SUSTAINABLE INFRASTRUCTURE FINANCING FOR SMALL TOWNS IN CHINA

Approaches to Attract Long-term Capital for Small-Scale Infrastructure Projects
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Approaches to Attract Long-term Capital for Small-Scale Infrastructure Projects

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Produced by the World Bank’s Social, Urban, Rural & Resilience Global Practice, the Urban Development Series discusses the challenge of urbanization and what it will mean for developing countries in the decades ahead. The Series aims to explore and delve more substantively into the core issues framed by the World Bank’s 2009 Urban Strategy Systems of Cities: Harnessing Urbanization for Growth and Poverty Alleviation. Across the five domains of the Urban Strategy, the Series provides a focal point for publications that seek to foster a better understanding of (i) the core elements of the city system, (ii) pro-poor policies, (iii) city economies, (iv) urban land and housing markets, (v) sustainable urban environment, and other urban issues germane to the urban development agenda for sustainable cities and communities.
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More than half of China’s population now lives in the cities and 70 percent is expected to do so by 2030, adding another 300 million urban inhabitants seeking jobs, housing, infrastructure and other services in cities and towns. Over the past three decades, China has experienced unparalleled urbanization and economic development, successfully creating employment and improving living standards for its citizens. Although China has avoided some common issues related to rapid urbanization, such as urban poverty and unemployment, strains are starting to show as its existing growth model is running out of steam with inefficient use of land, capital and labor.

In this context, China is embarking on a new model of urbanization. The central government recently launched the “New Urbanization Plan” to sustain the country’s economic growth by promoting further urbanization. This new model (or so-called new normal) sees not only a shift from a resources mobilization strategy to increased efficiency and sustainability, but also an emphasize of small cities and towns’ role in the further urbanization and sustainable economic growth. The new path to sustainable growth implies financing challenges for different layers of governments.

The decentralization has provided subnational governments certain flexibility and incentives in local economic development, but also create a widening fiscal gap. Particularly, China’s traditional municipal financing system has left many small towns poorly served in terms of infrastructure. Only a mere 9 percent of total fixed asset investment goes to towns, leading to disparities in the level infrastructure and quality of municipal services between cities and towns. Furthermore, the traditional urban infrastructure financing model has caused problems such as low density urban sprawl, maturity mismatch and inefficient resource allocation. In order to realize its socio-economic potential, small towns not only need to improve infrastructure and public services provision, but also avoid the common issues that larger cities have gone through in the past. Is there an alternative financing channel that can help small towns in China address the above issues? This paper is contributing to this debate.

In 2014, the World Bank has collaborated with the National Development and Reform Commission (NDRC) to carry out a study to identify various infrastructure financing strategies for small towns in China. This paper intends to further explore the feasibility of establishing a subnational level infrastructure financing facility pilot. By reviewing China’s municipal finance system including its evolving regulatory framework, the paper presents the key challenges ahead and a preliminary road-map for setting up a pooled infrastructure financing mechanisms at the subnational level.
Acknowledgements

