



# China's Global Development Finance:

## A Guidance Note for Global Development Policy Center Databases

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This guidance note aims to lay out the scope and methodology of data collection and verification for the China Global Energy Finance (CGEF) and the China-Latin America Finance (CLAF) databases at Boston University's Global Development Policy (GDP) Center.

The Chinese government and policy banks do not currently provide official data on China's overseas development finance. In 2012, Boston University researchers at the Global Economic Governance Initiative (GEGI), now part of the GDP Center, compiled the China-Latin America Finance Database that tracks all Chinese policy lending in Latin America and the Caribbean. It is now updated and displayed on an annual basis through the Inter-American Dialogue in Washington. That effort was inspired by the work of Deborah Brautigam and her team at the China-Africa Research Initiative the Paul Nitze School of Advanced International Studies (SAIS-CARI).

The CGEF is a database that records the annual flow of loan contracts of China's two policy banks: the China Development Bank (CDB) and China Export-Import Bank (CHEXIM). We use official websites at the banks themselves or host country ministries, news reports, and official documents to gather this data. These sources are verified through interview contacts in China and other host countries, when possible. Every record includes the year, location, energy source, subsector, lender, and project description. The GDP Center makes both these databases available in excel format upon request. Please email [gdp@bu.edu](mailto:gdp@bu.edu) with a brief explanation of your work for access.



## Major Actors in China's Energy Development Finance

The China Development Bank (CDB) and the Export Import Bank of China (CHEXIM) are two of the three “policy banks” (政策性银行) in China. We confine the range of “development finance (开发性金融)” to the two policy banks CDB and CHEXIM due to their engagement in overseas investments. The third policy bank, Agricultural Development Bank of China (ADBC), is not included in the database because it does not provide overseas financing at this point.

A policy bank is defined as a financial institution that is (1) established and guaranteed by the government; (2) has exclusive financial support from the state; (3) bears the responsibility of implementing economic and financial policy (贯彻落实国家经济金融方针政策). The definition often overlaps with that of national development banks, and the term “policy bank” is often used to describe CDB and CHEXIM as they follow the model of development banks.<sup>1</sup> These banks operate in the market with a goal of self-sustaining with a thin profit margin (市场运作、保本微利). Policy banks undertake both government-assigned and market-based projects.<sup>2</sup> They exist widely around the world, including in countries with liberal market economies such as the United States, to undertake large-scale, long-term projects that private capital does not tend to finance. National development banks (such as CDB) and export-import banks (such as CHEXIM) are the most common forms of policy banks. Banks like CDB and CHEXIM share their credit rating with the state that finances these banks.<sup>3</sup> The business model of these banks is similar to those of their Western counterparts—deploying the creditworthiness of the backing sovereign to raise financing on international capital markets at a cost less than what borrowing nations could obtain if they were similarly looking to access the same markets.

The China Development Bank (CDB) was originally defined as a policy financial institution. The bank is under direct jurisdiction of the State Council, and the Governor of CDB is a cabinet minister-level official. The bank was incorporated as the China Development Bank Corporation and officially classified as a development financial institution in December 2008. Its assets total 14.34 trillion RMB (2.24 trillion USD) as of 2016, making it the world's largest development finance institution and the largest bank in China for overseas finance.<sup>4</sup> In addition to financing domestic infrastructure, fundamental industries, and other “important projects”, CDB is also responsible for assisting the People's Bank of China (PBoC) in implementing monetary policy and issuing non-concessional loans for overseas investment. The CDB also has functions similar to an export or overseas investment credit agency as a result of its active involvement in supporting Chinese firms in China's overseas trade and investment finance<sup>5</sup>. Many commercial Chinese banks have limited experience in overseas investment and often follow the example of the CDB<sup>6</sup>. The CDB also has much larger research capabilities than China's commercial banks

CHEXIM is a specialized export credit agency dedicated to supporting exports and investments for Chinese companies. Before 2005, the bank was China's only major overseas capital provider in energy projects and equipment exports. CHEXIM has the unique capacity to issue two kinds of “preferential” loans (两优贷款, see explanation in the next section). The bank also dedicates a large proportion of its credit operations to non-concessional loans.<sup>7</sup> While the bank's assets are only a quarter the size of the CDB's (3.34 trillion RMB in 2016,

