

Between State and Market:  
China's Development Banking in Comparative Perspective

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**Abstract**

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In recent decades, China has been massively financing infrastructure projects around the world, building highways, railways, bridges, power plants and ports both domestically and overseas. Conventional wisdom sees this infrastructure boom as a typical story of state-led development, which is to a large extent true, but there is also a “market” aspect of the story that has often been overlooked. Through examining the agencies, i.e. China’s policy banks that capitalize these projects, this dissertation explores the incentives and rationale behind China’s infrastructure investment, discusses the state-market relations reflected in the banks’ operating models, and presents an alternative means of

development finance that is peculiar to China and differs from what has been practiced by industrialized countries.

The dissertation consists of three essays, focusing respectively on the fund-raising, domestic lending, and international lending of China's policy banks, and specifically, the China Development Bank (CDB), which is also the world's largest development bank. Comparing China's policy banks to their overseas counterparts as well as to their own past, the research comes to the conclusion that China's development finance is surprisingly market-based. This does not mean an absent role of the state; rather, it shows that market means can be used to achieve state goals and that the state and the market are mutually constitutive. The CDB has departed from traditional means of infrastructure finance, in which the state plays a direct role of fiscal allocation. Instead, it demonstrates an alternative, indirect role of the state, i.e. enhancing projects' creditworthiness and thereby allowing market mechanism to function. This "state-supported, market-based" model enables the financing of infrastructure projects that are neither affordable by fiscal revenue nor attractive to market capital, and provides a prescription to a long-lasting problem facing the developing world, i.e. how to finance infrastructure when neither "the state" nor "the market" can offer sufficient capital.

## Table of Contents

<b>State Actors, Market Games: Credit Guarantees and the Funding of China Development Bank</b>	1
Introduction.....	2
I. Literature review and research methods.....	4
II. Typology of policy-bank funding .....	8
III. Three phases of credit support .....	13
IV. Conclusion: understanding state-market relations in China.....	23
References.....	26
<b>From Spending to Lending: China Development Bank and the Creation of an Infrastructure Financing Market</b>	34
Introduction.....	35
I. Literature review and research methods.....	36
II. Typology of infrastructure finance and the China Model .....	38
III. Historical analysis: creating an infrastructure financing market.....	43
IV. Replicating the CDB model: provincial variations .....	50
V. The moral hazard of the infrastructure financing market.....	60
VI. Conclusion and policy implications .....	64
References.....	66
<b>Official Aid or Export Credit: China's Policy Banks and the Reshaping of Development Finance</b>	72
Introduction.....	73
I. Literature review and research methods.....	75
II. Estimating China's development finance using the OECD definition.....	79

III.	Why using non-concessional loans for development finance?.....	94
IV.	Conclusion: policy banks and the Chinese-style development finance.....	112
	References.....	114
<b>Appendix</b>	.....	120

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**State Actors, Market Games:  
Credit Guarantees and the Funding of China Development Bank**

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[Abstract]

China Development Bank (CDB), the world's largest development bank, has gained its international reputation by lending massively both inside and outside China, financing highways, airports, power plants, and various other industrial and infrastructure projects. At first glance this seems a typical story of state-led development model, i.e. the state channels preferential capital to selected industries, thereby allowing large-scale, policy-oriented investments to take place. But in fact, CDB raises most of its funds from the capital market (about 65% of the bank's total liabilities). How can CDB afford loaning mostly to the usually long-term and low-profit public projects if its funding is directed by the profit-driven market incentives? What does CDB's fund-raising mechanism reflect about state-market relations in China? The answers, this paper argues, lie in the state's credit guarantee for CDB bonds. Receiving credit ratings as high as government bonds, CDB supplements fiscal spending, channels capital to strategic industries, and what is more, creates a bond market of which the bank itself is a dominant player. Using first-hand quantitative data, historical documents and interviews, and comparing the CDB to its counterparts in Japan and Germany, this paper details how China nurtures a market where state actors play market games.

[Keywords]

Development Bank; Fund-raising; Credit Guarantee; Bond Market; Financial Institution; China

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## Introduction

This paper attempts to characterize state-market relations in China by examining the fund-raising mechanism of the China Development Bank (CDB), China's largest policy bank. In the past decade, the CDB gained its international reputation by lending massively both inside and outside China, financing highways, airports, power plants and various other industrial and infrastructure projects. In 2015, the CDB disbursed \$127.4 billion on-balance sheet foreign-currency loans. This portion alone is more than twice as large as the total disbursement of loans, grants, equity investments, and guarantees of the World Bank Group (WB, 2015), and this does not include the 2150 billion Renminbi loans (equaling more than \$300 billion) that the CDB disbursed within China (CDB, 2016).

At first glance, this seems a typical story of state-led development model, i.e. the state channels preferential capital to selected projects, thereby allowing large-scale, policy-oriented investment to take place. Given that the CDB lends largely to public projects, it is "natural" to assume that the bank receives capital from a "public source", i.e., fiscal revenue or state-subsidized funds at a below-market rate. Nonetheless, the CDB's funding mechanism is surprisingly market-oriented. It raises most of its funds (about 65 % of its total liabilities, see Table 1) from capital markets through bond auctions, and has become one of China's largest bond issuers. This raises the questions, if the CDB's fund-raising process is mostly driven by profit-oriented market incentives, how can it afford investing largely in long-term, large-scale public projects? What does the CDB's fund-raising mechanism reflect about aspects of state-market relations in China?

The answer to the first question, this paper argues, lies in the state's credit guarantee for CDB bonds, i.e., the state has granted CDB bonds a credit level equal to China's government bonds. This institutional favor has turned CDB bonds into one of the most popular securities in China's interbank bond market. With a sovereign bond rating, the CDB is able to supplement fiscal spending, finance infrastructure and strategic industries, and what is more, create a bond market in which a dominant player is the bank itself. An examination on the formation of this market provides answers to the second question. Founded in an era of fiscal shortage, the CDB has been rejecting the practice of direct credit allocation by the state and made great efforts to develop a funding mechanism where the market, instead of the state, determines the price and volume of its input capital.

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But this process of financialization does not imply a declined role of the state. Rather, the state plays a crucial role in credit enhancement. As the paper will show in detail below, this “state-guaranteed, market-based” funding mechanism demonstrates a growing market of state actors.

Using first-hand quantitative data, historical documents, and interviews, this paper (1) presents the fund-raising mechanism of the CDB and examines how it differs from its overseas counterparts and its own past, (2) explains how and why such a mechanism was created, and (3) discusses what it reflects about aspects of state-market relations in China.

This paper makes three contributions. First, it reveals a counterintuitive fact about China’s development finance that the main funding mechanism is surprisingly market-based. Second, it extends the financialization literature by applying it to the funding of public financial agencies. Third, it provides an answer to a long-lasting question regarding development, i.e., to what extent should the state be involved in the finance of infrastructure. The CDB’s experience shows that when state fiscal capacity is weak and capital market is underdeveloped, development financing is still possible.

The sections below will be structured as follows. The first section provides a literature review and presents the research methods. The second section takes a horizontal perspective, comparing how policy banks in Japan, Germany, and China raise funds. This section aims to position China’s policy banks in a broader spectrum, and present the two financing mechanisms (of Japan and of Germany) that China has intentionally modelled itself upon. The third section takes a longitudinal perspective and examines how and why the fund-raising mechanism of the CDB has evolved throughout its course of development. The fourth section discusses what this analysis on the CDB’s capitalization reflects about aspects of state-market relations in China.

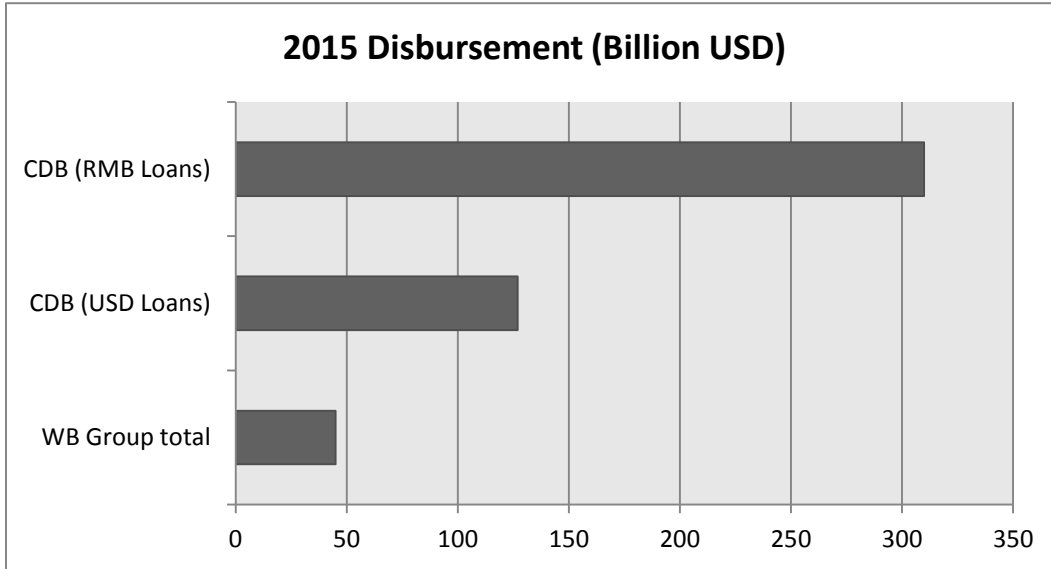


Figure 1 CDB's 2015 disbursement in comparison with World Bank; sources: China Development Bank homepage, World Bank Group Annual Report 2015

	Amount (billion RMB)	Percentage
<b>Debt Securities Issued (bonds)</b>	7301.4	63.2%
<b>Borrowings from government and financial institutions</b>	355.3	3.1%
<b>Due to other banks and customers (deposits)</b>	3360.4	30.0%
<b>Other</b>	532.4	4.6%
<b>Total Liabilities</b>	11549.4	100%

Table 1 CDB's liabilities, 2015; source: China Development Bank Annual Report 2015

## I. Literature review and research methods

### Theorizing the funding of national development banks

National development banks (NDBs) have dual identities. On the one hand, they serve public-oriented goals as government organs, and on the other, they pursue economic interests as financial agencies. Starting in the nineteenth century, special credit agencies had facilitated the industrialization of continental Europe and Japan through long-term

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finance (Cameron, 1953; Diamond 1957; Gerschenkron 1962; Hu, 1984; Yasuda, 1993; de Aghion, 1998). In the twentieth century, NDBs continued to play a crucial role, financing economic growth in Asia and Latin America. Literatures on the developmental state and state capitalism have captured the relationship between the state and the NDBs as well as the latter's role in economic development. Through long-term finance undertaken by NDBs, the state channeled preferential capital to selected industries, allowing rapid industrialization to take place (Johnson, 1982; Amsden, 1989; Wade, 1990; Haggard et al., 1993; Woo-cumings, 1999; Solís, 2004; von Mettenheim, 2010; Studwell, 2013; Musacchio and Lazzarini, 2014; Thurbon; 2016).

There are two issues with this statist perspective of understanding NDBs. First, development banks are viewed mainly as a tool of the state to achieve industrial and development goals. The market-oriented aspect of these banks, which constructs the other half of their identity, is not highlighted. Second, and related to the first issue, the literature focuses mostly on the capital-output side of the banks, i.e., how they disburse loans, whereas the capital-input side of the story, i.e., how they raise funds, is largely undervalued. Nonetheless, for a financial agency, the cost of funding determines the cost of lending. Without understanding the former it would be impossible to understand the latter.

In fact, many have pointed out that the CDB is more than a sheer financing arm of the state. Contrary to common knowledge of NDBs, the CDB's capitalization is rather market-driven and its lending is not subsidized by the state (Downs, 2011; Sanderson and Fortsythe, 2012; Chen, 2012; Brütigam and Gallagher, 2014; Xu and Carey 2015; Chen, 2018; Chin and Gallagher, forthcoming). This raises a question: how should we understand the market-ness of the CDB, and specifically, its bond-based funding mechanism?

One interpretation is that despite its market-led façade, the CDB's funding process is essentially "statist". Sanderson and Fortsythe (2012) see it as a "unique mechanism that hides the true amount of central government liabilities"; the CDB was able to sell plenty of bonds because the government guarantee has turned them into "free returns" for commercial banks, and the yields of these bonds do not reflect the true risk level of the bank. This is to a large extent true, but there can be different interpretations of such a government guarantee. CDB bonds enjoy sovereign credibility granted by the state's banking regulatory body, which increases the attractiveness of the bonds to market

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investors, and yet the bank does not pay any “guarantee fee” to the state. The guarantee therefore is a form of implicit state subsidy for the bank to reduce its fund-raising cost. In some literature, government guarantees are often treated as a type of subsidy that can be quantified in calculating the cost of infrastructure finance (see for example Irwin, 2007; Brandao & Saraiva, 2008; Takashima et al., 2010). Compared to commercial banks that do not receive such subsidies, the CDB is indeed statist.

However, the CDB is a public financial agency mandated to achieve policy-driven, public-oriented objectives. The funding of this type of semi-governmental, semi-commercial financial agencies has always been a mixture of state and market capital. Common sources include borrowings from the government budget, state-coordinated savings, and bond issues (Kim, 2003; Estache, 2010; Park, 2011; Croce and Yermo, 2013; CDB, 2013; Humphrey, 2015). Compared to the other NDBs, the CDB’s funding is actually quite market-driven. If China were to use typical state-led measures, it could have simply channeled cheap capital from savings without even adopting an auction-based bond-issuing mechanism. Comparing the CDB’s funding process to that of its overseas counterparts as well as to its own past, this paper adds nuance to the discussion of government guarantee by showing that it is more than just state subsidy.

As Section III shows in detail, government guarantees for CDB bonds are a result of minimizing, as opposed to increasing state involvement in the bank’s funding mechanism. The CDB spent an entire decade (1998-2008) trying to utilize the market in order to make more efficient use of capital and thereby better fulfill state goals. This could be understood using the analytical framework of the financialization literature. Financialization refers to “the increasing role of financial motives, financial markets, financial actors and financial institutions in the operation of the domestic and international economies” (Epstein, 2005). The process occurs not only with corporations and households, but also with the state. Various financial innovations and techniques have been used to pursue state objectives, namely, the management of sovereign debts, where market tools are employed to enhance state capacity. In this process, state interest and market interest are not necessarily contradictory; rather, they converge (Hardie, 2011; Trampusch, 2015; Wang, 2015; Livne and Yonay, 2016; Lagna, 2016; Fastenrath et. al., 2017). Wang (2015) views the CDB’s bond issuance as a statist route of credit generation, i.e., bond issuance allows the bank to generate more capital from the market, and serves the interests of its shareholder, the state.

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The paper agrees that the CDB uses market means to raise funds to serve the interest of state, though not necessarily the commercial interest of its four state shareholders, namely, Ministry of Finance, Central Huijin (a sovereign wealth fund), Buttonwood Investment Platform owned by the State Administration of Foreign Exchange, and the National Council for Social Security Fund. The four organs are not much involved in the CDB's operating model and do not have much authority directly affecting the profitability of the bank (see Chen, 2012; CDB, 2013; Chen, 2018). Buttonwood Investment Platform, for example, became a shareholder of the CDB in 2015 in order to increase the bank's capital adequacy ratio and thereby enable more lending in the long run (Liu and Jiang, 2015). As the paper elaborates below, the CDB's funding reforms served the state's interest to finance infrastructure and industrial projects sufficiently and efficiently.

Based on this strand of literature, the paper sees the CDB bond-based funding mechanism as a result of the financialization of the state. In this process, market tools are used to achieve state goals and state actors function in a market-driven manner. Government guarantees, therefore, should not be simply viewed as a subsidy that distorts the market's pricing mechanism. Rather, it is a pivot that laid the foundation for the creation of a market, i.e., China's interbank bond market, with which the CDB was able to deviate from a funding mechanism where the state directly allocated credits. During this transformation, the state's coordination of capital decreased, but the role of the state stays crucial – government guarantees enable bond transactions between the CDB and the Chinese commercial banks. The CDB's bond issuance, therefore, does not reflect a declining role of the state, but a growing market with state actors.

### **Research methods**

To understand the CDB's funding, this paper will first present a comparative analysis on the CDB and two of its overseas counterparts, the Development Bank of Japan and the Credit Institute for Reconstruction (Germany). The reason for providing such a comparison is twofold. First, it gives a general sense of where the CDB is positioned among the world's leading NDBs in terms of funding sources. Second and more importantly, it presents the institutions that the CDB has been intentionally modelled on. In other words, the main goal of this comparison is not to explain the variation among the three cases, though such a variation will be examined. Rather, it is to use the Japanese and the German mechanisms to understand how the CDB evolved in different time periods, as well as how China developed a financial system, in addition to its fiscal

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system, that allowed the financing of large-volume infrastructure and industrial projects essential for development.

To demonstrate the CDB's fund-raising mechanism, this paper uses two types of data: quantitative data from published historical and current documents that capture the amount, composition, and cost of CDB capital, and interview data with people working in development banking and related fields. The author conducted 57 interviews in China, 12 interviews in Japan, and 18 interviews in Germany, interviewing people who are working or used to work at development banks, other related financial agencies and organizations, enterprises that are clients of the banks, and government organs engaged in development finance. Interviews with the China Development Bank were conducted with CDB bankers of various ages, administrative levels, departments and branches. But due to the fact that the CDB has been extremely cautious in discussing its operations in public, the majority of interviews were off the record and very few are cited in this paper. When an interviewee refused to be quoted, the author fact checked with sources that are openly accessible, such as media reports, autobiographies, and officially documented speeches, and cited the latter.

## **II. Typology of policy-bank funding**

### **The Japanese and German models of policy-bank funding**

Many countries have special credit agencies that receive state support to finance economic activities. Some aim at facilitating industrialization while others promote exports. An NDB is a type of special credit agency that focuses particularly on achieving industrialization, urbanization, poverty-reduction, and other development goals. These credit agencies are special because they do not function merely for the purpose of profit maximization, and serve more policy-driven, public-oriented goals. They are called different names in different countries, e.g., Fiscal Investment Loan Program agencies in Japan, promotional banks in Germany, and policy banks in China. For the convenience of discussion, they are all referred as policy banks in this paper.

Fund-raising has always been a critical issue faced by these banks. On the one hand, they lend to large-scale public projects, and therefore have to access sufficient low-cost funds such as fiscal revenue in order to maintain a balance. On the other hand, they are banks. Receiving cheap capital from the state would result in unfair competition with other banks and discourage them from prudent banking. Thus the funding sources of policy banks are often a mixture of both state and market capital, such as borrowings from

government, bond issues, and deposits. For example, the National Economic and Social Development Bank of Brazil receives most of its funds from the government budget, whereas the Development Bank of Southern Africa relies mostly on bonds (Humphrey, 2015).

As a relatively young NDB, the CDB did a great deal of research and consulted international specialists from multiple development banks in order to find the most suitable means of fund-raising. When designing its funding mechanism, the bank looked particularly into the experience of the worlds’ two leading NDBs, i.e., Development Bank of Japan (DBJ, *nihon seisaku tōshi ginkō*) and Credit Institute for Reconstruction (KfW, *Kreditanstalt für Wiederaufbau*) of Germany (CDB, 2013). Both banks were established shortly after the end of the Second World War to restore national economy with the assistance of Marshal Plan capital. After decades of development, both have developed their own unique fund-raising mechanisms. Relatively, the Japanese one is more state-coordinated whereas the German one is more market-driven. The CDB has moved back and forth between the two models in different time periods. To understand the funding of the CDB, it is necessary to first examine the funding of its Japanese and German counterparts.

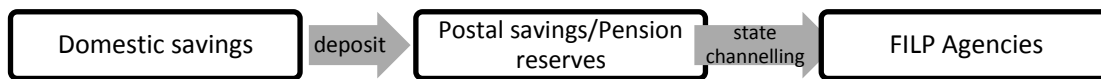


Figure 2 The Japanese Model

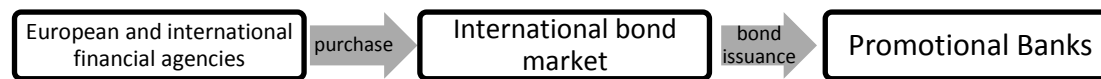


Figure 3 The German Model

Japan has over a hundred credit agencies mandated to serve policy-financing goals. They are named Fiscal Investment Loan Program (FILP) Agencies (*zaitō kikan*) because they are financed by FILP, a program coordinated by the Ministry of Finance (MOF) that channels capital from postal savings and pension reserves to public projects. Before 2001, FILP funds were directly managed by the Trust Fund Bureau (*Shikin Ūnyōbu*) of MOF, and lent low-cost capital to FILP agencies such as the DBJ.<sup>1</sup> In the late 1990s, major reforms were launched to curb direct capital flow from postal savings to FILP. As a result

<sup>1</sup> The bank was called Japan Development Bank (JDB, *nihon kaihatsu ginkō*) until a merger in 1999.

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both the Trust Fund Bureau and FILP agencies have to issue bonds and raise capital on the market since 2001. Nevertheless, the proportion of self-raised FILP-agency bonds has still been limited, the agencies still borrow largely from the state-coordinated FILP capital, and the program still sells plenty of bonds to postal savings (Park, 2011).<sup>2</sup>

There are two important features of this Japanese model (especially before 2001). One is that the origin of capital lies in domestic savings, and the other is that the state plays a crucial role in determining the amount, cost and destination of the capital flow. This differs starkly from the situation in Germany, where the source of capital is the international capital market and the state involves itself less directly in the KfW's fund-raising process.

Germany also has credit agencies that lie in-between the state and the market. Both at federal and at state levels are promotional banks (*förderbanken*) that pursue public objectives rather than commercial interest. The largest German promotional bank is the KfW, which is also the largest NDB in Europe. The bank raises most of its funds through bond issuance (over 80%, see Figure 4). These bonds are backed up by an implicit credit guarantee by the federal government, i.e. not calculated as government debt but guaranteed by federal credit. This guarantee is stated in the KfW law (KfW, 2013). As a result of such state support, KfW bonds are rated as highly as Germany's government bonds by international rating agencies. The high rating ensures the attractiveness of KfW bonds on the market. For investors, KfW bonds are considered safe, long-term investments worthwhile holding. The currency portfolio of KfW bonds is quite diverse, including Euros, US dollars, Australian dollars, Japanese yen, and among other. In 2015, 37% of its total bond issue was in Euro and 45% was in USD (KfW Financial Report, 2015). This means KfW bonds' creditworthiness is acknowledged globally.

In short, the KfW's fund-raising mechanism is rather market-based in that the price and volume of funding are determined by the market. The role played by the German federal government in such a fund-raising process is the offering of guarantee. This contrasts starkly with the Japanese case, in which the state directs cheap capital from given sources to selected financial agencies at given prices.

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<sup>2</sup> For example, in 2015 Fiscal Year the Development Bank of Japan received 634 billion yen from FILP and 395 billion yen from self-issued bonds. [http://www.dbj.jp/pdf/CSR\\_disclo/2016/01.pdf](http://www.dbj.jp/pdf/CSR_disclo/2016/01.pdf).

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### A hybrid Chinese practice

In China there are three policy banks, the CDB, the Export-Import Bank of China, and the Agricultural Development Bank of China, all founded in 1994 to take over the less profitable public projects from four national banks that had major inefficiency problems. In other words, the establishment of the policy banks was part of a major financial reform that aimed at streamlining the entire banking sector and differentiating policy banking from commercial banking.

As Section III shows in detail, in the early 1990s China lacked a well-developed capital market and had barely any experience in policy-banking. Thus, the CDB looked around the globe to find fund-raising mechanisms favorable for its own needs (CDB, 2013), and eventually adopted a method that integrated both the savings-based Japanese model and the bond-based German model. Such a mixture is not only shown numerically by the fact the CDB raises some capital from bonds issues and some from deposits of customers and other banks, and that the proportion of its bond issuance is between that of Japan and Germany (Figure 4). What is more important is the categorical difference that the CDB has integrated the essence of both financial systems.

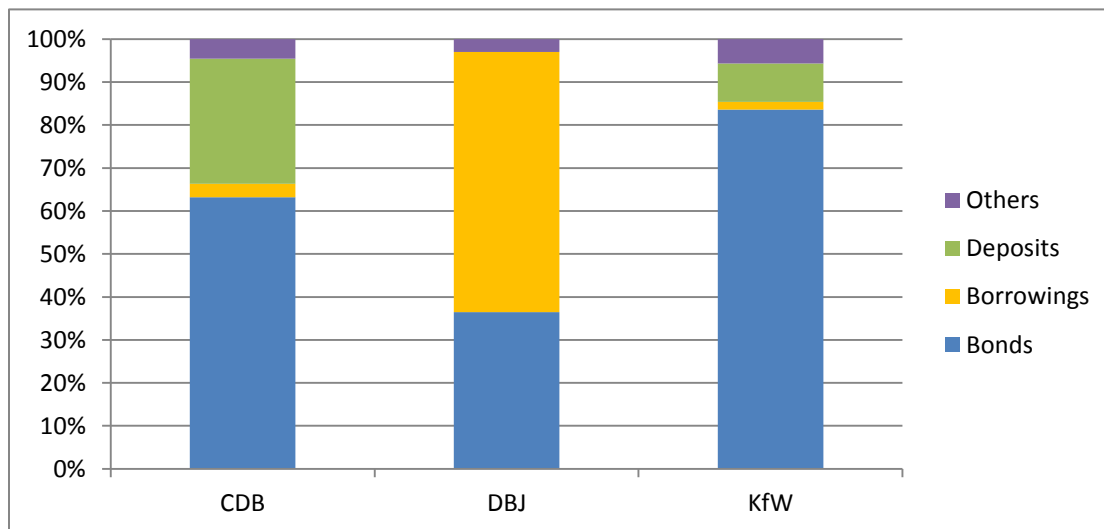


Figure 4 The Funding structures of CDB, DBJ and KfW by FY2015; Sources: CDB Annual Report 2015, DBJ Annual Report 2016, KfW Financial Report 2015<sup>3</sup>

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<sup>3</sup> Borrowings of DBJ refer to capital borrowed from FILP; borrowings of CDB and KfW are funds borrowed from government organs.

In a nut shell, the hybrid Chinese practice includes two parts, to issue bonds in the capital market, and to use state guarantees to make domestic savers purchase them. On the one hand, the CDB’s capital is raised mostly through bond auctions in the market. The major proportion of its total liabilities is bond issues, the rest being customers’ deposits and government borrowings. Like KfW bonds, CDB bonds attract bond purchasers because they are supported by the state’s credit guarantee. CDB bonds enjoy “zero risk-weighting” granted by the China Banking Regulatory Commission. This means that the risks that investors bear for holding CDB bonds is zero—they are as safe as government bonds and that investors do not have to set capital against them. As a result of this state support, international credit-rating agencies such as Moody’s and Standard & Poor’s rate CDB bonds as high as China’s government bonds.

However, unlike KfW bonds which are sold mostly to international investors, CDB bonds are sold mostly to domestic investors, especially to the largest state-owned commercial banks.<sup>4</sup> What this means is that the origin of CDB capital is domestic savings. This resembles FILP, which draws capital originally from domestic savings. In other words, although the CDB uses market means to raises funds, i.e., issuing bonds via auctions, the *de facto* capital flow takes place mainly between state actors in a domestic setting, i.e., from state-owned commercial banks to state-owned policy banks.



Figure 5 The Chinese Model

The reason the CDB issues limited amounts of bonds in the international capital market is not simply that it does less overseas business than the KfW, which has a domestic-versus-international business ratio of roughly 2:1 (KfW Annual Report, 2015). The CDB’s outstanding balance of renminbi loans by the end of 2015 was 7085 billion yuan (approximately \$1100 billion), whereas the balance of its foreign-currency loans was 248 billion dollar, over 20% the size of its domestic loans (Almanac of China’s Finance and Banking, 2015). The banks’ annual loan disbursement in non-renminbi

<sup>4</sup> Official data of CDB bond purchasers are available at China Central Depository & Clearing Co.,Ltd., <http://www.chinabond.com.cn/Channel/19012917>.