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<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
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<tbody>
<tr>
<td>ADT</td>
<td>Administratively designated towns</td>
</tr>
<tr>
<td>APL</td>
<td>Adaptable Project Loans</td>
</tr>
<tr>
<td>ASA</td>
<td>Advisory Services and Analytics</td>
</tr>
<tr>
<td>CAPEX</td>
<td>capital expenditure</td>
</tr>
<tr>
<td>DFI</td>
<td>Development Finance Institutions</td>
</tr>
<tr>
<td>DFV</td>
<td>District Financing Vehicle</td>
</tr>
<tr>
<td>ERR</td>
<td>Economic Rate of Return</td>
</tr>
<tr>
<td>FIL</td>
<td>Financial Intermediary Loan</td>
</tr>
<tr>
<td>FMDV</td>
<td>Global Fund for Development of Cities</td>
</tr>
<tr>
<td>GUIFF</td>
<td>Green Urban Infrastructure Financing Facility</td>
</tr>
<tr>
<td>IFF</td>
<td>Infrastructure Financing Facilities</td>
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<tr>
<td>INCA</td>
<td>Infrastructure Finance Corporation Limited</td>
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<tr>
<td>IEG</td>
<td>Independent Evaluation Group</td>
</tr>
<tr>
<td>IRR</td>
<td>Internal Rate of Return</td>
</tr>
<tr>
<td>LGFA</td>
<td>Local Government Funding Agency</td>
</tr>
<tr>
<td>MFA</td>
<td>Municipal Finance Authority of British Columbia</td>
</tr>
<tr>
<td>MoF</td>
<td>Ministry of Finance</td>
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<tr>
<td>NAO</td>
<td>National Audit Office</td>
</tr>
<tr>
<td>NBFI</td>
<td>non-banking financial institutions</td>
</tr>
<tr>
<td>NDRC</td>
<td>National Development and Reform Commission</td>
</tr>
<tr>
<td>PPP</td>
<td>public-private partnership</td>
</tr>
<tr>
<td>SME</td>
<td>small and medium enterprise</td>
</tr>
<tr>
<td>SMG</td>
<td>Shanghai Municipality Government</td>
</tr>
<tr>
<td>SMI</td>
<td>Shanghai Municipal Investment</td>
</tr>
<tr>
<td>SNG</td>
<td>subnational governments</td>
</tr>
<tr>
<td>SOE</td>
<td>state-owned enterprises</td>
</tr>
<tr>
<td>SPV</td>
<td>special purpose vehicle</td>
</tr>
<tr>
<td>SRFs</td>
<td>State Revolving Funds</td>
</tr>
<tr>
<td>TA</td>
<td>technical assistance</td>
</tr>
<tr>
<td>TSS</td>
<td>Tax Sharing System</td>
</tr>
<tr>
<td>TNUDF</td>
<td>Tamil Nadu Urban Development Fund</td>
</tr>
<tr>
<td>UDIC</td>
<td>Urban Development Investment Corporation</td>
</tr>
<tr>
<td>USAid</td>
<td>United States Agency for International Development</td>
</tr>
<tr>
<td>WB</td>
<td>World Bank</td>
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</table>
China has experienced rapid urbanization in the past three decades, which has successfully brought unparalleled economic growth, employment creation and improvement in living standards. Over the next 20 years, there will be 65 to 70 percent of the population living in China's cities and towns. However, the existing municipal finance system has experienced an asymmetric assignment of fiscal power and expenditures, leaving a widening gap between municipal budgetary revenues and expenditures: the ratio of subnational revenues remains slightly less than 50 percent of total government budgetary revenue, while the ratio of subnational expenditures has risen as high as 80 percent of the total expenditures.

This paper is focused on exploring the feasibility of establishing a pooled Infrastructure Financing Facility (IFF) at the sub-national level to provide sustainable long-term finance to infrastructure projects in small towns. The paper reviews China's fiscal and infrastructure financing system, including the 2014 amendment of China's Budget Law and associated regulations, presents an overview of pooled IFFs, and explores the potential application of a pooled financing facility in China, specifically for urban infrastructure projects in the greater Shanghai region.

Local governments in China have relied on land-based financing and the use of urban development investment corporations (UDICs) for off-budget borrowing for financing infrastructure and delivering an unprecedented urban development in history. However, a consensus has emerged that the current system is unsustainable in the long term and have triggered concerns at the national level. Of particular concern is the maturity mismatch of UDIC borrowing. Infrastructure projects normally require long repayment periods, while UDICs have relied on short-term financing from mostly banks and trusts. The Budget Law amendment in 2014 puts constraints and increased discipline on government income and expenditure, providing both opportunity and challenges to local government finance. On the one hand, it allows provincial level governments to issue debt themselves under control by the legislature and the central government. On the other hand, local governments cannot borrow through UDICs or other corporation channels, closing this traditional way of urban finance in China.

Small towns, with expanding population and presence throughout the country, are expected to play an important role in China's new urbanization strategy by settling large amount of newly urbanized population. The number of small towns increased from 20,986 in 2005 to 21,826 in 2014, accounting for over 20 percent of national population. Yet, small towns' role has been constrained due to lagging infrastructure and less attractive employment prospect compared to larger cities. Unbalanced allocation of fixed asset investments that favor cities over towns had led to disparities in the level and quality of infrastructure and municipal services. Furthermore, small towns face several constraints on their creditworthiness as they lack fiscal autonomy and limited capacity to borrow. While the amended Budget Law starts to
allow local governments to issue bonds, the borrowing has to be organized at provincial level and mostly benefits larger municipal governments. As such, the small towns’ needs for long-term financing may remain underserved. Some innovations in infrastructure financing in the recent years include local government debt “swaps”, public-private-partnerships (PPP) and infrastructure funds. The PPP approach is useful mostly for larger projects and will not likely provide a viable approach for the financing of smaller projects in small towns.