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1 The discussion about defining policy bank, as well as the history of development bank and policy bank, can be seen in various public or academic sources such as <http://wiki.mbalib.com/wiki/%E6%94%BF%E7%AD%96%E6%80%A7%E9%93%B6%E8%A1%8C> and Zhang, Tao; Bu, Yongxiang, Issues Regarding to Reforms of Chinese Policy Banks (关于中国政策性银行改革的若干问题), Economic Perspectives, Issue 5, 2006, pp. 3-11.

2 The regulation and principle of CDB and CHEXIM can be found at: [http://www.cbrc.gov.cn/govView\\_966B842FB7EF4BA5AFB30BA00AE4AFE5.html](http://www.cbrc.gov.cn/govView_966B842FB7EF4BA5AFB30BA00AE4AFE5.html) (CDB), [http://www.cbrc.gov.cn/govView\\_8CE5EF195B654C20ACB5077415C8A210.html](http://www.cbrc.gov.cn/govView_8CE5EF195B654C20ACB5077415C8A210.html) (CHEXIM)

3 China Development Bank, Credit rating. <http://www.cdb.com.cn/ywgl/zyjw1/gjxypj/>; The Export-Import Bank of China, Credit rating. [http://www.eximbank.gov.cn/tm/second/index\\_18.html](http://www.eximbank.gov.cn/tm/second/index_18.html).

4 China Development Bank, Introduction. <http://www.cdb.com.cn/gkxh/khj/>.

5 China Development Bank, CDB Financial Knowledge Material 2017. <http://www.cdb.com.cn/shzr/jjzsjw/khtsyw/201709/P020170904630084158376.pdf>

6 The relationship between CDB and other banks (including CHEXIM) are addressed in an interview with CDB research director, Cao Honghui.

7 Chinca, Introduction to two preferential loans, the Export-Import Bank of China.

<http://www.chinca.org/cms/html/files/2013-12/16/20131216102948872930302.pdf>

or approximately 523 million USD), it is still among the world's largest policy banks and export credit agencies. Compared to the CDB, which is mostly involved in major energy acquisition and trade, CHEXIM is often involved in the financing of smaller energy projects such as power stations and power grids. Developing countries are likely to receive one of the two types of preferential loans mentioned above from CHEXIM for energy-related infrastructure.

## Major Types of Development Finance in China

Energy sector development finance from CDB and CHEXIM can be divided into the following categories:

- **Energy resource trade.** The CGEF database does not include trade of minerals. Other projects might also involve resource trade as a part of the contract, including mortgage and conditionality.
- **Resource exploration investment.** This is not always combined with energy trade with China and does not always involve a Chinese exploration company.
- **Project finance in power plants.** It should be noted that CDB and CHEXIM do not directly participate in the construction of specific projects in recipient countries. The projects, after approved by the recipient country and contracted, can be built by either Chinese or non-Chinese companies. The investment is recorded if either CDB or CHEXIM is involved in financing the project. Even within a given type of project, such as coal-fired power plants, CHEXIM loans can be either non-concessional or concessional. CDB loans are always non-concessional.
- **Project finance in power transmission and grid facilities**, including electrification projects<sup>8</sup>.
- **Project finance in pipelines and other transport facilities** (such as LNG carriers).
- **Equipment trade in all subsectors.** Export of Chinese equipment is generally financed by CHEXIM.
- **Project finance of multipurpose projects**, such as petrochemical complex and power plant with transmission and distribution.

Common borrowers of CDB and CHEXIM energy financing include:

- **Recipient country governments.** CHEXIM will only grant one of its two types of "preferential loans"/两优贷款 to sovereign institutions (such as ministries of finance or central banks) or financial institutions appointed and guaranteed by the sovereign government.
- **State-Owned Enterprises (SOEs)** of the recipient country. In these cases, companies such as Russian Transneft and Brazilian Petrobras sign contracts directly with Chinese banks.
- **Joint investors**, which occasionally includes Chinese companies.

