

Chinese and World Bank Lending Terms: A Systematic Comparison Across 157 Countries and 15 Years

Scott Morris, Brad Parks, and Alysha Gardner

Abstract

China's lending volumes in developing countries far surpass those of other bilateral creditors and compare in scale only to World Bank lending practices. Where World Bank lending terms, volumes, and policies are publicly available, the state of knowledge on official Chinese financing terms remains limited due to a lack of official transparency. To better understand the nature of official Chinese lending and its relationship to the debt capacity of borrowing countries, researchers and policymakers need to look beyond the total volume of lending and pay more attention to *concessional*ity, or the extent to which loans are offered at below-market rates. Financing offered on concessional terms (low interest rates, long maturities, and extended grace periods) reduces the likelihood of a debt crisis in borrower countries.

Our paper analyzes a new dataset of 157 countries, using information from AidData and the World Bank, to compare Chinese lending terms (interest rates, grace periods, and maturities) to IDA and IBRD lending terms over the 2000-2014 time period. We use two measures of concessionality: *loan concessional*ity, measured as the grant element of an individual loan; and *portfolio concessional*ity, which captures the overall generosity of a portfolio of funding to a country or group of countries by including grant funding alongside grant elements of concessional and non-concessional loans. Using these metrics, we examine Chinese lending terms and concessionality relative to World Bank at the global, regional, and country levels, as well as across income brackets and institutional lending categories. We also look at the stated lending terms of different Chinese institutions and assess whether these policies are reflected in the actual lending data. Our analysis demonstrates that China's official financing is less concessional than World Bank financing in comparable settings; however, nearly all Chinese loans have some degree of concessionality, which may help to explain the attractiveness of Chinese financing compared to market sources of finance.

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Correction: An earlier version of this paper incorrectly described the portfolio concessionality of the China Development Bank as “>.01%” instead of “<.01%” in table 4. This version also adds two additional summary rows to table 2, describing loan concessionality and portfolio concessionality for China and the World Bank.

The data and replication files for this paper are available here: <https://www.cgdev.org/sites/default/files/morris-parks-gardner-china-world-bank-data-code.zip>

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Introduction

The scale and distribution of official Chinese financing to governments around the world has come more clearly into view in recent years. Beijing does not publish a country-by-country breakdown of its loan-financed (or grant-financed) activities. Nor does it systematically publish loan-level data.¹ However, due to the extensive efforts of independent researchers and better reporting by official sources outside of China, it is increasingly clear that the Chinese government—through its major policy banks, state-owned commercial banks, and government agencies—now represents the largest official external creditor to developing country governments worldwide. By some estimates, it is larger than World Bank and IMF individually and all of the Paris Club creditors combined (Horn, Reinhart, and Trebesch, 2019).

Yet, beyond its overall scale and geographical distribution, relatively little is known about the terms of Chinese lending. What are the interest rates, maturities, and grace periods associated with Chinese loans to other governments? How concessional is Chinese lending compared to lending from other official sources? The existing literature offers some indication of lending terms from different Chinese government institutions, but these estimates are usually derived from the stated policies of the lenders or studies with limited sample sizes. In this paper, we provide a systematic assessment across a large sample of Chinese government grants and loans, relying on the 1.0 version of AidData’s Global Chinese Official Finance Dataset (Dreher, Fuchs, Parks, Strange, and Tierney, 2017).

To understand Chinese financing practices in the context of international lending standards, we use the World Bank as a benchmark. We consider the World Bank to be a useful and relevant comparator for several reasons. First, more than any other single creditor, the World Bank rivals China in the overall scale and consequence of its lending to developing country governments (Horn et al., 2019).² Second, as the largest multilateral lender, the World Bank promotes a common set of behavioral norms related to public debt sustainability and encourages other official lenders to comply with these norms (World Bank, Resource Mobilization Department, 2006). To prevent sovereign debt crises and help creditors overcome collective action problems³, the institution has developed a set of procedures and policies that allow it to (a) measure the concessionality of loans from bilateral and multilateral creditors; (b) identify debt sustainability risks in borrower countries; and (c) provide guidance on both loan pricing and the appropriate mix of grants and loans for different types of borrowers (IMF and World Bank, 2013; IDA and IMF, 2018). Bilateral and multilateral development finance institutions rely upon these World Bank norms to inform their own decisions.⁴ It is therefore useful to consider how Chinese lending practices

¹ The Chinese government considers the details of its overseas lending program to be a “state secret” (Bräutigam, 2009: 2).

² China is in a league of its own among bilateral creditors (Horn et al., 2019).

³ In the absence of compliance with such norms, every official creditor has an incentive to “free ride” on the generosity of its peers, which increases the likelihood of sovereign debt crises and make it less likely that any single lender will get repaid. Recognizing this problem, the World Bank has taken on the role of creating, promoting, and monitoring compliance with such norms (World Bank, 2006).

⁴ By way of illustration, Galiani, Knack, Xu, and Zou (2017) demonstrate that when countries cross the lower-middle income (LMIC) threshold that the World Bank uses to determine eligibility for highly concessional financing from IDA, they experience a 59% reduction in ODA (as a share of GNI) from all multilateral and bilateral sources, on average. In fact, several major lenders and donors – such as the African Development Bank,

comply with or deviate from World Bank norms. Finally, although the World Bank is multilateral institution, it is an “official sector” lender like China, making its lending practices more relevant to Chinese lending practices than those of private banks or bond markets, which set their financing terms purely based on market dynamics and the pursuit of profit maximization.

Section 1 of this paper reviews existing research on cross-border financing by official sector institutions in China. In Section 2, we examine lending policies of the World Bank (IBRD and IDA) and Chinese institutions, including China Development Bank, the Export-Import Bank of China (“China Eximbank”), the Ministry of Commerce and other government agencies, state-owned enterprises, and state-owned commercial banks.⁵ We then describe our data sources and methods in Section 3. Our main results are presented In Section 4, where we draw upon a dataset covering 157 countries and 15 years to compare Chinese and World Bank lending terms and concessionality levels across regions, income brackets, and institutional lending categories. In Section 5, we test whether our core findings from Section 4 hold in a sub-sample of 28 countries with more complete data on lending terms. In Section 6, we discuss the limitations of our study and several promising avenues for future research. Section 7 outlines a forward-looking set of policy recommendations based on our analysis for the Chinese government, borrower governments, and other multilateral and bilateral stakeholders.

the Asian Development Bank, and the U.S. Government's Millennium Challenge Corporation – explicitly use the World Bank's per capita income threshold and IDA eligibility determinations to make decisions about the concessionality of the financial support that they will provide to their own partner countries.

⁵ A total of 40 official sector institutions from China are included in our sample. For a full list of financing institutions, please see Appendix 2E.

Section 1. Current Literature

The Chinese government is now the largest official source of development finance in the world, surpassing lending by any single multilateral institution or other bilateral lenders, including the United States. While some of China's overseas lending is directed to wealthier nations, the majority of its loans are to developing countries. In low-income countries (countries with per capita incomes below \$2,350), total lending from China exceeded lending from the World Bank, the IMF, and private sources between 2010 and 2015 (Horn et al., 2019). China Development Bank, a leading source of cross-border official finance, now has total assets (domestic and international) that exceed the combined total assets of the World Bank, the European Investment Bank, and all four major regional development banks combined (Morris, 2018).

To better understand the nature of official Chinese lending and its relationship to traditional bilateral and multilateral sources of development finance, researchers and policymakers need to pay more attention to *concessional*ity, or the extent to which loans are offered at below-market rates. Financing offered on concessional terms (low interest rates, long maturities, and extended grace periods) reduces the likelihood of a debt crisis in borrower countries, and concessional lending policies are generally aimed at a country's capacity to repay based on level of development and debt profile (Bandiera and Tsiropoulos, 2019). Chinese lending to developing countries is generally offered on less concessional terms than those offered by Western and multilateral creditors, but more favorable terms than the market would offer (Bräutigam, 2009; Ruta, Dappe, and Zhang, 2019).

According to limited information provided by the World Bank's Debtor Reporting System (which records sovereign debt at the individual loan level but does not make this information publicly available), Chinese government loans to low-income countries typically have a 2% interest rate, 6-year grace periods, and 20-year maturities.⁶ Official Chinese lending to emerging market (or middle-income) economies is generally offered on harder terms, with flexible interest rates benchmarked to the London Interbank Offered Rate (LIBOR), grace periods varying between three and five years, and maturity lengths varying between two and eighteen years (Bandiera and Tsiropoulos, 2019). However, sparse public reporting of lending terms and confidentiality requirements have made it difficult to undertake any deeper analysis of lending terms.⁷

China's international development finance program is characterized by a lack of transparency around key features, including volumes, terms, and conditions (Muchapondwa, Nielson, Parks, Strange, and Tierney, 2016; Nielson, Tierney, and Parks, 2017). Official reporting on Chinese development finance is vague, sporadic, and incomplete. The Chinese government periodically publishes white papers on its foreign aid program; the last one, published in

⁶ These lending terms generally hold across multiple sources and data collection methods, including both public and private reporting (the World Bank's Debtor Reporting System). See Bräutigam, 2009; Bräutigam and Hwang, 2016; Ruta et al., 2019; and Bandiera and Tsiropoulos, 2019.

⁷ There are a number of excellent country-specific and project-specific studies on Chinese lending terms and conditions. See, for example, Corkin, 2013; Jansson, 2013; and Onjala, 2018. Horn et al. (2019) attempts to provide an assessment of Chinese lending terms across many countries and projects. For all loans where the authors do not have access to direct observations of interest rates, maturities and grace periods they impute a set of assumed values that correspond to the stated institutional policy of a concessional loan at China Eximbank. In this paper, we only rely on direct observations of Chinese lending terms.

2014, indicates that China’s average annual foreign aid budget is \$4.8 billion (The People’s Republic of China, 2014). But the Chinese government only provides global and regional aggregate estimates of foreign aid provision and does not provide a country-by-country breakdown, nor include project-level reporting. Perhaps most importantly, the Chinese government publishes very few details about its less concessional and more commercially oriented loans to developing countries, and these flows represent approximately 80% of total Chinese government financing to developing countries (Dreher et al., 2017). The research community has responded to this challenge by independently compiling data on Chinese financing from borrower governments, multilateral institutions, Chinese contractors, media reports, and other sources (e.g. Bräutigam and Hwang, 2016; Dreher et al., 2017; Horn et al., 2019).

China’s emergence as the largest creditor to developing countries has coincided with a rising risk of debt distress in these economies. Hurley, Morris, and Portelance (2018) find that twenty-three BRI countries are at risk of debt distress (according to World Bank/IMF debt sustainability analyses), and that eight of these countries are severely vulnerable to debt distress as a result of future BRI-related financing flows.⁸ A more recent study estimates that “more than two dozen countries now owe more than 10 percent of their GDP of the Chinese government” (Horn et al., 2019). The same study notes that low-income governments, as a group, owe substantially more to China (\$380 billion) than they do to all 22 members of the Paris Club combined (\$246 billion).

Section 2. Lending Policies for China and the World Bank

The World Bank and China follow different lending paradigms. The World Bank’s stated goals are to end extreme poverty and promote shared prosperity at a global scale (World Bank, 2013). By contrast, China emphasizes the pursuit of “mutual benefits” for both the lender and the borrower (The People’s Republic of China, 2011). Given these contrasting paradigms, it is not surprising that these two official creditors follow different lending policies. This section introduces the key differences in the lending policy frameworks of the World Bank and China.

World Bank Policy Framework

With the creation of the International Development Association (IDA) in 1960, the World Bank’s shareholders recognized the need to differentiate financing terms according to borrowers’ ability to pay. Under a differentiated pricing model, the bank began to charge below-market (concessional) terms to its poorest, least creditworthy borrowers and market (non-concessional) terms to its wealthier, creditworthy borrowers. Under the formalized policy framework, which prevails today, borrower eligibility for concessional terms is a function of the country’s per capita income and a bank-determined assessment of country creditworthiness. In practice, low income countries are eligible for IDA’s concessional terms, while most middle-, upper-middle, and high-income countries borrow on IBRD terms. Within each of these categories, terms may vary according to characteristics of the country (e.g., small economy countries, high debt risk countries). For example, among IDA

⁸ The eight countries identified include Mongolia, Montenegro, Pakistan, Maldives, Djibouti, Laos, Kyrgyz Republic, and Tajikistan.

borrowers, there is a further element of progressivity, with high debt risk countries receiving pure grant financing, most IDA countries receiving “normal” terms, and relatively higher income IDA countries paying less concessional terms. IDA’s lending model is dependent on donor grant contributions, which effectively eliminates the need for a risk-based pricing model.

The World Bank seeks to manage credit risk in its overall portfolio. Yet, unlike commercial lenders, the Bank does not set prices for its sovereign borrowers based on their risk profiles, which is why IDA lending terms to low income countries and IBRD lending terms to middle- and upper-income countries do not demonstrate much variation. In effect, lower credit risk countries subsidize the provision of more concessional terms to higher credit risk countries. As an official sector lender with a development mandate, the Bank adheres to this approach to ensure equitable access to financing across countries. This unique institutional design feature is only possible because of the bank’s preferred creditor status, which helps to ensure repayment even when borrowers are otherwise in default to other classes of creditors.

Currently, the World Bank’s most concessional loans are provided with 1.54% fixed interest rates, 10-year grace periods, and 40-year maturities (World Bank, Office of the Vice President, 2019). These terms are offered through IDA to low income countries that are not considered to be creditworthy.⁹ The Bank’s least concessional loans, which are offered through IBRD to high income countries¹⁰, are fixed spread loans above a 6-month LIBOR reference rate. Those with the longest maturities (18 to 20 years) are lent at LIBOR plus 205 basis points, while those with shorter maturities have smaller spreads (World Bank, Office of the Vice President, 2019).

Chinese Government Policy Framework

Unlike the World Bank, the Chinese government is not a single creditor with a unified and coherent policy framework guiding all its official lending activities. There are many Chinese government lending institutions, including state-owned policy banks, state-owned commercial banks, and state-owned enterprises (SOEs), engaged in official lending activities, and each lender has its own policies.¹¹ The authorities in Beijing have a variety of lending instruments at their disposal and these instruments have distinct features and functions.¹²

⁹ For countries at high risk of debt distress, IDA provides grants rather than loans.

¹⁰ Currently just Chile, Poland, and Uruguay.

¹¹ For example, see Export-Import Bank of China, n.d.

¹² In addition to the four lending instruments examined in this paper, vendor financing is another important source of Chinese official financing. The purpose of vendor financing (sometimes also called a “supplier credit”) to help foreign buyers purchase goods and services from Chinese exporters. These loans from Chinese state-owned enterprises (e.g. ZTE, CATIC, NORINCO, Poly Technologies) can be 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 plus a margin.

Box 1. Official Chinese Policies on Lending Terms

No-Interest Loans from China’s Ministry of Commerce (MOFCOM) via “Economic and Technical Cooperation Agreements”: These RMB-denominated loans are granted to government institutions and they are provided on extremely generous terms. They typically have 20-year maturities, 10-year grace periods, and 0% interest rates. No counterpart funding is required, and when borrowers have difficulty repaying their debts to the Chinese government, these are often the first loans to be forgiven or rescheduled.

Concessional Loans¹³ from China Eximbank: These RMB-denominated loans are granted to government institutions and provided on below-market terms (usually 20-year maturities, 5-year grace periods, and 2% interest rates). 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 Eximbank accordingly. The proceeds of these loans can be used to support up to 100% of a project’s overall cost. No counterpart funding is required.

Preferential Export Buyer’s Credits from China Eximbank: These USD-denominated loans are granted to government institutions that wish to buy Chinese exports. The terms of these loans vary, but they are typically offered with fixed rather than floating interest rates that are more generous than prevailing market rates. As a general rule, these loans are slightly more expensive (higher interest rates, shorter maturities, and shorter grace periods) than China Eximbank concessional loans.¹⁴ The proceeds of these loans can be used to support up to 85% of a project’s overall cost, but 15% counterpart funding is required.

Non-concessional and semi-concessional loans from China Development Bank (CDB) and Chinese state-owned commercial banks (Bank of China, Industrial and Commercial Bank of China, China Construction Bank, and Agricultural Bank of China)¹⁵ Loans from these banks are generally provided on less concessional terms because, unlike China Eximbank, they must maintain their own balance sheets and lend without receiving official subsidies from the state.¹⁶ Typically, the base interest rates of these loans are set to the (floating) LIBOR rate, and then an additional margin is incorporated to account for borrower-specific risk and repayment capacity. While interest rates on these loans usually fall somewhere in the 4.5% to 6% range, maturities and grace periods can vary widely. Loans from CDB and Chinese state-owned commercial banks, which are usually denominated in U.S. dollars or euros, are granted to both government agencies and companies.

¹³ By way of clarification, the term “concessional loan” is not being used here to refer to loans with grant elements that exceed the concessionality thresholds set by the World Bank/IMF or the OECD. We are instead referring to the proprietary term (优惠贷款) that China Eximbank uses to describe one of its lending programs (Export-Import Bank of China, n.d.).

¹⁴ Despite the higher expense, some low-income and middle-income governments still favor preferential buyer’s credit loans because they are denominated in relatively stable US dollars, while concessional loans from Eximbank are denominated in less stable Chinese yuan (e.g. Government of Sri Lanka, 2012: 70).

¹⁵ The state-owned commercial banks and China Development Bank offer a wide array of loan instruments, including but not limited to term loans, bridge loans, revolving credit facilities, working capital loans, resource-backed loans, club loans, syndicated loans, and export credits.

