 804.4 in 1996. The subsequent change in buying power is:

$$1273.9 / 804.4 = 1.58$$

Note that this methodology yields a ratio of 1 for all currencies pegged to the USD. The data used for the buying power formula are generated from the historical exchange rates described above.

3.3 Finalized Deflators

The GDP inflation and change in buying power numbers are combined to create annual deflators for donor countries:

$$\text{Inflation} * \text{Change in Buying Power} = \text{Deflator}$$

4. Examples on Using GDP Deflators

Amounts in LCU should be converted to nominal USD, using the LCU per USD exchange rates found in sheet A1. Then, the values should be *divided by* the percentages in sheet "E1." For example, in 1975, Kuwait funded an electrification project in Bangladesh worth 6,400,000 *KD*1975 (AidData ID 2427051). To convert this amount to USD 2014, first, convert it to USD 1975:

$$6,400,000 \text{ KD } 1975 / (.29003 \text{ KD/USD } 1975) = 22,066,505.30 \text{ USD } 1975$$

Next, divide it by the AidData deflator:

$$22,066,505.30 \text{ USD } 1975 / 20.83\% = 105,936,175.20 \text{ USD } 2014$$

Note that amounts that are *already reported in USD* do not need to be converted. They only need to be deflated (divided by the appropriate deflator).

Appendix E: Health of Record Scores

AidData's 'health of record' scores are meant to signal the quality of each record in four dimensions: 1) the quality of the sources used to underpin the record, 2) the completeness of the record in terms of foundational project information, 3) the level of detail available on project implementation, and 4) the financial details available for the project. The details of each score are listed below.

Source Quality Score: This metric varies on a scale of 1 to 5, with 1 indicating that the record is exclusively underpinned by unofficial sources and 5 indicating reliance upon multiple, official sources. This score is meant to communicate which projects meet our preferred threshold for reliability/quality of the sources. We would consider records with a score of 3 or lower as records that have a lack of authoritative sources underpinning the record, flagging to users records that may have reliability issues. The average score across the entire 3.0 dataset is 4.3, indicating that most records successfully meet our threshold for quality of sources (scoring a 4 or 5). The full scoring criteria is detailed below:

Criteria for Source Quality Score:

Source Categorizations:

- Official sources include Donor/Recipient Official Source, Implementing/Intermediary Organization Source, Other Official Source
- Tier 1 non-official sources include Academic Journal Article, Other Academic
- Tier 2 non-official sources include Media Report, NGO/Civil Society/Advocacy, Social Media, Other

Assign a value based on the following criteria:

- 1 = Only media sources
 - Source type = Media Report (any number).
- 2 = Only Tier 2 non-official sources or non-official sources + any media sources (not required)
 - Source types = NGO/Civil Society/Advocacy OR Social Media OR Other (at least one). Can have Media Report source type as well (any number).
- 3 = At least 1 Tier 1 non-official source (but no official sources) + any Tier 2 non-official sources (not required)
 - Source types = Academic Journal Article OR Other Academic (any number). Can have Media Report, NGO/Civil Society/Advocacy, Social Media, or Other (any number).
- 4 = Only 1 official source (no additional official sources) + any non-official sources, either Tier 1 or 2 (not required)
 - Has only 1 source type that matches Donor/Recipient Official Source OR Implementing/Intermediary Organization Source OR Other Official Source. Can have Media Report, NGO/Civil Society/Advocacy, Other, Social Media, Academic Journal Article, or Other Academic (any number).
- 5 = At least 2 official sources
 - Has at least 2 sources with source type Donor/Recipient Official Source, Implementing/Intermediary Organization Source, or Other Official Source. Can have Media Report, NGO/Civil Society/Advocacy, Social Media, Other, Academic Journal Article, or Other Academic (any number).

Data Completeness Score: This metric varies on a scale of 0 to 5, with 5 indicating that the basic fields of the record are complete. The "threshold" for a score of 5 is similar to the key fields in the OECD-DAC's Creditor Reporting System: an actual rather than estimated commitment year, a non-missing transaction amount, a flow type/flow class that is not defined as "Vague," and identifiable funding, implementing, and receiving agencies. The average Data Completeness Score for the 3.0 dataset is 3.3.