Common types of financings from the two banks include:

- **Export buyer's credit:** Non-concessional loans to assist recipient countries in purchasing products and services from Chinese firms.<sup>9</sup>
- **Non-concessional loans:** A loan will be considered non-concessional if it is for a "self-running

<sup>8</sup> Sometimes the electrification projects are tied with infrastructure projects. In such cases, only the energy project is recorded in the database, and the infrastructure project itself is not recorded as it is not an energy generating or supply project. For example, during the construction of Ethiopia-Djibouti railroad, a railroad electrification project was also planned. We track the electrification project and update it, but we do not record the railroad itself.

<sup>9</sup> The Export-Import Bank of China, Export buyer's credit. <http://www.eximbank.gov.cn/tm/Codetails/index.aspx?nodeid=31&page=ContentPage&contentid=13983>; China Development Bank, Export buyer's credit. [http://www.cdb.com.cn/cpfw/gjyw/dkrz\\_434/201602/t20160219\\_2641.html](http://www.cdb.com.cn/cpfw/gjyw/dkrz_434/201602/t20160219_2641.html)

business,”(自营业业务),<sup>10</sup> interest rates are comparable to market rate, or it is specified as a commercial loan/商业贷款<sup>11</sup>.

- **Concessional loans/援外优惠贷款:** A concessional loan, one of the two types of preferential loans, is often considered as official development assistance. Inter-governmental agreements are required.<sup>12</sup> The main characteristics of these loans are fixed interest rates (usually 2-3%) and long-term maturity (15-20 years). The terms of repayment are divided into a grace period (where the recipient only pays interest) and repayment period (where the recipient pay every half-year). Concessional loans are distributed in RMB and are regulated by the Foreign Assistance Department and Administrative Department in CHEXIM.<sup>13</sup>
- **Preferential export buyer's credit/优惠出口买方信贷:** The other type of preferential loans, these loans are the result of China's reforms of foreign assistance in the 1990s. They function similarly to export buyer's credit, but the Chinese government provides subsidies to lower the interest rate to a fixed, lower level. An inter-governmental agreement is not required. Preferential export buyer's credit is distributed in USD, and is regulated by the International Cooperation Department and Department of Finance.<sup>14</sup>

The main difference between CDB and CHEXIM is that only CHEXIM is authorized to issue concessional loans. Our database records also indicate that only CDB is involved in resource trade with resource exporters, such as Russia, Brazil and Angola. Even when no Chinese company is contracted, both banks may be involved in project finances.

GDP Center databases do not consider umbrella framework agreements as valid loan records.<sup>15</sup> Unless specific projects are mentioned and evidence supports that the projects are in motion, statements pledging funds to general sectors are not recorded as development finance in our databases<sup>16</sup> The following types of economic cooperation involving CDB and CHEXIM are not recorded, even when covered by media:

- Memorandums of Understanding (MoU), which are not considered confirmed loans.
- Financial agreements with other banks.
- Lines of credit, which are not loans by themselves.
- Proposed projects that have not met financial closure.
- Loans to projects that have been cancelled.
- Loans provided by other banks that are falsely reported as CDB or CHEXIM. These records will be deleted if there are further evidence indicating that these banks are not involved.
- Grants and technical assistance, which are unlikely to be issued by CDB and CHEXIM.

The entire database is revised over the course of each year and reposted earlier the following year in attempt to continuously strive for accuracy.

<sup>10</sup> The Export-Import Bank of China, On-lending. [http://www.eximbank.gov.cn/tm/Fm2/index\\_1168.html](http://www.eximbank.gov.cn/tm/Fm2/index_1168.html); China Development Bank, Loan financing. [http://www.cdb.com.cn/cpfw/gjyw/zytz\\_435/](http://www.cdb.com.cn/cpfw/gjyw/zytz_435/)

<sup>11</sup> This is mainly determined by empirical evidences from other researches and interviews. For example, Vietnam is less likely to be a recipient for Chinese concessional loans for various reasons, including international politics, whereas its neighbor Cambodia is very likely to receive concessional loans. When a project in countries such as Vietnam is reported, and the loan type cannot be identified, we assume that the loan is non-concessional.