¹⁶ However, China Eximbank does have a buyer’s credit loan (BCL) program that is non-preferential in nature and which is broadly analogous to the buyer’s credit loans offered by CDB and Chinese state-owned commercial banks. See Export-Import Bank of China, n.d.

Despite the apparent absence of a unified policy framework that guides all of China's official lending activities, there are two key distinctions between China's approach to official lending and the World Bank's policy framework. First, profit maximization is more central to the decision-making of Chinese government lending institutions than it is to the decision-making of the World Bank. When the Chinese government adopted its "Going Out" strategy in 1999, it did so to solve a particular problem: annual trade surpluses had led to a rapid accumulation of foreign exchange reserves. Authorities knew that allowing these foreign exchange reserves to enter the domestic economy would increase the risk of inflation and currency revaluation. So, to create favorable conditions for continued economic growth at home, they decided to invest the country's foreign exchange reserves in overseas assets, leading to the adoption of the "Going Out" strategy and a dramatic expansion in the scale of China's official lending to other countries. China's foreign exchange reserves reportedly earn a 3% annual return at home (Kong and Gallagher, 2016), so Chinese government lending institutions have an incentive to price their foreign currency-denominated loans to overseas borrowers above this reference rate.¹⁷

Second, while Chinese government lending institutions consider a borrower's repayment capacity when they make decisions about concessionality levels (Corkin, 2011; Dreher, Fuchs, Parks, Strange, and Tierney, 2018), there is not much evidence that they do so in a way that is coordinated *across* Chinese government lending institutions. As we discuss later in Section 7 of this paper, China recently announced the adoption of a debt sustainability framework (DSF) for all projects implemented under the Belt and Road initiative (BRI), but it remains to be seen if the BRI DSF will substantially influence the lending behavior of China's policy banks, state-own commercial banks, SOEs, and Ministry of Commerce.

Section 3. Data and Methodology

Defining and Measuring Concessionality

To compare the concessionality of World Bank financing and official Chinese financing to developing countries, one needs to define concessionality in a way that can be consistently applied across different financing institutions. We define concessionality as a measure of the generosity of a financing package, or the extent to which financing is offered at below-market rates. We use two measures of concessionality: *loan concessionality*, measured as the grant element of a loan or loan portfolio; and *portfolio concessionality*, which accounts for a financier's provision of grant funding in addition to the concessionality of its loan portfolio. We use the World Bank-IMF grant element equation to measure loan concessionality and portfolio concessionality in a consistent and comparable manner.

The IMF defines the grant element of a loan as "the difference between its nominal value (face value) and the sum of the discounted future debt-service payments (net present value)

¹⁷ On this point, see Corkin (2011, 2013) and Jansson (2013). After conducting a careful analysis of China Eximbank and China Development Bank's lending activities in the DRC, Jansson (2013: 157) concludes that "their principal concern is the perceived profitability of the project in question. They need to be confident that their investment will be repaid."

to be made by the borrower, expressed as a percentage of the face value of the loan.”¹⁸ This measure varies from 0% to 100%, so loans provided on market terms have a grant element of zero, and pure grants have a grant element of 100%.¹⁹ To calculate the grant element of a loan that is provided on below-market (concessional) terms, one needs to calculate the *discounted cost* (or “net present value”) of the future debt service payments that will be made by the borrower.

The grant element calculation takes the following form:

$$\left(1 - \frac{r}{d}\right) * \left[1 - \left(\frac{\frac{1}{(1+d)^{n*g}} - \frac{1}{(1+d)^{(n*m)}}}{d*(n*m - n*g)}\right)\right], \text{ where } d = (1 + D)^{\frac{1}{n}} - 1$$

In this equation, r represents the interest rates (or weighted mean of interest rates for a loan portfolio); m represents the maturity length in years (or weighted mean of maturities); g represents the grace period in years (or weighted mean of grace periods); n represents the number of repayments per annum, assumed to be twice a year; and D represents the discount rate of 5.00%. Equal principal repayment is assumed.²⁰

The grant element ratios generated by this formula can be used in several ways:

- to identify whether individual loans are concessional or non-concessional—generally, anything above the 35% threshold is considered concessional at the IMF and the World Bank, and anything over the 25% threshold was considered concessional at the OECD prior to 2018;²¹
- to measure the average concessionality of a portfolio of loans; and
- to calculate the absolute amount of grant funding nested within one or more loans—by multiplying the grant element (concessionality rate) of a loan by the nominal (face) value of a loans

The IMF grant element calculation is a stand-alone metric designed to measure loan concessionality and does not consider the direct provision of grant funding. To measure portfolio concessionality, one needs to account for overall aid and debt flows from the World Bank and China to recipient countries, including grants that are offered alongside concessional and non-concessional loans. Therefore, to measure the overall concessionality of a financier’s portfolio to a single country or group of countries, we sum stand-alone grant

¹⁸ Stated differently, the grant element of a loan is “the difference between the nominal and the present value [of the loan], expressed as a percentage of the nominal value [of the loan]” (IMF, 2015:28).

¹⁹ In theory, the grant-element equation used by the World Bank and the IMF could technically generate more extreme values, above 100 or below 0. However, in this paper, we rely on the IMF’s grant element calculator, which is bounded so that loans cannot assume negative values (as such values imply lending terms that are ‘less favorable than market terms’, which is nonsensical if market terms are risk-adjusted prices agreed by willing buyers and sellers of credit) or a value of 100% (as such transactions would represent pure grants rather than loans). To address the former, the IMF has adopted a simple rule— “[f]or loans with a grant element equal or below zero, the [present value] will be set equal to the nominal value of the loan” (IMF, 2015: 28)—which effectively creates a grant element “floor” of zero.

²⁰ Other types of financing outside standard loans, such as lump sum debt service and annuity, use variations on this grant element formula.

²¹ Beginning in 2018, the OECD will use a tiered system to determine concessionality, with different grant element thresholds for countries at different income levels. See the UN CDP (2019) for a description of the new policy.

financing with “grant financing” nested within concessional loans (or a loan’s *grant element*), then divide this value by the overall size of the financier’s loan and grant portfolio to this country. Nested grant financing is calculated by multiplying the grant element of a loan by the face value of the loan. Portfolio concessionality is therefore determined using the following equation:

$$\text{Portfolio concessionality} = \frac{\text{Grant funding} + (\text{Loan funding} * \text{Grant Element of Loan})}{\text{Total grant and loan funding}}$$

These measures of portfolio concessionality and loan concessionality are useful because they provide an objective way of comparing Chinese and World Bank practices. However, they also have limitations. Chief among these is the fact that we follow the IMF’s practice of using a fixed discount rate of 5.00% in all of our grant element calculations. In reality countries with different levels of creditworthiness can borrow at different market rates, resulting in widely-varying, country-specific discount rates.²² In principle, our measures of concessionality could account for country-specific discount rates, but in practice it is not possible to calculate such rates for the full set of countries in our sample. Therefore, to minimize complexity, avoid sample selection bias, and ensure consistency with prevailing international standards for the measurement of concessionality, we apply a fixed discount rate of 5.00% to all countries.

Box 2. Discounting and Calculating a Loan’s Grant Element: A Simple Example

The concept of discounting is central to grant element calculations. To illustrate this concept, consider a simple example involving your personal finances. If a family member gives you \$990 today and you choose to invest rather than spend those funds by putting the funds in a savings account that yields a 1% annual interest rate, this is equivalent to your family member giving you \$1000 in a year’s time. In other words, we can use the 1% annual interest rate to discount your family member’s \$1000 contribution next year to its net present value (\$990).

To calculate the grant element of a loan, the IMF assumes a fixed discount rate of 5% (IMF 2015). So, if a bank were to lend \$1 million at a 2% annual interest rate but that bank could earn 5% annual interest on its capital by investing it elsewhere, the difference between the discounted cost (“net present value”) of future debt service payments at a 2% interest rate and at a 5% interest rate would represent the size of the “grant” from the lender to the borrower. After calculating the net present value of future debt service payments, one calculates the grant element by simply subtracting the net present value of future debt service repayments from the face value of the loan, and then dividing this amount by the face value of the loan. So, if \$50 million is the net present value of future debt service repayments on a loan with a face value (principal) of \$100 million, the grant element of the loan would equal 50%.

²² In fact, the IMF and the World Bank originally used country-specific discount rates in their grant element calculations. They discontinued this practice in October 2013 because it proved to be an unreliable way of measuring of discount rates over the long term, and instead adopted a unified discount rate of 5.00%. For more information about the reasoning for this policy change, see the IMF, 2013.

Data

To compare financing terms across lenders, we draw upon three main data sources: AidData’s Global Chinese Official Finance Dataset, the World Bank’s IBRD Statement of Loans – Latest Available Snapshot, and the World Bank’s IDA Statement of Credits and Grants – Latest Available Snapshot. Our combined full dataset contains 7,312 observations worth \$957 billion USD in development finance distributed to 157 different countries.²³ Each observation represents a single grant or loan from either the World Bank or the Chinese government to a recipient country. We restricted our analysis to the time period 2000-2014 based on the temporal coverage in AidData’s Global Chinese Official Finance Dataset. Our key variables of interest are face values, interest rates, grace periods, and maturity lengths.²⁴

Table 1. Data sources

AidData (2000-2014)	2,453 obs	1,046 loans	1,407 grants	130 countries
World Bank - IDA (1961-2019)	3,362 obs	2,442 loans	920 grants	80 countries
World Bank - IBRD (1947-2019)	1,497 obs	1,497 loans	0 grants	75 countries
Full Dataset - Morris et al (2000-2014)	7,312 obs	4,985 loans	2,327 grants	157 countries
Subsample - Morris et al (2000-2014)	2,085 obs	1,391 loans	694 grants	28 countries

Our analysis focuses exclusively on official financing flows, which include official development assistance (ODA) and other official flows (OOF). Whereas ODA primarily consists of highly concessional loans and grants that are directed to developing countries, OOF primarily consists of non-concessional and semi-concessional loans and export credits, and these flows can be directed to countries at any stage of development.²⁵ The World Bank provides official financing through its IDA and IBRD windows. It provides ODA mostly through the former and OOF mostly through the latter. China provides ODA mostly through the Ministry of Commerce/CIDCA and China Eximbank, and OOF mostly through the China Development Bank and its state-owned commercial banks.

In the absence of reporting from the Chinese government, we rely on AidData’s Global Chinese Official Finance Dataset to identify key loan characteristics: face values, interest rate, grace periods, and maturity lengths.²⁶ In total, there are 437 Chinese interest rate observations, 410 maturity rate observations, and 320 grace period observations. Only 268 of the 1,046 Chinese loans in the full dataset have complete information for interest rates,

²³ Given that AidData’s dataset only captures official financing from China to other countries, we do not include World Bank loans to China in our dataset. As such, the World Bank lending terms in this report should not be viewed as an authoritative statement on World Bank lending practices writ large, but rather as a benchmark for Chinese lending practices. For more information on the relationship between the World Bank and China, see Morris and Portelance (2019).

²⁴ For additional details on our approach and sources, see Appendix 1A.

²⁵ For more precise definitions of ODA and OOF, see OECD, 2018.

²⁶ For additional details on the Tracking Underreported Financial Flows methodology used to generate this dataset, see Appendix 2A.

maturities, and grace periods. By contrast, we have complete data on lending terms for the vast majority of IDA and IBRD grants and loans from the World Bank.²⁷

Analysis of the Full Sample and Subsample

Observations on individual loans from official Chinese financiers may have full information on lending terms (interest rate, maturity, and grace period), partial information on lending terms (e.g. the interest rate and maturity but not the grace period), or no information on lending terms (face value and recipient of financing only). We account for this problem by offering a two-stage analysis.

In the first stage of our analysis, we examine loans with full *and* partial information on lending terms, and create average lending term estimates for the World Bank and China that are weighted according to grant and loan face values.²⁸ We then use these weighted average estimates along with total face value of grant financing to compare levels of portfolio and loan concessionality across the full sample and across regions, income brackets, and institutional lending categories.

The second part of our analysis looks at a subsample of 28 countries with more complete data on lending terms.²⁹ Instead of using weighted averages to estimate loan concessionality, we calculate the grant element of each individual loan with full information and use the resulting grant element estimates and grant financing volumes to measure average loan and portfolio concessionality. To test the robustness of the findings from the first stage of the analysis, we conduct a difference-in-means test between average lending terms from the subsample countries at the countries not included in our subset, or the “outsample”. Our subsample consists of 2,085 observations from 28 countries, with 928 grants and loans from China and 1,157 grants and loans from the World Bank.³⁰

²⁷ While we have full lending terms information for the majority of World Bank loans, data limitations surrounding IBRD flexible loans required that we generate interest rates for these loans using reasonable assumptions in line with stated World Bank lending policies. See Appendix 1A for more details.

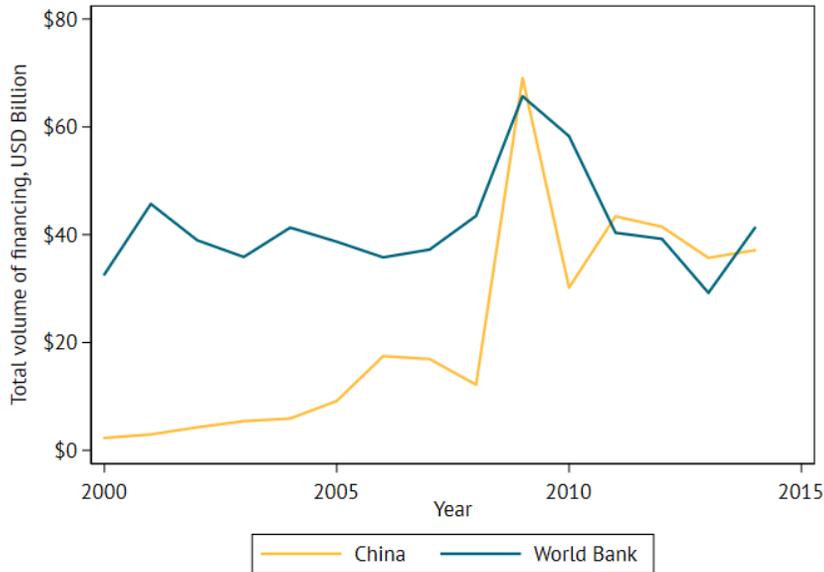
²⁸ All weighted averages and percentages in this report are weighted by financing amount, unless otherwise specified.

²⁹ Our sub-sample includes countries where, at a minimum, one in four loan observations contained complete information on lending terms.

³⁰ The countries in the subsample include Angola, Bangladesh, Cambodia, Cameroon, Republic of the Congo, Costa Rica, Dominica, Ethiopia, Gabon, Ghana, Guyana, Kyrgyz Republic, Mauritania, Moldova, Mongolia, Montenegro, Nepal, Niger, Nigeria, Papua New Guinea, the Philippines, Samoa, Serbia, Sri Lanka, Tonga, Uganda, Uzbekistan, and Zambia.

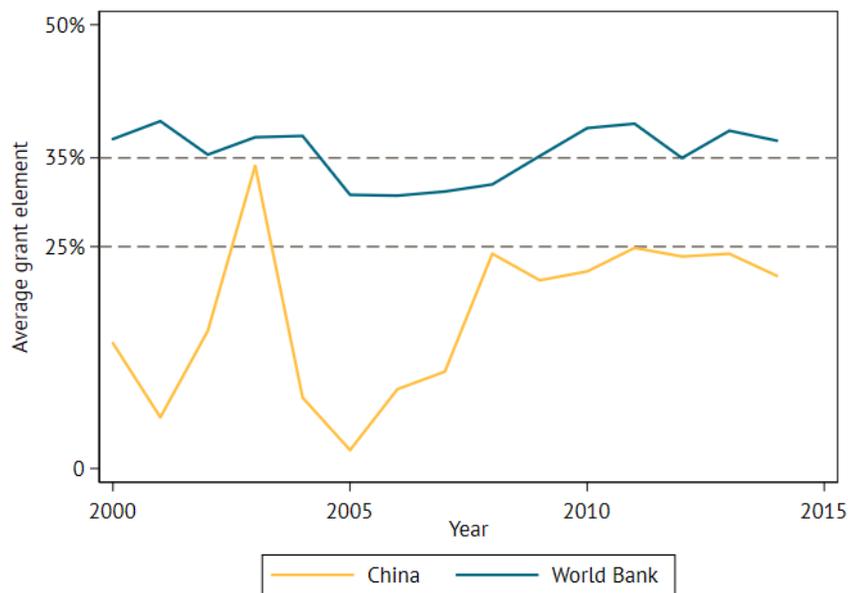
Section 4. Analysis of the Full Sample

Figure 1. Volume of financing over time



Financing from both China and the World Bank increased over the 2000-2014 time period, with the gap between the two financiers narrowing considerably after 2010 (see Figure 1). At the time of the global financial crisis, credit from both financiers spiked; however, Chinese financing represented a more dramatic increase and even temporarily exceeded World Bank financing in 2008. By 2014, Chinese and World Bank financing volumes converged.

Figure 2. Loan concessionality over time



According to Figure 2, the concessionality of China’s loan portfolio demonstrated a relatively high level of volatility between 2000 and 2008, as it experimented with different approaches and established its position in the international development finance market. Chinese loans passed the first half of the time period with very low grant elements, sometimes close to zero. However, by 2007, the average concessionality of China’s loan portfolio stabilized just below 25%, which is the threshold historically used by the OECD Development Assistance Committee (OECD-DAC) to determine if loans are sufficiently concessional to qualify as ODA. By comparison, World Bank lending terms were more consistent over the 15-year time period. The average grant element of its loan portfolio hovered around 35%, which is the cutoff that the World Bank and the IMF uses to determine whether or not a loan is concessional. Overall, the World Bank’s loan portfolio was approximately 30% more concessional than China’s loan portfolio during the 2000-2014 period of study.