Small towns are expected to play an important role in China’s new urbanization strategy by settling large amount of newly urbanized population.

In order to facilitate the ability of small-town governments to obtain sustainable financing for infrastructure projects from financial markets, IFFs could be established to channel long-term financing for projects sponsored by small towns. An IFF will pool the financing needs from different small towns, issue marketable-size bonds and thus lower the cost of debt. Additional advantages of a pooled financing mechanism can be achieved due to scale and knowledge of the capital markets as well as a longer tenure that can help address maturity mismatch. General design considerations for IFFs include accountability, regulatory and tax treatment, no exclusivity obligation, functions outsourced, minimum level of participation and level of leverage. Cases from a mix of developed and developing countries present existing practices and lessons of the IFFs.

Despite the potential of using IFF for small-town infrastructure financing, IFFs has not been used in China in part due regulatory issues that need to be considered for any IFF designs for small towns in China, including: regulation of non-deposit taking financial institutions in making loans, use of a revenue stream as collateral, constraints for municipalities to borrow directly, and inadequate reporting and disclosure standards.

Taking the existing regulatory framework, Shanghai Municipal Government (SMG) is proposing to develop an urban infrastructure financing facility for small-town related projects in the greater Shanghai area.
1 Introduction

This report is a product of the World Bank work on local government infrastructure financing in China. It presents the feasibility of establishing financing facilities to provide sustainable long-term debt to infrastructure projects in small towns, with a particular focus on the small towns in the Shanghai region. It is a follow-up study to Phase I of a World Bank Advisory Services and Analytics (ASA) for Small Town Infrastructure Financing in China.

Phase I of the ASA was carried out in 2014 in collaboration with the National Development and Reform Commission (NDRC). It identified various infrastructure financing strategies for small towns through financial intermediaries. As a result of this effort, a broad consensus was built on the benefits of establishing an Infrastructure Financing Facility (IFF) at the sub-national level as a pilot project. The NDRC and the World Bank thus agreed to conduct a Phase II ASA Study to explore the feasibility of establishing an IFF. Further discussions with NDRC, the Ministry of Finance (MoF), and the Shanghai Municipality Government (SMG) led to the decision to focus on Shanghai municipality for this pilot project.

The Shanghai Municipality consists of the central city of Shanghai and nine suburban districts/counties. A District Financing Vehicle (DFV) was established in 2005 under a World Bank-financed Shanghai Urban Environment Adaptable Program Loan (APL) Project Phase II, and it played an innovative role in appraising, managing and leveraging private sources of financing in infrastructure projects for small towns within Shanghai Municipality. The SMG proposed to transform the DFV into a full-fledged Green Urban Infrastructure Financing Facility (GUIFF) with the capacity to raise funds in domestic (and possibly international) capital markets, as well as to on-lend into specific sub-projects with proper project appraisal and fiduciary oversight capacity. This proposal could be implemented as a ring-fenced pilot experiment for China to find sustainable long-term debt finance mechanisms for small town infrastructure development. A successful pilot case in the Shanghai region could potentially be replicated in a few other provinces to meet substantial infrastructure financing needs in small towns.

Recent policy changes in China have created both challenges and opportunities for introducing sustainable infrastructure financing mechanisms. With the aim of better managing local government debts, the Chinese central government has introduced a series of new policies and amended the 1994 Budget Law. Under the new framework, smaller cities still are not allowed to borrow directly but are expected to leverage on the provincial-level government borrowings. Hence financial innovations for small town infrastructure projects need to take this limitation into consideration.

The purpose of this paper is to explore the feasibility of establishing infrastructure financing facilities (IFFs) to provide sustainable long-term finance to infrastructure projects in small towns and provide a conceptual financial engineering design to the IFF.
2 China’s System of Municipal Financing and Its Evolution

2.1 The Basic Fiscal Finance System

The basic system governing subnational and municipal finance was established by the landmark Tax Sharing System (TSS) reform in 1994 and has generally stayed the same until it was amended in August 2014. The TSS broadly defines the responsibilities of the central and subnational governments. Urban development is considered a local concern, and municipal governments assume primary responsibility—both functional and fiscal—for it. The responsibilities of the national government are limited to the review and approval of urban master plans and large urban infrastructure investment projects, setting technical standards and policy guidance, promoting knowledge exchange, and facilitating capacity building and access to international financing.