Criteria for Data Completeness Score:

Start at 5, then

- Projects with year uncertain = -1
- Projects with no transaction amount (include umbrella projects) = -1
- Projects with vague flow class or flow type = -1
- Projects with a missing or unspecified Funding Agency = -1
- Projects with EITHER a missing Implementing Agency OR Receiving Agency = -1

*Min: 0, Max = 5

Project Implementation Score: This metric varies on a scale of 0 to 5, with higher scores indicating that more implementation details have been captured in the record. The following implementation details are considered: whether the project's implementing agency (or agencies), implementation start and completion dates (actual or planned), and geographical locations are specified; and whether the project has a specified sector allocation. Project Implementation Scores are only calculated for records with a "Recommended for Aggregates" value of "Yes" and a "Status" value of "Implementation" or "Completion." The average Project Implementation Score in the 3.0 dataset is 3.7.

Criteria for Project Implementation Score:

Add an additional point for each of the criteria met below where Status = Implementation/Completion AND Recommended for Aggregates = Yes

1. The presence of implementing agency when Status = Implementation/Completion
2. The presence of start/end dates based on Status = Implementation
 - a. Actual start date = 1 point
 - b. Planned end date = 1 point
3. The presence of start/end dates based on status = Completion
 - a. Actual start date = 1 point
 - b. Actual end date = 1 point
4. The presence of location details when Status = Implementation/Completion
5. Sector != Unallocated/Unspecified

Loan Detail Score: This metric varies on a scale of 0-5, with higher values indicating that more financial transaction details are captured in the record. Loan Detail Scores are only calculated for records with a "Recommended for Aggregates" value of "Yes" and a "Flow Type" designation of "Loan." A score of 5 indicates that a loan's interest rate, maturity, transaction value, loan type, funding agencies, and receiving agencies are all specified (i.e., not missing). The average Loan Detail Score in the 3.0 dataset is 3.6.

Criteria for Loan Detail Score

Add an additional point when each of the fields below is not blank. Calculated only for projects where Flow Type = Loan AND Recommended for Aggregates = Yes

- Interest rate != blank

- Maturity != blank
- Transaction value != blank
- If no interest rate or maturity, and Loan type != blank or “No Information”
- Funding agency != blank OR Receiving agency != blank
- Grace Period != blank

Appendix F: AidData’s Global Chinese Development Finance Dataset, Version 3.0 at a glance

AidData Dataset		Global Chinese Development Finance Dataset, Version 2.0 (Published September 2021)	Global Chinese Development Finance Dataset, Version 3.0 (Published November 2023)
Scope & Coverage	Sectors	All	All
	Country Coverage	165 countries globally (including 145 countries with projects identified)	165 countries globally (including 146 countries with projects identified)
	Financiers	334 Chinese official sector donors and lenders	791 Chinese official sector donors and lenders
	Financial Instrument	Loans, grants, scholarships, technical assistance, debt rescheduling, debt forgiveness	Loans (with categorization of 23 distinct loan instruments), grants, scholarships, technical assistance, debt rescheduling, debt forgiveness
Dataset Summary	Number of Records	13,427	20,985
	Number of Fields	70	133
	Sources Publicly Available	91,125 (including 62,750 unique sources)	147,703 (including 99,393 unique sources)
	Total Financial Value	\$851 billion (2017 prices)	\$1.34 trillion (2021 prices) (excluding short-term “rollover” facilities, or \$1.5 trillion when included)
	Timeframe	2000-2017 (with implementation details through 2021)	2000-2021 (with implementation details through 2023)
	Financial Details	Transaction amount, collateral, interest rate, grace period, maturity, commitment fee, management fee	Transaction amount, collateral, interest rate, default interest rate, grace period, maturity, commitment fee, management fee, insurance fee, first and last loan repayment dates, level of public liability

Project
Details

	Participating Agencies	Funding agencies, co-financing agencies, receiving agencies, implementing agencies, accountable agencies	Funding agencies, co-financing agencies, direct receiving agencies, indirect receiving agencies, implementing agencies, guarantor, insurance provider, collateral provider, security agent/collateral agent
	Implementation Details	Commitment year, status, planned and actual start and completion dates	Commitment date, status, planned and actual start and end dates, deviation from planned start and completion dates, infrastructure project flag
	Description	Average of 142 words per project	Average of 166 words per project
	OECD Classifications	Sector, flow class	Sector, flow class, recipient country income classification, grant-equivalent measure
	Sub-national Details	3,285 physical locations	9,497 physical locations

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