Table 2 summarizes the global differences between World Bank and Chinese financing. In total, China provided \$333 billion in financing (or \$22.2 billion a year on average) and the World Bank provided \$624 billion in financing (or \$41.6 billion a year on average) between 2000 and 2014.³¹ China and the World Bank maintained similar loan-to-grant ratios (roughly 20:1) during this period.³² However, the face value of the average Chinese government loan was twice as large (\$307 million) as the face value of the average World Bank loan (\$148 million). The opposite was true of grant financing: the average World Bank grant size (\$44 million) was almost five times larger than the average size of an official Chinese grant (\$9 million).

Table 2. At a glance: financing from China and the World Bank³³

	China	World Bank
Total Financing (USD)	\$333 billion	\$624 billion
Average Loan Size (USD)	\$307 million	\$148 million
Average Grant Size (USD)	\$9 million	\$44 million
Total Number of Projects	2,453	4,859
Volume of Grants (% total financing)	3.77%	6.42%
Volume of Loans	96.23%	93.58%
Weighted Mean Interest Rate	4.14%	2.10%
Weighted Mean Maturity (years)	16.6	17.9
Weighted Mean Grace Period (years)	4.8	7.7

³¹ The total volume of financing as presented in this table represents a lower bound of Chinese official finance, based off our considerable sample size. Other researchers, most notably Horn et al, have estimated a higher total volume of financing based on an expanded dataset.

³² To generate these ratios, we use the absolute monetary value in constant USD (2014) of the loans and grants that were provided rather than the number of loans and grants that were provided.

³³ For comparability in our overall analysis, the numbers displayed in this table exclude World Bank lending to China. Including World Bank loans to China impacts summary statistics for the World Bank. With Chinese loans included, the World Bank’s total financing increases to \$658 billion; the Bank’s average loan size is \$150 million; the Bank’s number of projects increases to 5,028; the volume of grants as a percent of total financing decreases to 6.09%; and average lending terms adjust to a 2.14% interest rate, 17.9 year maturity, and 7.5 year grace period.

Loan Concessionalty*	17.69%	35.73%
Portfolio Concessionalty	21.46%	42.15%

*In this table, average loan concessionalty is calculated as the weighted average grant element for all loans with complete information on lending terms. Further analysis in this paper looks at smaller sample sizes, and relies instead on constructed loan concessionalty figures based on the weighted average of each lending term statistic for the sample. See Section 2 for further discussion on how loan concessionalty and portfolio concessionalty are calculated.

Across the board, we find that World Bank lending terms are more favorable for their borrowers, with lower interest rates, longer maturities, and more generous grace periods. The average interest rate on a Chinese government loan is 4.14%, which is nearly twice as high as the average interest rate (2.10%) on a World Bank loan. Chinese government loan maturities are only slightly shorter (16.6 years) than World Bank loan maturities (17.9 years), on average; however, the average grace period on a World Bank loan (7.7 years) is substantially more generous than the average grace period from Chinese government financing institutions (4.8 years, on average).

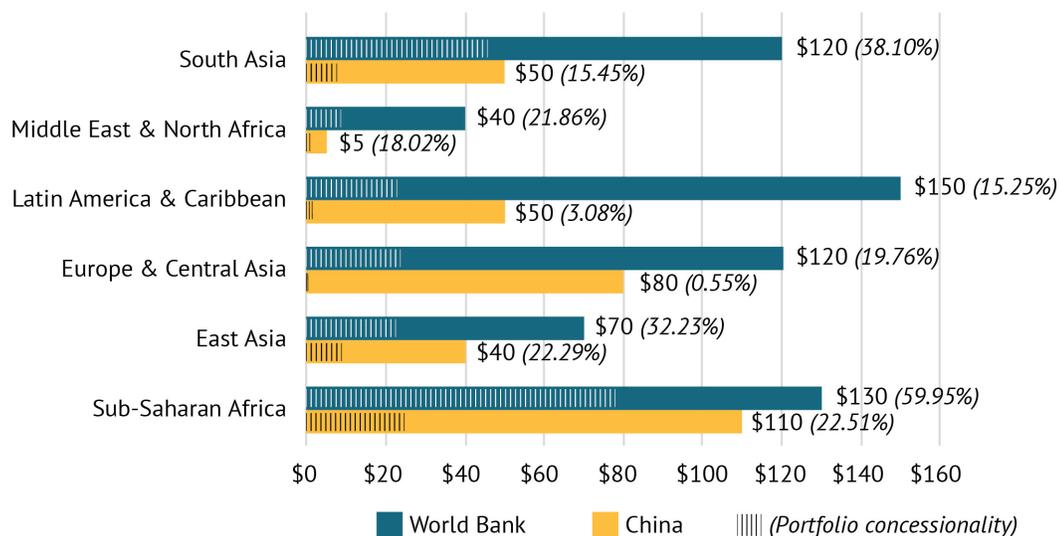
Geographical Financing Patterns

The geographical reach of China’s overseas financing is broad and generally comparable to that of the World Bank. During our period of study, China lent to 130 countries, while the World Bank lent to 127 countries. However, there are also some important differences in where these two creditors focus their financing efforts. Twenty-one countries in our dataset are recorded as borrowing from China and not the World Bank. An additional nine countries received the vast majority of funding (at least 85%) from China, and only a small amount from the World bank. Of these 30 borrowing countries that rely predominantly on Chinese debt³⁴, two are not members of the World Bank (Cuba and North Korea); some are wealthy and therefore ineligible to borrow from the World Bank (e.g. New Zealand, the United Arab Emirates); and some are in arrears to the World Bank and International Monetary Fund, rendering them ineligible for new loans (Sudan, Somalia, and Zimbabwe).

Figure 3 shows cumulative financing and portfolio concessionalty from China and the World Bank by region. In every region, the World Bank has lent or granted more funds than China over the 15-year period. However, the gap between Chinese and World Bank financing is smallest in Sub-Saharan Africa. Furthermore, Sub-Saharan African financing makes up a larger portion of total official Chinese financing (33%) than it does for the World Bank (21%).

³⁴ A full list of countries in our dataset can be found in Appendix 2A. The thirty countries with only Chinese financing or majority Chinese financing during this time period are: Angola, Antigua and Barbuda, Bahamas, Belarus, Cambodia, Cook Islands, Cuba, Ecuador, Equatorial Guinea, Fiji, Laos, Libya, Malaysia, Malta, Namibia, Nauru, New Zealand, Niue, North Korea, Palestine, Russian Federation, Somalia, Sudan, Suriname, Syria, Turkmenistan, the United Arab Emirates, Vanuatu, Venezuela, and Zimbabwe.

Figure 3. Cumulative financing and portfolio concessionality by region, 2000-2014, USD billion



The World Bank’s portfolio is more concessional than China’s portfolio in every region of the world, and sometimes dramatically so. The overall concessionality of China’s portfolio demonstrates less variation from region-to-region, hovering between 15%-22% in all regions except Europe and Latin America. By contrast, the overall concessionality of the World Bank’s portfolio varies widely -- from a low of 15% in Latin America to a high of 60% in Sub-Saharan Africa (which is also the region where Chinese lending volumes are highest). The differences between China and the World Bank are most stark in Sub-Saharan Africa. Whereas the overall concessionality of the World Bank’s portfolio in Sub-Saharan Africa is nearly 60%, China’s portfolio concessionality in the same region is only 22.5%. All three measures of lending terms contribute to these differences in portfolio concessionality rates: China consistently has higher interest rates, shorter maturity lengths, and shorter grace periods.³⁵

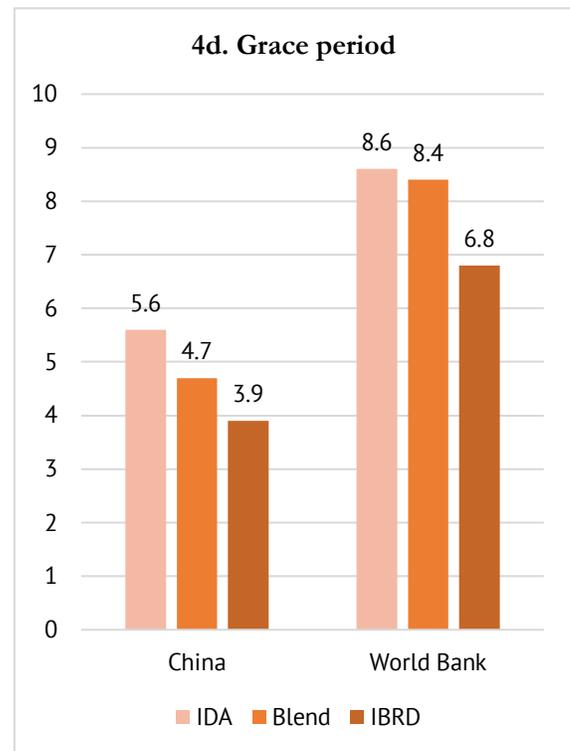
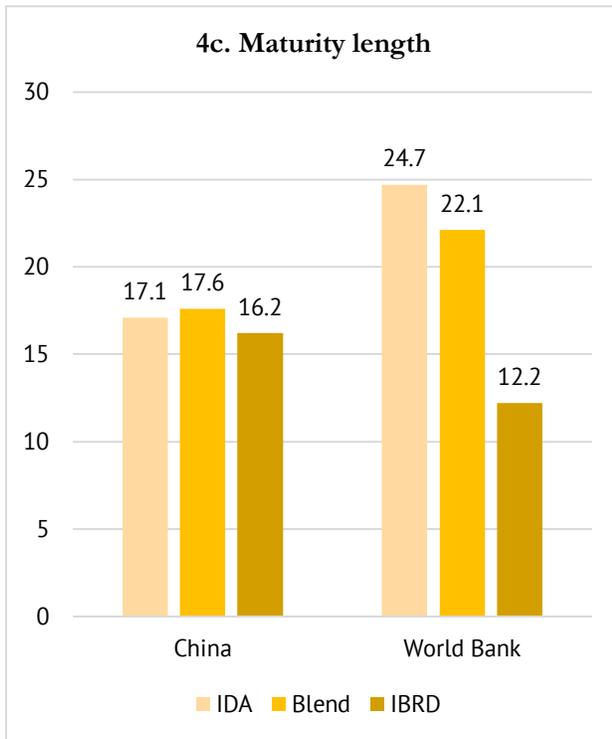
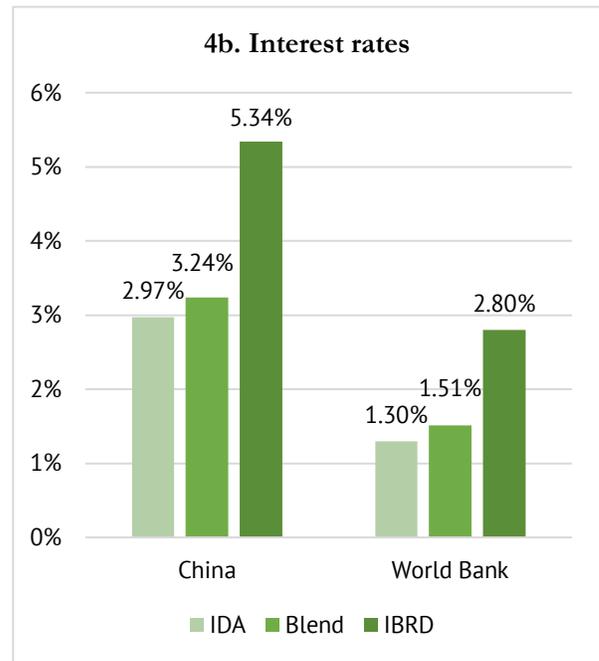
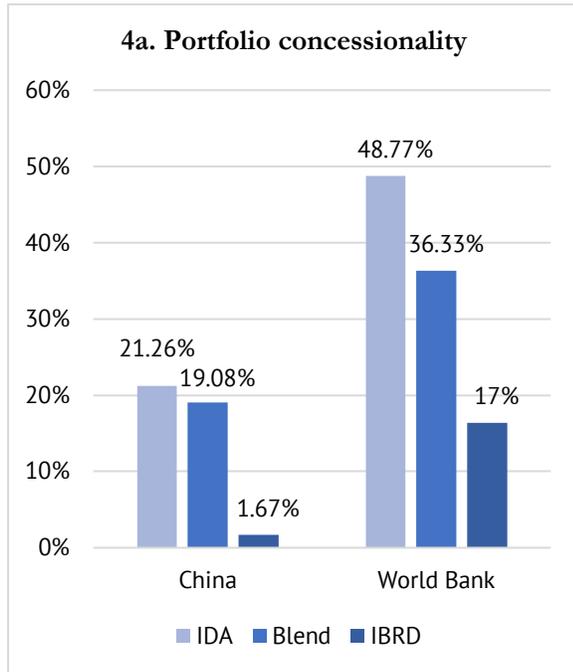
Assessing Adherence to Concessionality Principles

The World Bank classifies countries according to income levels and creditworthiness as “IDA” or “IBRD” countries, with a handful of countries given “Blend” status where they are permitted to borrow from both institutions. Each institution has its own policies, as discussed in Section 2, with IDA offering highly concessional loans and grants and IBRD offering loans on harder terms. Figure 4 presents weighted average lending terms from China and the World Bank to countries in three different institutional lending categories (IDA, IBRD, and Blend).³⁶

³⁵ See Appendix 2B for detailed statistics on lending terms by region.

³⁶ Each individual loan was grouped by country-year status. For example, a Chinese loan to Angola in 2008 is classified as an “IDA” loan because Angola was an IDA-eligible country in 2008; a Chinese loan to Angola in 2014 is classified as an “IBRD” loan because Angola became an IBRD-eligible country in 2014. We examined public World Bank documents to determine changes in lending status over the 15-year period.

Figure 4. Portfolio concessionality and weighted average lending terms by World Bank lending categories



World Bank lending terms are consistent with their stated policies and objectives of offering softer terms to IDA countries and harder terms to IBRD countries, with a transition period for those countries moving from one category to another (see Figure 4). As countries increase their borrowing capacity and graduate to different lending categories, the World Bank incrementally increases interest rates and reduces maturity lengths and grace periods. In this way, the World Bank behaves contrary to market lending practices, where a low-income, high credit risk country would be offered harder terms to compensate for the greater lending risk.³⁷

Table 3. Portfolio concessionality by income level

	China	World Bank
Low-income	31.06%	54.47%
Lower-middle income	12.95%	25.24%
Upper-middle income	1.61%	16.71%
High-income	2.05%	26.27%

China’s lending terms also demonstrate progressivity and follow World Bank patterns, but from lower baseline levels of concessionality. Chinese official lenders vary interest rates and grace periods according to a country’s ability to repay, as demonstrated in Figure 4. Our analysis of portfolio concessionality rates across low-income, lower-middle income, upper-middle income and high-income countries (in Table 3) also suggests that institutionalized norms of progressivity exist within Chinese financing institutions. Yet even the most generous interest rates and grace periods from China are still less generous than those from the World Bank. The fact that the average maturity length of a Chinese government loan holds constant across lending categories (at approximately 17 years) also suggests that official Chinese lenders do not adjust maturity lengths for individual loans based on the financial circumstances of borrowing countries.³⁸

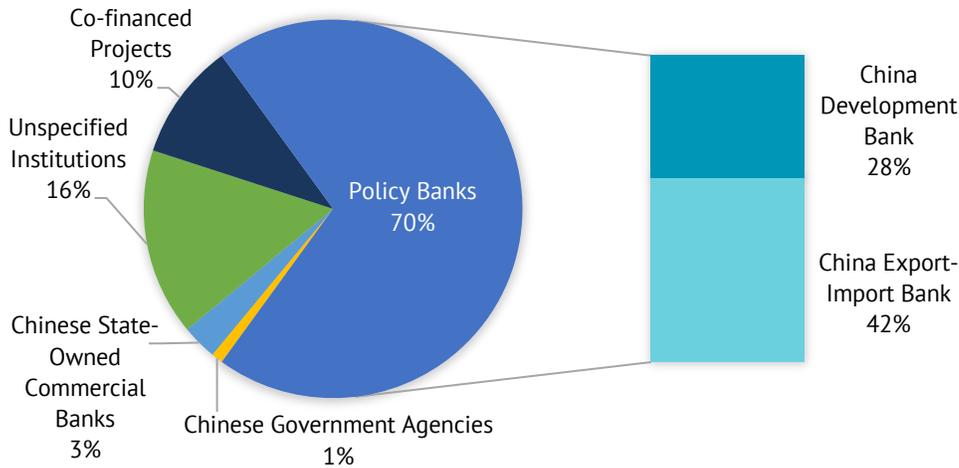
Institutional Approaches to Concessionality: China Development Bank and China Eximbank

As noted in Section 2, China has different financing institutions with diverse mandates; as such, these institutions do not follow a single set of norms and policies. Where the Ministry of Commerce and China Eximbank have a formal mandate to finance projects on softer lending terms, the government expects China Development Bank and the country’s state-owned commercial banks to pursue more profitable projects and lend on substantially harder terms (more closely resembling market-based lending).

³⁷ For more detailed statistics on lending terms by World Bank lending group classification, see Appendix 2C.

³⁸ For more detailed statistics on lending terms by income category, see Appendix 2D.