While decentralization was essential in providing flexibility and incentives to local governments to develop their infrastructure needs, it has left a major fiscal revenue gap. The system is asymmetrical in the assignment of fiscal revenue and expenditures. The gap between municipal budgetary revenues and expenditures has widened over time. The ratio of subnational revenues remains slightly less than 50 percent of total government budgetary revenue, while the ratio of subnational expenditures has risen as high as 80 percent of the total expenditures (Figure 1).

2.1.1 Closing the Financing Gap

Land Based Financing. For Chinese municipal governments, extra funds are needed to close the financing gap between municipal budgetary rev-
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Envelopes and investments on urban infrastructure. Land asset-based revenues have played this function in the past decades and have become a major source of funding for Chinese sub-sovereigns. Figure 2 shows the source of revenues used to fund urban infrastructure development, where the land lease revenues account for 40 percent of revenues used to fund urban infrastructure. This percentage is much higher in small towns and could reach 70 percent of all revenues.

Urban Development Investment Corporation (UDIC) Borrowing. In China, until the Budget Law was amended in 2014, subnational governments were not allowed to borrow from banks and other financial institutions or to issue bonds. They have gotten around this restriction in the past through the establishment of UDICs—municipal corporations that local governments capitalize by providing them with land use rights, cash, and shares in state-owned enterprises. UDICs are treated as municipal state-owned enterprises (SOEs) under China’s Company Law. The UDICs mobilize financing for infrastructure investment via loans from banks and

**FIGURE 2.** Revenues Used to Fund Urban Infrastructure

<table>
<thead>
<tr>
<th>Year</th>
<th>Subnational Expenditure Percentage</th>
<th>Subnational Revenue Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>30%</td>
<td>60%</td>
</tr>
<tr>
<td>1995</td>
<td>40%</td>
<td>50%</td>
</tr>
<tr>
<td>2000</td>
<td>50%</td>
<td>40%</td>
</tr>
<tr>
<td>2005</td>
<td>60%</td>
<td>30%</td>
</tr>
<tr>
<td>2010</td>
<td>70%</td>
<td>20%</td>
</tr>
<tr>
<td>2015</td>
<td>80%</td>
<td>10%</td>
</tr>
</tbody>
</table>


Note: Since 2013, “water resource fee” and “municipal special allocated budget” (which was an important part of the local government general budget before) were dropped from China Urban Construction Statistic Yearbook due to change in methodology.
the “shadow” banking system based on their land use rights and future revenue from land development projects as security (World Bank, 2012).2

The purpose, structure, and capacity of UDICs differ widely across subnational governments (SNGs) in China. Many UDICs manage municipal investment and maintenance operations in multiple sectors, such as in transport, power, and water supply, beyond serving as financing platforms. Some UDICs function as purely financing platforms and do not undertake any revenue-generating activity. Some other UDICs have mixed public and commercial business activities.

China’s system of municipal finance and governance has delivered and kept pace with a period of urban development unprecedented in history. However, a consensus has emerged that the current system is unsustainable over the long term.

UDICs are able to obtain financing from commercial and/or policy banks for urban infrastructure investments, some with revenue flows (such as toll roads) and others without (such as urban streets). UDICs represent a large stream of business to commercial and policy banks; municipal governments are assumed to provide implicit guarantees, and collateral is offered in the form of land.

In light of these implicit and explicit guarantees, banks are willing to lend to UDICs whose creditworthiness is linked with the related local government. Aside from borrowing from banks, financing channels of UDICs also include mid-term notes, trust products, and enterprise bonds3. The enterprise bond is also widely known as “UDIC bond” (Chentou zhai). The scale of UDIC bonds bourgeoned in 2009 and to a large extent replaced bank loans in the period 2009 - 2014 due to stricter controls on banks’ lending to UDICs (Figure 3).

China’s system of municipal finance and governance has delivered and kept pace with a period

3 It is worth noting that UDICs’ borrowing is not limited to projects without cash flows (i.e., public goods/services). It can also support the company’s commercial/for-profit projects (e.g., real estate). More often than not, UDICs will pack public and commercial projects together, forming a kind of cross-subsidization, to attain financing.

**FIGURE 3. The Annual Amount of UDIC Bond Issuance**

Source: China Urban Construction Statistic Yearbook; WIND Data.