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currency is roughly 20-25% the size of its disbursement in renminbi.<sup>5</sup> Nonetheless, the proportion of the CDB's overseas bond issues over domestic bond issues is very low. In 2015, CDB issued only 10 billion in USD and 5 billion in Euro, less than 10% the size of its renminbi bond issues, which was 1136 billion yuan (approximately \$176 billion). The CDB releases very little information about the funding sources of its foreign-currency loans (as opposed to renminbi loans). Limited data from CDB annual reports and interviews with CDB bankers show that the bank borrows dollars from government organs (e.g. the central bank) to finance many of its overseas projects instead of relying mostly on overseas bond issues (Chen, 2018). These data imply that even taking into consideration that the CDB does less business abroad, the proportion of its overseas bond issues is still very limited. For the bank, selling bonds to Chinese financial agencies is the dominant means of capitalization and domestic savings is the key source to its funding.

### **III. Three phases of credit support**

How and why has the CDB adopted such a hybrid fund-raising mechanism grounded on the bond-based, market-oriented German model and the savings-based, state-coordinated Japanese model? In fact, the level of state involvement in the CDB's funding process has varied throughout its history. The table below summarizes the role of the state and the market in the Chinese, Japanese, and German models as discussed above, and places these three in a spectrum where the two extreme scenarios are fiscal allocation, of which the state does everything, and full commercialization, of which the market does everything. All five models are potential means to raise funds for public projects. As the paper elaborates more below, policy makers had drastically different views about how the CDB should raise its funds, and the bank had significant reforms and restructuring on its funding mechanism over its course of development.

This section focuses on understanding both the structural factors and the agency factors that drove the CDB's funding reforms. The bank was founded at a time when China had a large fiscal shortage and the central government could not provide sufficient capital to finance infrastructure and industrial projects. Nor did China then have a developed capital market where the CDB could raise funds. This structural background produced two diverging views of development finance. Liberal policy makers believed that state coordination was inefficient, and intended to use market tools to the maximum extent to

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<sup>5</sup> Neither the CDB and nor the Almanac of China's Finance and Banking (ACFB) consistently release yearly-based volume of loan disbursement. Most recent data from ACFB is in 2013.

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finance public projects. Conservatives, on the other hand, highlighted the “policy” mandate of the CDB, hoping to safeguard its source of capital by using state coordination. The CDB’s current funding mechanism, therefore, was a result of the battle between these two driving forces.

The over two decades of CDB history can be divided into three phases in terms of the evolution of its fund-raising mechanism. The first phase (1994-1998) was the most state-controlled, during which the entire process of the CDB’s fund raising was coordinated by China’s central bank. In the second phase (1998-2008), the CDB gained relative autonomy. Policy makers intended to institutionalize an auction-based fund-raising mechanism and reduce state coordination. By the end of this phase, the state almost withdrew its involvement in the CDB’s funding process completely, even planning to end its credit guarantee for CDB bonds. After the global financial crisis (2008-present), the “policy-oriented” aspect of the bank was re-valued, and as a result the state’s credit guarantee was maintained and formalized after several years of debate.

The table below presents five models of financing public projects that China has employed or considered employing. As the discussion below will show in detail, the CDB has consistently rejected the idea of relying fully on state fiscal allocation (M1), and made strenuous efforts to create a market for the capitalization of public projects. But this does not imply an advocacy for a funding mechanism completely free of state involvement (M5). The high percentage of bond issuance in the CDB’s total liabilities does not reflect a declining role of the state, but a growing market with state actors (M3).

Models		Role of the state	Role of the market
M1	Fiscal allocation	Raise taxes; determine the price, volume, and destination of capital	None
M2	Japanese Model	Determine the price, volume, and destination of capital	Attract deposits
M3	Chinese Model	Offer sovereign guarantee to attract domestic bond investors	Determine the price, volume, and destination of capital; attract deposits
M4	German Model	Offer sovereign guarantee to attract global bond investors	Determine the price, volume, and direction of capital
M5	Full commercialization	None	Attract market capital; determine the price, volume, and destination of capital

Table 2 Typology of public-project finance

### 1994-1998: apportioning bonds

In the first phase, the state’s involvement in the CDB’s fund-raising process was the greatest. The CDB, as well as the other two policy banks’ funding was coordinated by the People’s Bank of China (PBOC), China’s central bank. All three policy banks used a method named “administratively apportioned bond issuance (*xingzheng paigou fazhai*)” to raise funds, i.e., the PBOC required domestic financial agencies such as commercial banks, urban credit cooperatives, and the Postal Savings and Remittance Bureau to purchase policy-bank bonds. Each purchaser was assigned a quota and was required to buy their amount at a given price. That is to say, the PBOC determined the volume, yield, and purchasers of these bonds.

In 1994, the CDB apportioned 65 billion yuan in bonds—45.5 billion three-year bonds with a yield of 12.5% and 19.5 billion five-year bonds with a yield of 14%. From 1994 to 1998, the CDB issued 494.2 billion yuan in bonds, among which 56.23% were apportioned to the Postal Savings and 40.46% to commercial banks (CDB, 2013, pp. 33). These numbers show that in the first four years the CDB’s fund-raising mechanism resembled its Japanese counterpart’s before 2001. Both drew capital from savings and

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both were coordinated by a state organ. The difference was that in Japan the coordinator was the Ministry of Finance (MOF) and the savings was channeled directly to an account regulated by the ministry, whereas in China it was the central bank that channeled the capital via apportionment.

A major problem with this “administrative apportionment” was that the yield of CDB bonds did not reflect real market supply and demand. The yield set up by the PBOC was usually high, causing much financial burden for the CDB. Moreover, the apportioned bonds could not be resold on a secondary bond market. This decreased the liquidity of assets of bond investors, and as a result they became reluctant to purchase CDB bonds. “In the first few years since the establishment of the CDB, we had to visit the central bank and negotiate with the investors every time before we issue bonds. It was hard,” said a source from the CDB.<sup>6</sup>

Why then did the CDB choose such a fund-raising method at its starting point? The answer was quite straightforward—there were no other options. The first generation CDB bankers did a great deal of research on foreign policy banks, especially the Japanese and German ones, but found that the three main sources where the CDB could possibly draw funds from—fiscal revenue, postal savings, and the bond market—were all short of funds in the early 1990s. The central government’s fiscal income was largely insufficient because throughout the 1980s a major portion of fiscal revenue was allowed to stay at local level in order to incentivize local economic growth. In fact, the birth of the CDB in the early 1990s was partly a result of such a lack of state capacity to finance infrastructure. The original hope was that this financial agency could be a solution to inefficient use of fiscal credits.

The fiscal shortage was so large that the central government had to revive the government-bond market, which was shut down in-between 1958-1980, to raise capital for fiscal spending. However, the newly reborn bond market was not fully developed in the 1990s, at least not yet one that could offer financial infrastructure in support for a bond issuance without state’s apportionment. In fact, as will be discussed in detail below, it was the CDB rather than MOF that institutionalized an auction-based bond-issuing mechanism in China’s bond market.

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<sup>6</sup> Personal Communication, China Development Bank, November 3, 2016, Beijing.

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The Postal Savings and Remittance Bureau was established to mobilize nationwide savings no earlier than March 1986 (Almanac of China's Finance and Banking, 1987). Thus there was not enough postal savings to finance the policy banks eight years later – in 1994 the CDB alone issued 75.8 billion renminbi bonds whereas the total deposit at the Postal Savings was only 99.4 billion (Almanac of China's Finance and Banking, 1995). The PBOC hence had to mobilize commercial banks to purchase CDB bonds at their reluctance. The “administratively apportioned bond issuance”, therefore, was an *ad hoc* method that enabled the CDB to raise funds in its first four years, when neither “the state” nor “the market” was capable of providing capital for infrastructure projects.

In the long run, nevertheless, CDB policy makers realized the importance of exploring diverse fund-raising methods and building a bond market that could allow the bank to raise capital without the PBOC’s administrative allocation. Thus in its first few years the CDB made an attempt to equip itself as a qualified bond issuer and move towards the KfW model. It applied to a few major international credit rating agencies to be rated—Moody’s in 1994 and Nippon Investor’s Service (NIS) and Standard & Poor’s in 1995, and was rated as high as China’s sovereign credit: A3 from Moody’s, BBB from Standard & Poor’s, and AA- from NIS. On February 29, 1996, the CDB launched its first ever overseas bond issuance in Tokyo, and issued 30 billion Yen Samurai bonds, with 10-year maturity and 4% yield. A year later, it issued \$330 million Yankee bonds in the US, with 10-year maturity and 7.413% yield (CDB, 2013). These attempts were preparatory steps to diversify the CDB’s capital source portfolio. But compared to the CDB’s domestic issuance (118 billion yuan in 1998), its overseas issuance were rather limited in volume (Almanac of China's Finance and Banking, 1998).

### **1998-2008: playing the “real” market game**

The decade after the Asian Financial Crisis was critical for China and for the CDB, since the crisis alerted Chinese policy makers to the importance of building a well-regulated financial market. China began to utilize international banking standards and streamline its banking sector. In April 1998, Chen Yuan, a former deputy governor of the PBOC, was appointed the new governor of the CDB. Chen Yuan is the son of Chen Yun, a communist economist and one of China’s most influential leaders. The powerful new governor initiated a series of reforms to turn the CDB into a “real” bank from a mere credit allocator of the state. The reforms aimed to reduce the level of state involvement in both the CDB’s capital-input and capital-output side, and allow the bank to have more autonomy in making both its funding and lending decisions.

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Many raised concerns over the idea of withdrawing state support for the CDB's fund-raising mechanism. MOF, responsible for coordinating public spending, was concerned that the cost for issuing bonds via auctions would be even higher than that of administrative apportionment, thereby exacerbating the fiscal shortage. Some CDB officials worried that the asset quality of the bank per se was not good enough to attract investors (Sun, 2009, pp. 226-227). Administrative apportionment, after all, was a safe income guarantee for a bank mandated to finance infrastructure. But the concerns and opposition from conservative policy makers did not stop Chen from reforming the bank. "These concerns all make sense...but as a bank, we must follow market rules and banking regulations. Marketization is inevitable," said Chen (Chen, 2012, pp. 120).

On 2 September 1998, the CDB launched its first "marketized bond issuance", "marketized" (*shichanghua*) meaning that the central bank no longer determined the bond's yield or assign financial agencies to purchase them. The previous state-coordinated apportionment was replaced by a market-based auction among the CDB and many financial agencies, including state-owned commercial banks. During the auction, bidders offered their favorable level of volume and yield of bonds, and those who offered lower got the bonds. The auction succeeded – only part of the bidders got the bonds.

In 1999, the CDB moved a step further and created China's first floating-rate bond. Before that, the yield rates of CDB bonds were fixed. Such fixed rates could be a risk for bond investors, namely commercial banks, whose capital inflow was determined by the interest rate of deposit. This was because during the years of holding the bonds, deposit interest rates might fluctuate. A floating-rate bond whose yield could move up and down accordingly around a certain benchmark rate would be more ideal for those investors. Nonetheless, back then there was no market "benchmark", be it CHIBOR<sup>7</sup> or a particular government bond rate, which was so widely acknowledged and could be considered a reference for the floating rate of CDB bonds. Neither China's interbank market nor the government-bond market was sufficiently developed. The CDB therefore went ahead and set up the first ever reference of floating-rate bond in China's bond market, which was the PBOC's 1-year term deposit rate. This technical innovation lowered the risks for CDB bond purchasers.

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<sup>7</sup> China's Interbank Offer Rate.

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The CDB was a pioneer in practicing a market-based bond auction and creating China's first floating-rate bond, and perhaps even more, a founding member of China's interbank bond market. Before the CDB's innovative attempts, China's bond market was dominated by government bonds, issued by MOF through administratively apportioned underwriting. "Assigned" investors were reluctant to purchase government bonds, as they were with apportioned CDB bonds. Some MOF officials made attempts to "marketize" the issuance of government bond, but in the early 1990s the majority of people believed that "apportionment" was a good enough method and there was no need to change. "Through their lens, this kind of view made sense, because they had never seen what a market looked like," said Gao Jian, then the Deputy Director of MOF's Department of Government Debt Administration and a reformer who advocated the marketization of bond issuance (Gao, 2017). "We must transit to a new mechanism, auction," said Gao in 1993 (Gao, 1995, pp. 107). The Ministry held China's first bond auction in 1996, and issued 3-year, 7-year, and 10-year government bonds, but such practice did not continue (Gao, 2009, pp. 107; Sun, 2009, pp. 238). Two years later, the transition from apportioning to auction occurred in the newly-established interbank bond market.<sup>8</sup> The auction was led by the CDB, where Gao was invited by Chen Yuan to serve as the CDB's chief economist and Director of its Treasury Department since October 1998.

The auction-based bond issuance was institutionalized and soon followed up by other issuers. MOF and the Export-Import Bank of China adopted bond auction in 1999, and the Agriculture Development Bank followed in 2004 (CDB, 2013, pp. 99). Furthermore, market-raised bonds could be resold, which generated bond sales and energized the bond market. All these factors contributed to the CDB's prominent role in China's bond market. Even today when financial agencies or corporations issue bonds, CDB's bonds are still considered a benchmark.

But the above is not to say that after the 1998 reform the CDB's fund-raising mechanism was completely free of state participation. Although the PBOC liberalized the yield and the amount of CDB bond issues, it still had the authority to regulate the list of bidders who could join the auction to purchase CDB bonds. In the first few years after its first marketized fund-raising attempt, the CDB was still partially supplemented by capital raised through administrative apportionment, mostly from Postal Savings. This was a favor given by the PBOC to assist the CDB's transition from administrative

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<sup>8</sup> China's Interbank Bond Market was established in 1997.

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apportionment to market-based bond issuance. This raises the question, without the PBOC's coordination, could the CDB attract sufficient capital from the market just by its own institutional and technical innovations? In other words, was the CDB's own creditworthiness high enough to entirely substitute the effect of state coordination?

In 2004, state's credit guarantee was institutionally formalized to replace the withdrawing role of the PBOC in the CDB's bond issuance. The China Banking Regulatory Commission (CBRC) issued a document entitled "*the Regulations for Capital Adequacy of Commercial Banks*," which stated that commercial banks hold zero risk weighting when holding policy bank bonds (CBRC, 2004). This incentivized commercial banks to hold CDB bonds as safe, long-term assets. It is important to note that the concept of "risk weighting" was adopted from overseas—Basel II, is a set of international banking regulations put forth by the Basel Committee on Bank Supervision was published in June 2004 and in the same year the term was formally used in official documents in China. The concept was localized and used to enhance the creditworthiness of policy bank bonds.

In the same decade, the CDB adopted many other international practices to improve its appraising, lending, and auditing processes, turning towards a bank that functions with rigid market-standards and building its own credibility in accordance with international banking regulations. The bank's nonperforming loan ratio dropped rapidly within the decade, and Chen's reform was highly regarded. The financial reform also gave the CDB political power – it was able to challenge the authority of the ministries that coordinate the economy, and turn down projects that did not meet banking appraisal standards. This market-oriented reform reached its peak in January 2007, when then Prime Minister Wen Jiabao announced in the National Conference on Financial Work that the CDB should "fully practice commercial banking, become self-managed, and be responsible for its own risks as well as profits and losses" (Wen, 2007). This on the one hand was a result of the CDB's ambitious march towards "marketization". On the other hand, the CDB was becoming too powerful under the leadership of Chen, irritating commercial banks that practiced "normal" commercial banking without state support (Yang, 2008; Lao, 2014). Turning the CDB into a "normal" commercial bank would deprive it of some of its privileges and limit its power.

In December 2008, the CDB was turned into a joint stock company, with MOF and Central Huijin, a sovereign wealth fund being its largest shareholders. This was said to be

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a preparatory step for the listing of the CDB on China's stock markets (Chen, 2010). All the evidence show that the CDB was functioning more like a "bank" and that the state was planning to end its involvement in the CDB's funding process and let the bank play its own game in the bond market.

### **2008-present: returning to policy banking**

Nonetheless, the state's attempt to entirely withdraw its credit support for the CDB caused turbulence in the bond market. When the CDB held bond auctions in 2007, the demand for CDB bonds turned out to have dropped dramatically, because commercial banks were concerned that those bonds would lose their zero risk weighting when the CDB became a "commercial bank". The demand for CDB bonds further dropped after the CDB became a joint stock company in 2008. This consequently led to a question for policy debate—without the state's credit guarantee, can the CDB raise sufficient capital to finance its long-term, public-purpose projects?

In December 2008, the China Banking Regulatory Commission promised that the CDB would maintain its zero risk weighting status until the end of 2010. Its status afterwards remained to be determined (CBRC, 2008). This temporary support gave the CDB a moment to breathe. The CDB's "commercialization" continued, but only on its capital-output side: CDB Capital and CDB Securities, two subsidiaries of the bank, were established in 2009 and 2010 respectively to undertake more financialized, market-oriented business.

What changed the narrative of CDB commercialization was the 2008 global financial crisis, after which the Chinese government launched a "4 trillion yuan stimulus package" to revitalize domestic economy. The CDB was the major financial agency assisting the government to restore economic growth by investing massively in infrastructure and major industries. With such state obligations, it was impossible for the CDB to lose state support on its capital-input side; otherwise it would be difficult for the bank to maintain a capital balance. The CDB officials also made continuous effort to the CBRC to request permanent state guarantee. From 2011 to 2013, the CBRC assigned the CDB temporary zero risk weighting year by year, and in 2013 extended the expiration day to the end of 2015. This credit guarantee scheme was permanently formalized in 2015 by a document issued by the CBRC (CDB, 2015b), meaning that the CDB will enjoy state's credit guarantee forever.

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The formalization of state guarantees marked a more thorough adoption of the KfW's fund-raising mechanism, one that is based on the credit support of the federal government of Germany. "It took me a decade to persuade the Chinese officials to have the state guarantee the CDB bonds", said Hans Reich, former President of the KfW who has been a member of the CDB's International Advisory Council since 1998, "State guarantee is one of the most important things for a development bank that serves public goals".<sup>9</sup> But the borrowed German model was "localized" in two aspects, as was also discussed earlier in this paper. First, the creditworthiness of the CDB bonds is guaranteed by a CBRC document and effective within the Chinese financial market, whereas KfW bonds are guaranteed by law and acknowledged globally. Second, and also a consequence of the first point, the very origin of the CDB's capital source is domestic savings, whereas investors of KfW bonds are internationally diversified.

The Japanese "deposit" model, which explains most of the remaining of the CDB's liabilities, has significantly increased its presence after the crisis. The reason was twofold. On the capital-supply side, the central bank lowered benchmark deposit interest rate multiple times in 2008 to stimulate growth after the crisis. Monetary policy loosened liquidity in the market and allowed the CDB to raise more capital. On the capital-demand side, the State Council's 4-trillion stimulus package incentivized banks, regardless of policy or commercial, to increase their lending volume. In order to enable larger amount of domestic lending, the CDB decided to diversify its capital pool and enlarge the size of its deposits, and launched in 2008 a project named "Doubling Deposit Program". By the end of the year, the CDB had a deposit volume totaling 360 billion yuan, increased 128% compared to previous year. Starting in 2012, the deposit pool was further expanded, including "policy deposits (*zhengcexing cunkuan*)" such as the Social Security Fund, Housing Provident Fund, and fiscal deposits. The total deposit volume in that year exceeded 900 billion yuan, accounting for 11% of the CDB's capital sources (CDB, 2013, pp. 347-348). Now deposits from banks and corporations are the bank's second largest source of capital.

Who deposits in the CDB and why does the bank need them? Unlike commercial banks, the CDB does not accept deposits from individuals. Most of its depositors are either financial agencies that have business collaboration with the bank, or its clients who deposit in the bank after borrowing loans from it (Fu, 2014). As shown in the CDB's

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<sup>9</sup> Personal Communication (phone), Hans Reich, November 22, 2016, Beijing.

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Annual Report, the interest rate on deposits from financial agencies such as commercial banks was 3.03%, and that from the CDB's clients was only 0.79%. The yield on bond issues, however, was 4.16% (CDB, 2015a). That is to say, the cost of raising capital from the bond market was considerably higher than that of drawing from direct deposits. In fact, the yield rate of the former was determined mostly by the supply-and-demand of China's bond market, whereas the latter, China's deposit interest rate, has not been fully liberalized. There was hence much more room to cut fund-raising costs from deposits than from bonds. This was especially important in the post-crisis era when there was an increasing demand for CDB loans to finance policy-oriented projects which normally come with a low profit rate. "The interest-rate liberalization of bond market occurred earlier than that of deposits. For most of the CDB's funding, the price is determined by the market. This made fund-raising hard for us," said a source from the CDB (Fu, 2014). Hu Huaibang, the CDB's new governor coming from a major commercial bank and succeeding Chen Yuan in 2013, announced in his first year in office that the CDB should search every opportunity to increase the size of deposits (Fu, 2014). However, unlike long-term bonds which may have a maturity of over five years, deposits are relatively short-term and can be withdrawn. This does not match the CDB's capital-output needs, which are mostly long-term loans. Therefore, deposits can be supplementary to the bond-issuing mechanism but cannot replace the latter entirely.

To summarize, the decade after the 2008 financial crisis demonstrates reinforcement of the state's role in the CDB's funding process. The failed attempt to withdraw state guarantees shows that a funding mechanism completely free of state involvement turned out to be infeasible for a policy bank. The increased proportion of deposits in the CDB's liabilities presents a rise of the Japanese model in the bank's fund-raising mechanism, and implies that when the CDB has to finance more policy-oriented projects, it cannot rely solely on market funds.

#### **IV. Conclusion: understanding state-market relations in China**

What does the CDB's fund-raising mechanism reflect about state-market relations in China? It is not difficult to demonstrate that the state is to a large extent involved in the functioning of the market, especially given the fact that China had a Soviet-style planned economy up until the end of the 1970s and there are still legacy elements to the current Chinese economy. The question is to what degree and how.

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China has a “strong state”, which is the common knowledge, but the history of the CDB shows a “weak” side of it. With existing fiscal system in the early 1990s, the central government was not able to mobilize sufficient capital to finance infrastructure. It was due to this weakness of fiscal capacity that policy makers sought market methods. They could have chosen to adopt a more state-coordinated saving-based model, which was not uncommon for the capitalization of public financial agencies, but they did not. For liberal reformers, strong state coordination was a synonym for inefficiency, and it did not make sense to adopt something that they wanted to move away from, i.e. state apportionment. As a result, the CDB ended up developing a funding mechanism that was not only more commercialized than its own past, but also relatively market-driven in the family of NDBs. Therefore, the sovereign guarantee for CDB bonds, though a subsidy, is a result of minimizing state involvement rather than enlarging it.

With this funding mechanism, the state no longer determines the cost, volume, or destination of CDB capital – these jobs were mostly handed over to the interbank bond market. As discussed above, the CDB is by far a major player of the market and the market owes its birth to the bank, but the market does have its own autonomy and demonstrates a supply-demand mechanism. When the CDB bonds were about to lose the state’s credit support in 2007, investors responded immediately with drastically declining purchasing demand. When the CDB attempted to search for “cheap capital” after 2008, it chose to seek alternative sources, i.e. enlarging the volume of deposits. The bond market was an established market with its own rules, and the CDB could not simply lower the cost of bond issues despite its powerful status in the market.

On the other hand, the drop in demand in 2007 demonstrates the fact that this funding mechanism is grounded in state support, and that the market is not free of state involvement. It is such a guarantee that incentivizes investors and allows bond transactions between the CDB and commercial banks to take place. The policy favor given by China’s banking regulatory body is effective and acknowledged mostly within China and among the Chinese financial agencies. In other words, the state and the market are mutually constitutive, and state and market incentives converge. Compared to the international bond market where the KfW raises most of its bonds, China’s interbank bond market appears less “free”, because the game of the latter is played mostly by domestic actors and many of the major players are state-owned. But to build an interbank bond market from scratch, these agencies were what China had to begin with. Before the

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late 1990s, China did not even have a market that could allow banks to trade with each other.

The interbank bond market is not the only market that functions in such a way. This research has applicability to several other “fields” of China’s financial market, e.g. the securities market, where state-owned enterprises, banks, venture capital, and other state-related entities pursue profit-oriented interests and function in a market-driven manner. The research can also be extended to other financial agencies with dual identities, such as sovereign wealth funds, pension reserves, postal savings, export credit agencies, just to name a few. Like the policy banks, these financial agencies pursue state interest on the one hand and market interest on the other. What is more, the paper provides an answer to a puzzle of development faced by the developing world. Many developing countries have neither a “capable state” that can raise sufficient fiscal revenue for infrastructure and industrial projects, nor a “developed market” that can draw capital from commercial investors for these projects. There has thus been much debate regarding whether these countries should strengthen state capacity or let market take the lead. The research on the CDB presents a view of state-market relations that could be a possible alternative for countries seeking to industrialize and grow.

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**From Spending to Lending:  
China Development Bank and the Creation of an Infrastructure  
Financing Market**

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[Abstract]

In recent decades, China has been massively building infrastructure works both domestically and overseas. Using a mixed-method analysis, this paper examines how China finances infrastructure projects nationwide by focusing on the China Development Bank (CDB), the world's largest development bank by lending volume. Comparing horizontal data from 31 provincial regions and examining the institutional evolution of China's public-finance system, this paper characterizes a unique financing mechanism of the CDB, which lies in-between the more state-led fiscal spending and the more market-led project finance. The paper argues that the CDB has assumed a partial fiscal role of China's subnational governments, helping them raise capital by creating a market-based financing model grounded on fiscal guarantees.

[Keywords]

Infrastructure Finance; Development Bank; Fiscal Capacity; China

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## Introduction

“If you want to prosper, build roads first,” said China’s President Xi Jinping at the Memorandum signing ceremony of the Asian Infrastructure Investment Bank (AIIB). In the past decades, investment in infrastructure has become a major engine that drives China’s economic development, allowing rapid urbanization and industrialization to take place. What is more, this infrastructure-driven growth model has been “globalizing” through the establishment of a series of institutions such as the AIIB, the New Development Bank, and the Belt and Road Initiative.

Throughout history, large-scale infrastructure finance by a rising power is not an unfamiliar story, but most of the stories happened to industrialized economies. As a developing country, how has China managed to finance the large bulk of long-term, large-scale infrastructure works both at home and abroad? How does China’s infrastructure finance differ from existing practices of public finance, and what do such differences mean to the rest of the world?

This paper examines China’s infrastructure finance by looking at the domestic lending of China Development Bank (CDB), the world’s largest development bank that has been providing huge volumes of capital to infrastructure projects both inside and outside China. Based on a historical analysis on the evolution of China’s public finance system and a statistical analysis of thirty-one mainland Chinese provinces, the paper finds that China’s infrastructure finance is neither entirely state-led nor fully market-driven. The CDB has assumed a partial fiscal role of China’s subnational governments, helping them raise capital by creating a market-based financing model grounded on government guarantees. Such a “state-supported, market-based” lending mechanism enabled the financing of a large amount of infrastructure projects when fiscal revenue was insufficient and market capital was unavailable.

The contribution of this paper is threefold. First, it reveals the nuts and bolts of China’s infrastructure-driven development model in the past two decades through the lens of policy banks, i.e. the agencies that provided capital and made lending decisions but were largely overlooked in the existing literature. Second, by explaining the domestic origin of China’s infrastructure finance, it sheds lights on understanding the rapidly expanding overseas infrastructure business of China, which has drawn much policy and scholarly debate especially after the launch of the Belt and Road Initiative. Third, it contributes to

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the literatures on comparative political economy, development studies, and state-market relations by exploring the role of the state in financing development.