Figure 5. Breakdown of Chinese official financing by institutions



Our analysis demonstrates that official Chinese financing primarily occurs through the country’s two policy banks (70% of financing), with China Eximbank providing \$141.4 billion of financing and China Development Bank providing \$91.7 billion of financing (see Figure 5). Apart from the two policy banks, loans from the country’s biggest state-owned commercial banks – namely, the Industrial and Commercial Bank of China, China Construction Bank, the Bank of China, and the Agricultural Bank of China -- accounted for roughly 3% of overall official Chinese financing during our period of study. Less than 1% came from other government agencies, and this small amount primarily came the form of grants from the Ministry of Commerce and Chinese embassies. Another 10% of the portfolio was not financed by a single Chinese government institution, but instead co-financed by multiple Chinese government institutions or single official Chinese institution in conjunction with non-official Chinese financing institutions (private or non-profit sector) or even foreign financing institutions (such as multilaterals, private banks, and government agencies within the borrowing country).³⁹

Consistent with their stated policies, China Development Bank and Chinese state-owned commercial banks provide financing on less concessional terms than China Eximbank, and all three fall below the World Bank-IMF concessional cutoff of 35% (see Table 4).⁴⁰ Although China

Table 4. Portfolio concessionalty by official Chinese financier

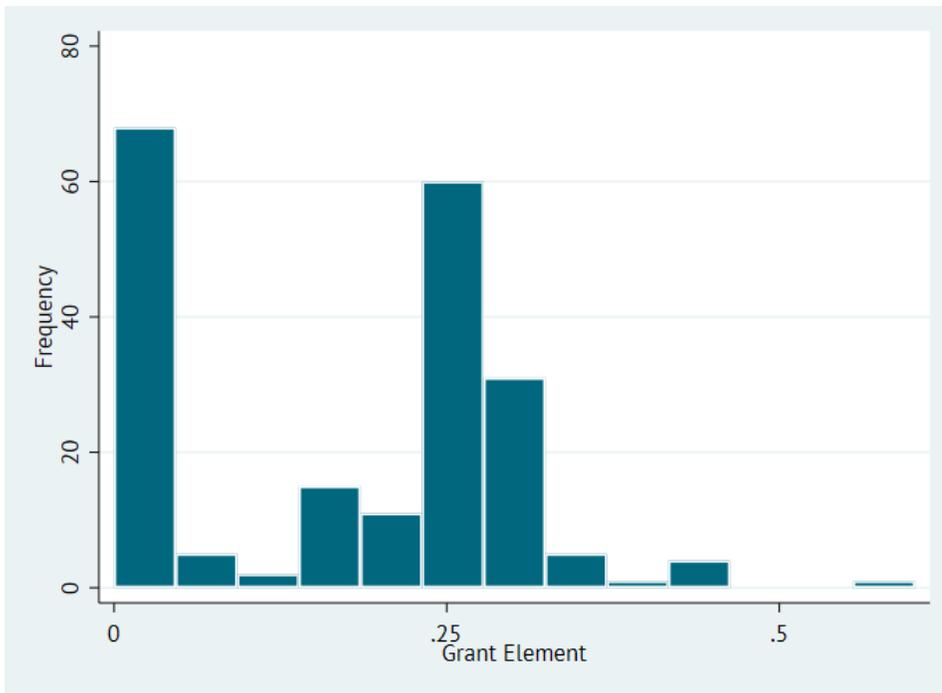
China Development Bank	<0.01%
State-owned Commercial Banks	7.47%
China Export-Import Bank	13.96%

³⁹ For detailed summary statistics on lending terms by official Chinese financing institution, see Appendix 2E.

⁴⁰ We find that official government agencies, such as the Ministry of Commerce and Chinese embassies and consulates, are overwhelmingly grant-based institutions, and the few that do provide loans do so on concessional terms. Projects that have been co-financed (usually one policy bank partnering with a smaller government agency, a state-owned enterprise, or a state-owned commercial bank) also offer loans on highly concessional terms. These co-financed projects make up only 10% of financing over the 2000-2014 time period. As a group, we also find

Eximbank’s average lending terms (3.32% interest, 17-year maturities, and 6-year grace periods) are more generous than those of China Development Bank (5.75% interest rate, 16-year maturities, and 4-year grace periods), the lending terms of these two institutions in low-income countries (LICs), where the risks of debt distress are typically most acute, are quite similar. China Eximbank’s weighted average lending terms to LICs (2.51% interest rates, 20-year maturities, 6-year grace periods) are nearly identical to China Development Bank’s average lending terms to LICs (2.35% interest rates, 19-year maturities, 1-year grace periods). These institutions extend vastly different grace periods to the loans that they offer to LIC borrowers: the weighted average grace period for China Eximbank loans is 6 years, yet only 1 year for China Development Bank loans.

Figure 6. Frequency of China Eximbank loans, by grant element (loan concessionality)



There is also interesting variation *within* Chinese banks. For example, China Eximbank has several different lending instruments, including one for “concessional” loans (优惠贷款), one for preferential export buyers’ credits (优惠出口买方贷款) and one for non-preferential export buyers’ credits (的出口买方信贷). The average grant element of a China Eximbank loan is 14%, but Figure 6 illustrates that China Eximbank’s loan portfolio is best understood as a bimodal distribution, with slightly more than half of its loans offered at reasonably concessional terms (a grant element of around 25%), and the remainder of the portfolio offered at close-to-market rates. In fact, many of the China Eximbank loans on the “left hand side” of the bimodal distribution (presumably corresponding to non-preferential export buyers’ credits) are provided on similar terms or harder terms than China Development Bank loans.

that the unspecified Chinese government institutions in our dataset provide more grants and concessional loans than other institutions.

Section 5. Analysis of the Subsample

Next, we assess a subsample of 28 countries which were selected based on having the most complete data on lending terms.⁴¹ To gauge the external validity of our subsample analysis, we first run a difference-in-means test between the terms of the loans offered to countries in the subsample (28 countries) and the terms of the loans offered to countries not included in the subsample (126 countries), which we refer to as the outsample.⁴² The results, displayed in Table 5, demonstrate that while the subsample is statistically different from the outsample sample, the differences between World Bank lending terms and Chinese lending terms are largely consistent with what we observe in the full sample of 157 countries. Therefore, we are confident that our subsample analysis paints a reasonably accurate picture of Chinese and World Bank lending terms around the globe.

Across all variables of interest within the subsample, Chinese lending is provided on less favorable terms than World Bank lending (including higher interest rates, shorter maturity and shorter grace periods). Similar to the patterns we observe in the full sample (157 countries), official Chinese interest rates in the subsample are twice as large as those from the World Bank. Overall, the subsample includes more concessional loans (from both China and the World Bank) than the full sample, which seems to be a function of the higher proportion of IDA countries in the subsample.⁴³ Notwithstanding this difference between the subsample and the full sample, the results presented in Table 5 increase our confidence that the subsample is broadly indicative of the same patterns observed in the full sample.

⁴¹ The countries included in the subsample are: Angola, Bangladesh, Cambodia, Cameroon, Republic of the Congo, Costa Rica, Dominica, Ethiopia, Gabon, Ghana, Guyana, Kyrgyz Republic, Mauritania, Moldova, Mongolia, Montenegro, Nepal, Niger, Nigeria, Papua New Guinea, the Philippines, Samoa, Serbia, Sri Lanka, Tonga, Uganda, Uzbekistan, and Zambia. **For each of these countries, one in four loan observations, at a minimum, contained complete information on all lending terms of interest.**

⁴² Instead of a traditional two-group mean-comparison test (t-test), we used a linear regression model, regressing the variable of interest on subgroup categorization, to compare weighted means.

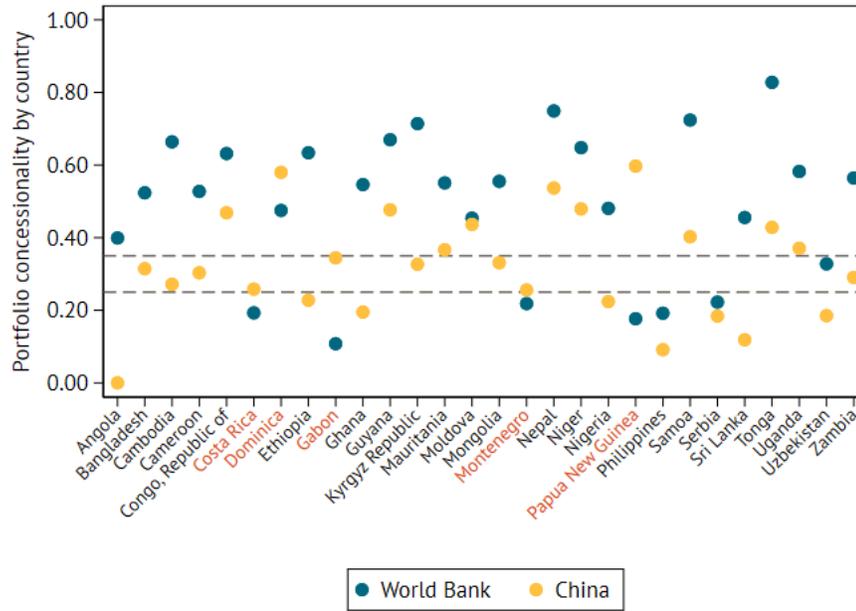
⁴³ 71% IDA/Blend countries in the subsample versus 48% IDA/Blend countries in the full dataset. Because the subsample includes a higher percentage of IDA countries, we would expect overall lending terms in the subsample to be more generous. This expectation is confirmed with our analysis, as shown in Table 6. However, while the subsample lending term statistics are on average more generous than the full population, the same relative relationships between World Bank lending terms and official Chinese lending terms still holds (see Table 2).

Table 5. Difference-in-means tests for subsample and outsample

	Subsample (28 countries)		Outsample (126 countries)		Difference-in-means	
	China	World Bank	China	World Bank	China	World Bank
Weighted Mean Interest Rate	3.11%	1.20%	4.67%	2.27%	1.56%***	1.07%***
Weighted Mean Maturity Length	17.1	25.6	16.4	16.5	- 0.7***	- 9.1***
Weighted Mean Grace Period	5.3	9.0	4.4	7.4	- 0.9***	- 1.6***

*** = $p < 0.001$

Figure 7. Portfolio concessionality by country in the subsample



Another key advantage of the subsample is that it enables analysis of lending terms on a country-by-country basis, which is where we now turn our attention. When we examine portfolio concessionality on a country-by-country basis (taking into account both lending terms and grants), we find that the World Bank provides more concessional financing than China and generally stays above internationally accepted concessionality thresholds (35% for World Bank/IMF and 25% for OECD-DAC). The Bank is more concessional than China in all but five cases (Costa Rica, Dominica, Gabon, Montenegro, and Papua New Guinea), where overall financing from official Chinese institutions is more concessional. However, four of the five cases are upper middle-income countries⁴⁴, suggesting that higher relative

⁴⁴ In the remaining country, Papua New Guinea, we find that China offers substantially more concessional lending terms than the World Bank; however, given the small size of our subsample, this particular country may be skewing the final results.

levels of Chinese portfolio concessionality in these countries may reflect less on the generosity of Chinese lending terms and more so on the harder World Bank terms for upper middle-income countries.

More than half of the countries in the 28-country subsample secured financing packages from Chinese government institutions with concessionality levels below the World Bank-IMF threshold of 35%. These cases include ten countries (Bangladesh, Cambodia, Cameroon, Ethiopia, Ghana, Kyrgyz Republic, Mongolia, Nigeria, Uzbekistan, and Zambia) that currently qualify for IDA grants and concessional loans from the World Bank.

While official Chinese financing does not usually meet the World Bank-IMF standard for concessionality (35% grant element), it is still provided with a non-trivial degree of concessionality. This is more evident in comparison to market lenders. Using the World Bank’s International Debt Statistics database⁴⁵, we find that official Chinese financing is offered on more concessional terms than the private sector (see Table 6). Private sector interest rates are nearly 50% higher than official Chinese interest rates, and maturity lengths are substantially shorter in the private sector (17 years versus 10 years).

Table 6. Lending terms of subset countries

	China	World Bank	Private Sector
Weighted Mean Interest Rate	3.11%	1.21%	5.71%
Weighted Mean Maturity Length	17.1	25.6	10.2
Weighted Mean Grace Period	5.3	9.0	6.8
Loan Concessionality	15.24%	43.03%	0.00%

Section 6. Limitations and Future Research Directions

In this study, we provide a preliminary assessment of Chinese loan concessionality based on analysis of the interest rates, maturities, and grace periods that Chinese lenders and the borrowers agreed upon at the time that they finalized their agreements, and we also look at portfolio concessionality, a metric that takes into account the mix of loans and grants. Our

⁴⁵ We use four key indicators from the World Bank’s International Debt Statistics database to generate weighted mean estimates of private sector lending terms by country for the years 2000-2014: average grace period on new external debt commitments, private [indicator DT.GPA.PRVT]; average interest on new external debt commitments, private [DT.INR.PRVT]; average maturity on new external debt commitments, private [DT.MAT.PRVT]; and commitments, private creditors [DT.COM.PRVT.CD]. From the World Bank, “debt from private creditors include bonds that are either publicly issued or privately place; commercial bank loans from private banks and other private financial institutions; and other private credits from manufacturers, exporters, and other suppliers of goods, and bank credits covered by a guarantee of an export credit agency.” (World Bank, n.d.-b) The statistics we used for this analysis are now archived, as the World Bank is unveiling a new International Debt Statistics database in 2020.

study nevertheless has several limitations that will need to be addressed in future research to obtain a more detailed and comprehensive picture of official Chinese financing practices.

First, due to data availability constraints, we have not accounted for loan commitment fees or management fees. 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. A management (or “front-end”) fee is a one-time, lump sum fee that is charged as a percentage of the face value of the loan. These fees can affect loan concessionality in significant ways,⁴⁶ but unfortunately AidData’s Global Chinese Official Finance Dataset (Version 1.0) does not yet include systematic reporting of commitment fees or management fees. We recently reviewed approximately 90 Chinese government loan contracts that identify the size of such fees, and our preliminary analysis suggests that these fees vary widely. Whereas some Chinese government loans include management and commitment fees as low as 0.1%, others include fees in 1-2% range. By way of comparison, the fees that the World Bank charges its borrowers through the IDA and IBRD lending windows are typically in the 0-1% range (World Bank, Office of the Vice President, 2019).

Second, our assessment does not account for the presence or absence of collateral requirements in loan agreements. Such requirements do not affect the way that a loan’s grant element is calculated, but they do influence loan concessionality 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 can be seized 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. Several studies suggest that collateral requirements are common in Chinese government loans (Corkin, 2013; Bräutigam and Gallagher, 2014), but these studies focus primarily on commodity-backed loans to resource-rich countries, which may not provide a representative picture of China’s broader official financing activities.

Third, our study only sheds light on the ex-ante terms of Chinese loans — that is to say, the terms that Chinese lenders and the borrowers agreed upon at the time when they signed and countersigned loan agreements. Yet there is evidence that Chinese lenders restructure loan repayment terms or even cancel debts at a significant rate, which can create major differences between a loan’s ex post concessionality and its ex ante concessionality (Bräutigam, 2009: 127-130; Kratz, Feng, and Wright, 2019). Horn et al. (2019: 32) finds that, in recent years, the Chinese government has restructured or canceled debt at a much higher rate than

⁴⁶ By way of illustration, consider the \$492,400,000 preferential buyer credit loan agreement that the Government of Bolivia signed with China Eximbank in 2015 for the Rurrenabaque-Riberalta Highway Project. This loan was provided with a 3% interest rate, a 0.25% management (front-end) fee, and a 0.25% management (front-end) fee. Upon signature of this loan agreement, the Government of Bolivia had to remit a lump-sum payment of \$1.231 million (.025% x \$492,400,000) to China Eximbank. In the 39 days that elapsed between the start date of the loan (November 14, 2015) and the first date when the Government of Bolivia was expected to pay a commitment fee, the undisbursed balance of the loan was still \$492,400,000, so China Eximbank charged the Government of Bolivia a pro-rated commitment fee of \$133,358 [.25% x \$492,400,000 x (39/360)]. Then, in the first six months of 2016, China Eximbank disbursed \$98,480,000 to the Government of Bolivia, leaving the undisbursed balance of the loan at \$415,918,000 and Government of Bolivia a commitment fee charge of \$558,699. See Banco Central de Bolivia, 2016.

other official creditors, with 140 publicly-identifiable debt restructurings or write-offs in the past 18 years alone.⁴⁷ However, to the best of our knowledge, there are no systematically collected, publicly available, large sample-size data on the specific terms of Chinese loan reschedulings. Therefore, unless or until Chinese creditors or borrowers disclose the terms of their rescheduled loan agreements, researchers will need to develop new methods of data collection to better understand the differences between ex ante and ex post Chinese loan concessionality.⁴⁸

Fourth, we do not address the effects of non-competitive or “tied” procurement on project costs (Ghossein, Hoekman, and Shingal, 2018), but in the absence of a competitive mechanism for determining project cost, the prices that borrowers pay (i.e. the face value of the loans that they contract) may be inflated.⁴⁹ Therefore, financing terms alone may understate the degree to which borrowers are incurring higher costs relative to what they would have incurred if they selected a more competitive source of debt financing.⁵⁰

Fifth, this paper focuses on the supply side of loan concessionality, but there is also a demand side that deserves scrutiny. Whereas some borrowing governments accept the initial lending terms that Chinese banks offer, others negotiate loan agreements on more favorable terms. For example, China Development Bank usually lends on commercial or semi-concessional terms. Yet, in the case of the Jakarta-Bandung High Speed Railway, the bank agreed to provide a loan on highly concessional terms with a 40-year maturity, a 10-year grace period, and a 2% interest rate.⁵¹ This variation might be a function of different types of

⁴⁷ By way of example, in 2011, China Eximbank restructured 3 of its loans with the Government of Seychelles. The first loan was contracted in 1997 for the East Coast Housing Phase II project; it was an RMB 50 million loan with a 14-year maturity, 8-year grace period, and 2% interest rate. It was later restructured such that the terms became substantially more favorable to the borrower: a 30.6-year maturity, a 20.5-year grace period, and a 2% interest rate. The second loan was contracted in 1998 for the Les Mamelles Housing Development project; it was an RMB 87,891,876 loan with an 8-year maturity, 4-year grace period, and 4% interest rate. It was restructured along identical lines: a 30.6-year maturity, a 20.5-year grace period, and a 2% interest rate. The third loan (with a face value of RMB 8,305,000) was contracted in 2005 for the Additional Les Mamelles Housing Project. It originally had a 10-year maturity, a 15-year grace period, and 4% interest rate, but was subsequently restructured on more favorable terms: a 25-year maturity, a 9-year grace period, and 2% interest rate. The authors thank the Seychelles’ Ministry of Finance for sharing this loan rescheduling information.