<sup>12</sup> The Export-Import Bank of China, "two preferential" loans. <http://www.eximbank.gov.cn/tm/Codetails/index.aspx?nodeid=33&page=ContentPage&contentid=13986>

<sup>13</sup> Chinca, Introduction to two preferential loans, the Export-Import Bank of China. <http://www.chinca.org/cms/html/files/2013-12/16/20131216102948872930302.pdf>.

<sup>14</sup> *Ibid.*

<sup>15</sup> Deborah Brautigam, Jyhjong Hwang, China-Africa Loan Database Research Guidebook. <https://static1.squarespace.com/static/5652847de4b033f56d2bdc29/t/58ac6353f7e0ab024bcc665c/1487692628411/guidebook+draft+v.26.pdf>

<sup>16</sup> In rare cases, multiple projects are recorded in one report (with relatively high credibility, such as Chinese embassy). However, the projects are not widely covered. In such cases, these projects count as one entry in the database as there is no better way to separate them.

## Research Essentials in Compiling the Data

- Basic knowledge of development finance, Chinese development finance, and relevant databases/web pages for data reporting.
- Advanced search functions in Google and other search engines. For specific methodology see “Information Collection” section below.
- Knowledge of Chinese language. Many of the entries are easily verifiable when searched in Chinese, and some of the key evidence is posted on Chinese official websites. Certain internet browsers provide translation; however, they might not be able to translate specific details. This is also important when determining the linkage among projects and Chinese companies that changed their names during the development of an investment.
- Excel or similar software with a custom sorting function.

## Information Collection

The major sources of data in the GDP Center China databases are news reports, official declarations of contracts, and other verified official and non-official documents. The major source of data collection is web searches.

Keywords often include:

- China Development Bank (CDB), China Export-Import Bank (CHEXIM), and their different spelling, such as Export-Import Bank of China.
- Country names, especially major economic partners of China.
- Names of long-term clients of the banks, mostly Chinese state-owned companies.
- Energy Sources. Exploration projects from the two banks includes fossil fuels (coal, oil, gas/LNG)<sup>17</sup>. All types of power generation can be supported by the two policy banks; however, in practice, the most frequently supported types of power plants are coal-fired and hydroelectric. Transmission projects might involve electricity from unspecified generation sources.
- Words such as “loan”, “credit” and “finance”. While the GDP Center databases do not record unspecified loans, proposed loans or MOUs, these reports are often included in the search result and must be manually identified.

There are four main sources of data collection: (1) the official websites of CDB, CHEXIM and Ministry of Commerce of China (MOFCOM); (2) online lists of Chinese investment or energy projects in certain recipient countries, which are checked by entry to inspect the involvement of CDB or CHEXIM; (3) daily collection of news reports involving CDB or CHEXIM; (4) interviews and personal verification.

We only publish data in our database if it can be verified in both China and the host country or in interviews and consultations with the policy banks and host countries.

## Description of Data Entries

- **Date:** The year the loan contract is confirmed to be signed. In cases where reports of a certain project only include information that the project is “to be financed by certain banks,” the date of project contract will be verified in a later iteration.
  - During major bilateral or multilateral meetings, old projects may be used as “new cooperation” so as to magnify the achievement. If there is evidence that the project has already been recorded and has already been implemented, we do not add a new entry. If the

project has already been recorded but has not started, we revise the date to match the new event.