The sections below will be structured as follows. The first section provides a literature review and lays out the research methods. The second section presents a typology of infrastructure finance and locates the CDB's lending model within this spectrum. The third section explains the origin of the CDB model through a historical analysis, explaining how, with the government's guarantee, the CDB has created an infrastructure financing market to supplement fiscal shortage. The fourth section examines the domestic variation of the CDB model using data from thirty-one Chinese provinces. The fifth section examines an intrinsic moral hazard of this model, and is followed up by a conclusion section that discusses the policy implications.

## **I. Literature review and research methods**

### **Literature review: theorizing infrastructure finance**

The financing of infrastructure involves a dilemma. On the one hand, infrastructure projects are public goods, and therefore not necessarily attractive to commercial investors that pursue profit maximization. On the other hand, state-coordinated public funds (e.g. fiscal revenue) that do not merely seek to profit are not always sufficient. A great deal of research hence aims to answer these real-world questions: how should urban infrastructure projects be financed, and how to solve the commercial-versus-public interest dilemma in public-good financing, especially in developing countries that lack adequate fiscal funding (Kim, 2003; Estache, 2010; Croce and Yermo, 2013). One solution is to establish development banks, or broadly speaking, long-term credit agencies that specialize in infrastructure finance. These semi-governmental, semi-commercial financial agencies usually have access to lower-cost capital and can therefore afford financing projects with lower returns (Park, 2011; Humphrey, 2015).

In most of the literature, long-term credit agencies are viewed as financing arms of the state and serve to achieve publicly oriented goals such as industrialization, urbanization, and economic development (Cameron, 1953; Diamond 1957; Gerschenkron 1962; Hu, 1984; Yasuda, 1993; Haggard et al., 1993; de Aghion, 1998; Woo-cumings, 1999; von Mettenheim, 2010; Musacchio and Lazzarini, 2014). This strand of literature captures the statist aspect of the national development banks, which are usually state-owned, semi-bureaucratic agencies with coordinating power, and could explain the CDB's close relationship with government organs in facilitating infrastructure finance across China.

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However, the literature fails to explain the “market-ness” of these actors, which constructs the other half of their identity. Despite their publicly oriented goals, development banks are financial agencies that have to at least maintain a financial balance. Without understanding this aspect, we cannot explain why, as the paper will elaborate below, the CDB has adopted a project-finance model of infrastructure finance. In fact, many have pointed out that the CDB is more than a sheer financing arm of the state. Contrary to common knowledge, the CDB’s capitalization is relatively market-driven and its lending is not particularly cheap (Downs, 2011; Sanderson and Fortsythe, 2012; Chen, 2012; Brütigam and Gallagher, 2014; Xu and Carey; Chen, 2018; Chin and Gallagher, forthcoming).

This paper sees the CDB’s lending mechanism as part of the financialization of China’s public finance system. Financialization refers to “the increasing role of financial motives, financial markets, financial actors and financial institutions in the operation of the domestic and international economies” (Epstein, 2005). The process occurs not only to corporations and households, but also to the state. The “financialization of state” literature examines the state’s increasing use of financial intermediaries to achieve its goals, and focuses on analyzing the scenarios where state interest and market interest converge, such as the management of sovereign debts (Hardie, 2011; Trampusch, 2015; Wang, 2015; Livne and Yonay, 2016; Lagna, 2016; Fastenrath et. al., 2017). Along the same line, this paper details how the CDB transformed China’s main infrastructure-finance mechanism from fiscal spending to bank lending, creating an infrastructure financing market where the state uses market means to achieve public goals.

### **Research Methods**

The research uses both qualitative and quantitative analyses to understand the CDB’s infrastructure finance model. Both analyses rely on primary sources, first-hand official data, interviews, and archival documents. The historical analysis draws materials from various official publications of the CDB as well as official documents released by Chinese government organs. It also draws information from interviews with people working at the headquarters as well as the provincial branches of the bank. The quantitative analysis uses officially published data from China Statistical Yearbook, Almanac of China's Finance and Banking, and China Development Bank Almanac.

The quantitative analysis unveils the general pattern of the CDB’s lending in various provinces. But due to the fact that the bank only began to release its provincial-level data

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in the most recent three years, the analysis cannot trace its lending pattern at an earlier age. This shortage is supplemented by the qualitative research, which charts the CDB's lending mechanism through a historical lens and examines how the bank has played a role in the larger picture of China's fiscal system.

## **II. Typology of infrastructure finance and the China Model**

### **Typology of Infrastructure Finance**

Infrastructure is a public good that serves the public interest. As a result of this nature, the financing of infrastructure projects often involves a certain degree of state participation and is not entirely profit-driven. In order to understand how the CDB finances projects, the paper first introduces four common means of infrastructure finance, namely, fiscal spending, project finance, bond issuance, and development-bank loans, where the state plays different roles in the funding processes.

The first method, and probably the most commonly used one is fiscal spending. The rationale behind this method is straightforward – infrastructure is a public good and therefore should be financed by public fund. Government raises capital through taxation, and spends it on projects that serve public objectives. There is no expectation on profit returning from the project directly.

Project finance, on the contrary, is profit-driven. Finnerty (1996) defines it as *“the raising of funds on a limited-recourse or nonrecourse basis to finance an economically separable capital investment project in which the providers of the funds look primarily to the cash flow from the project as the source of funds to service their loans and provide the return of and a return on their equity invested in the project”*

To reiterate this in plain language, in project finance a loan to an infrastructure project is an investment. The investor (e.g. a bank) lends to a project with an expectation that it will generate cash flow and repay the interests. If the project per se does not seem likely to generate sufficient cash flow, the investor may request that the project sponsor offer certain forms of collateral (e.g. a land property) ahead of time, so that if it really turns out not to pay off, the investor can seize the collateral. The sponsor of the project (e.g. a government's department of transport) is not liable for the loss of the project (aka non-recourse). The liability belongs to a special-purpose vehicle (SPV), i.e. a legal entity established by the sponsor for the purpose of borrowing funds from various financial investors, including banks. The SPV is the borrower in a legal sense. It exists to specifically serve the functioning of the project and dissolves after the project ends. That

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is to say, if the project defaults, the lender/investor cannot take their money back from the sponsor. They can only take properties associated with the SPV. This means of project finance is accompanied by risks. Therefore, only projects with sufficiently high profitability are attractive to investors.

**Method I: Fiscal spending**



FIGURE 6

**Method II: Project finance**

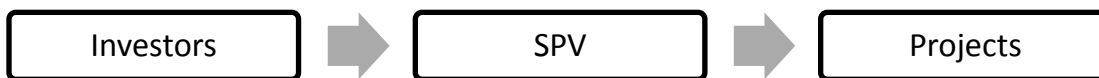


FIGURE 7

The two methods are used for financing different types of infrastructure. The first method does not have much restriction on the project side. Tax revenue can be spent on a project that serves pure social purpose but does not generate profits, e.g. constructing a road between two villages (not a highway that collects tolls). The second method requires the project to profit. A power plant can be financed using this method because it produces electricity and consequently receives capital as users pay fees.

Both methods have shortcomings. A problem with the first method is low economic efficiency – fiscal revenue is simply spent without any immediate capital return. Theoretically, infrastructure would facilitate more economic activities and thereby increase GDP and fiscal income. But in reality this does not necessarily happen all the time, and if it does, may take a long time. As a result, a government may encounter capital shortage if its fiscal revenue fails to meet its expenditure. A problem with the second method is that it can be too commercial. Investors only fund projects with high profitability. Projects with considerable social effect but limited commercial prospects are not likely to attract market capital.

There are several ways to solve this “social versus commercial” dilemma of infrastructure finance. One of them is to increase government’s fiscal capacity. If a government has sufficient capital, it is capable of financing whatever projects without a budget constraint. One way is to levy more tax, but this may result in grievances and is therefore cautiously practiced. Another way is to issue government bonds, including sovereign bonds issued

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by central or federal government and sub-national bonds issued by state, provincial, or municipal governments. When doing so, governments are essentially borrowing capital from the market.

A fourth method is to have semi-public financial agencies, instead of market investors, to finance public projects. Many multilateral as well as national development banks were established to finance public projects. Those agencies usually have access to cheaper source of capital and can therefore afford financing less profitable projects. Common capital sources of development banks include borrowings from government, state-channeled low-cost savings, and state guaranteed bond issues. To a certain extent national development banks can be seen as agents of the state that serve the goal of financing development. Nonetheless, despite their public mandates, they still require a minimum level of profitability. After all, they are not government organs and have to at least maintain a financial balance.

**Method III: government bonds**

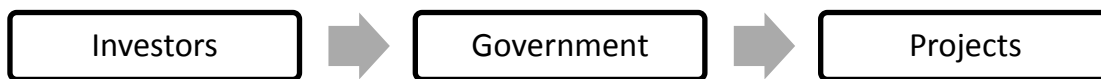


FIGURE 8

**Method IV: semi-public financial agencies**



FIGURE 9

The first method is the most state-led, as the decision of whether to fund a project is made entirely by a government organ and the source of capital is government funds. Project finance, on the contrary, is the most market-driven, since lending decisions are made by market investors and the source of capital is the market. Government-bond issuing and development-bank lending lie in-between these two extremes.

	Role of the state	Role of the market
Fiscal spending	Provide capital; decide whether to fund	None
Government bond issuance	Provide capital; decide whether to fund	Lend to government
Development bank lending	The bank offers capital and decides whether to fund	
Project finance	May offer collaterals or guarantees if sponsor is a government organ	Provide capital; decide whether to fund

TABLE 3

### **CDB and its government-backed project finance**

China's infrastructure finance in the past two decades mostly resembles the fourth method, i.e. development bank lending. The main bank that offers infrastructure loans is the China Development Bank (CDB). Established in 1994 with the mandate to finance "infrastructure, basic industry, and pillar industries," the CDB lends mostly to two types of projects – public projects and corporate projects. The former are loans to government-sponsored infrastructure projects such as highways, railways, bridges, power plants, harbors, etc. The latter are loans to firms conducting business in mining, energy, and new emerging industries, and among others. As the bank's annual report ( Figure 10) shows, major destinations of CDB loans includes railway, highway, public infrastructure, electric power, urban renewal, petroleum and petrol chemical, strategic emerging industries, and other projects. These two types of lending are not unrelated. Financing an infrastructure project, e.g. a highway, could benefit the financing a corporate project, e.g. automobile manufacturing, because infrastructure enables the transportation of products and services. With its large capital pool, the bank is able to finance both types of projects at a time. In terms of geographical distribution, most CDB loans stay within China, despite the bank's international reputation. The CDB's outstanding balance of renminbi loans by the end of 2015 was 7085 billion yuan (approximately \$1100 billion), whereas the balance of its foreign-currency loans (foreign-bound) was only 248 billion dollar (Almanac of China's Finance and Banking, 2015).

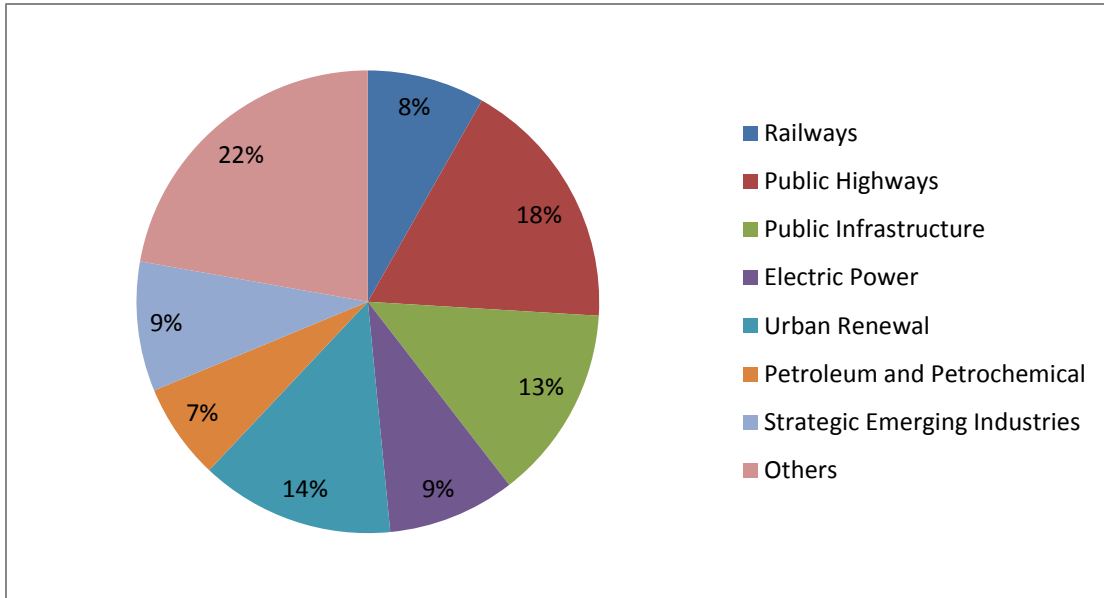
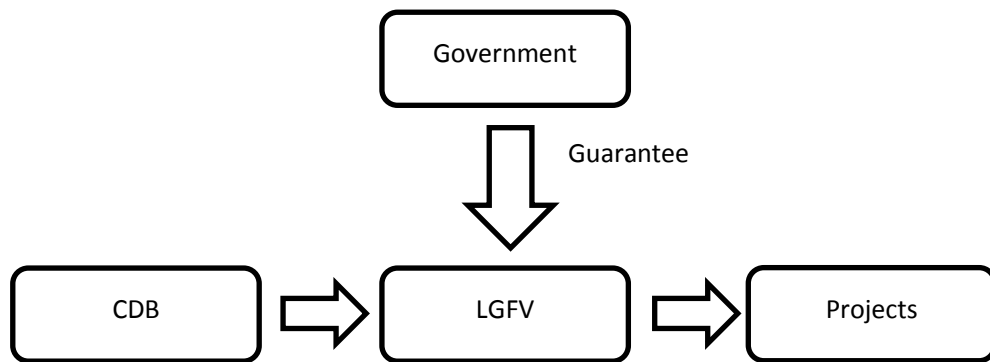


FIGURE 10 OUTSTANDING LOAN BALANCE: BREAKDOWN BY INDUSTRY, CDB ANNUAL REPORT 2015

The CDB finances infrastructure projects mainly in the form of project finance, but with a variation. Unlike standard project finance which capital is channeled through an SPV, the CDB finances projects through local government financial vehicles (LGFV), i.e. legal entities established by local governments to raise capital. A common name of an LGFV is “XXX Municipal Construction Investment Company,” which is seen quite often across China. What differentiates an SPV from an LGFV is that the former is project-specific. It dissolves after completion of a project and handles only one project at a time. The latter is more like a corporation. It does not dissolve after the project ends and can undertake more than one project at a time. This difference is important in that it indicates two sources of credibility. When lending to an SPV, a bank appraises the credibility of the project and the SPV only serves a legal and procedural purpose. But when lending to a continuously existing LGFV, the bank appraises the credibility of the LGFV in addition to that of the project. Some LGFVs are independent “corporations” with their own balance sheets, whereas others rely heavily on the financial support of the local government that owns them. In the latter case, what the bank essentially appraises is the fiscal capacity of the local government.



GRAPH 1

The reason for using LGFVs instead of SPVs is twofold. First, infrastructure projects are often commercially nonviable. If applying standard project finance, many socially important but economically unprofitable projects would not meet banks' appraisal standards. LGFV projects are to a certain extent supported by the credibility of local governments, and are therefore capable of financing many "commercially nonviable" projects important for local development. Second, as will be discussed more below, for a long time China's local governments were not allowed to hold debts. Creating LGFVs enabled governments that lacked sufficient fiscal revenue to raise funds without directly having more liabilities. The CDB's government-backed project finance is thus a means of infrastructure finance that reconciles project finance and fiscal spending.

In this lending mechanism, the role of the state is not to directly allocate fiscal revenue. Rather, it enhances the credibility of projects through providing collateral or guarantee. Land is a common form of collateral, especially when there is an expectation of rising land prices. If physical collateral is insufficient, a government (usually a fiscal department) can sign an agreement with the LGFV called "Agreement on Repayment of Debt Difference," which states that if the LGFV fails to repay the loans, the government will make up the difference with its fiscal revenue. In other words, a core component of the CDB's lending mechanism is local governments' credit enhancement, which plays a role in making commercially nonviable projects viable.

### III. Historical analysis: creating an infrastructure financing market

How did the CDB develop such a lending mechanism that integrates project finance with government guarantees? The quotation below demonstrates the rationale behind this institutional design:

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*“Let’s say a local government needs a billion to build a road, but can only afford 0.1 billion each year from its fiscal budget. Using the traditional method, the building process would take 10 years, and the road stays under construction throughout the decade. Now we (CDB) provide a one-billion loan to the government, and road construction can start right away. The road facilitates economic activities, generates growth, increase fiscal revenue, and repays our loans,”* said former CDB deputy governor Liu Kegou, one of the early designers of the CDB’s lending mechanism.<sup>10</sup>

The CDB was founded in an era when there was a need to build infrastructure but “the state” could not offer sufficient fiscal capital and “the market” did not have the apparatus to conduct project finance. The bank’s government-backed project-finance mechanism, therefore, was a financial innovation that served to achieve the state’s objectives of urbanization and industrialization. China’s infrastructure financing market, to a large extent, owes its existence to the CDB. This section traces the evolution of the CDB’s lending mechanism with a focus on the shift made in 1998, a critical historical juncture when the bank launched a series of reforms to switch China’s main infrastructure-finance mechanism from spending to lending.

### **Before 1998: a legacy of fiscal spending**

Since the Reform and Opening-up in 1978, China’s central government had delegated substantial fiscal autonomy to local governments, aiming to incentivize economic vitality from the bottom-up. As a result, the rural economy developed quickly throughout the 1980s, but the financing of urbanization and industrialization faced great challenges due to the fiscal shortage of the central government. In order to build infrastructure works, the foundation of urbanization, the Chinese government employed two solutions: one was to increase fiscal revenue, and the other was to use the limited revenue more efficiently. To increase tax revenue, China launched a major tax reform and created a “tax-sharing system” in 1993. What this fiscal system meant in a nut shell was that sub-national governments had to turn in a larger proportion of their revenue to the central government.

The second method was directly associated with the birth of the CDB. In 1988, China established six state-owned specialized investment corporations (*Guoyou zhuanye touzi gongsi*), specializing in fixed-asset investment of six industries, i.e. forestry, agriculture, energy, transportation, raw materials, and mechatronics and textile machinery. They aimed to turn fiscal spending from non-profit to profit-generating. In other words, the

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<sup>10</sup> Personal communication, September 5, 2017, Beijing.

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corporations were supposed to use fiscal revenue efficiently by investing selectively in promising projects and make profit out of them, rather than simply spending the money raised from taxation, as was the case before 1988. By doing so, the financing mechanism for infrastructure and industrial projects would transform from fiscal spending to equity investment, which was one step toward marketization. Nonetheless, the investment corporations lacked the incentives and skills to pursue their “profit-generating” goal and had resulted in large volume of debts. In 1994, a part of their debts as well as their personnel was merged into the newly established CDB with the hope that the bank would make marketization happen.

However, in the first few years after its establishment, the CDB functioned mostly like a fiscal arm of the state rather than a “real” bank. This was shown in two aspects. First, the bank’s authority to select projects was largely limited by the State Planning Commission (SPC, *Guojia jihua weiyuanhui*), China’s central planning body that coordinated the national economy.<sup>11</sup> The CDB was basically lending to projects assigned by the SPC.

Second, the bank did not have full autonomy in determining the interest rate of its loans. CDB loans were partially subsidized by the Ministry of Finance (MOF), the ministry in charge of infrastructure finance. A dissection of the CDB’s loan composition could demonstrate this statist characteristic of CDB lending. A CDB loan consisted of two parts, a subsidized soft-loan part and a “normal” hard-loan part. Funds of the soft loan came from the CDB’s registered capital, which was originally from MOF, aka the central government’s fiscal revenue. This soft-loan portion contributed to the “equity,” i.e. the capital base of an infrastructure project, which usually accounted for 5-15% of the project’s total capital (Almanac of China's Finance and Banking, 1995). Funds of the hard loan came from the bank’s self-raised capital. This latter portion was the same as any loan offered by a bank to a borrower. The interest rate of a CDB soft loan, set by the government, was lower than that of a hard loan. The soft-loan interest rate could be as low as 4.68%, whereas the hard-loan interest rate ranged from 8.64% to 14.04%, depending on the length and type of project (Almanac of China's Finance and Banking, 1995). To put it in simple words, soft loans were state-subsidized set-up capital for state-selected projects. The reason for having a soft-loan part was that many projects did not have sufficient “seed capital” to even meet the minimum equity requirement. CDB’s soft loans, therefore, lowered the cost of projects and enabled the launch of many large

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<sup>11</sup> The State Planning Commission later became National Development and Reform Commission.

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projects that were strategically important for the state's development goals. For example, in 1995 the CDB offered a soft loan of \$400 million to the Ling Ao Nuclear Power Plant located in Shenzhen, China (CDB, 2016).

Compared to the traditional method of fiscal spending and to the transitional equity investment of the six specialized corporations, the CDB's soft-plus-hard loan method was more market-oriented in two ways. First, in terms of capital input, CDB loans used the bank's self-raised capital, though not fully, rather than mere fiscal revenue. Second, in terms of capital output, CDB loans were disbursed in the form of bank lending, which must be repaid. However, the institutional legacy of fiscal spending was still visible in that the lending process was largely directed by the SPC and MOF.

### **After 1998: from spending to lending**

1998 was a critical year for China and for the CDB. Experiencing the Asian financial crisis, policy makers in China realized the importance of having "real" financial agencies, ones that were not simply extensions of state organs. In that year, Chen Yuan, a former top central bank official and also the son of China's well-known economic official Chen Yun, was appointed the CDB's new governor. The powerful governor initiated a series of market-oriented reforms, aiming to gain the CDB more authority by adopting new fund-raising, appraising, and auditing standards. Under Chen, the bank began to issue bonds in China's inter-bank bond market and develop its own project-selection criteria.

One major outcome of the reforms was that the bank gained more autonomy from the ministries. In the past, the CDB had to follow ministry command and finance "designated" projects; after the reform, it had the power to turn down the projects that could not meet the bank's appraisal standards. Second and more importantly, the CDB transformed the infrastructure-finance mechanism in China from fiscal spending to bank lending. The ideational shift behind this transformation was that infrastructure projects were not only expected to produce social effects, but also to generate profits and pay back bank loans.

A close examination of the CDB's lending mechanism reveals how a new means of infrastructure finance was created by the bank step by step. As mentioned earlier, when doing project finance, a bank provides loans to a special purpose vehicle, which is owned by a (or more) project sponsor. The sponsor provides basic capital (equity) to jumpstart the project, and writes proposals to appeal to investors in the market, which include policy banks, commercial banks, or any other investors that are interested in the project.

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Investors appraise the project, assess its potential profitability, and make a decision of whether to provide capital.

Back in 1998, the idea of using project finance to fund infrastructure was barely present in China. The CDB thus began to create various components necessary to conduct project finance. The first step was to create project sponsors, i.e. the entity that initiates and owns a project. Most infrastructure projects were initiated by governments, either central or local, but China's Budget Law enacted in 1994 forbade local governments from directly holding debts, which meant that they could not be the borrowers of CDB loans.<sup>12</sup> The CDB thus instructed the governments to set up local government financial vehicles (LGFV), which served as legal entities to borrow loans, issue bonds, or use other market methods to raise funds.

After setting up sponsors, the next step was to raise the "basic capital," or the equity of the project. Usually this portion of capital comes from the equity investment of the project sponsor, and in this case, the LGFV. For example, if a project needs 10 billion, the project sponsor would normally prepare a billion or two "basic capital," and borrows the rest from financial agencies. However, some local governments could not even afford offering 10% capital of the project. Nor could they borrow from banks because China's Commercial Bank Law forbade commercial banks from participating in equity investment. The CDB thus had to provide the equity for the LGFVs through soft loans.

After the basics of a project were set up, the bank practiced its "ordinary" duty, i.e. lending hard loans to the projects managed by LGFVs. A hard loan was based on an appraisal of the profitability of the project, despite that the equity of the project per se was essentially capitalized by the bank's soft loan.

In addition to capital, the CDB also provided professional expertise. Bank officials offered consulting services to government departments, advising on "constructing credibility" of projects. This is an important feature of the CDB that differentiates it from other banks. As mentioned earlier, infrastructure projects are not necessarily commercially viable in the eyes of ordinary commercial investors. To turn them into "bankable" projects, their creditworthiness must be raised. For the CDB, the credibility of projects is something that can be constructed. If the project per se does not generate sufficient cash flow, the local government can offer collateral of various forms, or use its

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<sup>12</sup> The new Budget Law in 2014 allowed local governments to hold debts directly.

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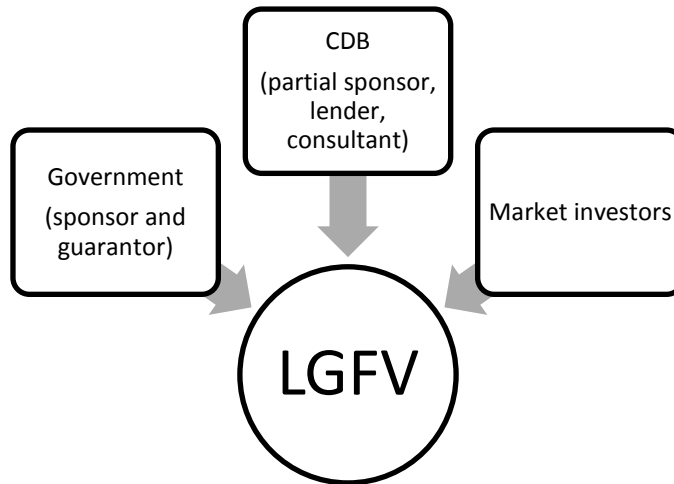
future fiscal or land revenue as guarantees to raise the project's credibility. If these methods still do not work, the bank can group multiple projects together and conduct portfolio financing, using profitable projects to compensate non-profitable ones and thereby lowering risks (Zou, 2015; CDB, 2016; Xu, 2017). That is to say, the CDB not only appraises projects after the project sponsor turns in the proposal, it is actually involved beforehand in the proposal-forming stage, teaching sponsors how to write proposals and make their projects more appealing to the market. All these methods "taught" by the CDB share one commonality, i.e. government should be actively engaged in assisting the credit enhancement of the projects, either through offering guarantees, collaterals, or through coordinating and bundling projects.

A typical case of the CDB's government-backed project finance model was the municipal infrastructure finance of Wuhu, a city in Anhui Province. In 1998, the CDB signed a 10-year, 1.08-billion yuan agreement with Wuhu Construction Co. Ltd., a municipal LGFV. The agreement included 6 municipal construction projects such as highway, water supply, garbage disposal, etc. The bank also financed a key local company, Chery Automobile, which later became a main driving force for Wuhu's GDP growth. This large amount of capital was not a donation from the CDB to Wuhu. It was guaranteed by Wuhu government's fiscal revenue and needed to be repaid.

The CDB has been rather proud of this project package, and named it the "Wuhu Model" (CDB, 2016). The essence of this model is threefold: (1) the CDB collaborates with local government in planning the entire project, also coined "bank-government cooperation (*yin-zheng hezuo*)"; (2) the bank conducted portfolio financing, i.e. financing multiple projects at a time with "bundled loans (*dakun daikuan*)"; (3) the repayment was guaranteed by government. If things went well, the CDB capital would jumpstart growth, increase Wuhu's GDP and fiscal revenue, and allow the government to repay CDB loans it guaranteed. This was indeed what happened. According CDB's official data, the Wuhu model led to significant economic growth in the city. Wuhu's fiscal revenue in 2015 was 47 billion Yuan, almost 26 times its size in 1998; its GDP reached 245.7 billion yuan, 13.6 times its size in 1998.