⁴⁸ AidData is currently updating its Tracking Underreported Financial Flows (TUFF) methodology to rely more heavily on official sources, which may result in significantly more detailed data on debt reschedulings.

⁴⁹ As a general rule, Chinese government lenders do not require international competitive bidding and they usually codify the requirement that borrowers procure goods and services from Chinese suppliers on a preferential basis in their loan contracts. The risk of cost inflation in Chinese government-financed projects may be particularly acute because of another unique vulnerability in the way that its projects are identified and selected. Some of China’s largest overseas financing institutions ask political leaders rather than technocrats from borrower countries to formulate project proposals and submit them for appraisal (Dreher et al., 2019). Chinese contractors with a significant in-country presence know that this is how projects get approved, so they have an incentive to “game the system” by colluding with the specific political leaders in borrowing countries who are responsible for submitting project proposals. Anecdotal evidence suggests that they do so by first identifying a project that they are uniquely well-positioned to implement and that will benefit the leader with whom they are colluding; then inflating the cost of the project to increase their profit and cover the expense of any potential side payment(s) to the leader and/or his relatives and allies; and finally asking the political leader to present the candidate project to Beijing as an official priority of the borrowing government without leaving any “contractor fingerprints” on the proposal submission (Dornan and Brant, 2014; Zhang and Smith, 2017; Parks, 2019).

⁵⁰ Mohamed Nasheed, who served as the President of the Maldives from 2008-2012, claims that “They came in; they did the work and sent us the bill. So it’s not the loan interest rates as such but the costing itself. They over-invoiced us and charged us for that and now we have to repay the interest rate and the principal amount. ... I can’t see how our development can be rapid enough to have the amount of savings to re-pay China” (The Economic Times 2019).

⁵¹ 60% of the \$3.96 billion debt financing package was denominated in US dollars at a 2% interest rate, while the remaining 40% was denominated in Renminbi at a 3.46% interest rate.

policies and institutions within borrower countries – for example, laws that require parliamentary review and ratification of loan agreements, the existence and political independence of debt management offices (DMOs), or the use of cost-benefit analysis and rate-of-return thresholds to vet loan proposals for public investments. However, more research is needed to pinpoint the policies and institutions that are most and least consequential. We also need to better understand the specific reasons why borrowers are willing to accept Chinese loans on less concessional terms when they can access cheaper credit elsewhere (Bunte 2019).

Section 7. Policy Discussion

Our analysis demonstrates that China’s official financing is less concessional than World Bank financing in comparable settings. China provides loans with systematically higher interest rates, shorter maturity lengths, and less generous grace periods. At the same time, nearly all Chinese loans have some degree of concessionalism, which may help to explain the attractiveness of Chinese financing compared to market sources of finance. China’s position as the leading external source of official sector lending to developing country governments raises a number of policy questions and concerns.

First, in light of growing debt sustainability concerns across the developing world, China’s official financing institutions may soon conclude that it is in their interest to adopt the World Bank’s lending framework, including the World Bank-IMF Debt Sustainability Framework. The vast scale of China’s overseas lending program has made it the single largest source of external credit for a growing number of countries, and since these loans are generally provided on harder terms, debt sustainability for borrowing governments is increasingly a function of Chinese lending behavior.

Yet, a World Bank lending framework poses a dilemma for China. Virtually all Chinese lending is tied, or non-competitive, and, in our analysis, 42% of official Chinese lending comes directly from China Eximbank, the government’s export credit agency (ECA). ECAs are not primarily development institutions, and China Eximbank’s mandate -- consistent with other ECAs -- is to promote domestic firms through export credits.⁵²

OECD governments have recognized the need to impose some constraints on the market-distorting activities of their ECAs. However, China has not joined existing export credit or aid disciplines on tied financing, and these disciplines may in fact push China away from the World Bank’s approach to concessionalism. ECA disciplines seek to limit concessional financing as a basis for competition among ECAs by setting minimum interest rates (OECD, 2019). Were China Eximbank to adopt the World Bank’s concessionalism rules, its lending practices would become even more misaligned with the OECD disciplines. Of course, the underlying violation is the tied nature of the financing, not the concessionalism per se.

Under the auspices of the now defunct US-China Strategic and Economic Dialogue, negotiations on a new framework for ECAs were launched in 2012, led by the United States

⁵² The official mission statement of China Eximbank is to “to facilitate the export and import of Chinese mechanical and electronic products, complete sets of equipment and new-and high-tech products, assist Chinese companies with comparative advantages in their offshore project contracting and outbound investment, and promote international economic cooperation and trade” (Export-Import Bank of China, 2015).

and China, with the aim of bringing non-OECD and OECD ECAs together under a new arrangement (Export-Import Bank of the United States, 2019). The International Working Group on Export Credits continues to meet, though no outcomes have been reported and further progress may be hindered by the deteriorating relationship between the United States and China. Nonetheless, any new ECA standards will need Chinese participation to be meaningful, and it seems unlikely that the OECD would be the forum for a new arrangement. New ECA standards should incorporate debt sustainability measures, as this would have the effect of curtailing ECA financing in situations where the World Bank and IMF have identified debt risks. Alternatively, new standards could ease the concessional financing constraint in situations where debt risks are high, paving the way for the provision of grants and debt on more generous terms.

There is also a growing need for bilateral development finance institutions beyond ECAs to coalesce around a new set of international standards. Development finance institutions (DFIs), like China Development Bank, are not currently bound by any international standards on lending terms and debt sustainability. Yet, these DFIs are an increasingly important source of development finance. This is not just a Chinese phenomenon. The US government recently expanded OPIC's lending capacity, rebranding it as the US Development Finance Corporation. Although the new institution is primarily focused on private sector lending, it has the authority to lend to governments. As development finance has gained favor among bilateral aid providers over traditional forms of aid, the question of debt sustainability takes on some urgency.

The G20 has proved to be a receptive forum for raising the issue of sustainable financing, defined in the G20 context as lending that is appropriate to the circumstances of the borrowing country in terms of ability to repay over time. Yet, actions to date have been at a "principles" level. It would be useful for the G20 to move toward a more concrete discussion around lending standards with the aim of adopting a binding framework for member countries. The starting point should be consideration of the World Bank framework for lending, including the debt sustainability framework as a way to monitor debt risks and respond appropriately. Countries will then need to consider whether and to what degree this multilateral framework has to be adapted for bilateral contexts.

The Chinese government released a debt sustainability framework (DSF) for the Belt and Road initiative in 2019, which seemingly did just that. Yet, this new bilateral framework carries significant risks. Although it is nearly identical to the World Bank-IMF framework, the Chinese DSF introduces the possibility of competing assumptions around macroeconomic variables (Morris and Plant, 2019). Stakeholders in the development finance community need to pay careful attention to the issue of debt sustainability coordination across all relevant financing venues, including export-credit agencies (ECAs), development finance institutions (DFIs), and the multilaterals. Systematic analysis of increased volumes and, now, harder lending terms of official Chinese financing (supported by anecdotal reporting across the globe), indicates that China has a pivotal role to play in preventing or mitigating harm from an impending developing country debt crisis. While progress on bilateral ECA agreements appears to have stalled, and China's new DSF lacks concrete implementation measures to deter rash lending decisions, a better approach to the situation would be to pursue a new, multi-country agreement among bilateral DFIs to adopt the

World Bank-IMF framework directly, such that bilateral DFIs would agree to follow its determinations when it comes to debt risks and adjust their financing activities accordingly.

Finally, it remains the case that a lack of lending transparency is a critical barrier to understanding debt dynamics in many developing countries. The Chinese government occupies a unique position in that it is the world's largest official bilateral creditor and it is among the least transparent when it comes to reporting official lending volumes and terms across countries. Membership in official institutions like the IMF and World Bank, as well as official convenings like the G20, strongly implies a commitment to information-sharing. Yet, there is clear misalignment between China's leadership in these bodies and its opaque lending practices. Resolving this issue would represent a major step forward for the debt sustainability agenda.

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Appendix 1. Detailed Methodology and Sources

A. Creation of the dataset

As Table 1 demonstrates, we drew upon three main data sources to construct our dataset: Version 1.0 of AidData’s Global Chinese Official Finance Dataset, the World Bank’s IBRD Statement of Loans – Latest Available Snapshot, and the World Bank’s IDA Statement of Credits and Grants – Latest Available Snapshot. To ensure accurate comparability across datasets, we pruned the original data from a combined set of 23,000 observations to 7,300 observations.

Table A1: Data sources

AidData (2000-2014)	2,453 obs	1,046 loans	1,407 grants	130 countries
World Bank - IDA (1961-2019)	3,362 obs	2,442 loans	920 grants	80 countries
World Bank - IBRD (1947-2019)	1,497 obs	1,497 loans	0 grants	75 countries
Full Dataset - Morris et al (2000-2014)	7,312 obs	4,985 loans	2,327 grants	157 countries
Subsample - Morris et al (2000-2014)	2,085 obs	1,391 loans	694 grants	28 countries

We took several steps to remove observations from the World Bank dataset that were not relevant to our study. First, to ensure comparability, we removed all financing agreements that were signed outside the 2000-2014 time period covered in Version 1.0 of AidData’s Global Chinese Official Finance Dataset. This reduced the number of World Bank observations in our dataset by roughly two-thirds. Second, we removed all loans and grants that were regionally, rather than nationally, targeted. Third, we removed all financing arrangements that had been “fully cancelled” or “terminated”. Fourth, we removed all observations that represented non-traditional lending instruments – specifically, the IBRD’s Currency Pool Loan (CPL) and Policy-Based Guarantees (PBG or GURB). Fifth, we removed all loan and grant observations that were missing data on the grant and loan face values (labeled “Original Principal Amount”), as the amount of a grant or loan is crucial for the purposes of our analysis. Finally, for the sake of comparability, we removed all World Bank loans and grants to China from the dataset. Had we included World Bank grants and loans to China in the sample, we would arguably would have needed to also account for grants and loans from China’s policy banks, state-owned commercial banks, and government institutions to domestic borrowers. However, the primary focus of our analysis is on outbound flows of aid and debt.⁵³ These six steps reduced the number of World Bank observations from approximately 17,500 to 4,859 loans and grants.

We followed a similar set of procedures to identify the relevant set of observations in Version 1.0 of AidData’s Global Chinese Official Finance Dataset. First, using the “recommended for research” variable, we eliminated all pledges (i.e. projects that never reached the official commitment stage), suspended projects, cancelled projects, and so-called “umbrella” projects that supported specific subsidiary projects.⁵⁴ The application of this procedure reduced the total number of observations by approximately 20%. Second, we removed all regional or multi-country grants and loans. Third, we removed all observations that correspond to financing instruments other than grants and loans (e.g., debt forgiveness, debt rescheduling, free-standing technical assistance, scholarships, supplier credits⁵⁵).

⁵³ For a more in-depth discussion of World Bank activities within China, see Morris and Portelance (2019)

⁵⁴ We do not exclude the specific subsidiary projects that were financed under these “umbrella” projects (e.g. master framework agreements, lines of credit) from our analysis.

⁵⁵ For comparability’s sake, we also exclude all Chinese supplier credits from our dataset, as the World Bank does not provide this type of debt financing.

These three steps reduced the number of Chinese loans and grants from approximately 5,500 to 2,453.

After pre-processing these two datasets to isolate the relevant set of observations, we sought to ensure comparability of our key variables of interest – amount, interest rate, maturity length, and grace period – across each World Bank and AidData observation. AidData uses a deflation methodology (Strange, Cheng, Russell, Ghose, and Parks, 2017:25-26) based on the OECD-DAC methodology to convert all grant and loan amounts into constant (2014) USD. Therefore, we applied the same methodology to the World Bank’s “original principal amount” variable to generate a new amount variable for each World Bank loan and grant in constant (2014) USD. For lending term variables (interest rate, maturity length, and grace period), we relied on AidData reporting. We were then able to use the raw data in the World Bank dataset to construct a comparable set of lending term variables. Instead of maturity lengths or grace periods, the World Bank dataset includes variables on the effective dates of financing agreements, the first repayment dates of repayment, and the last dates of repayment. To determine the grace period for a loan, we measured the difference (in years) between the effective date and the first repayment date. To determine the maturity length of a loan, we took the difference (in years) between the first repayment date and the last repayment date.

Generating comparable interest rate data for World Bank loans required that we implement several additional steps. The IDA Statement of Credits and Grants dataset does not include interest rates; however, it does provide a “service charge rate,” which varies between 0.00% (interest-free loans) and 4.95% and is comparable to the interest rates applied to IBRD loans. We used this service charge rate as our interest rate for all IDA loans. The IBRD Statement of Loans dataset includes interest rates for all single-currency loans but uses a “0” placeholder for IBRD flexible loans (IFL), which can be further categorized as fixed spread loans or variable spread loans.⁵⁶ Interest rates for IFLs are calculated with a floating market interest rate – typically the six-month LIBOR – plus a premium that is fixed over the lifetime of the loan. The premia for each loan differ depending on country characteristics (GNI per capita, World Bank lending relationship, fragility, etc.) and loan characteristics (maturity length, currency issuance, whether the loan is fixed or variable spread). Some of these conditions are easily determined based on public information, including the country’s classification⁵⁷ and the maturity length of the loan. However, the World Bank does not publish granular data on the currencies in which loans are denominated or whether loans have fixed or variable spreads. Since this information was not available, we employed simplifying assumptions. We assumed that all loans were denominated in USD and used the average between the fixed and variable spread premia. We used FRED historical data on 6-month LIBOR rates to determine the base rate at the date of the agreement signing and the [IBRD Financial Products: Lending Rates & Fees](#) webpage to determine the premia.

By way of illustration, consider this example of how we determined the interest rate for an IBRD flexible loan to Colombia in 2006 with a maturity of 10 years:

- The LIBOR rate on the agreement signing date (July 26th, 2006) was 5.57%
- In 2006, Colombia would have been classified in lending “Group B” because its GDI per capita was below the IBRD graduation rate, but the country did not qualify for an exemption that would have placed the country in Group A.

⁵⁶ For more information, see the “IBRD Financial Products: Lending Rates & Fees” webpage (World Bank, n.d.-a).

⁵⁷ Each country is classified into one of four pricing groups: A, B, C, or D. Countries are grouped into these categories based on annual GDI per capita, World Bank lending status (Blend or recent IDA graduate), with exceptions for small states and countries in fragile and conflict-affected situations. Using these criteria, it is possible to retroactively classify each country into one of the four categories for each year in the 2000-2014 time period (World Bank, 2018).

- A fixed spread premium for a USD loan to a Group B country with a 10-year maturity is 0.85%, and a variable spread premium for the same loan is 0.59%. The average of these two premiums is 0.72%.
- Therefore, the interest rate for this loan is 5.57% + 0.72%, or 6.29%.

Once all of these key variables (amount, interest rate, maturity length, and grace period) were synchronized across the World Bank and AidData datasets, we generated categorical variables for historical income levels and World Bank lending status by country and year. We did this because using *current* income levels and lending status categories for historical (2000-2014) loans would likely lead to biased and inaccurate findings. For example, one would expect a loan to Albania in 2000 to be highly concessional because at that time Albania had not yet graduated from IDA. However, by 2008, Albania had graduated to IBRD lending status. We used World Bank data on historical income bracket classifications (World Bank 2019), as well as other publicly available documents, to assign each observation in the dataset an income status and a borrowing status based on the borrowing country and year of the loan/grant agreement.

Finally, to create the subsample analyzed in Section 5, we sought to identify those countries with relatively complete data on the terms of the Chinese government loans they contracted between 2000 and 2014. In Version 1.0 of AidData's Global Chinese Official Finance Dataset, a limited number of loan observations include data for all lending term variables needed to calculate the grant element (interest rate, maturity, and grace period). We refer to these observations as “full information” loans. For each country in the dataset, we divided the number of “full information” official Chinese loans by the total number of official Chinese loans. Using this procedure, we identified what percentage of “full information” loans existed for each country in the dataset. Countries that met a threshold of 25% -- or 1 in 4 loans -- were included in our subsample. These twenty-eight countries include: Angola, Bangladesh, Cambodia, Cameroon, Republic of the Congo, Costa Rica, Dominica, Ethiopia, Gabon, Ghana, Guyana, Kyrgyz Republic, Mauritania, Moldova, Mongolia, Montenegro, Nepal, Niger, Nigeria, Papua New Guinea, the Philippines, Samoa, Serbia, Sri Lanka, Tonga, Uganda, Uzbekistan, and Zambia.