*Note:* Authorities eased the control of UDIC bonds in later 2015 with the consideration that UDICs were still the main source of urban infrastructure finance for most local governments. Since November 2016, regulation of local debt strengthened again, and it is projected that UDIC bonds in 2017 would slow down and return to the level slightly lower than 2015.

2 Some UDICs have also issued bonds on their balance sheet. See also footnote 4.
of urban development unprecedented in history. However, a consensus has emerged that the current system is unsustainable over the long term. Relying on off-budget funds such as land concessions is not sustainable as the rate of urban expansion cannot continue indefinitely. The rapid expansion of UDIC borrowing—especially since the global financial crisis of 2008—has also triggered concerns. The rapid growth of UDIC borrowing has pushed up land prices to levels that are likely unsustainable in the longer term and has created conditions that could undermine the viability of many UDICs. Of particular concern is the maturity mismatch of UDIC borrowing. Infrastructure projects normally require long repayment periods to generate the revenues needed for their capital costs. Unfortunately, the UDICs have relied on short-term financing from banks and non-bank financial institutions (the so-called “shadow banking system”);4 As is highlighted in Figure 4, according to the audit of local governments’ debt carried out by the National Audit Office in 2013, 73 percent of total local government debt was due to be paid off in less than 5 years. This will be a serious challenge in that most of the debt was used to finance long-term infrastructure projects (HSBC, 2014).

The government recognizes the risks in implicit guarantees, as well as the maturity mismatch existing in the system, and has taken significant steps and reforms to introduce alternative means of infrastructure financing with proper credit risk allocation, as discussed below.

2.2 Recent Subnational Financing Reform in China

2.2.1 Budget Law Amendment

On August 31, 2014, the Amendment of the Budget Law of the People’s Republic of China was passed by the National People’s Congress, and it became effective on January 1, 2015. The Amendment aims to put legal constraints on government income and spending, a move that is set to have a far-reaching effect on the country’s fiscal balance and health. The revised law requires that all types of fiscal money should be put under the unified budgetary system, and detailed budget information, including that of the central government, the local governments and government departments, must be open to public supervision and scrutiny. Another ramification of the revision of the budget law is its clear control of government debt issuance. It starts to allow the local governments to issue debt themselves, and the issuance must be put under strict control by the legislature and the central government.

Since the debt-issuing tap was turned on by the Amendment, an impending task is to clear the large amounts of government financing vehicles and cut

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4 The primary “shadow banking” sources used by the UDICs are wealth management products sold to retail customers, trust loans sold to high-net-worth investors and entrusted loans from large companies. See McKinsey & Company (2015).
the links between the local governments and such companies. In October, 2014, China's State Council published the Guideline to Strengthen the Supervision and Management of Debts Incurred by Local Governments (No. 43, 2014). The State Council required the establishment of an integrated management mechanism for local governments’ debts to cover borrowing, use of funds, and repayment. According to this new guideline, governments of the 32 provincial-level regions are allowed to borrow within a quota set by the State Council. The quota needs to be approved by the National People’s Congress or its standing committee. Prefecture-level and county-level governments can commission the provincial governments to borrow, if necessary. The guideline also requires that local governments no longer borrow money through UDICs or other corporate channels.

A significant portion of the proceeds of such bond issuances are passed down to lower levels of government to meet their infrastructure financing needs. This source of financing is of special importance in that it supplements other forms of budgetary revenue that can be used to finance projects that do not generate revenue from local user fees (Moody’s, 2015). The provincial-level bond issuers expect the lower levels of local governments to repay, with interest, the funds passed down to them. This will then provide the provincial-level borrowers with the funds they need to repay their bonds. Since the provincial-level governments can withhold normal budgetary allocations to lower level governments if they fail to meet their payment obligations, they are in a very strong position to ensure that these payments are made.

Following the new guideline, the Disposal Method of the Stock of Local Government Debt (2015, No.32) issued by the Ministry of Finance gives more details on how to deal with the flow and stock of local government debt. Debt borrowed by local governments and agencies, or payable by local governments, should be categorized as general or special local government debt. Local governments can apply to issue bonds to replace existing debt to lower interest payments and lengthen debt duration. Local governments should also work to pay down such debt, including via local asset disposals.

Based on the 2014 State Council Document No. 43, the current local government finance vehicles are separated from local government functions, and the UDICs without financial revenues are closed. Debt borrowed by enterprises and institutions for which local governments are not liable should be paid (and re-financed) according to market rules, having access to credit from commercial banks and to the corporate bond markets.