Whether Wuhu's economic growth was a direct result of the CDB loans was difficult to assess, but it was certain that the CDB's capital support has allowed rapid urbanization to occur in this city. What is more important here is that the Wuhu model appeared in a particular historical moment, when the majority of Chinese local governments lacked

capital to finance infrastructure projects. The CDB’s practice of project finance enabled the governments to use collateral and guarantees to compensate current fiscal shortage. Furthermore, the CDB’s financial innovation nurtured an infrastructure financing market in China, not only in that it created a norm of financing infrastructure grounded in an idea of project finance, but also in that the policy bank’s investment attracted commercial investors to the infrastructure business. For many market lenders, infrastructure projects are not ideal assets because they are long-term, large-scale, and not necessarily profitable. The CDB’s participation is a sign that shows that a considerable portion of risk has already been undertaken by the policy bank, making the investment more appealing for commercial investors. In other words, the CDB played a role in both enriching fiscal capacity of government and creating market for infrastructure investors.



GRAPH 2 THE CREATION OF AN LGFV

Years	Main financing body	Financing method
Before 1988	Ministry of Finance	Fiscal spending
1988-1993	Six Specialized Investment Companies	Equity investment
1994-1998	CDB	Soft loan (subsidized) plus hard loan
1998 onwards	CDB	CDB loans guaranteed by governments

TABLE 4 EVOLUTION OF CHINA’S INFRASTRUCTURE FINANCING MECHANISM

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## IV. Replicating the CDB model: provincial variations

Since 1998, the Wuhu model has been replicated all around China, creating a large infrastructure financing market nationwide. In the same year, the CDB took over the China Investment Bank and its provincial branches,<sup>13</sup> which allowed the financing of projects at provincial and municipal level. However, the same model has been interpreted rather differently in different parts of the country, and the ecosystem of infrastructure financing market varies largely by region. In some provinces, the infrastructure financing market is still strongly state-led. Only those projects guaranteed by government will be financed, and the market is mostly monopolized by the CDB. In other provinces, the infrastructure financing market is diverse and competitive. Local government holds tenders and invites bids, and different financial agencies compete with one another to win projects. Below are quotations of loan managers from two CDB provincial branches.

- Case I: CDB loan manager from a provincial branch in Midwest China

*“Our bank functions mostly like a fiscal bureau. We loan to the LGFVs, which are essentially run by the same group of people sitting in the government office. When we appraise projects, we are essentially appraising the fiscal capacity of the local government rather than that of the project. The collateral is sometimes just the government’s guarantee letters. Our loans have considerable advantages. Compared to commercial banks, our interest rate is lower and our loan volume is larger. The local government definitely favors our loans.”*<sup>14</sup>

- Case II: CDB loan manager from a provincial branch in East China

*“I don’t think our bank has any comparative advantage when competing with other financial agencies in infrastructure project tenders. First of all, the local government is rich. It doesn’t necessarily have to borrow money from us. The LGFVs themselves are rich and can use their own money. The commercial banks sometimes offer loans with even lower rates than ours. There are also many other investors out there. Perhaps we*

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<sup>13</sup> China Investment Bank was established in 1981 to disburse capital borrowed from foreign financial agencies such as the World Bank and finance China’s infrastructure and industrial projects.

<sup>14</sup> Personal communication, December 18, 2016, China.

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*have a disadvantage – our loan appraisal process is strict and inflexible, and takes a long time. As loan managers, we have to work very hard to win a project.”*<sup>15</sup>

To understand the regional variation, it is necessary to examine how the CDB loans are disbursed in different parts of China. In fact, the majority of the CDB's domestic loans to infrastructure projects are handled not by the CDB main bank (i.e. its headquarters) in Beijing, but its branches in respective provinces. The CDB has thirty-eight branches. Thirty-one of them are located in the thirty-one mainland provincial regions and one is in Hong Kong. In general the bank does not have branches at municipal or lower administrative levels. The only exceptions are branches in five major port cities, namely, Dalian, Qingdao, Ningbo, Xiamen, and Shenzhen, which are considered provincial-level regions fiscally (*danlieshi*), as well as the city of Suzhou in Jiangsu Province. Each province of China, therefore, has only one to two CDB branches. For example, in Zhejiang Province the Zhejiang Branch is located in the provincial capital Hangzhou and the Ningbo Branch is located in the port city Ningbo. Beijing also has a provincial-level branch in addition to the main bank. For the convenience of discussion, in this paper they are all referred as provincial branches (as opposed to the Beijing main bank).

The main bank undertakes administrative roles. The only bureau of the main bank that directly disburses loans is the Enterprise Bureau (*qiye ju*), which is in charge of loan management with around a hundred central enterprises (*yangqi*), i.e. China's most strategically important state-owned enterprises (SOEs). If a municipal government or an enterprise other than a central enterprise intends to borrow from the CDB, it must reach out to the corresponding provincial branch. If the size of a loan exceeds a certain level, approval by the main bank is required, but most of the prior assessment work and customer-relation work are done by the branches. The scope of business of the branches is explicitly divided by their geographical location and there is therefore no direct competition among them. If a project involves more than one province, e.g. if an enterprise of Province A would like to finance a project in Province B, then the corresponding branches in both provinces may be involved. Since the political, economic, and social conditions of China's provinces vary greatly from one another, the lending patterns of the branches also differ starkly from each other.

Figure 11 below shows the CDB's accumulated lending volume by the end of 2014 (CDB Almanac, 2015). In general, the bank appears to have a preference in lending to the

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<sup>15</sup> Personal communication, December 6, 2016, China.

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economically better-off coastal regions, but such preference is not consistent throughout all provinces. By simply eye-balling the numbers, it is easy to see that the bank demonstrates contrasting lending patterns cross regions. For instance, the CDB loans very little to Tibet, an autonomous region with a small population size and low level of economic activities, which seems to be intuitive. But neither does it lend that much to Shanghai, a metropolitan area with a large provincial GDP, plentiful market capital, and high fiscal revenue. Yet the CDB lends much to Guangdong, Zhejiang, and Jiangsu, three rich coast provinces with great economic impetus. But it also lends significantly to Liaoning, a north-eastern province experiencing drastic economic decline. If we examine the proportion of CDB loans of total long-term bank loans, which measures the bank's share in the long-term capital market, we find more consistent patterns (Figure 12). The CDB takes smaller shares in the more-developed, south-eastern provinces, and larger shares in the less-developed, mid or north-western provinces. But again this rule is not consistent throughout all provinces.

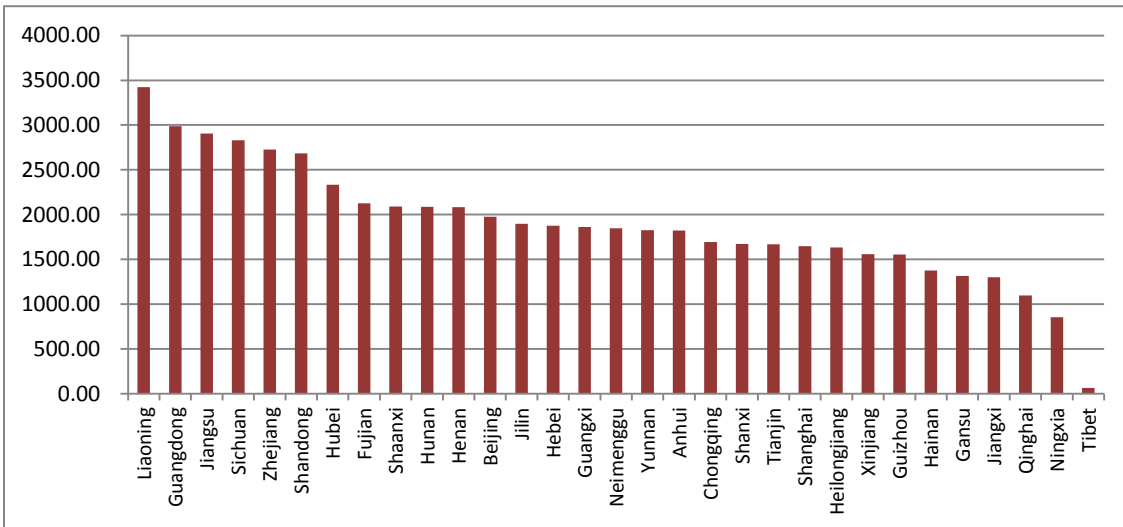
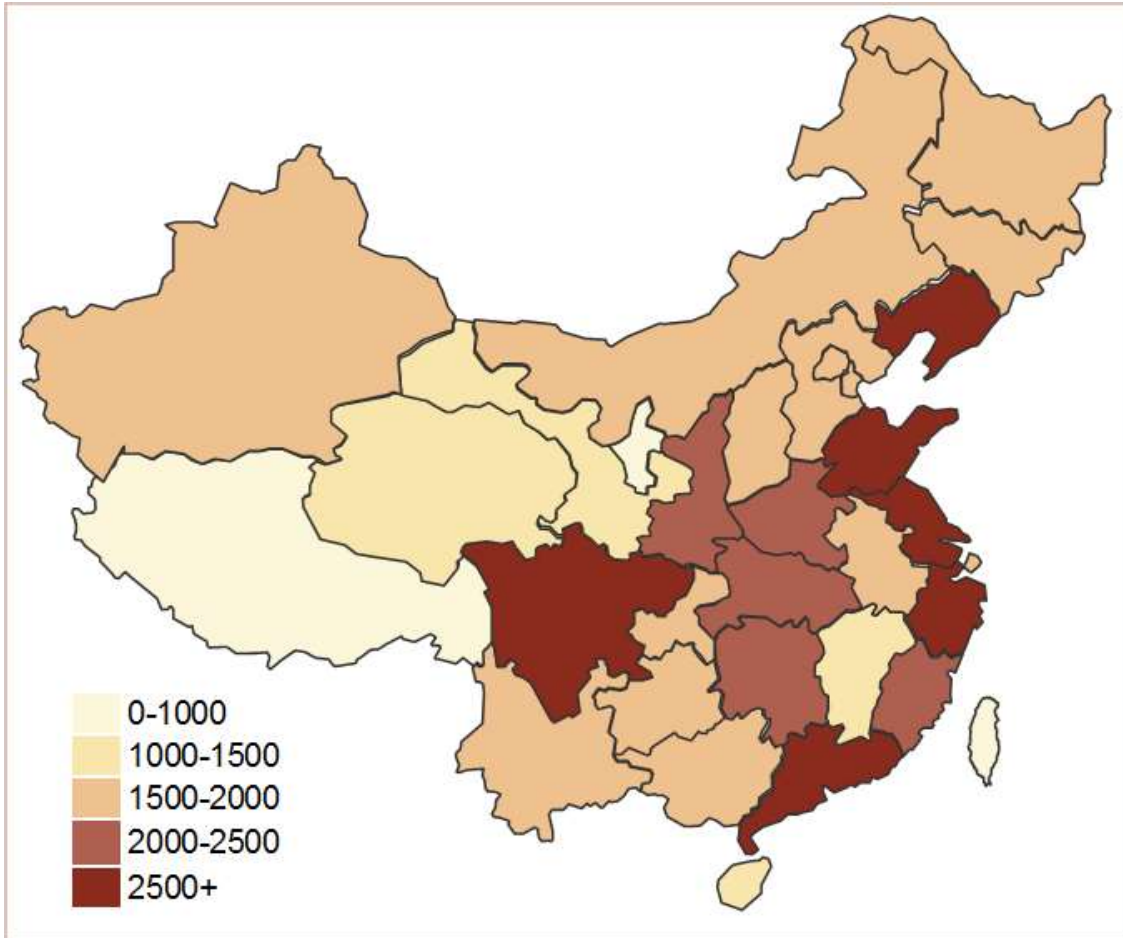


FIGURE 11: CDB'S RENMINBI ON-BALANCE SHEET VOLUME BY PROVINCE (2014/12/31), IN 100 MILLION YUAN; SOURCE: CHINA DEVELOPMENT BANK ALMANAC 2015

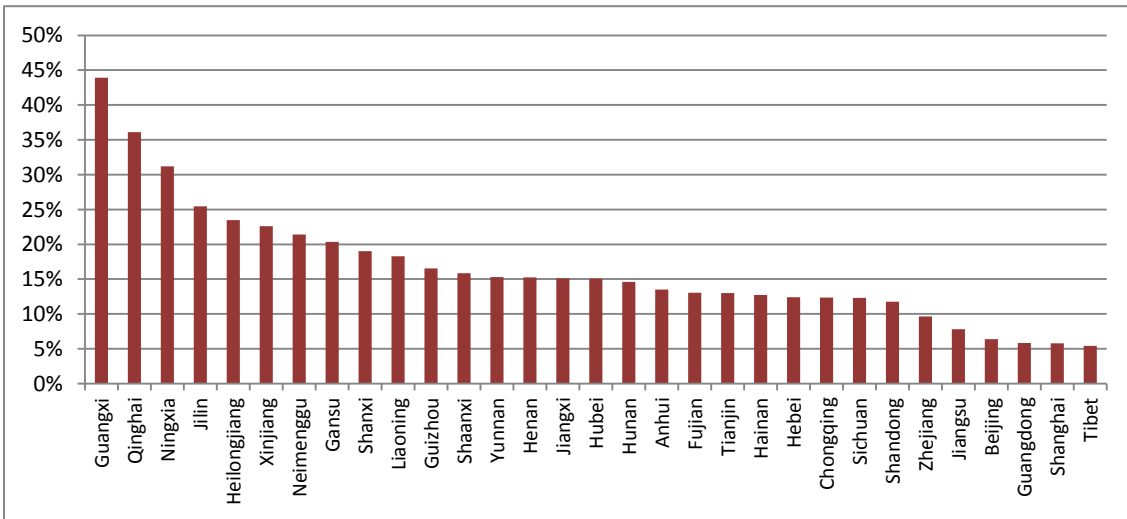
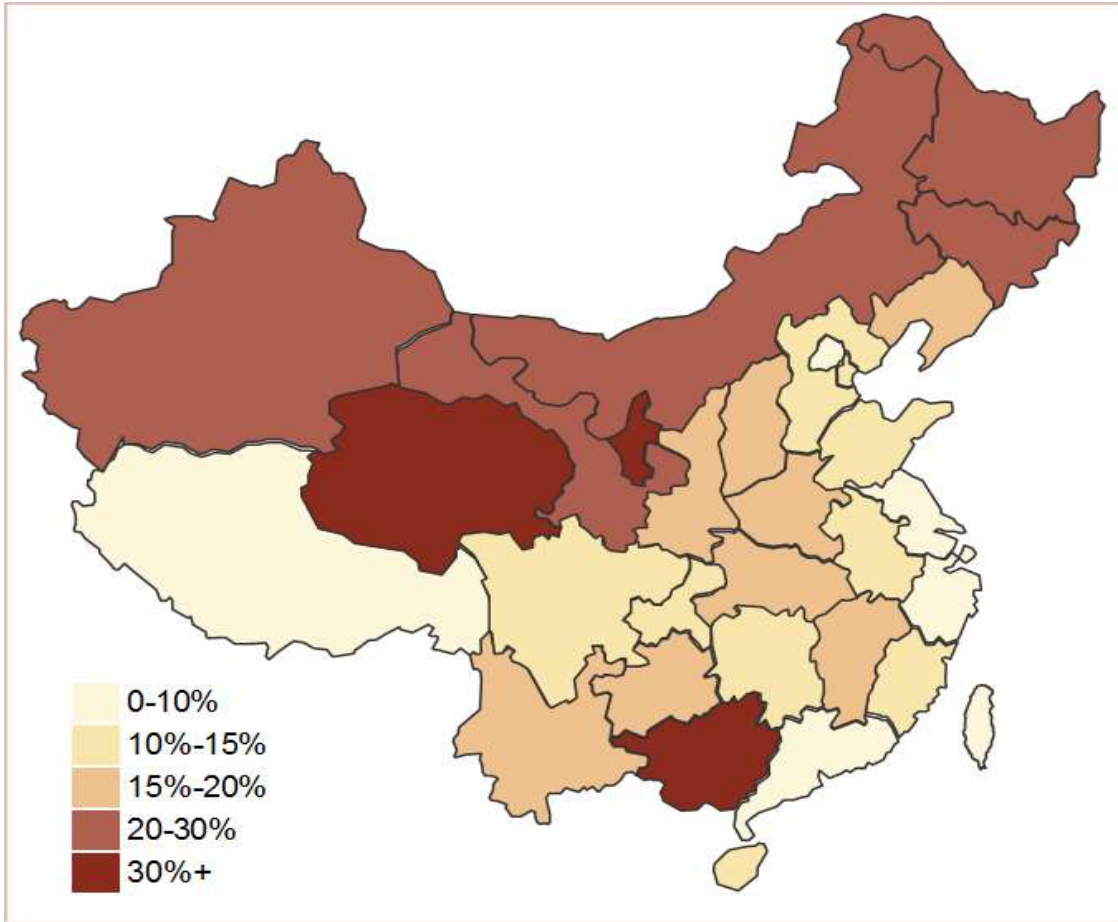


FIGURE 12 SHARE OF CDB LOANS OVER TOTAL LONG-TERM BANK LOANS (2014/12/31);  
 SOURCE: CHINA DEVELOPMENT BANK ALMANAC, ALMANAC OF CHINA'S FINANCE  
 AND BANKING

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The bank's seemingly self-contrasting lending pattern is in fact not surprising. A development bank by definition has a dual identity, one as a government organ that serves public and developmental goals, and the other as a financial agency that follows market rules. The former drives the bank to invest in the less developed regions, whereas the latter drives it to invest in the more developed ones. The CDB's government-backed project finance preserves this duality. The logic of project finance predicts that the bank lends to LGFVs with high credibility, which is essentially backed up by the fiscal capacity of the local governments. Theoretically, the higher a government's fiscal capacity is, the more its LGFV can borrow from the CDB. However, it is those local governments with lower fiscal capacity that really need to and have stronger incentives to borrow from the CDB. This predicts that the less well-off governments will borrow more. The question, therefore, is how the bank reconciles and presents the duality of its lending mechanism.

Drawing from interviews with lending managers in different provinces, this research proposes four factors that may potentially affect the CDB's lending in a province. The first one is the economic scale of a province, which can be measured by provincial GDP. Generally speaking, the more economic activities going on, the more bank loans (**Hypothesis 1, H1**). This applies not only to the CDB, but to any bank. A second factor that may affect the CDB's lending is the level of development of a province, which can be measured by GDP per capita. Less developed areas need more capital to build infrastructure (**H2**). Since the CDB is a policy bank with a mandate to finance development, it should lend to the more impoverished regions. In addition, two other factors are related to the CDB's lending. One of them is the level of capital provision in the market. If market actors can offer capital to infrastructure finance, the demand for CDB capital may decrease (**H3**). But this is not always true because infrastructure projects are not necessarily profitable by commercial standards, and may not be able to attract market capital even if there is a lot out there. Another factor is the amount of fiscal revenue. If a subnational government has plentiful revenue, it may borrow less from the CDB (**H4**). This is also not always true because even if a government has enough money to build infrastructure, borrowing from other sources is still a good option because it allows the government to have a larger budget for other things.

A statistical analysis helps explain how these factors impact the lending of the CDB. The regression below uses panel data of the CDB's lending volume in thirty-one mainland

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China provinces<sup>16</sup> in three recent years (2013, 2014, and 2015).<sup>17</sup> Independent variables include (1) natural log of GDP, which measures the economic scale of a province, (2) natural log of GDP per capita, which measures the level of development of a province, (3) fiscal revenue of the provincial government, and (4) total volume of lending by other financial agencies in a province, and the model controls for population.<sup>18</sup>

As Table 5 shows, three results are significant. First, the CDB's lending volume is positively associated with the total bank lending volume in the province, as well as the natural log of provincial GDP. This indicates that the CDB lends to provinces with large economic scale, and coincides with the lending pattern of other banks. The CDB, however, lends more to provinces with lower fiscal revenue. This suggests the CDB may be playing a supplementary role to subnational government in financing infrastructure projects, instead of purely following the commercially-driven rationale of project finance.

If we regress total bank volume (excluding CDB) on the same independent variables and plus the CDB loan volume, the result (Table 6) shows that other bank's lending volume and the CDB's lending volume are still positively associated, and the result is significant. But other banks tend to lend more to provinces with higher fiscal revenue. Comparing the two sets of results, the analysis comes to the conclusion that the CDB, like other banks, lends more to provinces with larger economic scale. The CDB's lending and the other banks' lending do not crowd out each other. What differentiates the CDB from the other banks is that it supplements the fiscal revenue of provincial government, whereas other banks do not. The latter prefer lending to provinces with higher fiscal revenue. That is to say, the rationale of project finance is better practiced by other financial agencies than by the CDB.

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<sup>16</sup> If a province has more than one CDB branch, then the CDB's provincial lending volume is a sum of all the branches in the province.

<sup>17</sup> The CDB's domestic lending volume at provincial level only becomes available starting in 2013. Data used in this paper is collected from *Almanac of China's Finance and Banking* and *China Development Bank Almanac*. CDB's lending in Beijing excludes loans to central enterprises, which are located in Beijing but calculated as loans disbursed by the CDB main bank as opposed to the CDB Beijing Branch. The 2015 loan volume of the CDB's Beijing Branch is not available because the CDB Almanac that year only shows an aggregated number that includes both the main bank's and the Beijing Branch's volumes. The CDB's Beijing 2015 volume used in this analysis is an estimated volume, assuming the Beijing Branch's and the main bank's lending volumes in each year are proportional.

<sup>18</sup> Data is collected from China Statistical Yearbook.

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There are two issues with the above analysis. First, the data is from 2013-2015, a specific period of time with its own peculiarities, which will be discussed more in the following section. Statistical results may vary if using data from a different time period. However, due to the fact that the CDB only released provincial-level aggregated data starting in 2013, earlier information is not available. Second, the finding points to a problem with the CDB's government-back project finance, i.e. financial agencies can freeride government guarantees. This will also be discussed in the following section.

```

. xtreg CDBvolume Revenue Bankloanx lgGDP lgGDPPC Population, fe

Fixed-effects (within) regression           Number of obs   =       93
Group variable: ProvinceN                 Number of groups =       31

R-sq:  within = 0.7942                    Obs per group:  min =        3
        between = 0.7744                    avg =           3.0
        overall = 0.7288                    max =           3

                                           F(5,57)         =       44.00
corr(u_i, Xb) = -0.9850                    Prob > F         =       0.0000

```

CDBvolume	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Revenue	-.1291115	.0585424	-2.21	0.031	-.2463406	-.0118823
Bankloanx	.0387446	.0068177	5.68	0.000	.0250923	.0523969
lgGDP	1989.504	447.9603	4.44	0.000	1092.479	2886.529
lgGDPPC	94.90338	386.1266	0.25	0.807	-678.3019	868.1086
Population	.1258917	.1925841	0.65	0.516	-.2597513	.5115346
_cons	-19484.14	3704.26	-5.26	0.000	-26901.79	-12066.49
sigma_u	2089.9784					
sigma_e	130.05253					
rho	.99614277 (fraction of variance due to u_i)					

```

F test that all u_i=0:      F(30, 57) =      22.11          Prob > F = 0.0000

```

CDB outstanding loans	
Fiscal Revenue	-0.129** (0.058)
Bank loan	0.039*** (0.006)
GDP (log)	1989.504*** (447.960)
GDP per capita (log)	94.903 (386.127)
Population	0.126 (0.193)
Constant	-19484.14*** (3704.26)

TABLE 5

```
. xtreg bankloanx Revenue lgGDP lgGDPPC Population, fe
Fixed-effects (within) regression      Number of obs   =      93
Group variable: ProvinceN              Number of groups =      31

R-sq:  within = 0.6144                  Obs per group: min =      3
      between = 0.6608                    avg =      3.0
      overall = 0.6584                    max =      3

corr(u_i, Xb) = -0.5057                  F(4,58)         =     23.10
                                          Prob > F        =     0.0000
```

bankloanx	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Revenue	3.475789	1.030999	3.37	0.001	1.41202	5.539558
lgGDP	24382.04	8011.498	3.04	0.004	8345.284	40418.8
lgGDPPC	5042.011	7407.089	0.68	0.499	-9784.888	19868.91
Population	-3.231514	3.684727	-0.88	0.384	-10.6073	4.14427
_cons	-259594.8	62672.45	-4.14	0.000	-385047.3	-134142.2
sigma_u	13850.458					
sigma_e	2504.7503					
rho	.9683317	(fraction of variance due to u_i)				

F test that all u\_i=0: F(30, 58) = 24.02 Prob > F = 0.0000

Bank outstanding loans	
Fiscal Revenue	3.476*** (1.031)
GDP (log)	24382.04*** (8011.498)
GDP per capita (log)	5042.011 (7407.089)
Population	-3.232 (3.685)
Constant	-259594.8*** (62672.45)

TABLE 6

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## **V. The moral hazard of the infrastructure financing market**

With its government-backed project finance model, the CDB offered a prescription to a long-lasting problem faced by the developing world, i.e. how to raise funds for infrastructure finance when fiscal revenue is insufficient and market capital is unavailable. Without the CDB, many Chinese provinces would not have been able to urbanize. Government's credit enhancement, the core of CDB model, turned "un-bankable" projects "bankable" and enabled the funding of infrastructure projects that could neither attract market capital nor be financed by fiscal revenue.

But when doing so, the CDB also allowed projects that should not have been financed, according to commercial standard, to actually receive funds. This caused several problems. A first problem is excessive infrastructure investment. Local governments realized the "creditworthiness" of their "guarantees," borrowed more than they could and built more than necessary. A consequence is the widely reported "ghost cities," i.e. cities well equipped with apartments, parks, and other urban facilities, but no people. A second problem is over-reliance on land revenue. Local governments mortgaged lands to borrow from banks, which drove up land price in China. A third problem, and related to the first two, is the high volume of implicit local government debts, not directly calculated on the governments' fiscal reports but reflected on the LGFVs balance sheets (see for example, Shih, 2010).

These issues reflect the fact that the use of government guarantees has created a moral hazard, allowing commercial investors to freeride and lend imprudently. This triggered severe financial problems, especially after 2008 when China's State Council initiated a 4-trillion yuan package to stimulate domestic economy against the back drop of the global financial crisis. The package brought a loose fiscal and monetary environment where capital became abundant and assets became relatively scarce. Market investors including commercial banks, securities companies, leasing companies all would like to take a share of the seemingly safe, government-guaranteed projects which used to be financed overwhelmingly by the CDB. The number of LGFV increased rapidly, from over 3000 in 2008 to over 8000 by the end of 2009. Their total accumulated loans increased to 7380 billion yuan (approximately 1085 billion USD). Market investors blindly followed the trend and invested their money to LGFVs without prudent appraisal (CDB, 2016).

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This is not to say that the CDB should be blamed for financializing China's public finance system. Despite all the criticisms, the default rate of CDB loans to local governments is considerably lower than that of the commercial banks (Gao et al., 2018). The moral hazard is neither peculiar to China, but commonly observed in the practices of development finance across the world: a development loan to an under developed region may become the seed capital that jumpstarts growth, but may also end up as ineffective investment that does nothing but increase the debt volume of recipient regions (e.g. Bauer, 1968; Easterly, 2006). Thus it is important to notice that the idea of having government guarantees for projects comes with an intrinsic moral hazard and is a double-edged sword.