- **Country/country code:** The commonly used name of the recipient country. We are careful to differentiate country names, such as Democratic Republic of the Congo and Republic of the Congo.
- **Region:** Southeast Asia, South Asia, Europe/Central Asia, Middle East, Africa, Latin America and the Caribbean, North America. Other regions, such as East Asia and Oceania, are not included as there are no projects in these regions currently (projects inside China is not recorded in CGEF). As new projects in these regions occur, the data manager confers with the GDP Director for the region label.
- **Location:** Project location in the host country. We aim to acquire the most detailed level of geographic information of the project. Projects such as oil imports and equipment exports do not have specific locations and are coded as “unspecified”. The locations of nationwide projects are also coded as “nationwide.”
- **Energy source:** The primary energy source. This is usually specified in exploration projects and power generation projects. Electricity distribution projects such as power grids that have no specified energy sources are listed as “unspecified electricity.” Transmission projects with a specified source, such as transmission lines from a dam, are recorded accordingly.
- **Energy subsector:** The type of activity. Currently, this is generally divided into four categories: exploration and extraction; power generation; transmission and distribution; and multipurpose. The first three of these categories are the commonly used sub-sectors in the energy supply sector. Transport-related facilities for oil and gas are categorized in the transmission sector. There is also currently one entry classified as “energy efficiency,” where the trade of energy saving equipment is involved. If a project cannot be classified in these categories, a new category will be used.
- **Borrower:** The recipient of loans. Concessional loans are always granted to governmental entities of recipient country, but other types of loans can be issued to companies. In rare cases, the loan is granted to Chinese companies. If the loan is granted to an unspecified agency, the borrower is recorded as “government.”
- **Lender:** The provider of loans. As the CGEF only tracks loans from two banks, the lender will always be in one of the three categories: CDB, CHEXIM and CDB-CHEXIM co-financed. If a project involves one of the two banks and other financial institutions (for example, CHEXIM, Sinosure, and ICBC joint financed), then it is only recorded as CDB or CHEXIM, and specified in project description.
- **BRI country:** This column applies to the BRI filter in the CGEF Interactive Database. As a relatively new proposal of regional economic cooperation, the BRI is not a defined group of countries with clear a membership. As a result, the list of BRI countries may vary as some researchers extend the official list to countries that are interested in BRI or participate in trade with other BRI countries. The CGEF uses a conservative list of around 73 countries to identify BRI countries<sup>18</sup>.
- **Amount:** The amount of loans in millions (USD) at current value of the contract, regardless of periods of distribution. For example, the Sino-Russian gas trade in 2009 is paid in installment but recorded as one entry. In some cases, the loan is transacted in foreign currency, or RMB, and is converted using the annual average exchange rate of respective year of loans.

In cases of co-financed projects:

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<sup>18</sup> The list of BRI countries grows over time, and our database will adjust this annually according to the list on official OBOR website: [https://eng.yidaiyilu.gov.cn/info/iList.jsp?cat\\_id=10076&cur\\_page=1](https://eng.yidaiyilu.gov.cn/info/iList.jsp?cat_id=10076&cur_page=1). Currently there are about 73 countries. There are other conservative lists covering less countries, but the differences are less likely to sway our analysis as the newly joined partners, such as Panama and Trinidad and Tobago have limited financial ties with CDB and CHEXIM. It should be noted that there is no membership and set boundary in OBOR, and one might argue that other countries (such as United Kingdom) that has business ties with OBOR regions are de facto “members”. It is the reason why some researchers offer a larger list of countries.

- If the proportion of the CDB or CHEXIM financing is known, we use the actual number. Otherwise, we use the total loan amount and add the information of proportion to the note section.
- In rare cases, the CDB and CHEXIM grant loans to the same project separately. If these loans are covered in different news report, we record them as separate entries, as the loans may finance different phases of a larger project.
- There is a lender category named “CDB-CHEXIM co-financed”. If a loan is labeled as co-financed, the entry is not double-counted as CDB or CHEXIM. Co-financed projects are displayed separately.
- If a loan is found to include multiple phases of distribution (either major loans delivered in short period such as CDB-Petrobras loan in 2015-2016, or several smaller loans paid to support a single project, usually extension, transmission or grid construction), the data manager will either add a note in the previous entry regarding the installment, or revise the new loan and previous one as two different loans.
- In most cases, the percentage of contribution is not revealed. Loans are not assumed to be evenly supported by co-financiers.
- **Description:** Name of the project. A power station is usually addressed by its location, owner (company), and power capacity. The naming of other types of projects may vary from case to case. If a project is co-financed, the entry includes the name of other financiers.
  - Different phases of a construction are treated as different projects. For example, the Kostolac Power Station phase 2 and phase 3 are two different projects with different timetables.