B. Overview of AidData’s Global Chinese Official Finance Dataset, 2000-2014, Version 1.0 and Tracking Underreported Financial Flows (TUFF) Methodology

In this study, we rely upon the Version 1.0 of AidData's Global Chinese Official Finance Dataset (Dreher et al. 2017), which can be freely accessed at <https://www.aiddata.org/data/chinese-global-official-finance-dataset>. This dataset captures 4,373 Chinese government-financed projects (worth \$354 billion) that were officially committed or implemented in 138 countries and territories across 5 regions (Africa, Asia-Pacific, Middle East, Latin America and the Caribbean, and Eastern and Central Europe) over a 15 year period of measurement (2000-2014).⁵⁸ This dataset only includes official financing flows from China, as defined by the OECD-DAC. More specifically, the dataset includes projects supported by concessional and non-concessional funding from Chinese government institutions (including central, state or local government institutions).⁵⁹

⁵⁸ AidData also provides data on pledges (unofficial promises from the Chinese government that do not represent legal agreements between two sovereign governments), suspended projects, cancelled projects, and so-called “umbrella” projects (that supported a set of subsidiary projects). However, we exclude all of these project records from our analysis in the paper.

⁵⁹ The dataset includes both (a) highly concessional, Chinese development projects that meet the OECD’s criteria for Official Development Assistance (ODA); and (b) officially-financed Chinese projects that lack development intent and/or are provided with grant elements below a threshold, i.e. Other Official Flows (OOF).

AidData's Global Chinese Official Finance Dataset, 2000-2014, Version 1.0 was generated using the Tracking Underreported Financial Flows (TUFF) methodology, which synthesizes and standardizes project-level information from four types of sources to minimize the impact of incomplete or inaccurate information. These four sources are broadly categorized as news reports in English, Chinese and other local-languages; official statements from Chinese ministries, embassies, economic and commercial counselor offices, and contractors; the aid and debt information management systems of finance and planning ministries in counterpart countries; and case study and field research undertaken by scholars and NGOs (Strange et al., 2017). The TUFF methodology is divided into three stages: two stages of primary data collection (project identification and source triangulation) and a third stage to review and revise individual project records (quality assurance).

In the first stage of primary data collection, researchers identify potential projects at the donor/lender-recipient/borrower-year unit of analysis through a standardized set of search queries in Factiva, a Dow Jones-owned media database that draws on approximately 33,000 media sources worldwide in 28 languages, including newspapers, radio transcripts, and television transcripts. A machine learning algorithm is then used to identify a subset of articles retrieved through these Factiva queries that is most likely to contain information about officially financed projects for the donor/lender of interest. The algorithm combs through millions of search results – at a rate of approximately 15,000 results per hour or 475,000 results per week – and categorizes search results as either “relevant” or “irrelevant” (in order to identify results that likely contain information about Chinese government-financed projects). Researchers then review each of the Factiva records that the machine learning algorithm has classified as “relevant” and make case-by-case determinations about whether those records contain information about Chinese government-financed projects. In parallel, researchers retrieve all individual projects that are financed by Chinese government institutions and recorded in (a) the aid and debt information management systems of recipient/borrower countries, (b) IMF country reports, and (c) the websites of Chinese ministries, embassies, and economic and commercial counselor offices.

Once a potential project has been identified during the first stage of data collection, it is entered into the data management platform with a unique identification number and is assigned to a different researcher for a second stage of record review and augmentation. During this second stage, researchers perform a set of targeted online searches to validate, invalidate, and/or enrich the project-level information that was retrieved in the first stage. These searches are conducted in English, Chinese and recipient/borrower country languages by native speakers and trained language experts to improve record accuracy and completeness. Researchers also seek to collect supplementary information from government sources (e.g., annual reports published by the lender or granting agency), field reports published by NGOs and implementing entities (e.g., private contractors), scholarly research (e.g., case studies of particular projects, doctoral dissertations on the development finance activities of a particular donor/lender in a particular country), and experts with information or knowledge about specific projects that is not in the public domain or is not easily identifiable (e.g., photographic evidence of a project's current status). This process of project-level investigation and triangulation is designed to reduce the risk of over-reliance on individual sources, such as media reports, that might be inaccurate or incomplete.

The third stage of the TUFF methodology involves the systematic implementation of data quality assurance procedures to maximize the accuracy and completeness of project records. First, a set of de-duplication procedures is implemented in order to minimize the risk of double counting. Second, to account for the fact that idiosyncratic coding decisions made by individual researchers can result in inconsistencies across project records, a set of automated data checks are undertaken to limit discretion and eliminate illogical and inconsistent coding. Third, each project record in the dataset undergoes independent review to identify potential errors, missing data, or incorrect categorizations. Fourth, the dataset undergoes another layer of review that focuses specifically on projects with low “health of record” scores and large-scale projects (as indicated by the financial value of the

transaction). Finally, the dataset as a whole is subjected to several rounds of careful scrutiny by internal and external reviewers who identify errors of omission and commission, flag inconsistencies that need to be addressed, and recommend additional sources that should be consulted.

Appendix 2. Supplemental Statistics

A. Full Country List with Grant and Loan Financing by Source

Table A2. Countries in dataset							
Country	Total grant and loan financing from China			Total grant and loan financing from WB			
	(USD millions)	% Grant	% Loans	(USD millions)	% Grants	% Loans	
Afghanistan	\$100	100%		\$4,400	79%	21%	
Albania	\$300	2%	98%	\$1,600		100%	
Algeria	\$100	89%	11%	\$800		100%	
Angola	\$16,500		100%	\$1,100	15%	85%	Majority China
Antigua and Barbuda	\$100	66%	34%	>\$50		100%	Majority China
Argentina	\$4,600		100%	\$19,000		100%	
Armenia	<\$50	100%		\$2,200		100%	
Azerbaijan	<\$50	100%		\$4,700		100%	
Bahamas	\$2,900	2%	98%				China only
Bangladesh	\$3,200	6%	94%	\$16,000	2%	98%	
Barbados	<\$50	100%		\$100		100%	
Belarus	\$7,600	1%	99%	\$1,200		100%	Majority China
Belize				\$100		100%	
Benin	\$400	17%	83%	\$1,700	19%	81%	
Bhutan				\$400	29%	71%	
Bolivia	\$2,700	1%	99%	\$1,500		100%	
Bosnia and Herzegovina	\$1,400	1%	99%	\$1,700		100%	
Botswana	\$1,400	4%	96%	\$500		100%	
Brazil	\$8,500		100%	\$45,200		100%	
Bulgaria	\$100	4%	96%	\$3,000		100%	
Burkina Faso				\$4,200	45%	55%	
Burundi	\$100	56%	44%	\$1,900	70%	30%	
Cabo Verde	\$100	35%	65%	\$400		100%	
Cambodia	\$8,000	3%	97%	\$1,000	31%	69%	Majority China
Cameroon	\$5,400	2%	98%	\$2,600	11%	89%	
Central African Republic	\$300	27%	73%	\$700	60%	40%	
Chad	\$1,100	1%	99%	\$1,300	24%	76%	
Chile	\$1,400		100%	\$1,100		100%	
Colombia	\$100	1%	99%	\$19,000		100%	
Comoros	\$100	84%	16%	\$100	49%	51%	
Congo, Democratic Republic of	\$600	14%	86%	\$9,500	67%	33%	
Congo, Republic of	\$2,500	7%	93%	\$700	34%	66%	
Cook Islands	<\$50	46%	54%				China only
Costa Rica	\$1,000	19%	81%	\$1,300		100%	
Cote d'Ivoire	\$4,400	4%	96%	\$2,700	69%	31%	
Croatia				\$4,600		100%	
Cuba	\$100	11%	89%				China only
Djibouti	\$700	7%	93%	\$300	30%	70%	
Dominica	\$200	43%	57%	>\$50		100%	
Dominican Republic				\$1,800		100%	
Ecuador	\$10,000		100%	\$1,200		100%	Majority China
Egypt, Arab Republic of	\$800	9%	91%	\$10,700		100%	
El Salvador				\$1,800		100%	
Equatorial Guinea	\$1,800	1%	99%				China only
Eritrea	\$500	4%	96%	\$800	15%	85%	
Estonia				\$100		100%	
Eswatini				\$100		100%	
Ethiopia	\$14,500	2%	98%	\$15,600	25%	75%	
Fiji	\$1,000	7%	93%				China only

Country	Total grant and loan financing from China			Total grant and loan financing from WB			
	(USD millions)	% Grant	% Loans	(USD millions)	% Grants	% Loans	
Gabon	\$800	14%	86%	\$200		100%	
Gambia, The				\$300	56%	44%	
Georgia	<\$50	100%		\$2,400	2%	98%	
Ghana	\$4,700	13%	87%	\$7,500	11%	89%	
Grenada	\$100	100%		\$200		100%	
Guatemala				\$2,900		100%	
Guinea	\$500	23%	77%	\$1,200	50%	50%	
Guinea-Bissau	\$100	100%		\$300	46%	54%	
Guyana	\$400	28%	72%	\$100	45%	55%	
Haiti	<\$50	100%		\$1,200	94%	6%	
Honduras				\$2,100	4%	96%	
India	\$5,600		100%	\$70,100		100%	
Indonesia	\$9,300	3%	97%	\$30,400		100%	
Iran, Islamic Republic of	\$2,100		100%	\$2,800		100%	
Iraq				\$1,500		100%	
Jamaica	\$1,700	33%	67%	\$1,800		100%	
Jordan	\$100	51%	49%	\$2,500		100%	
Kazakhstan	\$8,300		100%	\$6,500		100%	
Kenya	\$5,600	10%	90%	\$8,000	2%	98%	
Kiribati				\$100	100%		
Kosovo				\$1,100	13%	87%	
Kyrgyz Republic	\$2,800	3%	97%	\$1,100	41%	59%	
Lao People's Democratic Republic	\$11,700	1%	99%	\$1,100	57%	43%	Majority China
Latvia				\$800		100%	
Lebanon	<\$50	33%	67%	\$1,300		100%	
Lesotho	\$200	45%	55%	\$500	30%	70%	
Liberia	\$300	100%		\$1,700	72%	28%	
Libya	\$400	1%	99%				China only
Lithuania				\$400		100%	
Madagascar	\$300	26%	74%	\$3,700	7%	93%	
Malawi	\$600	33%	67%	\$2,500	47%	53%	
Malaysia	\$1,300		100%				China only
Maldives	\$300	8%	92%	\$200	21%	79%	
Mali	\$1,100	28%	72%	\$3,400	13%	87%	
Malta	<\$50	100%					China only
Marshall Islands				<\$50	100%		
Mauritania	\$1,000	19%	81%	\$1,100	8%	92%	
Mauritius	\$2,000	1%	99%	\$600		100%	
Mexico	\$400	2%	98%	\$33,400		100%	
Micronesia, Federated States of	<\$50	91%	9%	<\$50	100%		
Moldova	\$100	23%	77%	\$900	6%	94%	
Mongolia	\$1,300	6%	94%	\$700	12%	88%	
Montenegro	\$1,000		100%	\$1,000		100%	
Morocco	\$1,000	1%	99%	\$7,400		100%	
Mozambique	\$2,700	5%	95%	\$5,300	10%	90%	
Myanmar	\$1,600	4%	96%	\$800	10%	90%	
Namibia	\$600	42%	58%	<\$50		100%	Majority China
Nauru	\$100	100%					China only
Nepal	\$1,200	31%	69%	\$3,500	48%	52%	
New Zealand	<\$50	47%	53%				China only
Nicaragua	\$100	84%	16%	\$1,700	14%	86%	
Niger	\$1,500	19%	81%	\$2,600	27%	73%	
Nigeria	\$7,200	1%	99%	\$14,000		100%	
Niue	<\$50	100%					China only

Country	Total grant and loan financing from China			Total grant and loan financing from WB			
	(USD millions)	% Grant	% Loans	(USD millions)	% Grants	% Loans	
North Korea	\$200	100%					China only
North Macedonia	\$800	2%	98%	\$1,200		100%	
Pakistan	\$23,600	4%	96%	\$20,300		100%	
Palestine	<\$50	100%					China only
Panama				\$1,500		100%	
Papua New Guinea	\$400	40%	60%	\$900		100%	
Paraguay				\$900		100%	
Peru	\$300	4%	96%	\$6,700		100%	
Philippines	\$1,500		100%	\$8,700		100%	
Poland				\$12,600		100%	
Romania	\$1,200		100%	\$10,200		100%	
Russian Federation	\$36,600		100%	\$4,700		100%	Majority China
Rwanda	\$600	22%	78%	\$3,000	46%	54%	
Samoa	\$300	18%	82%	\$200	43%	57%	
Sao Tome and Principe				\$100	54%	46%	
Senegal	\$600	21%	79%	\$3,600		100%	
Serbia	\$1,900		100%	\$6,200		100%	
Seychelles	<\$50	100%		\$100		100%	
Sierra Leone	\$500	19%	81%	\$1,500	47%	53%	
Slovak Republic				\$700		100%	
Slovenia				<\$50		100%	
Solomon Islands				\$100	63%	37%	
Somalia	<\$50	100%					China only
South Africa	\$4,400	2%	98%	\$4,800		100%	
South Sudan	\$400	19%	81%	\$200	17%	83%	
Sri Lanka	\$12,700	1%	99%	\$4,100	12%	88%	
St. Kitts and Nevis				<\$50		100%	
St. Lucia	<\$50	100%		\$200	2%	98%	
St. Vincent and the Grenadines				\$100	3%	97%	
Sudan	\$8,800	1%	99%				China only
Suriname	\$400	3%	97%				China only
Syria	<\$50	100%					China only
Tajikistan	\$2,100	5%	95%	\$900	57%	43%	
Tanzania	\$3,500	8%	92%	\$11,800	5%	95%	
Thailand	<\$50	100%		\$1,300		100%	
Timor-Leste	<\$50	100%		\$100	68%	32%	
Togo	\$400	8%	92%	\$600	87%	13%	
Tonga	\$300	18%	82%	\$100	64%	36%	
Trinidad and Tobago	\$200		100%	<\$50		100%	
Tunisia	<\$50	100%		\$5,100		100%	
Turkey	\$1,800		100%	\$37,900		100%	
Turkmenistan	\$10,700		100%				China only
Tuvalu				<\$50	100%		
Uganda	\$1,400	14%	86%	\$7,000	16%	84%	
Ukraine	\$3,700	1%	99%	\$9,700		100%	
United Arab Emirates	<\$50		100%				China only
Uruguay	\$100	12%	88%	\$3,500		100%	
Uzbekistan	\$3,000	2%	98%	\$1,900		100%	
Vanuatu	\$300	22%	78%				China only
Venezuela, Republica Bolivariana de	\$11,200		100%	\$100		100%	Majority China
Vietnam	\$4,000	4%	96%	\$23,500		100%	
Yemen, Republic of	\$500	14%	86%	\$3,300	37%	63%	
Zambia	\$3,700	7%	93%	\$2,500	10%	90%	
Zimbabwe	\$5,900	7%	93%				China only

B. Summary Statistics by Region

Portfolio concessionality and loan concessionality statistics designated with a single asterisk meet the OECD-DAC concessionality threshold of 25%. Portfolio concessionality and loan concessionality statistics designated with two asterisks meet the World Bank-IMF concessionality threshold of 35%.

Table A3. Overview - region		
	China	World Bank
Total Face Value of Funding (USD billion)	\$330	\$620
Sub-Saharan Africa	\$110	\$130
East Asia	\$40	\$70
Europe & Central Asia	\$80	\$120
Latin America & Caribbean	\$50	\$150
Middle East & North Africa	\$10	\$40
South Asia	\$50	\$120
Percent of Total Funding		
Sub-Saharan Africa	33%	21%
East Asia	12%	11%
Europe and Central Asia	25%	20%
Latin America and the Caribbean	14%	24%
Middle East and North Africa	2%	6%
South Asia	14%	18%
Sub-Saharan Africa		
Portfolio Concessionality	22.51%	59.95%**
Average Loan Size (USD million)	\$201	\$83
Average Grant Size (USD million)	\$10	\$58
Percent Grant Funding	6%	22%
Total Number of Projects	1,197	1,736
Weighted Mean Interest Rate	2.91%	0.85%
Weighted Mean Maturity (years)	17.1	28.3
Weighted Mean Grace Period (years)	5.7	9.5
Loan Concessionality (derived from weighted means)	17.49%	49.01%**
East Asia		
Portfolio Concessionality	22.29%	32.23%*
Average Loan Size (USD million)	\$224	\$176
Average Grant Size (USD million)	\$6	\$14
Percent Grant Funding	4%	2%
Total Number of Projects	481	494
Weighted Mean Interest Rate	2.52%	1.81%
Weighted Mean Maturity (years)	15.1	18.8
Weighted Mean Grace Period (years)	5.7	
Loan Concessionality (derived from weighted means)	19.03%	30.67%*
Europe & Central Asia		
Portfolio Concessionality	0.55%	19.76%
Average Loan Size (USD million)	\$698	\$152
Average Grant Size (USD million)	\$4	\$12
Percent Grant Funding	1%	1%
Total Number of Projects	227	879
Weighted Mean Interest Rate	5.21%	2.52%
Weighted Mean Maturity (years)	18.8	13.1
Weighted Mean Grace Period (years)	5.1	6.6
Loan Concessionality (derived from weighted means)	0.00%	18.95%

Latin America & Caribbean		
Portfolio Concessional	3.08%	15.25%
Average Loan Size (USD million)	\$447	\$180
Average Grant Size (USD million)	\$15	\$27
Percent Grant Funding	3%	1%
Total Number of Projects	194	877
Weighted Mean Interest Rate	5.81%	3.02%
Weighted Mean Maturity (years)	11.5	11.3
Weighted Mean Grace Period (years)	2.1	7.2
Loan Concessional (derived from weighted means)	0.00%	14.36%
Middle East & North Africa		
Portfolio Concessional	18.02%	21.86%
Average Loan Size (USD million)	\$175	\$159
Average Grant Size (USD million)	\$7	\$33
Percent Grant Funding	8%	4%
Total Number of Projects	99	254
Weighted Mean Interest Rate	3.33%	2.79%
Weighted Mean Maturity (years)	13.9	17.6
Weighted Mean Grace Period (years)	3.3	5.8
Loan Concessional (derived from weighted means)	11.26%	18.91%
South Asia		
Portfolio Concessional	15.45%	38.10%**
Average Loan Size (USD million)	\$419	\$228
Average Grant Size (USD million)	\$13	\$50
Percent Grant Funding	4%	5%
Total Number of Projects	255	619
Weighted Mean Interest Rate	3.49%	1.59%
Weighted Mean Maturity (years)	16.9	21.8
Weighted Mean Grace Period (years)	4.5	7.9
Loan Concessional (derived from weighted means)	11.86%	34.72%*

**meets OECD-DAC concessional threshold (25%), **meets World-Bank IMF concessional threshold (35%)*

By not including World Bank loans to China in this analysis (which are generally provide on harder terms), the summary statistics in this table suggest that World Bank provided slightly less financing and less concessional financing to the East Asia and Pacific than would be otherwise be the case. Financing to China over our fifteen-year period of study was approximately \$18 billion USD.