Another important component of the CDB model, "government-bank collaboration," has also been questioned. Despite its success in facilitating large-scale infrastructure finance, it produced a space for rent seeking. Many CDB loans in Wuhu were lent to Chery Automobile, a company established in 1997 by a former government official. The company became one of the driving forces of local economic growth due to the large amount of capital received from the CDB, but was trapped by political scandal. In 2004, Xinhua news released a report on the "red-hat" businessmen in Wuhu, criticizing the institutionalized phenomenon of government officials (i.e. red-hats) holding top positions in corporations and LGFVs. "Our secretary of the municipal party committee is the head of Chery," said a government official proudly to the Xinhua journalist (Zhu, 2004). The scandal went viral on the internet, generated a policy discussion on dual appointment of government officials, and ended up with the resignation of Chery's "red-hat" president. Despite all these criticisms, Chery was indeed a big taxpayer and still remains an important client of the CDB.<sup>19</sup>

Like government guarantees, bank-government collaboration is also a double-edged sword. On the one hand, it enabled portfolio financing and accelerated urbanization and industrialization. Only through collaboration between bank officials and government officials could multiple projects be planned and financed at a time. On the other hand, this expanded the room for rent-seeking by allowing government officials to manipulate larger amounts of capital (in addition to fiscal revenue) borrowed not only from the CDB but also from commercial investors.

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<sup>19</sup> See for example: Linglin Yu, 12/03/2014, *The 21st Century Business Herald*, [http://epaper.21jingji.com/html/2014-12/03/content\\_19773.htm](http://epaper.21jingji.com/html/2014-12/03/content_19773.htm).

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Policy makers in China were not unaware of the problems of the CDB model, and have made attempts, especially in the post financial crisis era, to restrict the privileged financial practices of the bank and prohibit other commercial investors from excessively replicating the CDB practices. Nonetheless, the demand for infrastructure loans remains huge, not only because a large part of the country is indeed under urbanized and needs capital to grow, but also because infrastructure investment is closely associated with local growth and official promotion (e.g. Li and Zhou, 2005; Gao et al., 2018). Thus, top-down regulations to discipline the infrastructure financing market are often counteracted by new means of finance to circumvent them.

A first attempt to solve the problem was to restrict the use of bundled loans, i.e. bundling several projects into one and having local governments guaranteeing for the entire package. In 2006, a document jointly announced by five top state organs—National Development and Reform Commission, Ministry of Finance, Ministry of Construction, People’s Bank of China, and China Banking Regulatory Commission prohibited banks from issuing bundled loans to local governments (CBRC, 2006). But even up to today the bank still bundles projects to conduct portfolio financing and lower project risks (e.g. Zou, 2015). The second attempt was to restrict the use of soft loans, a privileged practice of the CDB. In 2008, the CDB was turned into a joint-stock company, which was said to be a preparatory step to list the bank on stock exchanges. Consequently, the bank would be turned into a “commercial bank” and lose its privilege to issue soft loans, since commercial banks in China are not allowed to directly engage in equity investment. But in fact, the equity investment business of the CDB was handed over to CDB Capital, a wholly-owned subsidiary of the bank established in 2009. CDB Capital is like the International Finance Cooperation of the World Bank, which specializes in investing in development projects. With this subsidiary, the CDB is able to continue its investment in equity.

In June 2010, the State Council issued a government document titled “the State Council’s Document on Tightening Regulation on LGFVs” in order to turn LGFVs into self-sustaining corporations and thereby alleviating local government’s debt burden. The document stated that those LGFVs of which major source of repayment come from government’s fiscal revenue should no longer borrow more funds (The Central People’s Government, 2010). A subsequent explanatory document clarified that “major source of repayment” means more than 70% of their repayment (MOF, 2010). In 2014, the State Council took a step further, issuing another document, also called “Document 43,” to

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reregulate local government debts. The document stated that LGFVs should no longer rely on a government's fiscal repayment or guarantees. This left very little room for the financial vehicles. Without government support, they had to either turn entirely self-reliant, or go bankrupt. Obviously they could not simply go bankrupt and leave the debts to the governments. At the same time it was hard for all of them to be turned into self-sustaining corporations. After all, infrastructure projects by nature do not profit as much as commercial ones.

As a result of these regulatory policies, the CDB was no longer allowed to lend to LGFVs. Without government guarantees, few infrastructure projects can pass CDB's appraisal and acquire CDB loans. The bank soon came up with an ad hoc method – Government Purchasing Service (GPS), which would allow the financing of infrastructure projects without violating Document 43. That is, a government would sign a “government-purchasing contract” with an LGFV, the CDB would then lend to the LGFV so that the LGFV can do the project; afterwards, the government would purchase the completed project from the LGFV. By doing so, the government continues its infrastructure plans, the bank disburses new loans, and the LGFV circumvents Document 43. Nonetheless, the new method was essentially no different from the previous one, except that government's “repayment” is replaced by government's “purchase.” “Besides all the new official documents we have to acquire in order to approve a loan, everything else stays the same,” said a few CDB loan managers.

Another alternative financing option is to use public-private partnership (PPP). Unlike GPS which was a method suggested by the CDB, PPP was strongly promoted by the central government from the top-down. PPP has been widely practiced by the World Bank and many other public financial agencies around the world. To achieve public-private partnership, projects sponsors have to seek “private partners,” i.e. firms, to share the financial burden. But still, the social-versus-commercial dilemma as well as the moral hazard issue remains unsolved with this new financial tool. Private investors are reluctant to invest in the less profitable infrastructure projects, and if they do because they see government guarantees, it triggers the same moral hazard problem. Policy discussions on how to reregulate LGFVs and control the size of subnational government debts while maintain a decent growth rate continues to date.

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## **VI. Conclusion and policy implications**

The excessive borrowing of LGFVs and the imprudent lending of commercial investors were not direct results of the CDB's creation of the infrastructure financing market, but the CDB was a main driving force of the financialization of China's public finance system. As section III shows, the CDB adopted a semi-governmental, semi-commercial lending mechanism in the 1990s, an era when there was a large demand for infrastructure, but neither the state nor the market could provide sufficient funds. The CDB transformed the norm of infrastructure finance in China from fiscal spending to bank lending. The role of the state in infrastructure finance changed from direct channeling of fiscal revenue to offering guarantees and thereby attracting capital from commercial investors. Like China in the 1990s, many developing countries nowadays need to build infrastructure, but have neither strong fiscal capacity nor a developed market to allow this to happen. The CDB's lending model provides a prescription to these countries.

Nonetheless, the effect of the CDB model remains questionable. As section IV shows, the same CDB model has been practiced rather differently in different provinces of China. In some provinces, the infrastructure financing market is diverse and vibrant, whereas in others, the finance of public projects remains largely state-controlled. What is more, the infrastructure financing market that the CDB has created comes with an intrinsic moral hazard. A government guarantee turns commercially nonviable projects viable, but also allows projects that should not have been financed according to commercial standards to actually take place. Without effective regulation, commercial investors may free ride this guarantee and make imprudent lending decisions, and local governments may borrow beyond their capacity. Discussion and debates on reregulating the infrastructure financing market goes on, but the problem remains unsolved.

Examining the CDB's domestic lending sheds light on understanding its international lending, which has drawn much scholarly and policy discussion. Like the replication of the Wuhu Model within China, the CDB's global investment presents drastically different patterns in different regions. In many underdeveloped regions, CDB loans appear like aid, financing projects with social effect but not necessarily profitable. In the relatively developed markets, the bank appears commercially driven, competing with investors from other countries in international tenders. Compared with commercial investors, the CDB does not have a significant advantage in winning the most lucrative infrastructure

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projects in developed markets. Rather, it prefers collaborating with governments and offers long-term, large-scale loans to developing economies.

The overseas replication of the CDB model faces challenges. The model relies largely on government guarantees. Within China, the policy bank as well as other financiers of infrastructure projects sees local government guarantees as something credible, and “believe” that the central government will bail them out in one form or another even if local governments fail to repay the loans. But this is not the case with overseas projects. If the borrowing government fails to repay what it has guaranteed, the financiers have to resort to international, local, or Chinese law, which is an entirely different process from what it has to go through domestically. Moreover, unlike in China where land is state-owned, in many countries the state does not have ownership over lands, and therefore cannot use land revenue as collateral. The model also relies largely on bank-government collaboration prior to lending. In China, bankers of CDB provincial branches have close relationship with government officials. But with international projects, the same level of collaboration cannot be achieved easily, at least for one simple reason – the bank does not have as many overseas offices as well as loans managers in each country to facilitate such collaboration. These factors affect the bank from effectively practicing the same model in other parts of the developing world.

To conclude, the CDB’s government-backed project finance model played a crucial role in financializing China’s public finance system, and contributed to the country’s rapid urbanization and industrialization in the past two decades. The bank’s experience has provided a prescription of development to the developing world, and has been practiced globally through the bank’s international ventures. But it is important to note that the replication of the model has achieved rather different effects even within China, and that the core components of the model, i.e. government guarantee and bank-government collaboration may not be easily transplanted overseas.

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**Official Aid or Export Credit:  
China's Policy Banks and the Reshaping of Development Finance**

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[Abstract]

This paper seeks to demystify China's overseas development finance by examining the lending mechanism of two policy banks – China Development Bank and Exim Bank of China. Using quantitative data and interviews, the paper shows how and why China mixes the use of official aid and export credits. It argues that the existing literature cannot fully explain the non-concessionality of Chinese loans. Challenging the postwar paradigm of development finance, which was established by industrialized countries based on an idea of “donation” from the North to the South, China practices a “state-supported, market-based” way of development finance. The state is involved in infrastructure finance not through direct allocation of fiscal revenue, but through enhancing the creditworthiness of projects and making them bankable to the market. This form of development finance provides an alternative option for developing countries.

[Keywords]

Development Finance; Policy Bank; Official Development Aid; Export Credit; China

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## Introduction

In the past decades, China has been massively financing infrastructure projects overseas, building railways, bridges, power plants, and ports around the world. The enormous amount of capital outflow has drawn much attention from international investors, mass media, policy makers, and academics, especially after the announcement of the Belt and Road Initiative and the establishment of the Asian Infrastructure Investment Bank in 2013. Though heatedly debated and discussed, the nature of these infrastructure loans remains controversial in academic writings and media reports. Sometimes they are referred as state-led aid, financing infrastructure works in less developed countries, whereas other times they are seen as commercially-driven export credits, supporting the international venture of Chinese manufacturers.

Both narratives are true to a certain extent and the presence of both of them reflects the fact that China mixes the use of aid and export credits. But if we examine the nature of these credits carefully, we find that aid loans and export-credit loans hold fundamentally contradictory lending philosophies: aid serves the interest of the recipient whereas an export-credit loan serves the interest of the lender; aid offers a more favorable condition to a less developed country, whereas a commercial loan charges higher interest rates from it. In other words, it is impossible to be “both” at the same time. More importantly, the two ways of understanding these cross-border loans lead to different interpretations of China’s incentives in doing overseas projects, which consequently result in different conclusions regarding the impact of these loans on the global political and economic order. If they are aid with little commercial interest, they may be used to serve foreign-policy or geopolitical purposes, but if they are export credits, they may ultimately choose more-developed economies as destinations and converge to the existing global market. To what extent are these loans “aid” and to what extent are they “export credits”? Why has China mixed them up for its overseas development-finance projects?

This paper seeks to dissect China’s overseas development-finance loans by focusing on the major agencies that handles them, i.e. the China Development Bank and the Export-Import Bank of China. As public financial agencies that pursue both policy and commercial objectives, the two policy banks reconcile state versus market interests. Examining the international lending of these two banks, the paper makes two arguments, one descriptive and one explanatory. First, the nature of China’s development-finance loans is a mixture of official aid and export credit. In terms of lending destinations, these

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loans are aid-like and flow mostly to the less developed regions, but in terms of their terms and conditions, they appear commercially-driven, i.e. their interest rates are non-concessional and comparable to market rates. Such a mixture can be partially explained by China's geopolitical, foreign-policy strategy and the state-led economic development model, two prevailing explanations provided by existing literature. But beyond that, the dual identity of these loans shows that China, as a developing economy and a latecomer to the international market, is reshaping the existing development-finance paradigm, which is based on the idea of "donation" from the North to the South and associates development finance with concessionality. The lending of the two policy banks presents a "state-supported, market-based" method of development finance. The state is involved in infrastructure finance not through direct allocation of fiscal revenue, but through enhancing the creditworthiness of projects and making them bankable to the market. This form of development finance provides an alternative option for developing countries.

The contribution of this paper is threefold. First, it provides a new perspective of understanding China's overseas development finance through a close examination of the financial agencies that disburse those loans. Due to their semi-governmental, semi-commercial nature, policy banks have been largely overlooked in existing literature that examines China's overseas development finance. Using open-source quantitative data and interviews, this paper demystifies the lending process and analyzes the incentives and operating models of the policy banks that serve both government and firm interests.

Second, the paper seeks to clarify the confusion over the concept of China's overseas "development finance." As a result of a lack of a clear definition, existing calculations and estimations of China's overseas development finance vary significantly from each other, which consequently leads to starkly distinctive conclusions about the impact of the capital flows. In fact, the same loan can mean different things in the eyes of different parties. For example, a market-rate exim-bank loan to a less developed country may appear to be "aid" from the recipient's perspective, but is regarded as a commercial loan from the lender's perspective. This paper examines the portfolio of China's development-finance credits using the OECD definition, and explains the factors that cause China's blended use of official aid and export credit.

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Third, the paper contributes to the literature of development studies and development economics. The concept of development as well as the rules of development finance in the postwar era were mostly written by the Bretton Woods institutions, the United Nations, the OECD, and the many other international institutions established by industrialized countries. China as an emerging donor/lender challenges the existing paradigm of development finance. This paper attempts to characterize an alternative view of development finance by examining the world's largest developing country.

The sections below will be structured as follows. The first section provides a literature review and research methods. The second section presents what China's official development finance looks like using the OECD definition, and argues that the majority of China's development-finance loans are providing non-concessional interest rates for projects in less developed regions. The third section explains the rationales behind such Chinese-style development finance, and is followed up by a fourth concluding section.

## **I. Literature review and research methods**

### **Literature Review: theorizing China's overseas development finance**

Existing estimations of China's international lending present various forms of credits of development finance. The JICA Research Institute estimates China's foreign aid using open-source data from Chinese official documents (Kitano and Harada, 2014; Kitano, 2016). [AidData's China project](#) by William & Mary College tracks reported projects of "Chinese Official Finance" by three categories: official development assistance (ODA), other official flow (OOF), and vague official finance. The [China-Africa Research Initiative](#) of John Hopkins School of Advanced International Studies tracks China's aid, loans, and FDI to Africa. Boston University's [Global Development Policy Center](#) tracks the global energy finance loans of China's two policy banks.

Analyses based on these existing databases point out two facts about China's international lending. First, China uses various types of credits to finance overseas projects, and there is no consensus on how to categorize these credits. It is often difficult to tell whether a loan from China is aid or an export credit, and China categorizes its development-finance credits in a way that is different than the OECD definitions. To clarify the concept of China's development finance, this paper in the sections below will provide a detailed examination of the multiple types of Chinese credits. Second, and quite counter-intuitively, the bulk of Chinese overseas development finance is not ODA and is non-concessional (Brütigam, 2011; Brütigam and Gallagher, 2014; Dreher et al., 2017).

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Both facts show that China's development finance differs from that of traditional donors, which are mostly countries of OECD-Development Assistance Committee (DAC). The facts also lead to the question: why does China use non-concessional loans to finance development projects, which (1) appear commercially nonviable and (2) according to existing international norms should be either financed by concessional loans or not financed at all?

The economic statecraft literature provides a perspective to understand these issues, arguing that the state uses economic activities to achieve foreign-policy, geopolitical, security, and strategic goals (e.g. Baldwin, 1985; Mastanduno 2007). Through such a lens, the Chinese policy-bank loans are seen as the state's tool to pursue objectives that are beyond pure economic interests (Alvis, 2013; Reilly, 2013; Norris, 2016). This strand of literature lays the foundation for a commonly observed interpretation of China's infrastructure projects in the developing countries – they do not necessarily make profit, but fulfill China's global political ambitions. The economic statecraft literature could help advance understanding of the lending portfolio of the policy banks on a macro level, especially in the energy sector where the banks seek to achieve the state's strategic goal in securing resources overseas. But a micro-level examination of the policy banks' lending process shows that the story is more than simply economic statecraft. As the sections below will show in detail, Chinese government organs with diplomatic or political mandates have very limited authority in coordinating overseas loans, as it is the economic ministries that are really in control. What is more, this literature does not explain the non-concessionality of those cross-border loans.

The developmental state theory offers another perspective to understanding China's overseas loans (e.g. Johnson, 1982; Amsden, 1989; Wade, 1990; Haggard et al., 1993; Evans, 1995; Woo-Cummings, 1999; Solís, 2004; Thurbon; 2016). This strand of literature underscores the state's coordinating role in facilitating economic growth, supporting selected industries, and assisting exports. Backed up by the state, a selected group of enterprises are able to access low-cost capital and thereby compete with their foreign rivals on the international market with greater advantages. The developmental-state model is often used to explain the economic rise of late industrialized economies, such as China's East Asian neighbors, Japan and South Korea. A large part of China's overseas development finance can be explained by this theory. As the paper will show, a considerable amount of the Chinese loans were lent to selected enterprises with close ties to the state, and the policy-bank lending assisted the overseas

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activities of these enterprises, which were latecomers to the international market. Nonetheless, the non-concessionality of the Chinese loans remains unexplained. This literature sees preferential credits as a crucial element of state support, i.e. having accessibility to cheap capital creates a comparative advantage for the selected industries and firms. This, however, does not apply to the case of China.

The failure of existing literature to explain China's non-concessional development loans allows us to reconsider the meaning of development finance and the existing paradigm that determines the rules and norms of financing development projects. What concessionality implies essentially is a transfer of wealth from donors to recipients. The interest rate of a concessional loan is lower than market rate and has to be subsidized by the donor/lender. The practice of concessional lending (and its extreme version, grant giving) is therefore charitable. The development economics literature in the 1950s and 1960s highlighted the importance of large investment capital in jumpstarting economic growth and provided the theoretical ground for such a practice (e.g. Lewis, 1954; Rosenstein-Rodan, 1961; Rostow, 1963). In the same era was the establishment of the World Bank's International Development Association (IDA) and the OECD-DAC, two international organizations that have been regulating and disbursing soft loans and aid to the developing world. The idea behind this tide of "donation" in the postcolonial era was that with the aid from industrialized countries, "backward" economies could begin to grow. The incentives of the traditional donors, however, were more than economic. Aid giving was also a tool for maintaining relationship with former colonies and strengthening political ties with the Third World in the Cold War era. Such a donation-based practice of aid giving was criticized for being inefficient, resulting in market distortions and causing debt issues in the recipient countries, and was gradually challenged by the more commercially-driven means of aid-giving by emerging donors (Bauer, 1968; Easterly, 2003 and 2006; Kothari, 2005; Six, 2009; Sato et al, 2011; Mawdsley, 2012; Ohno and Ohno, 2013; Edwards, 2014).

Combining aid with export credits, China's non-concessional loans challenge the conventional knowledge that development finance should be conducted in a charitable, philanthropic manner. China is a significant emerging donor but it should not only be conceptualized as merely a "donor," because the majority of development-finance loans from China, as the paper will show in detail below, are not "donations." Chin and Gallagher (forthcoming) argue that China globalizes its development finance through the overseas diffusion of a coordinated credit space model that blends non-concessional and

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concessional lending, aid, and commercial lending. Lin and Wang (2016) argue that China, based on its own experience of economic growth, is going beyond aid through development cooperation for structural transformation. Xu and Carey (2015) propose an idea of “public entrepreneurship,” a new wave of scaled-up, market-based official finance especially from emerging economies. Along the same line, this paper argues that China’s policy banks are offering a new form of development finance. Through a close examination of the lending mechanism of China’s two policy banks, the agencies that handle the majority of the country’s development-finance loans, the paper shows that differing from traditional aid giving, which is based on the idea of donation from the North to the South, China practices a “state-supported, market-based” method of development finance.

## **Research Methods**

### *Data*

This research uses both quantitative and qualitative data. Quantitative first-hand data are obtained from publicly accessible annual reports, financial almanacs, and historical documents. Due to the fact that the two policy banks publish limited data by sector, region, or project, when official data is not available, the research uses secondary data, namely, Aiddata’s China project compiled by William and Mary College, China’s Global Energy Finance data compiled by the Global Development Policy Center, Boston University, and Engineering News-Record data. Qualitative data are obtained from interviews as well as articles and papers written by people working or used to work in related fields. This includes government officials, bank officials, loan managers, employees of enterprises engaged in overseas development finance, and among others. Both types of data are used to characterize the volume, cost, direction, purpose, and lending process of the development-finance loans.

### *Comparative cases*

In order to understand China’s overseas development finance, it is important to identify what we are comparing the Chinese loans to. For example, relative to what do we say a loan from China has a low interest rate? According to which definition do we say a loan is aid? This paper uses two benchmarks. One is the paradigm of development finance established by the OECD and the World Bank in the postwar era, which will be discussed in detail in the upcoming section. This paradigm determines the rules, norms, and regulations regarding how a country should issue development-finance loans/aid. What is important about this paradigm is that it was initiated mostly by West European countries

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and the United States, i.e. the earliest developed economies and also the main traditional donors.

Another benchmark is Japan's postwar development-finance model. Here Japan is treated as the "most similar case" to China. The reason is several-fold. First, in terms of scale, both countries are among the largest economies as well as the largest lenders/donors in the world. Second, the two shared many institutional similarities such as large banking sectors, strong bureaucratic systems, and more importantly, both have strong public-financial agencies mandated to serve policy goals. Third, Japan was a major challenger to the existing OECD/WB paradigm in the postwar era, just like China is today. From the 1950s to the 1970s, the Japanese economy grew rapidly and its ODA-financed overseas projects posed a great challenge to American and European firms. The OECD thus began to modify ODA rules in order to prohibit Japan from using concessional ODA lending to compete in international tenders. As a result, Japan had to make a major shift on its ODA policies and untie its ODA loans. China's current status resembles the earlier Japan, and many aspects of the Chinese loans can in fact be explained by the Japanese model. But China still differs from Japan on the issue of concessionality. These comparisons will be discussed in a more detailed manner in this paper.

## **II. Estimating China's development finance using the OECD definition**

### **Official Aid versus Export Credit: the OECD definition**

Capital for development finance comes from multiple sources. Financiers of development projects include multilateral financial institutions, such as the World Bank, the Asian Development Bank, the European Investment Bank, to name a few, or public financial agencies of particular countries, such as the Japan International Cooperation Agency, the China Development Bank, the KfW Development Bank, and among others. In addition, any private investor that has the capital and interest in financing infrastructure works can also be a provider. Since a development project can serve both a public purpose of providing public goods and a private purpose of generating profit, it is usually hard to differentiate the public versus private incentives of the capital. But since development projects usually require long-term and large-volume investment and are not necessarily commercially viable, the finance of these projects often times involves public elements.

A commonly used type of development-finance capital is Official Development Assistance (ODA). According to the definition of the OECD, ODA has to meet three

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criteria. First, it must be “official,” i.e. “provided by official agencies, including state and local governments, or by their executive agencies.” Second, it must be concessional, meaning the interest rate should be lower than market rate. Third, the main objective must be the “economic development and welfare of developing countries,” i.e. not serving the commercial purposes of the donors.<sup>20</sup>

Using this definition, two types of official loans cannot fall into the category of ODA, and they are categorized as Other Official Flows (OOF).<sup>21</sup> (1) Non-concessional development loans: loans that are offered by an official agency but do not meet the concessional condition. An example is a loan offered by a national development bank at a market interest rate. (2) Export Credits: loans/guarantees that are offered by an official agency but not for the purpose of the recipient country’s development. An example can be a loan provided by an official export credit agency (ECA) of the donor country for the purpose of promoting its own exports.

The second type of OOF, i.e. export credits, are handled by a country’s official ECA, and consist of two categories. The first is direct export credits, i.e. “loans extended by ECAs to facilitate and encourage exports to developing countries.” An example can be a loan from the Japan Bank of International Cooperation (JBIC, a state-owned official ECA) to support Japanese exports to India. The second is officially-guaranteed or insured export credits, i.e. “loans extended by the private sector but guaranteed/insured by ECAs to finance an export transaction.” An example can be a loan provided by the Deutsche Bank and guaranteed by the official insurance ECA of Germany, Euler Hermes.

Although the OECD has explicit definition for each type of credits, in reality the boundaries between these credits are not well demarcated. There are mainly two reasons for such blurriness. First, it is difficult to draw a line between concessional and non-concessional loans. For instance, nowadays the interest rate of Japanese and European capital is rather low, and even the market rate appears quite “concessional.” Thus in terms of cost there is not much difference between a concessional loan offered by an official agency and a commercial loan offered without official support. Second, it is

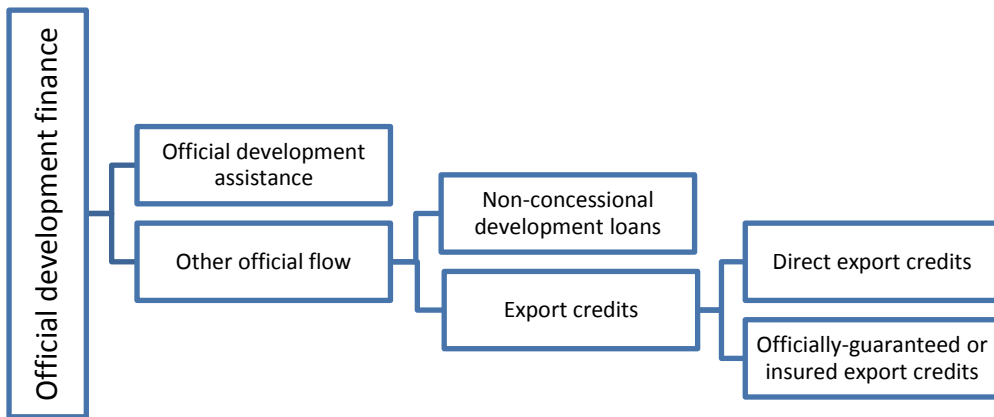
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<sup>20</sup> “Official development assistance – definition and coverage,” OECD, <http://www.oecd.org/dac/stats/officialdevelopmentassistancedefinitionandcoverage.htm>.

<sup>21</sup> “Resource flows beyond ODA in DAC statistics,” OECD, <http://www.oecd.org/dac/financing-sustainable-development/development-finance-standards/beyond-oda.htm>. “Non-ODA flows to developing countries: Export credits,” OECD, <http://www.oecd.org/dac/stats/beyond-oda-export-credits.htm>.

hard to identify the objective of a loan. An infrastructure project can benefit the recipient country and at the same time facilitate exports of the donor country. As a result of these ambiguities, countries can intentionally mix these credits to achieve certain goals. One commonly observed grey zone is the offering of low interest-rate ODA loans to commercially viable projects. By doing so, a country lowers the cost of capital and thereby increases its competitiveness in international competition. This practice was rather common in the 1970s, when many countries applied a “beggar-thy-neighbor” trade policy to boost their own exports. To avoid this, the OECD has carried out various regulations and rules throughout the postwar era, aiming to explicitly demarcate ODA and export credits, but loopholes still exist.

Despite the blurriness between different types of credits, the OECD typology has been commonly used by its members and non-members to estimate the volumes of their overseas development finance. The sections below will analyze China’s official development-finance loans/grants based on such a framework, and examine the volumes of China’s (1) ODA (concessional official loans), (2) non-concessional official loans, and (3) officially-guaranteed or insured commercial loans.