Several other attributes of a loan are recorded, when available, including:

- **The energy capacity** of the project. For example, most power plants have a capacity measured in megawatts (MW). If the capacity of a pipeline or oil/gas field is recorded, it is recorded using the unit of measurement of the source.
- **The Chinese company involved**, which is usually publicly available information.
- **The type of loan.** We record concessional loan (优惠贷款) and preferential buyer’s credit (优惠买方信贷) when explicitly mentioned in news reports. As the two types of preferential loans only represent a limited portion of CHEXIM loans,<sup>19</sup> we label the unidentified loans as non-concessional. Loans without other information are recorded as unclassified loans.
- **Terms of the loan** including interest rates, terms of payment, currency, conditionality, etc. If the loan has a condition, such as oil trade, it is recorded in the note section. Interest rates and years of payment are not always reported. Concessional loans will most likely have a flat interest rate of 2% and will be paid in 15-20 years. The interest rates of preferential buyer’s credit are similar. However, non-concessional loans do not seem to follow a particular pattern.

## Data Verification

The GDP Center only records projects if confirmed by one Chinese source and one external report, either in English or in the host country’s local language, indicating a loan signed by either CDB or CHEXIM. This is unless there is confirmation from a direct stakeholder. If a report can confirm the project but cannot confirm that CDB or CHEXIM provided a loan, it won’t be recorded.

In the case that a project is officially cancelled, the entry is deleted. For example, a number of Indian coal power

<sup>19</sup> Actually, the portion of two preferential loans is small in the entire database. This is a knowledge that should be kept in mind during analysis. The actual proportion of these loans can be found in China’s annual financial reports.

plants contracted during 2005-09 were cancelled in 2016, and these entries were subsequently removed. If a project is suspended but not officially ended, such as the Texas Clean Energy Project in Odessa, Texas, the record is maintained.

The level of credibility of Chinese sources is generally ranked as follows:

1. Official websites of CDB, CHEXIM, and MOFCOM;
2. Websites of local embassies and involved companies;
3. China's official media such as Xinhua News Agency;
4. SEC filings, IMF Article IV consultations
5. Academic journals (which usually use the above sources for evidences, but sometimes use interviews and other exclusive information);
6. Open reports from industrial association, such as China Electricity Council;
7. Commercial media (which usually forward important announcement from the above sources);
8. Other. News released on forums and blogs is considered as the least reliable source.

The level credibility of non-Chinese sources is ranked as:

1. Official websites of Chinese ministries and embassies;
2. Official websites of recipients and involved companies;
3. Surveying agencies and organizations with own data;
4. Mainstream media;
5. Open source database and academic research (which usually uses the above sources for evidences) or NGOs;
6. Other.

News reports that only appear in online forums without further evidence are taken as invalid. If the only evidence of a project is from a governmental source or global institution (such as the World Bank), we include the project but only if details of the project are provided.

Data verification takes place in January. During this time, new projects are added, dates of postponed projects are updated, repetitive and cancelled entries are deleted, and other considered revisions are made. The entire process takes several weeks. The database is updated by February or March.



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*The views expressed in this coding manual are strictly those of the author(s) and do not represent the position of Boston University, or the Global Development Policy Center.*

## DATA UPDATE PROCEDURE

The current procedure of annual updates are as follows:

1. The data manager maintains a daily file marking the rows or cells that are under revision or include new entries. Deleted entries and older versions of the revised cells are kept in a separate sheet.
2. The data visualization company returns the master files from the previous year. These files should match the in-house master file from the previous year. There should be one Chinese file (labeled ZH) and one English file.
3. The data manager prepares three files for the GDP Center director: two updated master files (Chinese and English) and one separate change log for the year.
4. The master file should have fewer columns than the daily file. The master files do not include loan details such as energy capacity, Chinese companies involved, loan types, etc. The master files also do not include source of entries.
5. If there are new Chinese entries, translation is included.
6. If the data visualization company has follow-up questions, answers are provided.
7. After the annual update, only the daily file needs to be maintained every day.