C. Summary Statistics by World Bank Lending Category

Table A4. Overview – World Bank lending categories		
	China	World Bank
Total Face Value of Funding (USD billion)	\$330	\$620
IDA	\$150	\$290
Blend	\$30	\$20
IBRD	\$140	\$310
Percent of Total Funding		
IDA	46%	46%
Blend	10%	4%
IBRD	43%	50%
IDA		
Portfolio Concessional	21.26%	48.77%**
Average Loan Size (USD million)	\$210	\$100
Average Grant Size (USD million)	\$8	\$44
Percent Grant Funding	5%	14%
Total Number of Projects	1,677	3,302
Weighted Mean Interest Rate	2.97%	1.30%
Weighted Mean Maturity (years)	17.1	24.7
Weighted Mean Grace Period (years)	5.6	8.6
Loan Concessional (derived from weighted means)	16.95%	40.52%**
Blend		
Portfolio Concessional	19.08%	36.33%**
Average Loan Size (USD million)	\$350	\$100
Average Grant Size (USD million)	\$13	\$7
Percent Grant Funding	6%	<1%
Total Number of Projects	239	248
Weighted Mean Interest Rate	3.24%	1.51%
Weighted Mean Maturity (years)	17.6	22.1
Weighted Mean Grace Period (years)	4.7	8.4
Loan Concessional (derived from weighted means)	14.40%	36.26%**
IBRD		
Portfolio Concessional	1.67%	17.00%
Average Loan Size (USD million)	\$550	\$240
Average Grant Size (USD million)	\$10	-
Percent Grant Funding	2%	0%
Total Number of Projects	502	1,304
Weighted Mean Interest Rate	5.34%	2.80%
Weighted Mean Maturity (years)	16.2	12.2
Weighted Mean Grace Period (years)	3.9	6.8
Loan Concessional (derived from weighted means)	0.00%	16.36%

*meets OECD-DAC concessional threshold (25%), **meets World-Bank IMF concessional threshold (35%)

Non-borrowing countries are excluded from the summary statistics in this table. Countries in our dataset that are not official borrowers of the World Bank include the Bahamas, Barbados, Cook Islands, Cuba, Latvia, Malta, New Zealand, Niue, North Korea, and the United Arab Emirates.

D. Summary Statistics by Income Bracket

Table A5. Overview - income bracket		
	China	World Bank
Total Face Value of Funding (USD billion)	\$330	\$620
Low-income (LIC)	\$80	\$200
Lower-middle-income (LMIC)	\$130	\$230
Upper-middle-income (UMIC)	\$120	\$180
High-income (HIC)	\$10	\$10
Percent of Total Funding		
Low-income	24%	32%
Lower-middle-income	38%	37%
Upper-middle-income	36%	29%
High-income	3%	2%
Low-income (LIC)		
Portfolio Concessionality	31.60%*	54.47%**
Average Loan Size (USD million)	\$170	\$110
Average Grant Size (USD million)	\$9	\$49
Percent Grant Funding	9%	17%
Total Number of Projects	1,230	2,217
Weighted Mean Interest Rate	2.29%	1.08%
Weighted Mean Maturity (years)	19.7	26.5
Weighted Mean Grace Period (years)	5.7	9.3
Loan Concessionality (derived from weighted means)	24.57%	44.91%**
Lower-middle-income (LMIC)		
Portfolio Concessionality	12.95%	25.24%*
Average Loan Size (USD million)	\$280	\$140
Average Grant Size (USD million)	\$7	\$27
Percent Grant Funding	2%	2%
Total Number of Projects	839	1,786
Weighted Mean Interest Rate	3.59%	2.33%
Weighted Mean Maturity (years)	15.4	16.9
Weighted Mean Grace Period (years)	5.4	6.9
Loan Concessionality (derived from weighted means)	10.90%	23.37%
Upper-middle-income (UMIC)		
Portfolio Concessionality	1.61%	16.71%
Average Loan Size (USD million)	\$670	\$230
Average Grant Size (USD million)	\$12	\$7
Percent Grant Funding	2%	1%
Total Number of Projects	341	819
Weighted Mean Interest Rate	5.30%	2.75%
Weighted Mean Maturity (years)	16.6	11.8
Weighted Mean Grace Period (years)	3.9	7.1
Loan Concessionality (derived from weighted means)	0%	16.67%
High-income (HIC)		
Portfolio Concessionality	2.05%	26.27%*
Average Loan Size (USD million)	\$490	\$300
Average Grant Size (USD million)	\$8	-
Percent Grant Funding	2%	2%
Total Number of Projects	42	37
Weighted Mean Interest Rate	5.96%	1.93%
Weighted Mean Maturity (years)	15.6	13.3
Weighted Mean Grace Period (years)	2.2	8.0
Loan Concessionality (derived from weighted means)	0%	25.04%*

*meets OECD-DAC concessionality threshold (25%), **meets World-Bank IMF concessionality threshold (35%)

E. Summary Statistics by Official Chinese Financing Institution

Table A6. Complete list of official Chinese financiers

Financing institution	Number of projects ⁶⁰	Institution type
Five most frequent financing institutions		
Export-Import Bank of China (China Eximbank)	602	Policy Bank
China Development Bank (CDB)	113	Policy Bank
Chinese Embassy/Consulate	31	Government Agency
Industrial and Commercial Bank of China (ICBC)	19	State-Owned Commercial Bank
Bank of China (BOC)	15	State-Owned Commercial Bank
Other official Chinese financing institutions		
Beijing Organizing Committee for the Olympic Games	1	Government Agency
China-Africa Development Fund	2	Government Agency
China Center for Disease Control and Prevention (China-CDC)	1	Government Agency
China Co-Financing Fund for Latin America and the Caribbean	2	Government Agency
China National Development and Reform Commission	1	Government Agency
China's Ministry of Agriculture	1	Government Agency
China's Ministry of Commerce	8	Government Agency
China's Ministry of Culture	2	Government Agency
China's Ministry of Defense	1	Government Agency
China's Ministry of Foreign Affairs	1	Government Agency
China's Ministry of Foreign Trade and Economic Cooperation	2	Government Agency
China's Ministry of Science and Technology	2	Government Agency
Chongqing Government (subnational)	1	Government Agency
Confucius Institute	2	Government Agency
Nantong Municipal Council (subnational)	1	Government Agency
National People's Congress of China	1	Government Agency
National Population and Family Planning Commission of China	1	Government Agency
People's Bank of China (PBC)/China Central Bank	2	Government Agency
People's Liberation Army of China	4	Government Agency
Silk Road Fund	1	Government Agency
The Chinese Communist Party	2	Government Agency
The Chinese People's Political Consultative Conference (CPPCC)	1	Government Agency
Xinhua News Agency	1	Government Agency
Agricultural Bank of China	1	State-Owned Commercial Bank
China Communications Bank	1	State-Owned Commercial Bank
China Construction Bank Corporation (CCB)	6	State-Owned Commercial Bank
HydroChina Corporation	1	State-Owned Commercial Bank
China Export & Credit Insurance Corporation (Sinosure)	2	State-Owned Enterprise
China International Trust and Investment Corporation (CITIC)	4	State-Owned Enterprise
China International Water and Electrical Corporation	1	State-Owned Enterprise
China National Machinery and Equipment Import and Export Corporation	2	State-Owned Enterprise
China National Complete Plant Import and Export Corporation Group (COMPLANT)	1	State-Owned Enterprise
China National Corporation for Overseas Economic Cooperation (CCOEC)	1	State-Owned Enterprise
SinoHydro Corporation	1	State-Owned Enterprise
Yunnan Construction Engineering Group Corporation (YNJG)	1	State-Owned Enterprise
Unspecified Chinese Government Institution	1650	Unspecified

**meets OECD-DAC concessionality threshold (25%), **meets World-Bank IMF concessionality threshold (35%)*

A single project in the dataset may be financed by multiple institutions, including a combination of official Chinese institutions (government agencies, policy banks, state-owned enterprises, and state-owned commercial banks); non-official Chinese institutions (private sector or non-profit); and foreign financing institutions (including multilaterals, bilaterals, private sector entities, and domestic public or private sector institutions in the host country). All projects in the dataset have at least one official

⁶⁰ These project numbers include both solo-financed and co-financed project for each agency. For example, a project funded by CDB and the Ministry of Commerce would be counted twice. Summing the projects in this table will not reflect the total number of projects in our dataset.

Chinese financier, with some projects receiving financing from multiple official Chinese institutions, and a small number of projects co-financed by foreign financing institutions outside of China.

Table A7. Overview – Chinese financing institutions	
Total Face Value of Funding (USD billion)	\$330
Chinese Government Agencies	\$2
Chinese Policy Banks	\$230
China Development Bank	\$90
China Eximbank	\$140
Chinese State-owned Enterprises	<\$1
Chinese State-Owned Commercial Banks	\$10
Co-financed	\$30
Unspecified Chinese Government Institutions	\$50
Percent of Total Funding	
Chinese Government Agencies	1%
Chinese Policy Banks	70%
China Development Bank	28%
China Eximbank	42%
Chinese State-owned Enterprises	<1%
Chinese State-Owned Commercial Banks	3%
Co-financed	10%
Unspecified Chinese Government Institutions	16%
Chinese government agencies⁶¹	
Portfolio Concessionality	-
Average Loan Size (USD million)	\$90
Average Grant Size (USD million)	<\$5
Percent Grant Funding	23%
Total Number of Solo-Financed Projects	66
Chinese policy banks	
Portfolio Concessionality	4.56%
Average Loan Size (USD million)	\$360
Average Grant Size (USD million)	<\$5
Percent Grant Funding	<1%
Total Number of Solo-Financed Projects	659
Weighted Mean Interest Rate	4.39%
Weighted Mean Maturity (years)	16.8
Weighted Mean Grace Period (years)	4.8
Loan Concessionality (derived from weighted means)	4.55%
China Development Bank (CDB)	Policy bank
Portfolio Concessionality	<0.01%
Average Loan Size (USD million)	\$1,050
Average Grant Size (USD million)	<\$5
Percent Grant Funding	<1%
Total Number of Solo-Financed Projects	90
Weighted Mean Interest Rate	5.75%
Weighted Mean Maturity (years)	16.3

⁶¹ The summary statistics for Chinese government agencies are distorted by one particularly large project loan (ID#20419) to Mauritius; this table shows the average loan size and percent grant funding when this outlier is excluded from calculations. When the outlier loan is included in the summary statistics, the average loan size for Chinese government agencies is \$260 million with 8% of its funding portfolio coming from grants.

Weighted Mean Grace Period (years)	3.7
Loan Concessionalality (derived from weighted means)	0.00%
China Eximbank	
Portfolio Concessionalality	13.96%
Average Loan Size (USD million)	\$250
Average Grant Size (USD million)	\$10
Percent Grant Funding	<1%
Total Number of Solo-Financed Projects	569
Weighted Mean Interest Rate	3.32%
Weighted Mean Maturity (years)	17.2
Weighted Mean Grace Period (years)	5.6
Loan Concessionalality (derived from weighted means)	13.95%
Policy bank	
Portfolio Concessionalality	13.96%
Average Loan Size (USD million)	\$250
Average Grant Size (USD million)	\$10
Percent Grant Funding	<1%
Total Number of Solo-Financed Projects	569
Weighted Mean Interest Rate	3.32%
Weighted Mean Maturity (years)	17.2
Weighted Mean Grace Period (years)	5.6
Loan Concessionalality (derived from weighted means)	13.95%
Chinese state-owned enterprises	
Portfolio Concessionalality	-
Average Loan Size (USD million)	\$90
Average Grant Size (USD million)	-
Percent Grant Funding	0%
Total Number of Solo-Financed Projects	1
Chinese state-owned commercial banks	
Portfolio Concessionalality	7.47%
Average Loan Size (USD million)	\$680
Average Grant Size (USD million)	-
Percent Grant Funding	0%
Total Number of Solo-Financed Projects	16
Weighted Mean Interest Rate	3.84%
Weighted Mean Maturity (years)	12.6
Weighted Mean Grace Period (years)	3.9
Loan Concessionalality (derived from weighted means)	7.47%
Co-financed projects (Chinese official financier with non-official financiers and/or foreign financiers)	
Portfolio Concessionalality	19.29%
Average Loan Size (USD million)	\$560
Average Grant Size (USD million)	<\$5
Percent Grant Funding	<1%
Total Number of Projects	69
Weighted Mean Interest Rate	2.41%
Weighted Mean Maturity (years)	14.7
Weighted Mean Grace Period (years)	4.5
Loan Concessionalality (derived from weighted means)	19.25%
Unspecified Chinese government institutions	
Portfolio Concessionalality	39.84%**
Average Loan Size (USD million)	\$130
Average Grant Size (USD million)	\$10
Percent Grant Funding	23%
Total Number of Projects	1,642
Weighted Mean Interest Rate	2.42%
Weighted Mean Maturity (years)	17.0
Weighted Mean Grace Period (years)	5.4
Loan Concessionalality (derived from weighted means)	21.46%

*meets OECD-DAC concessionalality threshold (25%), **meets World-Bank IMF concessionalality threshold (35%)

F. Summary Statistics for Each Country in the Subsample

Table A8. Country-by-country summaries			
Angola			
Region: Sub-Saharan Africa	Lending status: IBRD (2000-2013, IDA)		Income level: Lower middle income
	China	World Bank	Private Sector
Portfolio Concessionality	0.00%	39.91%**	
Total Funding (USD million)	\$16,520	\$1,100	
Average Loan Size (USD million)	\$210	\$80	
Average Grant Size (USD million)	\$10	\$50	
Percent Grant Funding	<1%	15%	
Total Number of Projects	91	14	
Weighted Mean Interest Rate	6.03%	1.95%	5.08%
Weighted Mean Maturity (years)	12.9	20.8	6.8
Weighted Mean Grace Period (years)	4.1	8.8	1.1
Weighted Mean Loan Concessionality	0.00%	29.3%*	0.00%
Bangladesh			
Region: South Asia	Lending status: IDA		Income level: Lower middle income
	China	World Bank	Private Sector
Portfolio Concessionality	31.46%*	52.35%**	
Total Funding (USD million)	\$3,220	\$15,940	
Average Loan Size (USD million)	\$200	\$190	
Average Grant Size (USD million)	\$20	\$60	
Percent Grant Funding	6%	2%	
Total Number of Projects	27	89	
Weighted Mean Interest Rate	2.00%	0.74%	3.08%
Weighted Mean Maturity (years)	20.0	29.3	16.2
Weighted Mean Grace Period (years)	5.0	10.0	3.1
Weighted Mean Loan Concessionality	26.84%*	51.49%**	14.07%
Cambodia			
Region: East Asia & Pacific	Lending status: IDA		Income level: Lower middle income
	China	World Bank	Private Sector
Portfolio Concessionality	27.17%*	66.40%**	
Total Funding (USD million)	\$7,990	\$1,010	
Average Loan Size (USD million)	\$140	\$30	
Average Grant Size (USD million)	<\$5	\$20	
Percent Grant Funding	3%	31%	
Total Number of Projects	110	35	
Weighted Mean Interest Rate	1.84%	0.75%	No data
Weighted Mean Maturity (years)	14.0	29.5	No data
Weighted Mean Grace Period (years)	7.0	9.8	No data
Weighted Mean Loan Concessionality	25.27%*	51.47%**	No data
Cameroon			
Region: Sub-Saharan Africa	Lending status: Blend (2000-2013, IDA only)		Income level: Lower middle income
	China	World Bank	Private Sector
Portfolio Concessionality	30.33%*	52.74%**	
Total Funding (USD million)	\$5,420	\$2,620	
Average Loan Size (USD million)	\$190	\$60	
Average Grant Size (USD million)	\$10	\$70	
Percent Grant Funding	2%	11%	
Total Number of Projects	45	44	
Weighted Mean Interest Rate	1.96%	1.06%	2.59%