GRAPH 3 OECD TYPOLOGY OF OFFICIAL DEVELOPMENT-FINANCE CREDITS

**Examining China’s development finance through the OECD lens**

China’s official development-finance capital generally falls into four categories – (1) grants and interest-free loans issued by the government (ministry), (2) concessional loans and (3) non-concessional loans issued by policy banks, and (4) commercial-bank loans insured by official insurance company. Not being an OECD member, China does not use the OECD definitions to categorize its development-finance credits. According to the Chinese government’s official definition, China’s foreign assistance consists of the first

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two types of capital, i.e. grants and interest-free loans disbursed by the Department of Foreign Assistance of the Ministry of Commerce (MOFCOM) and concessional loans issued by the Department of Preferential Loans of the Exim Bank of China (Chexim).<sup>22</sup> Grants and interest-free loans are capitalized by the government's tax revenue whereas the concessional loans use mostly Chexim's self-raised funds. Concessional loans are denominated in Renminbi with an interest rate below China's central bank's benchmark rate, and the margin between the two is subsidized by the Ministry of Finance (MOF).<sup>23</sup> In addition to concessional loans, Chexim offers a type of U.S. dollar loan that is also below market interest rate – preferential buyer's credit. These dollar loans are not calculated as part of China's official foreign aid, because they are financed by the bank's own capital and are not subsidized by government funds. The two types of loans combined are referred as *liangyou* loans (literally, two preferential loans). They are handled by the same department of Chexim and come with interest rates ranging between 2% to 3%.<sup>24</sup> MOFCOM's loans/grants as well as Chexim's *liangyou* loans generally qualify under the OECD's definition of ODA, but their aggregated amount is rather limited, less than 5% of China's total overseas development finance in 2013 (see Figure 13). *Liangyou* loans only compose a minor portion of Chexim's total lending. The bank's other lending departments issue non-concessional loans with interest rates comparable to market rates.

Besides MOFCOM and Chexim, the China Development Bank (CDB) also finances overseas development projects. Despite the fact that the CDB does most of its business at home, its size of overseas lending is actually the largest among all financial agencies in China. By the end of 2016, the CDB's accumulated lending volume in foreign (non-renminbi) currency took up 30.1% of China's entire banking sector, which demonstrates the bank's leading role in China's overseas finance.<sup>25</sup> The CDB only offers

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<sup>22</sup> On April 18, 2018, the China International Development Cooperation Agency was inaugurated and its mandate is to coordinate foreign assistance and international development cooperation. This paper analyzes China's development finance policies before this administrative restructure.

<sup>23</sup> "Zhongguo de Duiwai Yuanzhu (2014)," the State Council, [http://www.gov.cn/zhengce/2014-07/10/content\\_2715467.htm](http://www.gov.cn/zhengce/2014-07/10/content_2715467.htm).

<sup>24</sup> "Liangyou Daikuan Yewu Jishao," Export-Import Bank of China, <http://www.chinca.org/cms/html/files/2013-12/16/20131216102948872930302.pdf>.

<sup>25</sup> "Guokaihong: Tuchu Fuwu Yidaiyilu Jianshe," China Development Bank, [http://www.cdb.com.cn/xwzx/khdt/201702/t20170204\\_4068.html](http://www.cdb.com.cn/xwzx/khdt/201702/t20170204_4068.html).

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non-concessional loans, at least that is what the bank claims to have been doing, in spite of the common suspicion that it has offered preferential credits to projects that serve China's national goals. Interviews with CDB loan managers as well as with employees of enterprises that have received CDB loans suggest that the interest rate of CDB loans generally range from 3-6%.<sup>26</sup> The bank's self-reported average interest rate of "loans and advances" in 2015 and 2016 were 5.25% and 4.40% (CDB Annual Report, 2016), and the interest rates of its medium-long term Renminbi loans range from 4.75-4.9%.<sup>27</sup> What is certain is that the CDB does not offer any kind of officially subsidized loans that resemble Chexim's concessional loans. In very rare cases the CDB may offer an extraordinarily low interest rate. For example, for a widely reported project—Jakarta-Bandung High Speed Railway project for which China and Japan competed intensively, China offered an interest rate of 2% and the capital came from the CDB, according to media reports. This number was hardly representative because the lending process involved many external actors and the decision making was beyond the sole authority of the bank. But even in such a case, the interest rate offered by China was nowhere comparable to that of Japan, which was only 0.1%.<sup>28</sup> The policy banks' non-concessional rates are also generally higher than the interest rates provided by the International Bank for Reconstruction and Development (IBRD), the World Bank's lending arm for higher-income developing countries. The IBRD rates are usually 50-150 basis points above LIBOR, which is around 2-4% in the recent years. Using the OECD definition, CDB loans as well as Chexim's non-*liangyou* loans resemble OOF and not ODA, because both banks are official financial agencies but neither of the loans are concessional.

The non-concessional loans of Chexim and of the CDB are not very different from one another, and there is no clear labor division between the two banks' overseas business, especially in the field of infrastructure finance. The reason for this similarity is simple – the two banks share the same group of clients, i.e. China's largest firms, which are mostly state-owned enterprises actively involved in strategic industries such as construction,

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<sup>26</sup> Interest rates of foreign-currency loans are presented in the form of LIBOR + n • 100bps. Actual interest rates therefore may fluctuate with LIBOR.

<sup>27</sup> "Guojia Kaifa Yinhang Renminbi Daikuan Lilv Biao," China Development Bank, <http://www.cdb.com.cn/cpfw/cdkll/rmbdkjzllb/>.

<sup>28</sup> "Zhongri Zhengduo Yinni Gaotie Zuizhongzhan Jinri Daxiang," Tengxun Caijing, <http://finance.qq.com/cross/20150901/5OSn869v.html>.

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energy, telecommunication, manufacturing, and mining. As a result of such overlap, competition might occur between the two banks. Nonetheless, there is a slight difference in the two banks' lending philosophies. In general, the CDB is more market-driven than Chexim. According to China Banking Regulatory Commission (CBRC), the CDB is a "development-oriented financial agency" (kaifaxing jinrong jigou), whereas the other two policy banks<sup>29</sup> are "policy-oriented financial agencies" (zhengcexing jinrong jigou).<sup>30</sup> The CDB has to maintain its own balance sheet and gain a minimum profit whereas the other policy banks can receive state subsidies. To use the CDB's own words, development-oriented finance is "the deepening and upgrading of policy-oriented finance." The former highlights the use of market mechanism in achieving developmental goals (see Chen, 2012)<sup>31</sup>, whereas the latter emphasize their policy-oriented mandates. A consequence of such a difference is that CDB loans are more stringent than other policy-bank loans and the bank has better financial performance than its two peers.<sup>32</sup>

Another important source of development capital is China's big commercial banks, namely, the Industrial and Commercial Bank of China, the China Construction Bank, and the Bank of China, all listed on the stock exchange and ranked the 1<sup>st</sup>, 2<sup>nd</sup>, and 8<sup>th</sup> of the world's largest banks by Forbes. These banks are not official ECAs or development banks, nor are their loans concessional. Therefore they are not ODA by the OECD's standard. But according to the OECD definition, a commercial loan can be considered OOF if the project is guaranteed by an official insurance company (another type of ECA). The underlying assumption behind this definition is that if the project fails, the official insurance company, which is backed up by government's fiscal revenue, will cover the loss. In real practice, if a borrower has purchased insurance from an official ECA for its project, banks will offer it a much lower interest rate because the project is guaranteed by sovereign creditability and considered less risky. The Chinese equivalent of insurance ECA is the China Export and Credit Insurance Corporation (Sinosure), which was established in 2001 after a merger of the export-credit insurance departments of the

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<sup>29</sup> China has three policy banks, the other one being the Agricultural Development Bank of China.

<sup>30</sup> "Guojia Kaifa Yinhang Jiandu Guanli Banfa Dajizhewen," CBRC, <http://www.cbrc.gov.cn/chinese/home/docView/44629962F8C34E959647559003B7BB4D.html>. "Zhongguo Jinchukou Yinhang Jiandu Guanli Banfa," CBRC, [http://www.cbrc.gov.cn/govView\\_8CE5EF195B654C20ACB5077415C8A210.html](http://www.cbrc.gov.cn/govView_8CE5EF195B654C20ACB5077415C8A210.html).

<sup>31</sup> "Guanyu Kaifaxing Jinrong," China Development Bank, <http://www.cdb.com.cn/kfxjr/gykfxjr/>.

<sup>32</sup> "Zhengcexing Jinrong Zaidingwei," Caijing, <http://yuanchuang.caijing.com.cn/2015/0820/3950786.shtml>.

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People’s Insurance Company and of Chexim. As shown in Figure 13, in 2013 Sinosure insured approximately \$50 billion in overseas development-finance loans (Sinore Annual Report, 2015),<sup>33</sup> whereas the two policy banks’ estimated non-concessional loans were about \$207.6 billion (Almanac of China’s Finance and Banking, 2013). However, many of the Sinore-insured loans were in fact issued by the two policy banks and not by commercial banks. So the volume of China’s officially-insured commercial-bank loans in 2013 should be smaller than \$50 billion.

Compared to commercial banks, the two policy banks have an advantage in providing long-term, large-volume loans – an important precondition for infrastructure finance. As Figure 14 shows, the two policy banks had dominant shares (78%) of the medium-long term foreign-currency loans of all Chinese banks.<sup>34</sup> This advantage is a result of their distinct source of funds. The two policy banks raise most of their funds through issuing long-term bonds on the bond market. In fact, the CDB played a crucial role in creating China’s interbank bond market and is the second largest bond issuer on the bond market, exceeded only by the Ministry of Finance (MOF). Policy-bank bonds enjoy “zero-risk weighting,” a policy favor granted by CBRC, which means that the bonds are guaranteed by the state and rated as high as MOF’s government bonds. Such sovereign guarantees of their capital-input allow the policy banks to disburse long-term, large-volume loans for their capital-output (see Sanderson and Forsthye, 2012; CDB History, 2013; Humphrey, 2015; Chen, 2017). Commercial banks, on the contrary, rely mostly on clients’ deposits, which can be withdrawn short-term.

The CDB’s and Chexim’s overseas loans are mostly denominated in U.S. dollars, and some are denominated in Renminbi or other currencies. As to their costs, policy banks do not have a significant advantage in offering “cheap” loans compared to the commercial banks. In terms of renminbi loans, the capital cost of the policy banks is generally higher than that of commercial banks: the yield of policy-bank bonds is roughly around 3-5%, whereas the interest rate on bank deposits is only 1-2%.<sup>35</sup> In terms of foreign-currency loans, the CDB has two sources. The first is to borrow foreign currencies directly from

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<sup>33</sup> This includes Medium & Long-Term Export Credit Insurance, Overseas Investment Insurance, Bond and Guarantee Business, and Others.

<sup>34</sup> Medium-long term loans refer to loans that are above one year

<sup>35</sup> Policy bond yield rate can be found on the official website of China Central Depository & Clearing co. Ltd and interest rate of deposits can be found on People’s Bank of China’s official website.

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government organs (e.g. the central bank) at a rate of approximately 2%-3% (CDB Annual Report, 2016).<sup>36</sup> The other is to issue foreign-currency bonds, but the volume of issuance is usually limited. In 2016, for example, the bank issued a total volume equaling 6.5 billion USD in foreign-currency bonds, whereas its Renminbi-bond issuance was 1500 billion (over 200 billion USD) (CDB Annual Report, 2016). Compared to financiers from developed countries, these Chinese loans are generally costly. For instance, Japan, China's main competitor on the infrastructure finance market, has a negative interest rate, and even the non-concessional yen loans come with a relatively low interest rate. The low interest rates on the international financial market mean that if a Chinese commercial bank can attract sufficient amount of deposit in foreign currency directly, it may be able to offer an interest rate that is even more preferential than those offered by the CDB or Chexim's non-*liangyou* departments.

In terms of borrowers, MOFCOM's grants and interest-free loans as well as Chexim's *liangyou* loans are only given to governments, i.e. agreements must be signed between MOFCOM/Chexim and a government agency of the recipient country, though firms may be able to participate in international tenders later and sign contracts with project owners. Non-concessional loans, regardless of coming from policy banks or commercial banks, can be lent to either government agencies or corporations. In other words, policy banks' non-concessional loans are not much different from commercial-bank loans in terms of borrowers' type.

Where the two differ are in regards to the scale, maturity, and strategy of investments. The CDB identifies itself as a "wholesale" bank with an advantage in offering large-scale, long-term loans. For example, in the first few years since its establishment, the bank offered a 30-billion, 15-year renminbi loan to the Three Gorges Dam project, which is China's and the world's largest hydro power plant (CDB, 2016). The bank also provides portfolio financing, i.e. using bundled loans to finance multiple projects at a time (Zou, 2015; CDB, 2016; Xu, 2017b; Chen, 2018). This way of finance is an outcome of the bank's mandate to facilitate urbanization and development: to equip cities with necessary infrastructure, multiple facilities have to be built at a time, such as roads, power plants, sewage plants, ports, and industrial parks. Chexim does less urban planning, but also has a preference in lending to projects with economic scale, because its major clients are

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<sup>36</sup> According to CDB's annual report, the average interest rate of "borrowings from governments and other financial institutions" was 2.26% in 2016 and 2.67% in 2015. By the end of 2016, 9% of "borrowings from governments and other financial institutions" was in Renminbi, 89% was in US dollar, and 1% was in other currencies.

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mostly engaged in strategic industries in which projects require large-volume investment. Compared to the policy banks, the commercial banks' lending volume is smaller on an aggregated level. Neither do they have an advantage in offering long-term large loans. However, on a single project level, a commercial bank is capable of competing with the policy banks, especially for infrastructure projects with great commercial potential. In other words, if the project per se appears lucrative, commercial banks have sufficient incentive and capacity to compete with the two policy banks.

To sum up, except for MOFCOM's interest-free loans and Chexim's concessional loans, all other development-finance capital, including Chexim's and the CDB's non-concessional loans as well as the large commercial banks' loans, are not subsidized by the government and generally do not come with a considerable level of concessionality. The CDB loans might be slightly more stringent than that of Chexim due to their diverse lending philosophies, but the difference is not significant. Compared to commercial banks, policy banks have an advantage in scale, i.e. issuing large-volume and long-term loans, but the interest rates they offer are not necessarily more concessional given that they raise most of their funds through bond issuance on the market, which is more costly than raising funds from savings, the usual capital source of commercial banks.

OECD category	ODA			OOF	
	China category	Foreign assistance	Foreign assistance/Liangyou	Liangyou	Non-concessional loans
Loan type	Grants, free-interest rate loans	Concessional loans	Preferential buyers' credit	Non-concessional loans	Commercial loans covered by Sinosure
Agency	MOFCOM	Chexim	Chexim	Chexim, CDB	Commercial banks
Interest rate	0	2%-3%	2%-3%	Market rate	Market rate
Borrower	Government agency of recipient country	Government agency of recipient country	Government agency of recipient country	Government agency of recipient country/ Chinese firm	Government agency of recipient country/ Chinese firm

TABLE 7 CHINA'S OFFICIAL DEVELOPMENT-FINANCE CREDITS

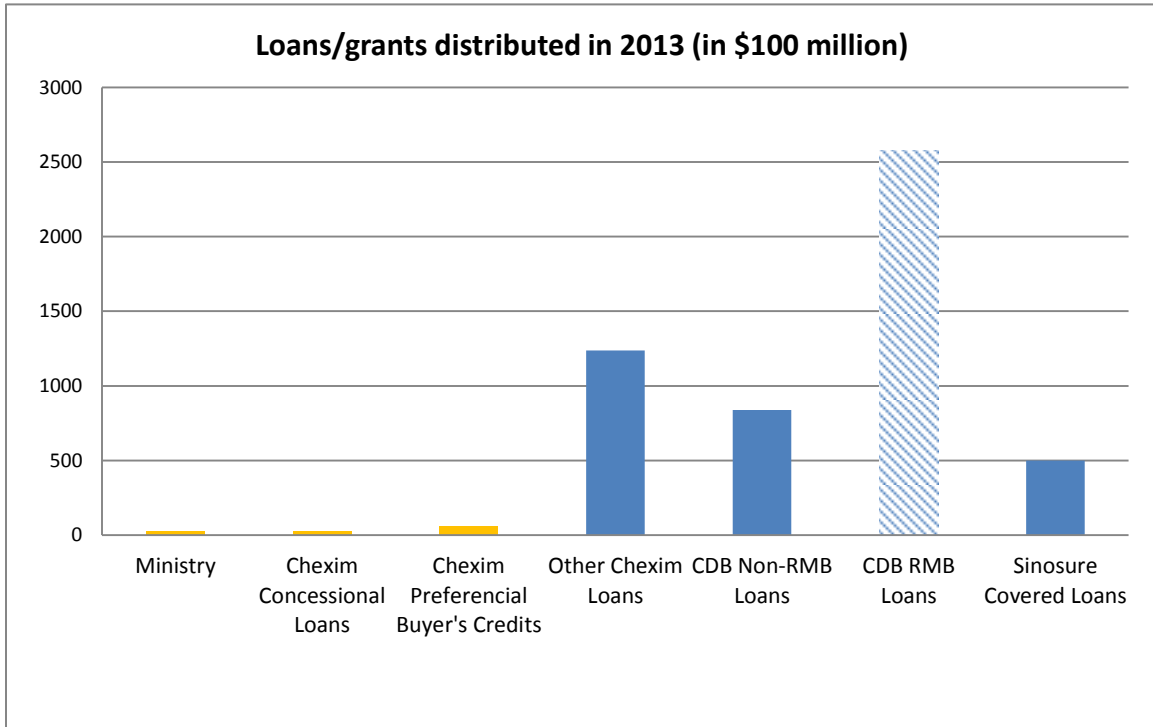


FIGURE 13 CHINA'S OFFICIAL DEVELOPMENT-FINANCE CREDITS; SOURCES: MINISTRY OF FINANCE, ALMANAC OF CHINA'S FINANCE AND BANKING 2013, SINOSURE ANNUAL REPORT 2015

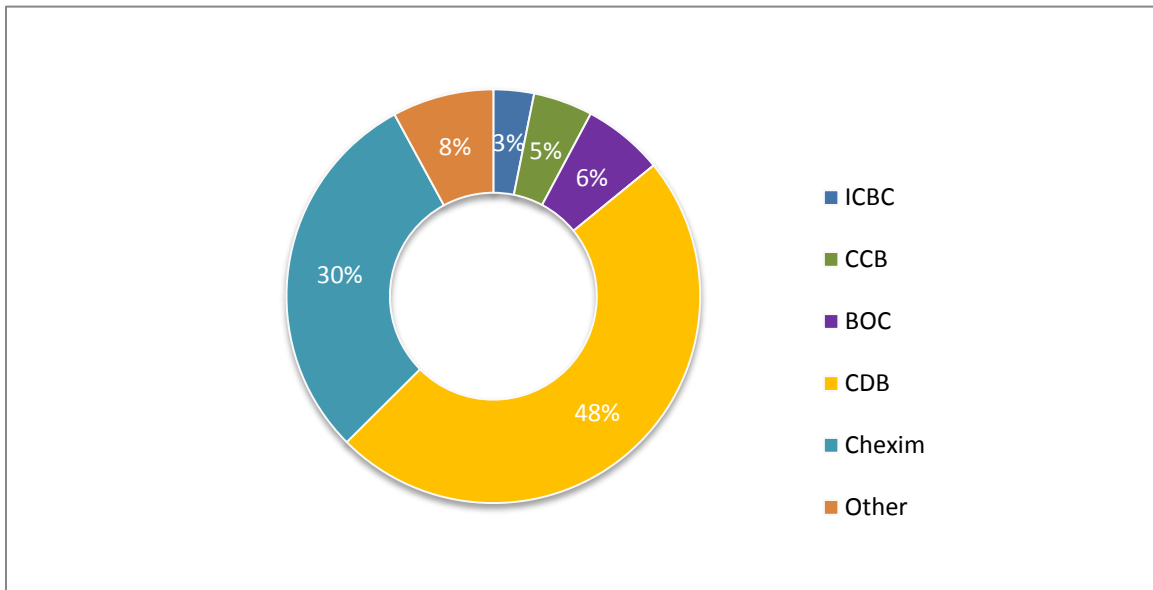


FIGURE 14 MEDIUM-LONG TERM FOREIGN-CURRENCY LOANS BY BANKS, 2015; SOURCE: ALMANAC OF CHINA'S FINANCE AND BANKING 2015

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Despite their non-concessionality, the majority of Chinese loans have been lent to the developing regions. According to [Aiddata's 2017 dataset](#), the top 20 borrowers of Chinese bank loans from 2000 to 2014 were Venezuela, Russia, Pakistan, Belarus, Iran, Nigeria, India, Angola, Brazil, Ecuador, Argentina, Indonesia, Ethiopia, Ghana, Kazakhstan, Laos, Bosnia-Herzegovina, Sri Lanka, Philippines and Mali (see Figure 15).<sup>37</sup> Using the World Bank's income-level categorization,<sup>38</sup> eight of these borrowers are upper-middle income countries, eight are lower-middle income countries, two are low-income, and none of them is high-income (China per se is an upper-middle income country). According to [Global Development Policy Center's dataset](#), from 2000 to 2017, the largest borrowers of China's policy-bank loans in the energy sector are Russia, Brazil, Pakistan, Angola, India, Venezuela, Indonesia, Turkmenistan, Nigeria, Vietnam, Argentina, Ecuador, Cambodia, Ukraine, Bangladesh, United Kingdom, Zambia, Uganda, Bosnia and Herzegovina, and South Africa (see Figure 16). Among these, eight are upper-middle income countries, ten are lower-middle income countries, one is a high-income and one is a low-income country. In other words, the policy banks are mostly targeting developing economies.

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<sup>37</sup> The original dataset has 5466 entries of development-finance projects. The author took out projects that were financed by government organs (e.g. a ministry), companies, and organizations, and kept projects financed by policy banks, commercial banks, and unspecified financiers; the author also took out grants, interest-free loans, technical assistance, scholarships, debt forgiveness, debt restructuring, and only calculated loans, export credits, supplier credits, and unspecified ones. This added up to 1737 entries.

<sup>38</sup> "World Bank Country and Lending Groups," World Bank, <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>.

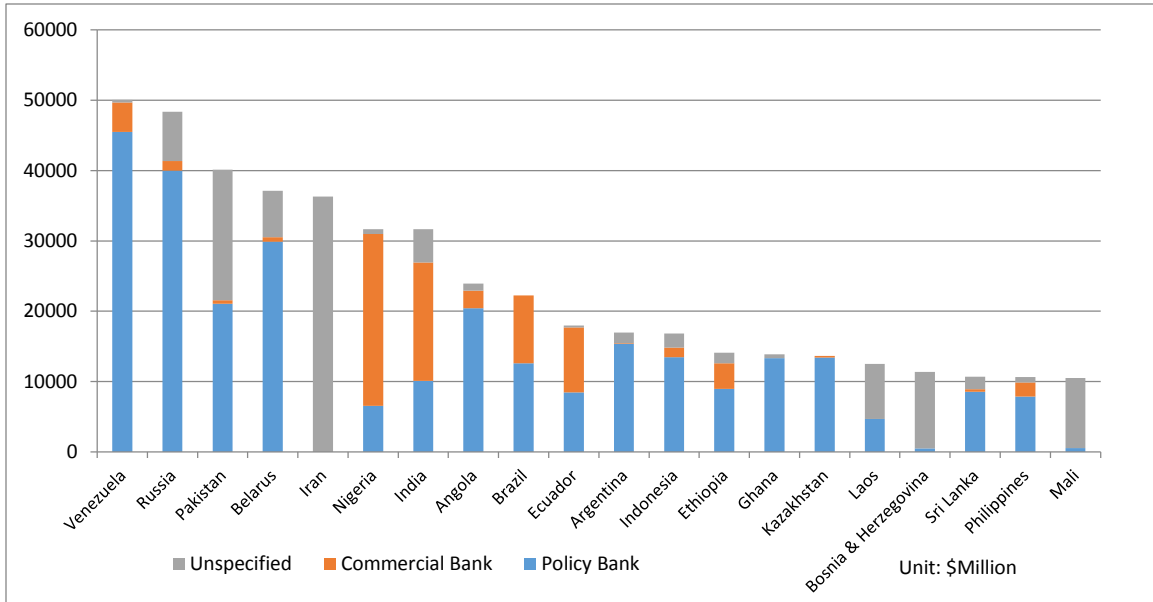


FIGURE 15 CHINA'S OFFICIAL BANK LOANS 2000-2014; SOURCE: AIDDATA<sup>39</sup>

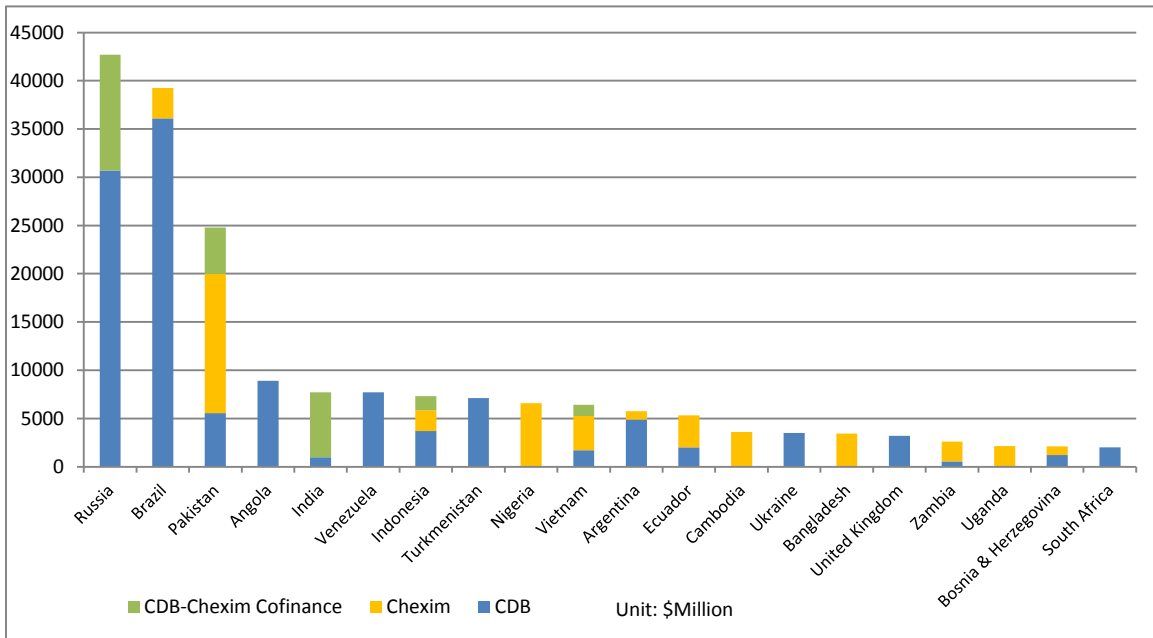


FIGURE 16 CDB'S AND CHEXIM'S LENDING IN THE ENERGY SECTOR, 2000-2017; SOURCE: GLOBAL DEVELOPMENT POLICY CENTER

<sup>39</sup> The dataset does not specify whether commercial-bank loans are insured by an official insurance company, and therefore may overestimate the total volume of non-concessional official development-finance loans by including commercial loans.

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This lending preference shows that China uses non-concessional loans to finance projects in regions that are usually destinations of concessional lending by industrialized countries. A comparison to Japan's two public financial agencies illustrates this disparity. Japan has two separate public financial agencies, the Japan International Cooperation Agency (JICA) and the Japan Bank for International Cooperation (JBIC), which handle concessional ODA loans and non-concessional export-credit loans respectively. In Fiscal Year 2015, JICA distributed 37% of its ODA to Southeast Asia and the Pacific and more than half of it went to Vietnam. The region that received the second largest amount of ODA was South Asia and about two thirds of it went to India (see Figure 17). JBIC (Japan's former Exim Bank), however, shows a contrasting lending preference—it was more interested in developed countries. The region that received the largest amount of JBIC credits in the same year was Europe, and the largest borrower in Europe was the United Kingdom (see Figure 18).

A similar lending and aid-giving pattern can be found in Germany, the largest European ODA donor. In Germany the KfW Group handles both ODA and export-credit loans. It has separate divisions that deal with these two types of businesses: the KfW development bank and the DEG that handle development projects, and the KfW-Ipex that handles export credit loans. Ipex is the most profitable division of the KfW. In fact, the KfW Group uses profits generated from Ipex to subsidize other parts of its business that do not necessarily make profits. According to Ipex's annual report, in Fiscal Year 2015, 4.2 billion Euro (24%) loans were lent to projects in Germany, 6.7 billion Euro (39%) went to other parts of Europe, and the rest of the world borrowed 6.4 billion Euro (37%), of which 4.8 Euro (28%) was lent to emerging markets. In other words, the majority of the credits (63%) stayed within Europe (KfW-Ipex, 2016). The KfW Development Bank and the DEG focus on developing countries and emerging markets, and a certain portion of the capital for those projects (e.g. 2.2 billion euros out of 7.7 billion in 2015) came directly from the Federal Government rather than the bank per se (KfW, 2016). In Fiscal Year 2015, the largest recipients of Germany's development loans are India, Indonesia, and South Africa.<sup>40</sup> That is to say, like Japan, Germany's non-concessional lending also prefers more developed countries than developing ones. For projects in less developed countries, where China's non-concessional lending usually flows to, Germany uses ODA instead.

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<sup>40</sup> "Global Engagement," KfW, <https://www.kfw.de/microsites/Microsite/transparenz.kfw.de/#/start/2015>.

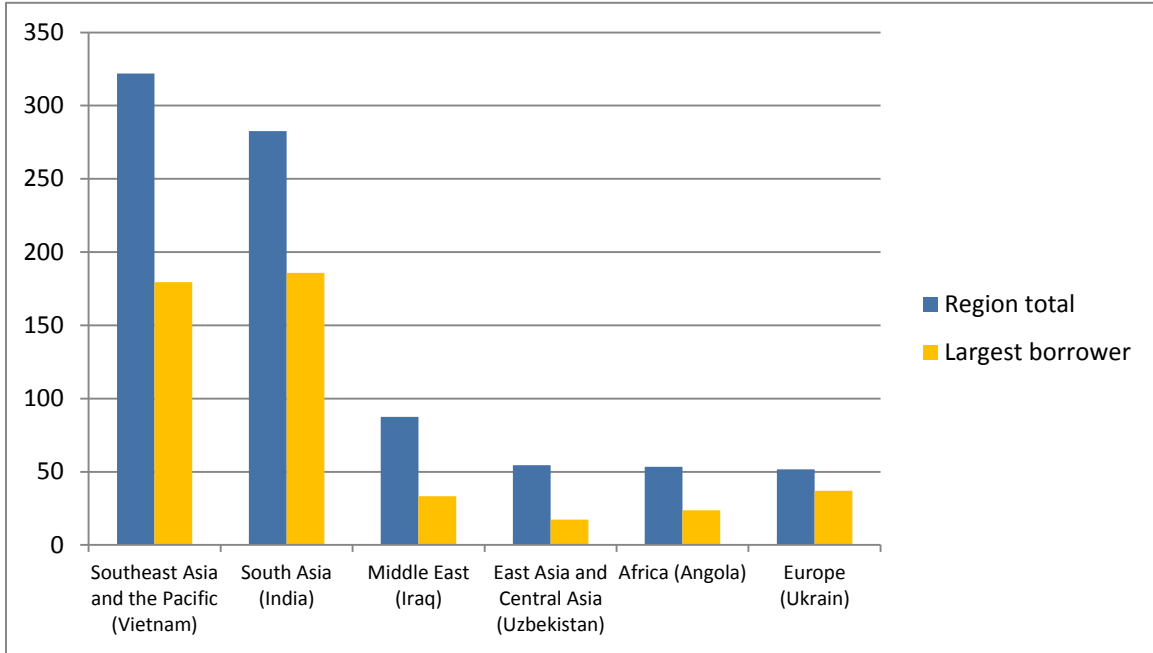


FIGURE 17 JAPAN INTERNATIONAL COOPERATION AGENCY'S ODA BY REGION, FY2015, IN BILLIONS YEN; SOURCE: JICA ANNUAL REPORT 2016

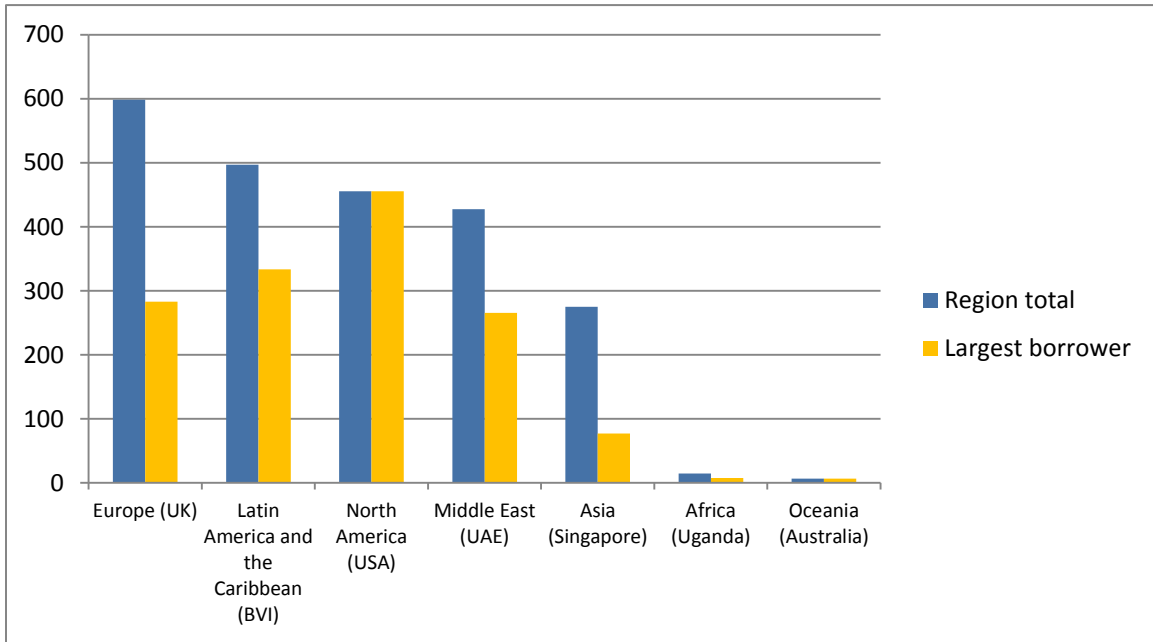


FIGURE 18 JAPAN BANK FOR INTERNATIONAL COOPERATION'S INVESTMENT BY REGION, FY2015, IN BILLIONS YEN; SOURCE: JBIC ANNUAL REPORT 2016

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To conclude, the above analysis presents three important features about China's official overseas development finance. First, the main financiers of the projects are the two policy banks. The amount of MOFCOM's foreign assistance is trivial compared to the volume of policy-bank loans. Second, the majority of the loans are not concessional. Only MOFCOM's grants and interest-free loans and Chexim's *liangyou* loans offer interest rates below market rate, but these grants and loans altogether account for a limited portion of China's total development-finance credits. The major sources of capital are Chexim's non-concessional loans and the CDB's overseas loans. Sinosure-covered commercial-bank loans are also an important source but by far their total volume is not as large as that of the policy-bank loans. Third, the destinations of the non-concessional loans are the developing countries, to which lenders from industrial economies usually offer government-subsidized concessional lending or aid/grant only. These three lending characteristics present a dual identity of China's overseas development finance. In terms of their destinations, the loans are aid-like because they target mostly the developing world. However, in terms of the way they are disbursed, these policy-bank loans are more like commercial loans, because their interest rate is non-concessional, either in comparison with foreign loans or with Chinese commercial bank loans.

### **III. Why using non-concessional loans for development finance?**

Why do China's policy banks use non-concessional loans to finance projects that are traditionally financed by concessional lending of industrialized countries? This section first discusses two strands of existing literature, the economic statecraft literature and the developmental state literature. The former sees the state as using commercial actors to achieve non-economic goals; the latter sees the state as coordinating economic development through rational planning. These literatures explain some part of China's development finance, but do not explain the non-concessional nature of the loans. The section then puts forward a complementary explanation based on a micro-level examination of the policy banks' lending process, arguing that the Chinese-style development finance is a result of the country's status as a developing country still going through industrialization and urbanization as well as it being a latecomer on the international market. This view also sees the state as pursuing economic development objectives, but unlike the second literature, it highlights the role of the state in credit enhancement and market creation. Further, the section shows that the way Chinese policy banks finance infrastructure projects challenges the existing development-finance paradigm established by industrialized countries. Unlike the current norm of aid giving, which channels fiscal

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revenue from developed countries to developing ones, China conducts development finance not through the direct allocation of fiscal revenue, but through enhancing the creditworthiness of projects and making them commercially viable to the market.

### **China's economic statecraft**

One way of understanding China's overseas development finance is through the lens of economic statecraft. That is, the state uses economic means to achieve geopolitical, diplomatic, security, or strategic goals. The loans were lent to less developed regions because, based on the reasoning of this literature, they are tools of the state to achieve non-commercial goals. In other words, China's policy banks could have invested in more profitable projects or in more economically advanced regions, but owing to the fact that they had to pursue state objectives, they invested in the less developed regions that are either geopolitically important or have abundant resources.

Analysis based on the reasoning of this literature is often seen in media reports regarding China's infrastructure projects, especially those located in "strategically important" areas. A typical example is the recent acquisition of Sri Lanka's Hambantota Port by the China Merchants Group. Financed by Chexim and beginning operation in 2012, the port ran a deficit for years and, as a result, the Sri Lanka Port Authority had to lease it to the Chinese firm in 2017. Several media reports pointed out that this acquisition might threaten Sri Lanka's sovereignty and affect international relations in the Indian Ocean.<sup>41</sup> "There is the possibility that China militarizes the port and uses it in a discriminatory, exclusive manner," commented Kitaoka Shinichi, political scientist and president of Japan International Cooperation Agency.<sup>42</sup>

The economic statecraft argument is also seen in discussions about China's investment in energy and mining sectors. Norris (2016) defines economic statecraft as the state seeking "to influence the behavior of commercial actors in an effort to achieve the state's strategic objectives," which include security objectives such as securing resource overseas. In his analysis of the CDB, Norris specifies two state organs that could affect the CDB's lending decisions: the State Council, which is China's central government,

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<sup>41</sup> See for example, "Is China's Belt and Road working? A progress report from eight countries," *Nikkei Asian Review*, <https://asia.nikkei.com/Spotlight/Cover-Story/Is-China-s-Belt-and-Road-working-A-progress-report-from-eight-countries>; "Sri Lanka, Struggling With Debt, Hands a Major Port to China," *the New York Times*, <https://www.nytimes.com/2017/12/12/world/asia/sri-lanka-china-port.html>.

<sup>42</sup> "ASEAN 50nen to Ittaiichiro: nihon, jishyu • jiritsu • tōitsushienwo," *Nikkei*, <https://www.nikkei.com/article/DGKKZO23402350T11C17A1KE8000/>.

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and the National Development and Reform Commission (NDRC), China’s economic planning organ, and argues that the bank is a tool of the state to secure resources overseas.

The economic statecraft theory does a great job in explaining the policy banks’ investment portfolio at a macro level. Policy banks, by definition, have to achieve the policy objectives of the state. The CDB has the mandate to finance “infrastructure, basic industries, and pillar industries,” and Chexim has the mandate to facilitate the “going global” of Chinese firms of strategic importance. The two banks follow state guidelines when they select industries and projects to finance. By the end of 2014, more than 50% of CDB’s overseas lending was to projects in the energy and mineral resource sectors (CDB Global Cooperation Business, see Figure 19). This appears to be good evidence for the economic statecraft argument.

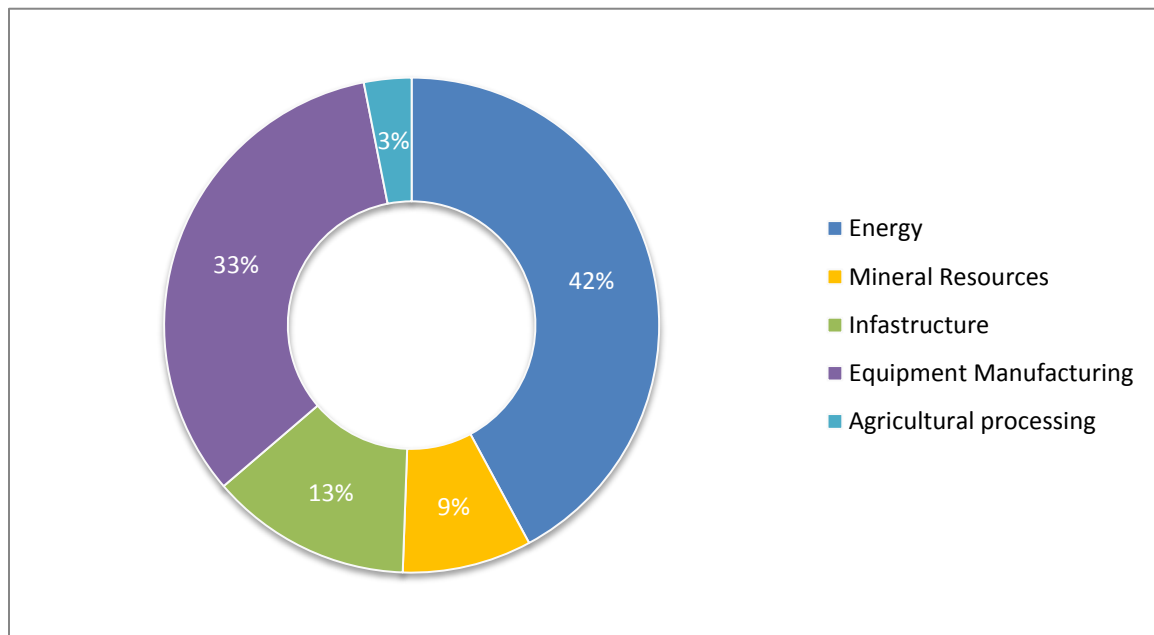


FIGURE 19: CDB LOAN DISBURSEMENT BY SECTOR (BY 12/31/2014); SOURCE: CDB GLOBAL COOPERATION BUSINESS

However, at a micro level there are two issues with this line of argument. The first is who “the state” is and what state interests are. The second is through what channels the state could make an impact on the banks’ lending decisions and what happens if the banks’ interests conflict with state interests. The policy banks are state-owned and serve state interests, but at the same time they are financial agencies subject to the supervision of

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China Banking Regulatory Commission. For both policy banks, banking prudence is one of their most important principles. To put it simply, they do not want failed projects or non-performing loans. This does not necessarily align with the non-economic “state objectives,” i.e. geopolitics, foreign relations, or security, which are the key interests of specific government organs such as the Ministry of Foreign Affairs (MOFA) and the National Development and Reform Commission (NDRC). When the banks’ economic and financial interests conflict with the state’s interests, whether these government organs have sufficient power to alter the banks’ decisions remains questionable. It is therefore important to examine through what channels “the state” can make an impact on the banks’ lending decisions.

A first channel is state ownership, which is viewed by the economic statecraft literature as an important sign of state control. The CDB is a state-owned shareholding corporation and its four shareholders are the Ministry of Finance (MOF), Central Huijin (a sovereign wealth fund), Buttonwood investment platform of the State Administration of Foreign Exchange (SAFE), and the National Council for Social Security Fund. Chexim is not a shareholding corporation and its owners are MOF and the Buttonwood investment platform. First, the fact that these state financial organs own the banks does not necessarily mean that they could determine the latter’s lending decisions. The reason SAFE became the policy banks’ major shareholder in 2015 was to increase the latter’s capital adequacy ratio and allow them to lend more. Second, even if these state financial organs attempt to influence the banks’ lending using their status as shareholders/owners, it is very unlikely that they force the bank to pursue political, foreign-policy or security objectives, because the former are more concerned about the financial/economic condition of their assets.

A second channel is personal appointment. All top leaders of the policy bank are appointed by the Communist Party, but their work experience before joining the banks reflects the priority of the banks.<sup>43</sup> The CDB has 13 directors (top-level leaders). Three of them are executive directors directly managing the bank, including the head of the bank. All three came from state-owned commercial banks. Four of the directors are government-agency directors from four ministerial-level government organs, i.e. NDRC, MOF, MOFCOM, and the central bank. NDRC has an incentive to implement the state’s industrial policies and secure resources, whereas all other government organs are more

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<sup>43</sup> Leadership information of the two policy banks can be found on the banks’ annual reports.

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concerned with monetary, financial, and economic issues. The other six are equity directors from the four shareholders mentioned above. In addition, the bank has a board of supervisors, whose members are directly pointed by the State Council. But according to the CDB annual report and the State Council's Regulation on Board of Supervisors of Main Financial Agencies, the main duty of the supervisors is economic, i.e. to make sure that the bank manages state assets well.<sup>44</sup> The leadership structure of Chexim is slightly different since it is not a shareholding corporation, but it demonstrates similar commercially-oriented features. Both its chairman and vice chairman previously worked at the central bank. The chairman of the bank's board of supervisors came from China Banking Regulatory Commission. All five vice presidents came from financial/economic agencies. In other words, the leadership structure of the two policy banks shows that the banks are more concerned about financial/economic objectives than other ones.

This contrasts greatly with the case of Japan, where there is an official, institutionalized channel for the state to influence the financial agencies and achieve non-commercial objectives. In his book on Japan's postwar economic miracle (1982), Johnson describes the phenomenon of "amakudari," which refers to the appointment of a ministry's official to an agency or enterprise supervised by the ministry. JICA is an amakudari destination for the Ministry of Foreign Affairs of Japan. In fact, it was not until 2003 that JICA had its first president not from MOFA. Similarly, JBIC was a "territory" of the Ministry of Finance of Japan, and NEXI (Japan's official export insurance company), of the Ministry of Economy, Trade and Industry. The personnel transfer not only occurs among top-level leaders, but also to lower-level staff (see for example, Kusano, 2006). The institutional connection and the well-established human networks allow the ministries to achieve their objectives through coordinating the financial agencies. JICA, coordinated by MOFA, has the mandate to achieve the state's diplomatic goals and increase the presence of Japan through economic means. Unlike the case of Japan, in China there is limited room for ministries to influence the policy banks' lending decisions. The *liangyou* loans require approval by MOFCOM, but the non-concessional loans do not. According to China's administrative ranking system, policy banks are at least vice-ministerial level agencies.<sup>45</sup> The ranking of top-level policy-bank leaders are not necessarily lower than the government officials (with the only exception of ministers).

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<sup>44</sup> "Guoyou Zhongdian Jigou Jianshahui Zanxingtiaoli," the People's Bank of China, <http://www.pbc.gov.cn/tiaofasi/144941/144953/2817209/index.html>.

<sup>45</sup> Some say the CDB is a ministerial level agency, but this is not confirmed.

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Another channel for the state to influence the bank is *Gaofang*, top-level leader visit. Usually when top leaders of China visit another country, they would facilitate economic cooperation between the two countries. An example is the China-Pakistan Economic Corridor (CPEC). The economic cooperation plan, which would build a collection of infrastructure projects throughout Pakistan, was put forward by China's Prime Minister Li Keqiang during his visit to the country. But such a top-down mechanism cannot be considered entirely state-led and the reason is twofold. First, government only provides a broad framework. On a micro-level each project is implemented by the banks, firms and related agencies, and they all have to go through the regular bank appraisal process. Second, many projects existed before the top-level visit. For example, Gwadar Port of Pakistan was built before Li's visit in 2013. In many cases *Gaofang* reinforces existing projects rather than generating new ones from scratch.

To sum up, economic statecraft theory could explain the two policy banks' investment portfolio on a macro level. But on a micro level, the policy banks have their own economic and financial interests that do not necessarily align with the state's geopolitical or foreign-policy objectives. A close examination on the channels shows that government organs with non-economic mandates can influence the banks' lending decisions only to a limited degree.

### **China as a developmental state: state-firm nexus**

The three direct channels through which the state can direct policy banks to invest in strategically important projects were discussed above. There is also an indirect way to do this, i.e. ministries can coordinate overseas finance through regulating firms. If a Chinese firm attempts to do an infrastructure project abroad, it has to acquire government approvals before requesting bank loans. Without receiving required government documents, banks would not lend to the firms. In most cases these documents are not difficult to acquire, but the procedural requirement gives ministries veto power. Through coordinating firms, the ministries can indirectly coordinate the policy banks. This leads to the possibility of using the developmental state literature to explain China's overseas finance. This strand of literature originated from empirical studies on the postwar miracles of Northeast Asian economies such as Japan and South Korea (Johnson, 1982; Amsden, 1989; Wade, 1990; Haggard et al., 1993; Evans, 1995; Woo-Cummings, 1999; Solís, 2004; Thurbon; 2016). Like the economic statecraft literature, the developmental state literature underscores the state's use of economic means in achieving national objectives. What is specific about the latter literature is that it views economic

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development, rather than security or foreign policy, as the core objective of the state. The developmental state literature also highlights the role of elite bureaucrats' rational planning of economy and their coordination of key sectors, including various industrial sectors and the financial sector. Specifically, the state coordinates the financial sector and channels preferential credits to selected industries and firms.

Two aspects of China's overseas development finance can be explained by the developmental state literature. First, China's development finance is coordinated by elite bureaucracy. Like Japan's Ministry of International Trade and Industry (MITI),<sup>46</sup> characterized by Johnson as the core ministry for Japan's economic planning, China's MOFCOM and NDRC have played crucial roles in coordinating industrial policies and overseas finance. A close examination of the banks' lending process reveals the coordinating role of these two ministries.

Chinese contractors (i.e. the companies building infrastructure works overseas) that intend to participate in international tenders must acquire a number of documents from government organs. A first document is a "Support Letter" from the Chinese embassy's Economic and Commercial Chancellor's Office (ECCO) in the country where a tender takes place. The ECCO are the overseas offices of MOFCOM that coordinate business activities in the corresponding country. After receiving the Support Letter, the firm needs to acquire a "Letter of Interest in Lending" from Chinese financial agencies and a "Letter of Interest in Insuring" from Chinese insurance companies. With these three documents, the firm can apply for a Certificate of Approval to MOFCOM's Department of Outward Investment and Economic Cooperation.<sup>47</sup> The department will evaluate several aspects of the application, such as how well the project follows China's trade policy, what the risk level of the country where the project takes place is, what the firm's past experience doing business in this country is, and how professional the firm is in conducting the proposed project.<sup>48</sup> These regulations give MOFCOM the authority to veto projects. Theoretically, firms can choose not to apply for the Support Letter from ECCO and still participate in international tenders. However, Chinese banks and insurance companies

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<sup>46</sup> MITI was later reorganized and became the Ministry of Economy, Trade and Industry (METI).

<sup>47</sup> "Duiwai Chengbao Gongcheng Xiangmu Toubiao (Yibiao) Guanli Banfa," MOFCOM, <http://www.mofcom.gov.cn/article/swfg/swfgbi/201112/20111207878964.shtml>.

<sup>48</sup> "Guanyu Zhuwai Jingshang Jigou wei Qiye Banli Duiwai Chengbao Gongcheng Xiangmu Toubiao (Yibiao) Hezhun Yijian de Zanxing Guiding," MOFCOM, <http://hzs.mofcom.gov.cn/article/zcfb/a/201612/20161202110143.shtml>.

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would not provide financial support for firms without those government approvals. Therefore, only if the firm has very sufficient capital can it possibly skip government regulation. But this happens rarely because most international projects need quite a large amount of capital.

In addition to MOFCOM, several other government organs are involved in overseas finance. The NDRC monitors Chinese firms' outward direct investment. If a firm plans to conduct mergers and acquisitions overseas, it has to register with the NDRC or its provincial-level administrations, otherwise banks would not lend to the firm.<sup>49</sup> The State-owned Assets Supervision and Administration Commission (SASAC) is not directly involved in the lending process but it supervises the economic performance of central enterprises, i.e. how well they manage state assets. MOFA may be involved if a firm tries to do a project in a country that does not have official diplomatic relations with China or is politically unstable, but its presence is relatively weak in comparison with MOFCOM and the NDRC. In sum, Chinese ministries, especially MOFCOM and the NDRC play important roles in regulating overseas development finance.

Again a question about this line of argument, that is, the state coordinates firms to achieve economic and developmental objectives, is to what extent the state can really turn down projects if there is a conflict of interest between the ministries and the firms. Like the policy banks, the SOEs have their own commercial interests that do not necessarily align with the developmental objectives of the ministries, and it is rather difficult to determine whether the former are truly pursuing state objectives, or using such “developmental and strategic” objectives to justify their commercially-oriented behaviors. Wang (2015) sees the SOEs through a different lens, highlighting the fact that they are pursuing financial interests and managing the assets of what she calls a “shareholding state.” “Whatever they do can be called ‘pursing national strategy’,” said a policy-bank loan manager. In fact, around half of China's central enterprises, i.e. the most important SOEs directly supervised by SASAC, are vice-ministerial level entities, namely, Sinopec, PetroChina, CNOOC, three oil giants actively engaged in international energy investment. Many of the central enterprises were formally ministries themselves, and their personnel appointments are directly managed by the Communist Party (see Li, 2016). As a result,

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<sup>49</sup> More details see “Qiyè Jìngwài Tóuzì Guānlǐ Bānfǎ,” NDRC, [http://www.ndrc.gov.cn/zcfb/zcfbl/201712/t20171226\\_871560.html](http://www.ndrc.gov.cn/zcfb/zcfbl/201712/t20171226_871560.html).

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ministries may not have sufficient power to influence these central enterprises' business decisions.

A second aspect of China's overseas development finance that can be captured by the developmental state literature is the fact that capital is channeled to a group of industries and enterprises selected by the state. Most of China's official loans (ODA and OOF) were lent to large firms conducting business in strategic industries. Most of these firms are state-owned central enterprises. SASAC's 2017 central-enterprise portfolio lists 97 enterprises which are involved in industries relating resources (petroleum, coal, steel, mineral, etc.), electricity, telecommunication, transportation, manufacture, and among others.<sup>50</sup> According to Engineering News-Record, an American magazine that annually ranks the largest contractors, among the world's top 50 international contractors, nine are from China, and all of them are central enterprises or their subsidiaries (Table 8).<sup>51</sup> According to the CDB, by the end of 2014, the bank has accumulated on-balance foreign-currency loans of 267 billion US dollar. About one quarter of this, approximately \$67 billion, is issued by the CDB main bank (as opposed to the CDB's 38 provincial branches), the CDB organ that handles central enterprises' projects (CDB Almanac, 2015).<sup>52</sup> In other words, at least a quarter of the banks' overseas loans were lent to central enterprises. Of course policy-bank loans are not restricted to state-owned borrowers. Huawei, a Shenzhen-based private-owned telecommunication giant, is a long-term partner with the policy banks and has received a large amount of loans from them. A commonality that companies like Huawei share with the SOEs is that they are enterprises of strategic importance and fall into the category of targeted industries.

With the support of policy-bank loans, Chinese enterprises have a considerable advantage in winning international projects in countries that are in need of large-volume capital for infrastructure. Many project owners/sponsors in developing countries lack the capital to build infrastructure works, and therefore prefer contractors that come with financial packages. In 2006, the CDB offered a \$15 billion loan to ZTE to build a mobile network

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<sup>50</sup> "Yangqi Minglu," SASAC, <http://www.sasac.gov.cn/n2588035/n2641579/n2641645/index.html>.

<sup>51</sup> Firms are ranked according to construction revenue generated outside of each company's home country in 2016 in U.S. \$ millions, <https://www.enr.com/toplists/2017-Top-250-International-Contractors-1>.

<sup>52</sup> The CDB's provincial branches are located mostly in the capital or major port city of each province of China. Each branch is assigned a few countries and disburses loans to projects taking place in their assigned countries only. The only department of the CDB main bank that directly disburses loans is the Enterprise Bureau, which is in charge of all projects relating central enterprises.

in Ethiopia. The bank’s financial package allowed ZTE to acquire this contract and build the first mobile network in the country.