Weighted Mean Maturity (years)	19.0	28.0	10.2
Weighted Mean Grace Period (years)	8.2	9.0	3.3
Weighted Mean Loan Concessional	28.88%*	47.11%**	13.63%
Congo, Republic of			
Region: Sub-Saharan Africa	Lending status: Blend (2000-2013, IDA-only)		Income level: Lower middle income
	China	World Bank	Private Sector
Portfolio Concessional	46.84%**	63.17%**	
Total Funding (USD million)	\$2,460	\$740	
Average Loan Size (USD million)	\$210	\$30	
Average Grant Size (USD million)	\$10	\$30	
Percent Grant Funding	7%	34%	
Total Number of Projects	29	26	
Weighted Mean Interest Rate	0.25%	0.97%	1.72%
Weighted Mean Maturity (years)	20.0	25.1	4.0
Weighted Mean Grace Period (years)	5.0	9.0	0.5
Weighted Mean Loan Concessional	42.82%**	44.59%**	7.33%
Costa Rica			
Region: Latin America & Caribbean	Lending status: IBRD		Income level: Upper middle income
	China	World Bank	Private Sector
Portfolio Concessional	25.83%*	19.30%	
Total Funding (USD million)	\$990	\$1,300	
Average Loan Size (USD million)	\$200	\$160	
Average Grant Size (USD million)	\$50	-	
Percent Grant Funding	20%	0%	
Total Number of Projects	8	8	
Weighted Mean Interest Rate	4.00%	2.96%	6.27%
Weighted Mean Maturity (years)	20.0	21.4	14.7
Weighted Mean Grace Period (years)	4.0	5.0	13.1
Weighted Mean Loan Concessional	8.29%	19.30%	0.00%
Dominica			
Region: Latin America & Caribbean	Lending status: Blend		Income level: Upper middle income
	China	World Bank	Private Sector
Portfolio Concessional	58.00%**	47.50%**	
Total Funding (USD million)	\$230	\$40	
Average Loan Size (USD million)	\$30	\$10	
Average Grant Size (USD million)	\$10	-	
Percent Grant Funding	43%	0%	
Total Number of Projects	13	8	
Weighted Mean Interest Rate	2.00%	0.85%	4.44%
Weighted Mean Maturity (years)	20.0	25.7	17.5
Weighted Mean Grace Period (years)	5.0	9.6	7.4
Weighted Mean Loan Concessional	26.84%*	47.50%**	4.64%
Ethiopia			
Region: Sub-Saharan Africa	Lending status: IDA		Income level: Low income
	China	World Bank	Private Sector
Portfolio Concessional	22.78%	63.39%**	
Total Funding (USD million)	\$14,500	\$15,640	
Average Loan Size (USD million)	\$370	\$160	
Average Grant Size (USD million)	\$10	\$170	
Percent Grant Funding	2%	25%	
Total Number of Projects	62	99	
Weighted Mean Interest Rate	2.41%	0.75%	4.05%
Weighted Mean Maturity (years)	17.0	29.6	13.4
Weighted Mean Grace Period (years)	5.3	9.7	3.3
Weighted Mean Loan Concessional	21.40%	51.39%**	6.02%
Gabon			
Region: Sub-Saharan Africa	Lending status: IBRD		Income level: Upper middle income
	China	World Bank	Private Sector
Portfolio Concessional	34.42%*	10.80%	

Total Funding (USD million)	\$760	\$150	
Average Loan Size (USD million)	\$90	\$10	
Average Grant Size (USD million)	\$50	-	
Percent Grant Funding	14%	0%	
Total Number of Projects	9	4	
Weighted Mean Interest Rate	2.46%	3.78%	5.58%
Weighted Mean Maturity (years)	20.0	13.4	10.1
Weighted Mean Grace Period (years)	7.0	4.0	6.2
Weighted Mean Loan Concessionalality	24.08%	10.80%	0.00%

Ghana

Region: Sub-Saharan Africa	Lending status: IDA		Income level: Lower middle income
	China	World Bank	Private Sector
Portfolio Concessionalality	19.52%	54.62%**	
Total Funding (USD million)	\$4,650	\$7,460	
Average Loan Size (USD million)	\$130	\$90	
Average Grant Size (USD million)	\$20	\$80	
Percent Grant Funding	13%	11%	
Total Number of Projects	62	86	
Weighted Mean Interest Rate	4.01%	0.79%	4.15%
Weighted Mean Maturity (years)	14.8	27.5	14.2
Weighted Mean Grace Period (years)	4.4	9.5	4.8
Weighted Mean Loan Concessionalality	8.01%	49.20%**	5.92%

Guyana

Region: Latin America & Caribbean	Lending status: IDA		Income level: Upper middle income
	China	World Bank	Private Sector
Portfolio Concessionalality	47.68%**	66.96%**	
Total Funding (USD million)	\$360	\$130	
Average Loan Size (USD million)	\$90	\$10	
Average Grant Size (USD million)	\$10	\$20	
Percent Grant Funding	29%	45%	
Total Number of Projects	13	10	
Weighted Mean Interest Rate	2.00%	1.12%	No data
Weighted Mean Maturity (years)	20.0	22.4	No data
Weighted Mean Grace Period (years)	5.0	8.3	No data
Weighted Mean Loan Concessionalality	26.84%*	40.00%**	No data

Kyrgyz Republic

Region: Europe & Central Asia	Lending status: IDA		Income level: Lower middle income
	China	World Bank	Private Sector
Portfolio Concessionalality	32.68%*	71.41%**	
Total Funding (USD million)	\$2,770	\$1,130	
Average Loan Size (USD million)	\$220	\$20	
Average Grant Size (USD million)	\$10	\$10	
Percent Grant Funding	3%	40%	
Total Number of Projects	29	73	
Weighted Mean Interest Rate	2.00%	0.75%	3.00%
Weighted Mean Maturity (years)	20.0	29.4	8.4
Weighted Mean Grace Period (years)	9.5	9.9	2.9
Weighted Mean Loan Concessionalality	30.52%*	51.38%**	9.76%

Mauritania

Region: Sub-Saharan Africa	Lending status: IDA		Income level: Lower middle income
	China	World Bank	Private Sector
Portfolio Concessionalality	36.66%**	55.09%**	
Total Funding (USD million)	\$1,010	\$1,100	
Average Loan Size (USD million)	\$160	\$30	
Average Grant Size (USD million)	\$30	\$20	
Percent Grant Funding	19%	8%	
Total Number of Projects	12	35	
Weighted Mean Interest Rate	2.40%	0.75%	3.55%
Weighted Mean Maturity (years)	18.4	29.5	7.0

Weighted Mean Grace Period (years)	4.2	9.8	2.1
Weighted Mean Loan Concessional	21.86%	51.42%**	5.80%
Moldova			
Region: Europe & Central Asia	Lending status: Blend (2000-2013, IDA-only)		Income level: Lower middle income
	China	World Bank	Private Sector
Portfolio Concessional	43.65%**	45.37%**	
Total Funding (USD million)	\$90	\$940	
Average Loan Size (USD million)	\$70	\$20	
Average Grant Size (USD million)	<\$5	\$10	
Percent Grant Funding	23%	6%	
Total Number of Projects	9	47	
Weighted Mean Interest Rate	2.00%	1.04%	3.24%
Weighted Mean Maturity (years)	20.0	23.5	7.4
Weighted Mean Grace Period (years)	5.0	8.7	2.4
Weighted Mean Loan Concessional	26.84%*	42.18%**	7.57%
Mongolia			
Region: East Asia & Pacific	Lending status: Blend (2000-2011, IDA only)		Income level: Lower middle income
	China	World Bank	Private Sector
Portfolio Concessional	33.11%*	55.52%**	
Total Funding (USD million)	\$1,310	\$700	
Average Loan Size (USD million)	\$200	\$30	
Average Grant Size (USD million)	\$10	\$10	
Percent Grant Funding	7%	12%	
Total Number of Projects	18	30	
Weighted Mean Interest Rate	1.72%	0.78%	4.86%
Weighted Mean Maturity (years)	18.6	27.9	8.3
Weighted Mean Grace Period (years)	5.9	9.5	7.8
Weighted Mean Loan Concessional	28.48%*	49.37%**	0.55%
Montenegro			
Region: Europe & Central Asia	Lending status: IBRD (2000-2006, non-borrowing; 2007 IDA)		Income level: Upper middle income
	China	World Bank	Private Sector
Portfolio Concessional	25.59%*	21.85%	
Total Funding (USD million)	\$1,020	\$980	
Average Loan Size (USD million)	\$340	\$40	
Average Grant Size (USD million)	-	-	
Percent Grant Funding	0%	0%	
Total Number of Projects	3	22	
Weighted Mean Interest Rate	2.11%	2.35%	6.82%
Weighted Mean Maturity (years)	19.5	20.1	5.6
Weighted Mean Grace Period (years)	5.0	4.9	3.1
Weighted Mean Loan Concessional	25.59%*	21.85%	0.00%
Nepal			
Region: South Asia	Lending status: IDA		Income level: Low income
	China	World Bank	Private Sector
Portfolio Concessional	53.67%**	74.91%**	
Total Funding (USD million)	\$1,190	\$3,510	
Average Loan Size (USD million)	\$160	\$50	
Average Grant Size (USD million)	\$10	\$40	
Percent Grant Funding	31%	48%	
Total Number of Projects	37	77	
Weighted Mean Interest Rate	1.70%	0.75%	3.46%
Weighted Mean Maturity (years)	23.9	29.5	29.6
Weighted Mean Grace Period (years)	5.4	9.9	7.7
Weighted Mean Loan Concessional	32.82%*	51.55%**	17.54%
Niger			
Region: Sub-Saharan Africa	Lending status: IDA		Income level: Low income

	China	World Bank	Private Sector
Portfolio Concessional	47.91%**	64.78%**	
Total Funding (USD million)	\$1,490	\$2,560	
Average Loan Size (USD million)	\$300	\$60	
Average Grant Size (USD million)	\$10	\$40	
Percent Grant Funding	19%	27%	
Total Number of Projects	28	52	
Weighted Mean Interest Rate	1.00%	0.75%	No data
Weighted Mean Maturity (years)	20.0	29.5	No data
Weighted Mean Grace Period (years)	5.0	9.8	No data
Weighted Mean Loan Concessional	35.98%**	51.46%**	No data

Nigeria

Region: Sub-Saharan Africa	Lending status: Blend (2000-2013, IDA only)		Income level: Lower middle income
	China	World Bank	Private Sector
Portfolio Concessional	22.41%	48.07%**	
Total Funding (USD million)	\$7,230	\$13,950	
Average Loan Size (USD million)	\$420	\$200	
Average Grant Size (USD million)	\$10	-	
Percent Grant Funding	1%	0%	
Total Number of Projects	30	71	
Weighted Mean Interest Rate	2.74%	0.86%	5.36%
Weighted Mean Maturity (years)	19.5	27.4	7.5
Weighted Mean Grace Period (years)	6.9	9.1	6.4
Weighted Mean Loan Concessional	21.55%	48.07%**	0.00%

Papua New Guinea

Region: East Asia & Pacific	Lending status: Blend (2000-2002, IBRD only)		Income level: Lower middle income
	China	World Bank	Private Sector
Portfolio Concessional	59.71%**	17.68%	
Total Funding (USD million)	\$380	\$870	
Average Loan Size (USD million)	\$60	\$50	
Average Grant Size (USD million)	<\$5	-	
Percent Grant Funding	40%	0%	
Total Number of Projects	45	18	
Weighted Mean Interest Rate	2.00%	3.27%	3.61%
Weighted Mean Maturity (years)	30.0	18.2	9.1
Weighted Mean Grace Period (years)	5.0	6.5	2.8
Weighted Mean Loan Concessional	32.90%*	17.68%	7.00%

Philippines

Region: East Asia & Pacific	Lending status: IBRD		Income level: Lower middle income
	China	World Bank	Private Sector
Portfolio Concessional	9.13%	19.21%	
Total Funding (USD million)	\$1,480	\$8,740	
Average Loan Size (USD million)	\$150	\$190	
Average Grant Size (USD million)	<\$5	-	
Percent Grant Funding	<1%	0%	
Total Number of Projects	16	46	
Weighted Mean Interest Rate	3.00%	2.85%	6.67%
Weighted Mean Maturity (years)	8.0	14.2	11.6
Weighted Mean Grace Period (years)	2.0	8.7	11.0
Weighted Mean Loan Concessional	8.76%	19.21%	0.00%

Samoa

Region: East Asia & Pacific	Lending status: IDA		Income level: Upper middle income
	China	World Bank	Private Sector
Portfolio Concessional	40.23%**	72.39%**	
Total Funding (USD million)	\$300	\$200	
Average Loan Size (USD million)	\$40	\$10	
Average Grant Size (USD million)	\$10	\$10	

Percent Grant Funding	18%	43%	
Total Number of Projects	17	17	
Weighted Mean Interest Rate	2.00%	0.75%	No data
Weighted Mean Maturity (years)	20.0	29.5	No data
Weighted Mean Grace Period (years)	5.0	10.0	No data
Weighted Mean Loan Concessional	26.84%*	51.67%**	No data

Serbia

Region: Europe & Central Asia	Lending status: IBRD (2000-2007, IDA)		Income level: Upper middle income
	China	World Bank	Private Sector
Portfolio Concessional	18.41%	22.25%	
Total Funding (USD million)	\$1,940	\$6,230	
Average Loan Size (USD million)	\$320	\$160	
Average Grant Size (USD million)	<\$5	-	
Percent Grant Funding	<1%	0%	
Total Number of Projects	9	39	
Weighted Mean Interest Rate	2.81%	2.33%	5.87%
Weighted Mean Maturity (years)	16.9	18.1	7.0
Weighted Mean Grace Period (years)	5.3	6.1	6.0
Weighted Mean Loan Concessional	18.20%	22.25%	0.00%

Sri Lanka

Region: South Asia	Lending status: IBRD		Income level: Lower middle income
	China	World Bank	Private Sector
Portfolio Concessional	11.88%	45.56%**	
Total Funding (USD million)	\$12,680	\$4,130	
Average Loan Size (USD million)	\$280	\$90	
Average Grant Size (USD million)	\$10	\$90	
Percent Grant Funding	1%	12%	
Total Number of Projects	63	47	
Weighted Mean Interest Rate	3.81%	1.11%	4.69%
Weighted Mean Maturity (years)	18.8	19.9	9.8
Weighted Mean Grace Period (years)	4.3	8.3	5.4
Weighted Mean Loan Concessional	10.94%	37.84%**	1.61%

Tonga

Region: East Asia & Pacific	Lending status: IDA		Income level: Upper middle income
	China	World Bank	Private Sector
Portfolio Concessional	42.83%**	82.77%**	
Total Funding (USD million)	\$340	\$140	
Average Loan Size (USD million)	\$70	\$10	
Average Grant Size (USD million)	<\$5	\$10	
Percent Grant Funding	18%	64%	
Total Number of Projects	22	16	
Weighted Mean Interest Rate	2.02%	0.75%	3.17%
Weighted Mean Maturity (years)	19.8	29.5	10.3
Weighted Mean Grace Period (years)	9.7	10.0	0.0
Weighted Mean Loan Concessional	30.39%*	51.65%**	8.04%

Uganda

Region: Sub-Saharan Africa	Lending status: IDA		Income level: Low income
	China	World Bank	Private Sector
Portfolio Concessional	37.08%**	58.23%**	
Total Funding (USD million)	\$1,450	\$6,990	
Average Loan Size (USD million)	\$140	\$90	
Average Grant Size (USD million)	\$10	\$220	
Percent Grant Funding	14%	16%	
Total Number of Projects	46	69	
Weighted Mean Interest Rate	2.00%	0.73%	7.47%
Weighted Mean Maturity (years)	20.0	28.9	7.9
Weighted Mean Grace Period (years)	5.0	9.3	2.7
Weighted Mean Loan Concessional	26.87%*	50.51%**	0.00%

Uzbekistan			
Region: Europe & Central Asia	Lending status: Blend (2000-2001, IDA only)		Income level: Lower middle income
	China	World Bank	Private Sector
Portfolio Concessional	18.54%	32.79%*	
Total Funding (USD million)	\$3,020	\$1,870	
Average Loan Size (USD million)	\$140	\$80	
Average Grant Size (USD million)	\$10	<\$5	
Percent Grant Funding	2%	<1%	
Total Number of Projects	28	24	
Weighted Mean Interest Rate	2.99%	1.66%	4.01%
Weighted Mean Maturity (years)	17.3	20.7	8.3
Weighted Mean Grace Period (years)	4.2	6.4	1.5
Weighted Mean Loan Concessional	17.16%	32.75%*	4.13%
Zambia			
Region: Sub-Saharan Africa	Lending status: IDA		Income level: Lower middle income
	China	World Bank	Private Sector
Portfolio Concessional	29.06%*	56.43%**	
Total Funding (USD million)	\$3,690	\$2,470	
Average Loan Size (USD million)	\$210	\$50	
Average Grant Size (USD million)	\$10	\$60	
Percent Grant Funding	7%	10%	
Total Number of Projects	47	51	
Weighted Mean Interest Rate	2.00%	0.75%	6.38%
Weighted Mean Maturity (years)	15.2	29.5	11.9
Weighted Mean Grace Period (years)	5.5	9.8	8.3
Weighted Mean Loan Concessional	23.56%	51.48%**	0.00%

*meets OECD-DAC concessional threshold (25%), **meets World-Bank IMF concessional threshold (35%)