RANK 2017	RANK 2016	FIRM
3	3	CHINA COMMUNICATIONS CONSTRUCTION GROUP LTD.
10	11	POWER CONSTRUCTION CORP. OF CHINA
11	14	CHINA STATE CONSTRUCTION ENGINEERING CORP. LTD.
21	20	CHINA RAILWAY GROUP LTD.
23	55	CHINA RAILWAY CONSTRUCTION CORP. LTD.
27	Not ranked	CHINA ENERGY ENGINEERING CORP. LTD.
31	23	CHINA NATIONAL MACHINERY INDUSTRY CORP.
48	49	CHINA METALLURGICAL GROUP CORP.
50	67	CHINA NATIONAL CHEMICAL ENGINEERING GROUP CORP.

TABLE 8 ENR RANKING: WORLD’S TOP 50 INTERNATIONAL CONTRACTORS BY REVENUE

To summarize, the fact that China’s overseas development finance (1) is coordinated by ministries (elite bureaucracy) and (2) prioritizes selected industries and enterprises can be explained by the developmental state literature. Nonetheless, the non-concessionality of China’s policy-bank loans remains unexplained. According to this literature, preferential lending is an important component of state support. Accessibility to low-cost capital allowed the selected industries and firms to have an advantage when competing with their rivals both at home and abroad. If China had been practicing the developmental state model, it should have largely subsidized the loans of the policy banks, and their interest rates would have been much lower.

Comparing today’s China to Japan in the first two postwar decades illustrates this contrast. Japan’s overseas development finance was mostly handled by the Overseas Economic and Cooperation Fund (OECF, now JICA) and the Exim Bank of Japan (now JBIC), two public financial agencies in charge of ODA loans and export credit loans

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respectively. These agencies received low-cost capital from the Fiscal Investment and Loan Program (FILP), which was a MOF-coordinated program that channeled cheap capital from postal savings to public financial agencies (Park, 2011). The major source of Japan's ODA and export credit capital was the FILP. The OECF and the Exim used low-cost FILP capital to support the exporting and international contracting of Japanese firms. Japan's use of tied ODA loans for commercial purposes was largely criticized by its American and European competitors for violating fair competition, and starting in the 1970s, the OECD multiple times disciplined ODA rules to prohibit Japan from using cheap loans to finance commercially-viable projects. As a result, Japan had to untie its ODA loans and reform its ODA policies since the 1980s (Yasutomo, 1995; Arase, 1995; Moravsick, 1998; Maeda, 2007 and 2010).

China's foreign-assistance loans and *liangyou* loans today greatly resemble Japan's ODA loans in the earlier postwar decades, for which the state used subsidized loans to support firms' overseas ventures. Although an official assistance project is supposed to be government-led and serve developmental purposes, through the lens of Chinese contractors, those aid projects are not so different from the international tender projects that they do for commercial interest. The only difference is that the sponsor of the aid projects is MOFCOM as opposed to a foreign government agency. Only Chinese firms are eligible to partake in the tenders held by MOFCOM and the grants and loans are used to pay the contractors directly. Chexim's *liangyou* loans also demonstrate similar commercially driven characteristics. Although requests for *liangyou* loans can only be raised by a government agency of the borrowing country, in real practice it is often the Chinese firms that suggest that the foreign government borrow from Chexim. In the eyes of Chinese contractors, those low-interest rate loans are just one type of financial tool that help them win international tenders.

But as discussed earlier, the majority of China's overseas development finance is capitalized by the Chinese policy banks' non-concessional loans, and their interest rates are not necessarily lower than those of Chinese commercial banks and are much higher than those offered by their competitors from industrialized countries. In other words, if the policy-bank loans are seen as preferential credits, then they are preferential in terms of their size and not their price. The non-concessionality of these loans, therefore, remains unexplained.

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## **Rewriting development finance**

So what explains the Chinese policy bank's non-concessional lending to the development-finance projects? If economic statecraft theory and developmental state theory only explain part of the story, what explains the rest? This paper points out a crucial factor that is often overlooked in understanding China's development finance. That is, the country is a latecomer in the global market and still a developing economy going through industrialization and urbanization despite its massive overseas capital outflow to the infrastructure market. This economic status affects its way of development finance.

Before further elaborating on this argument, it is important to notice that there is a reason we found the association between "commercial lending" and "development finance" counterintuitive. This counter-intuition comes from two underlying assumptions of the current development-finance paradigm: (1) commercial loans should finance the more profit-generating projects of the better markets; (2) the less developed markets and less profitable projects should be financed by subsidized capital, i.e. preferential credits, soft loans, or grants. Applying this logic to China's development finance, either (1) the non-concessional policy-bank credits should have gone to the better-off markets, or (2) the current projects that the policy banks lend to should have been financed by concessional loans. In other words, non-concessional lending should not be used for development finance in the less developed regions.

The association between concessional lending and development was created by the OECD/World Bank in the first two decades of the postwar era, when decolonization brought to this world a group of "backward" countries. The OECD and World Bank dominate the norms, rules, and means through which countries conduct development finance. In the first decade since its establishment, the International Bank for Reconstruction and Development (IBRD) offered only non-concessional lending to facilitate reconstruction projects, particularly in Europe. It was not until the late 1950s when the notion of concessional loans (soft loans) was put on table and the International Development Association (IDA) was established in September 1960 as part of the World Bank to finance the less developed regions. IDA divided countries into two groups, those that offered capital, the developed, and those that received capital, the developing. The less developed countries could receive concessional IDA loans (see Devesh et al, 1997; Xu, 2017a). This is still how the World Bank Group functions today. Countries with a per capita income below a certain threshold are eligible to apply for IDA loans, which come

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with terms with greater concessionality, and those with higher income apply for IBRD loans.<sup>53</sup>

Similarly, the OECD's Development Assistance Group (DAG, later became Development Assistance Committee), mainly consisting of the wealthiest democratic countries in the world, was established in 1960. The DAG's *Resolution of the Common Aid Effort* adopted in 1961 stated that "while private and public finance extended on commercial terms is valuable and should be encouraged, the needs of some of the less-developed countries at the present time are such that the common aid effort should provide for expanded assistance in the form of grants or loans on favorable terms, including long maturities where this is justified in order to prevent the burden of external debt from becoming too heavy" (OECD, 2006). The OECD-DAC by far is still the major international organization that determines the rules of official development assistance.

This idea that "less-developed countries need loans with favorable terms" contrasts fundamentally with the logic of commercial lending, which charges a higher interest rate on less credible borrowers. The adoption of this idea by the World Bank and the OECD reflected the interests and preferences of the core members of these two international organizations, which were also then the most advanced economies, in two ways. First, these countries could afford offering grants or loans with concessionality – a loan with any level of concessionality implies a transfer of taxpayers' money from the donor country to the recipient country. Second, firms of these countries were in general the most competitive ones on the international market. These firms had higher chances of winning projects in international tenders, and preferred not to compete with firms backed up by state subsidies, which the former saw as violating principles of fair competition.

Understanding the logic of the current development-finance paradigm paves the way to understanding China's development finance. Why do Chinese policy banks not use commercial lending to finance projects in better-off markets, like the industrialized countries do? Geopolitical concerns and access to resources are partial reasons, but there is another straightforward explanation that is often overlooked in the existing literature—the "good markets" and "good projects" were "taken" and China simply does not have a comparative advantage at those markets. A common view shared by the policy banks' lending managers and Chinese firms engaged in international infrastructure

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<sup>53</sup> See for example, World Bank Lending (Fiscal 2017), the World Bank (IBRD • IDA), <http://pubdocs.worldbank.org/en/982201506096253267/AR17-World-Bank-Lending.pdf>.

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market is that Chinese firms are not necessarily competing with foreign firms in the “good markets”; rather, in more cases they are competing with their Chinese peers in the relatively less developed markets. Figures in the earlier section show that China’s policy banks are mostly targeting middle-income developing countries, whereas their counterparts in Japan and Germany are targeting more advanced markets and use only state-subsidized ODA loans to finance projects in countries where Chinese policy banks do most of their business (see Figure 15, Figure 16, Figure 17, and Figure 18). This is not entirely a result of economic statecraft. There are resource-rich countries that are economically more developed and politically more stable. Japan Bank of International Cooperation, the country’s Exim bank that places the “securement of resources” on top of its agenda (JBIC, 2016), lends and invests mostly in advanced economies.

Engineering News-Record’s international contractor data shows that despite its total size, Chinese contractors have limited presence in developed markets such as Europe and North America. In 2015, Chinese contractors’ revenue share in the European market was only 3.6% and 5.4% in the North American market. This contrasts largely with their 54.9% share in Africa. China’s presence in Latin America and the Middle East were also relatively insignificant. The Asian market was where China really competed, and its competitors were South Korea and Japan (see Figure 20).

These numbers show two important facts about China’s overseas development finance. First, China has challenged the existing OECD/World Bank paradigm by largely financing the less developed regions. It has provided loans to regions that were traditionally not attractive to commercial capital from industrialized countries. Without China’s development finance, these projects would only be financed by limited amounts of development assistance or not financed at all. Second, China’s overseas development finance model is also different from Japan’s. Japan during its rapid growth era used a great deal of concessional ODA loans to support its firms to compete with European and American rivals. China in general is not financing projects in the same regions that the industrialized countries are interested in.

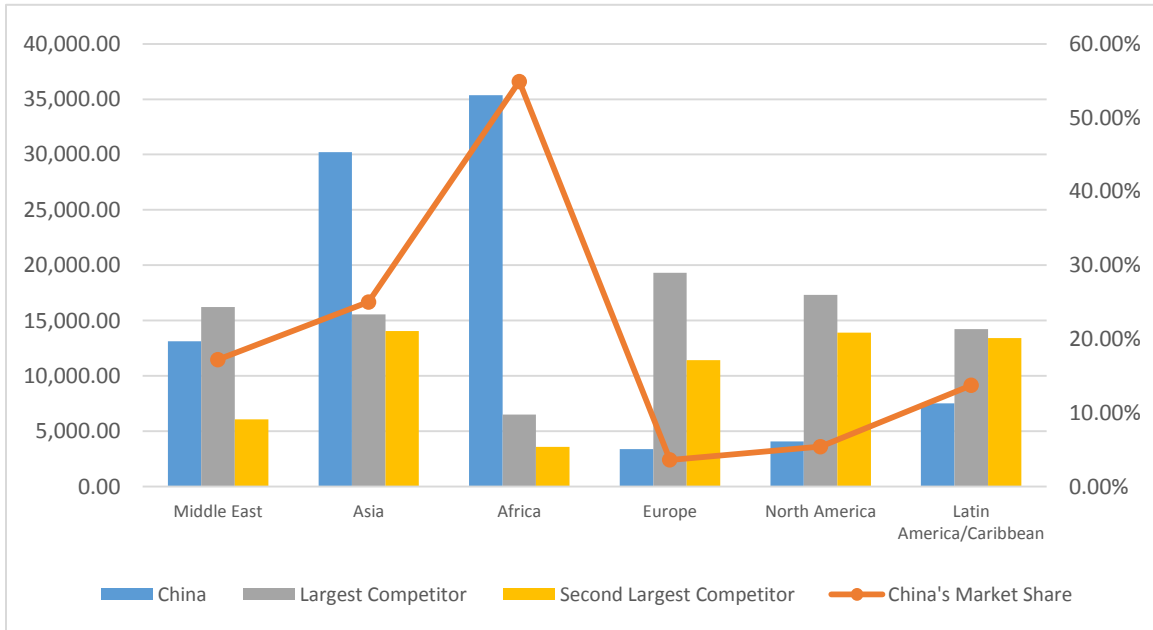


FIGURE 20 REVENUE OF TOP 250 INTERNATIONAL CONTRACTORS IN 2015, IN \$MILLION; SOURCE: ENR<sup>54</sup>

Then the next question is, if their borrowers are mostly from the less-developed regions, why do Chinese policy banks not offer loans with more favorable terms? Using the OECD/World Bank rationale, borrowers from less developed regions should enjoy certain a level of concessionality, so that they have a lower burden of repayment and fewer debts. The answer lies in China's status as a developing economy, i.e. one that is still going through urbanization and industrialization, and needs capital for its domestic infrastructure construction. According to World Bank's data, China's urban population rate in 2016 is 56.7%, only slightly higher than world average (54.3%). This means a large part of the country is still not urbanized. Despite its strong overseas presence, the CDB still does the majority of its business domestically, financing urbanization and industrialization within China.

In fact, one important reason the CDB was founded in 1994 was to make more efficient use of limited capital and better finance infrastructure and industrial projects. Back in the early 1990s the central government of China had a large fiscal shortage and policymakers realized the limitation of using direct credit allocation for infrastructure finance. The government therefore established policy banks to finance large-scale infrastructure works.

<sup>54</sup> Peter Reina and Gary J. Tulacz, "Seeking Stable Markets," Engineering News-Record, August 22/29, 2016.

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Starting in the late 1990s, the bank went through a series of market-oriented reforms to streamline its lending process and avoid making imprudent investment (CDB, 2013; CDB, 2015; Chen, 2018). The history of the CDB shows that the Chinese government has been reluctant to using direct fiscal allocation to finance infrastructure projects within China in provinces that are still going through urbanization, let alone infrastructure projects in less developed regions in other countries. What is more, the idea of donation was against the initial rationale of creating the CDB, i.e. using market means to make more efficient use of limited capital. Chexim is more acceptable to the idea of using state-subsidized loans, but like the CDB, it is a policy bank relying on self-raised funds through bond issuance on the market. To increase the amount of state-subsidized loans would mean the Ministry of Finance would have to allocate more credits to the bank. This, again, would diverge from what China has been doing for the past two decades.

### **How possible? State involvement for credit enhancement**

How have the policy banks managed to finance commercially nonviable projects with loans at commercial rates? After all, the idea seems not plausible and may lead to failed projects. The essence of China's commercially-driven development finance is the use of various means of state involvement (e.g. guarantees, coordination, planning) to increase projects' creditworthiness. A commercially viable project would generate sufficient cash flow by itself, and would use such cash flow to repay loans. For example, a power plant that generates electricity can use utility fees to pay back loans borrowed from banks to build this power plant. But in many cases infrastructure projects may not necessarily generate sufficient profits to repay loans. The Hambantota Port discussed earlier was an example. For these projects, the policy banks would require in their process of appraisal an extra level of guarantees to raise the level of credibility of the projects and cover the extra level of risks. The guarantees come from various sources, government, enterprises, insurance companies, and commodities. All of these methods demonstrate either explicit or implicit state involvement in the lending process.

The first source of state guarantee comes from the Chinese side. Policy banks often lend to state-owned enterprises, as discussed earlier in this paper, and the SOEs are often seen as the ones being picked by the state to receive financial priority. Yet beyond this winner-picking rationale, there is another related, but slightly different reasoning behind the policy banks' lending preference. SOEs are generally viewed as the "more reliable" borrowers in the eyes of loan managers – they believe the state would somehow cover the loss if an SOE project fails. But this kind of guarantee is implicit because there are no

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formal laws and rules to enforce such a state bailout. Another way to enhance a project's credibility is to ask the project owner to purchase insurance from Sinosure, China's official ECA. In usual cases, having official insurance coverage increases the credit rating of a project and banks would consequently offer lower interest rate loans to the project. In China's case, purchasing Sinosure's insurance also increases a project's creditability, but the most important consequence of having such coverage is not lowered interest rates from banks, but approval from them. In other words, Sinosure coverage can transform a project from being financially nonviable to being viable, and allows it to pass a bank's appraisal review.

Another source of guarantee comes from the borrower country's government. Banks can ask a government agency to use their fiscal revenue as a source of repayment if the project per se does not generate sufficient cash flow. In fact, the CDB has been practicing this model domestically, i.e. having subnational governments offer fiscal guarantees for their infrastructure projects. But not every borrowing government is willing to provide such a revenue-based guarantee, because this would increase their amount of debt, and may affect their ability to borrow from other financial agencies. Furthermore, a government's fiscal capacity is limited, and it cannot guarantee an unlimited number of projects.

So what if the borrowing government does not provide sufficient level of guarantees? As mentioned earlier, the CDB uses bundled loans to conduct portfolio financing, which is a financial technique to solve the creditability issue. In practice, the bank lends to multiple projects at a time, and uses earnings from the more profitable ones to cover losses of the less profitable ones (Zou, 2015; CDB, 2016; Xu, 2017b; Chen, 2018). But to be able to finance several infrastructure projects at a time, the bank must have sufficient capital. That is why this method is usually practiced by policy banks only, and not by commercial banks. One thing to notice is that portfolio financing is not only a financial innovation. State coordination is not negligible in the process. In order to group multiple projects into a bundle, the bank has to coordinate with the government of the borrower country and plan ahead of time.

In addition, the policy banks also use commodity-backed loans for borrowers that lack the capacity to repay loans with capital. This method requires an even higher degree of coordination. It not only involves the policy banks and the borrowing government, but also contractors that build infrastructure works as well as firms that purchase

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commodities or resources from the borrowing country. A widely known example is the CDB's oil-backed loans to Venezuela, which has drawn much scholarly and media discussion (e.g. Downs, 2011; Gallagher et al, 2012; Sanderson and Forsythe, 2013; Br äutigam and Gallagher, 2014). In 2007, China and Venezuela jointly established a fund, where the CDB lent \$4 billion and the Venezuelan Economic and Social Development Bank (BANDES, Venezuela's development bank) invested \$2 billion.<sup>55</sup> The mechanism of oil-backed lending consists of two parts. The first part is international contracting. The CDB's loans to the joint fund were used to pay Chinese contractors that built infrastructure works in Venezuela. The second part is oil-backed repayment. Since the Venezuelan government did not have sufficient fiscal capacity to pay back CDB loans, the CDB signed a contract with PDVSA, a Venezuelan state-owned oil and natural gas company. The deal was that PDVSA sold oil to Chinese state-owned oil companies, the Chinese companies paid for the oil to a CDB account, and the payment from Chinese companies was used to repay the CDB loans owed by Venezuela. In essence, the CDB was using Venezuela's future oil revenue to repay the loans, and China was offering infrastructure in exchange for Venezuela's oil. This model is therefore dubbed the "infrastructure-for-oil" model.

The story was often depicted as an evidence for economic statecraft theory, i.e. China uses its financial agency (the CDB) to secure energy overseas and strengthen political ties with borrowing countries. This is true, but there is also another aspect of the story that is often overlooked, that is, from the lender's perspective, the oil serves as a type of collateral, which allows the commercially nonviable infrastructure projects in the less developed regions to take place. The CDB was not the first Chinese bank that practiced this model. Chexim's oil-backed lending to Angola in 2004 was named "the Angola Mode" by the World Bank (Foster et al, 2009). Even before 2004, China had been offering oil-backed loans to Republic of Congo and Sudan (Liu, 2011). What is more, the commodities and resources that were used for repayment were not restricted to oil. China's loans to Africa in the 2000s were repaid by various commodities including chromium (Zimbabwe), copper (D.R. Congo), cobalt (D.R. Congo), iron ore (Gabon), Bauxite (Guinea), and even cocoa (Ghana) and peanut oil (Senegal) (Liu, 2011; Br äutigam, 2009).

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<sup>55</sup> "Yu Woguo Zhu Weineiruila Dashiguan Jingsancanhu Wangyong Canzan Wangshang Jiaoliu," MOFCOM, <http://shangwutousu.mofcom.gov.cn/article/lbqz/lbzn/200911/20091106631648.shtml>.

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The CDB was very proud of its infrastructure-for-oil model for achieving multiple objectives at a time – facilitating exportation of Chinese firms, securing energy and resource for the state, and bringing to the developing world infrastructure works (Chen, 2011). The same model, however, was largely criticized as failed investment, when oil prices dropped dramatically in the recent years and as a result Venezuela could not repay its debts. The purpose of this paper is not to make a positive or negative evaluation of this model, but to point out the fact that these controversies revealed the essence of this model, which is also the core idea of all the above mentioned methods that the policy banks use to finance infrastructure. Trust in SOEs, Sinosure coverage, portfolio financing, and commodity repayment all serve as guarantees or collateral that strengthen the creditworthiness of non-bankable projects in countries without sufficient fiscal revenue and affluent capital. These financing methods involve risks from their original design, because the policy banks are essentially using the state’s credit support to cover extra risks of projects that would not have passed banks’ appraisal according to conventional market standards. Nonetheless, it allows the less developed countries that have neither sufficient fiscal revenue nor attractiveness to commercial capital to borrow money and build infrastructure projects that are fundamental for development and growth. In this process, the role of the state is not directly allocating fiscal revenue, but providing guarantees and coordinating various agencies to raise the creditworthiness of the projects and make them financially viable to the market.

#### **IV. Conclusion: policy banks and the Chinese-style development finance**

The non-concessionality of Chinese policy-bank loans challenges the conventional wisdom that development finance should be conducted in a charitable manner. The existing literature on economic statecraft and developmental state could explain China’s overseas development finance partly, but could not explain the terms of the loans. Through examining the lending process of the CDB and Chexim, this paper shows that China, as a latecomer in the international market and an emerging developing economy, has put forward an alternative form of development finance.

Unlike conventional official assistance, which essentially transfers taxpayers’ money from donor countries to recipient countries, the policy-bank loans come with a limited degree of concessionality and downplay the role of “donation.” These loans also differ from tied aid, which uses state subsidized low-cost capital to raise the international competitiveness of selected enterprises. Chinese contractors are targeting the markets

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where investors from industrialized countries are normally interested in much less. Rather, they are targeting the developing markets more and frequently compete with their compatriots.

The policy-bank loans instead demonstrate new means of state involvement in development finance. The state facilitates development finance through neither direct fiscal allocation nor subsidization, but credit enhancement. Loans are appraised and disbursed in a market-driven manner, but the credibility of borrowers and projects are raised by various forms of government-coordinated guarantees and collateral. This allows many developing countries, which (1) lack the fiscal capacity to finance infrastructure, (2) are not attractive to commercial capital, and (3) receive an insufficient amount of aid or concessional lending from traditional donors, to be able to finance infrastructure projects that are essential for development and growth. Such a “state supported, market based” means of development finance challenges the existing development-finance paradigm and provides an alternative option for developing countries in need of capital.

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## Appendix

### *Informants*

No.	Position	Affiliation	Location	Time
<b>In China</b>				
1	Employee	CDB branch	Beijing	10/2016
2	Employee	Military industry company	Beijing	10/2016
3	Employee	Chexim headquarters	Beijing	10/2016
4	Employee	Chexim headquarters	Beijing	10/2016
5	Division Chief	CDB Capital	Beijing	10/2016
6	Employee	CDB headquarters	Beijing	10/2016
7	Employee	CDB headquarters	Beijing	10/2016
8	Employee	CDB headquarters	Beijing	10/2016
9	Deputy Division Chief	Chexim headquarters	Beijing	10/2016
10	Employee	CDB headquarters	Beijing	10/2016
11	Employee	CDB headquarters	Beijing	10/2016
12	Employee	CDB branch	Beijing	10/2016
13	Employee	CDB headquarters	Beijing	10/2016
14	Employee	CDB headquarters	Beijing	10/2016
15	Employee	Construction company	Jakarta (phone)	10/2016
16	Employee	CDB branch	Shanghai	10/2016
17	Professor	Nanyang Technological University	Singapore (phone)	10/2016
18	Employee	Sinosure	Beijing	11/2016
19	Employee	CDB branch	Beijing	11/2016
20	Employee	China-Africa Development Fund	Beijing	11/2016
21	Senior specialist	CDB Securities	Beijing	11/2016
22	Former deputy director	CDB headquarters	Beijing	11/2016
23	Employee	Chexim headquarters	Beijing (phone)	11/2016

24	Employee	Electronics company	Beijing (phone)	11/2016
25	Former employee	Telecommunication company	Jakarta (phone)	11/2016
26	Employee	Power company	Malaysia (phone)	11/2016
27	Employee	CDB branch	Ningbo (phone)	11/2016
28	Employee	Sinosure	Beijing	12/2016
29	Employee	Chexim headquarters	Beijing	12/2016
30	Deputy division chief	Chexim headquarters	Beijing	12/2016
31	Employee	CDB Capital	Beijing (phone)	12/2016
32	Employee	Leasing company	Chengdu (phone)	12/2016
33	Director	Provincial Department of Finance	Haikou	12/2016
34	Employee	CDB branch	Haikou	12/2016
35	Employee	CDB branch	Haikou	12/2016
36	Employee	Chexim branch	Haikou	12/2016
37	Deputy division chief	CDB branch	Hangzhou	12/2016
38	Employee	CDB branch	Hangzhou	12/2016
39	Employee	Telecommunication Company	Hong Kong (phone)	12/2016
40	Deputy division chief	CDB branch	Ningbo	12/2016
41	Deputy division chief	CDB branch	Ningbo	12/2016
42	Employee	CDB branch	Ningbo	12/2016
43	Employee	CDB branch	Ningbo (phone)	12/2016
44	Vice chairman	Steel company	Shanghai	12/2016
45	Employee	CDB branch	Shanghai	12/2016
46	Employee	CDB branch	Shanghai	12/2016
47	Employee	Bank of Communications branch	Taiyuan (phone)	12/2016
48	Employee	CDB branch	Yinchuan (phone)	12/2016

49	Employee	CDB headquarters	Beijing	08/2017
50	Deputy director	CDB headquarters	Beijing	08/2017
51	Employee	CDB headquarters	Beijing	08/2017
52	Employee	CDB headquarters	Beijing	08/2017
53	Employee	CDB branch	Beijing	09/2017
54	Employee	CDB Securities	Beijing	09/2017
55	Senior specialist	CDB Securities	Beijing	09/2017
56	Former vice governor	CDB headquarters	Beijing	09/2017
57	Employee	CDB headquarters	Beijing	09/2017
<b>In Germany</b>				
1	Employee	KfW	Frankfurt (phone)	11/2015
2	Employee	KfW	Berlin	08/2016
3	Employee	KfW	Frankfurt	08/2016
4	Employee	KfW	Frankfurt	08/2016
5	Department head	KfW	Frankfurt	08/2016
6	Economist	European Central Bank	Frankfurt	08/2016
7	Employee	KfW	Frankfurt	08/2016
8	Professor	Frankfurt University	Frankfurt	08/2016
9	Professor	Frankfurt University	Frankfurt	08/2016
10	Employee	KfW	Berlin	09/2016
11	Employee	KfW	Berlin	09/2016
12	Archivist	KfW Archive	Berlin	09/2016
13	Archivist	KfW Archive	Berlin	09/2016
14	Employee	Savings Banks Finance Group, DGSV	Berlin	09/2016
15	Employee	Savings Banks Finance Group, DGSV	Berlin	09/2016
16	Employee	Association of German Public Banks, VÖB	Berlin	09/2016
17	Former president	KfW	Frankfurt (phone)	11/2016
18	Former president	KfW	Frankfurt (phone)	11/2017
<b>In Japan</b>				
1	Employee	JICA	Tokyo	11/2017

2	Employee	JICA	Tokyo	11/2017
3	Professor Emeritus	Hosei University	Tokyo	11/2017
4	President	JICA Research Institute	Tokyo	11/2017
5	Former president	JICA	Tokyo	11/2017
6	Professor	National Graduate Institute for Policy Studies	Tokyo	11/2017
7	Professor	Waseda University	Tokyo	11/2017
8	Division chief	JICA	Tokyo	12/2017
9	Former division chief	Ministry of Economy, Trade, and Industry	Tokyo	12/2017
10	Former director	JBIC	Tokyo	12/2017
11	Former assistant director	JICA	Tokyo	12/2017
12	Former director	Overseas Economic Cooperation Fund	Tokyo	12/2017

Abbreviations:

CDB: China Development Bank

Chexim: Export-Import Bank of China

Sinosure: China Export and Credit Insurance Corporation

KfW: Kreditanstalt für Wiederaufbau

JICA: Japan International Cooperation Agency

JBIC: Japan Bank for International Cooperation

\*Phone: interviews conducted via phone as opposed to face-to-face interviews