Therefore, it is expected that the municipalities will have two channels for debt-financing of urban infrastructure in the near future (see Table 1): one is local government bonds through the provincial governments, and the other is corporate bonds or commercial bank loans borrowed by revenue-earning utilities and infrastructure service providers.

In addition, local governments are encouraged to attract private sector/social capital for infrastructure development. This could be achieved through (i) public-private partnership (PPP) arrangements with the private sector and (ii) establishing a government-owned enterprise for service provision, or converting an existing UDIC with revenue from public service provision into a utility service/infrastructure company. The enterprises/special purpose companies (both private and public) can borrow from the market based on revenues from users and other operating revenues. If there are shortfalls in revenues, the sponsoring local government can provide a pre-determined subsidy from the budget. In this regard, local governments would enter into concession contracts or service agreements with the service providers and provide availability payment (or a similar form of operating subsidy) during the service operation period. The
As of the end of March 2016, the National PPP Information Platform Project Database had 7,721 projects (a total investment of RMB 8.78 trillion yuan), including 232 MoF demonstration projects (a total investment of RMB 803.5 billion yuan). Despite the strong enthusiasm from local governments on PPP, actual transactions that have reached financial close or implementation are few. Of the 232 MoF demonstration projects announced in 2015, only 73 were under implementation (32 percent), while 24 projects were still under identification, 93 were under preparation, and 42 were under procurement (18 percent).

For the larger PPP projects in the PPP Center database, the actual implementation progress was even slower. As of the end of March 2016, of the 7,721 projects in the database, 1,051 projects were under preparation, 277 were under procurement, and only 369 were under implementation (5 percent).

There are a variety of reasons why private sector up-taking has been low in the China PPP space, including still ambiguous/developing regulations and enforcement and arbitration rules; lack of credibility of local governments in contract enforcement, incentives of local governments, local governments unwillingness to open up profitable projects to private sector, difficulty for privately owned enterprises to obtain finance, and entrenched and powerful SOEs.

### TABLE 1. Urban Infrastructure Debt-Finance Channels under the New Budget Law

<table>
<thead>
<tr>
<th>INFRASTRUCTURE UNDER THE MUNICIPAL GOVERNMENT RESPONSIBILITY</th>
<th>INFRASTRUCTURE UNDER LOCAL UTILITY AND INFRASTRUCTURE COMPANIES—ALL WITH REVENUES</th>
</tr>
</thead>
<tbody>
<tr>
<td>GENERAL OBLIGATION BONDS</td>
<td>CORPORATE BONDS</td>
</tr>
<tr>
<td>REVENUE BONDS</td>
<td>COMMERCIAL BANK LOANS</td>
</tr>
<tr>
<td></td>
<td>REVENUE-BASED PROJECT FINANCE</td>
</tr>
<tr>
<td></td>
<td>PPP</td>
</tr>
</tbody>
</table>

*Source: Authors’ own elaboration.*

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2.3.2 Infrastructure Funds

Infrastructure equity funds are starting to proliferate in China to engage local governments and UDICs in infrastructure financing, including PPP projects. These structures do not have clear supervisory and regulatory frameworks. However, they appear to be designed to make it possible to bypass restrictions established by the central government, including borrowing through bond/loan instruments, which the funds circumvent by agreeing on a buy-back date and fixed coupon and price on the equity investments of the fund.

Infrastructure funds are still incipient products but could potentially develop into an unstable and opaque financing vehicle unless improved regulations are established. There is a danger that the infrastructure funds being promoted in China may create unintended consequences if they are too broadly used to bypass restrictions on UDIC’s financing of municipal projects. Infrastructure funds will not likely lead to greater transparency in municipal financing and may delay the process of moving municipal financing into the capital markets.
Small Town Infrastructure Development and Finance in China

3.1 The Role of Small Towns in China’s Urbanization

Small towns are an integral part of China’s urban system. China’s urban hierarchy consists of cities (municipalities) and towns at four administrative levels below the central government: provincial-level cities, prefecture-level cities, county-level cities (district/county), and “small towns” (village/township). The so-called small towns comprise of all administratively designated towns (ADTs), including those that serve as the county seat. This hierarchy corresponds to the government hierarchy.

The number of small towns has remained relatively stable over the last ten years, despite small changes due to mergers into larger cities or consolidation with nearby towns. According to official statistics from National Statistics Bureau, in 2005 there were 20,986 small towns, of which 1,464 were county seats and 19,522 other ADTs; in 2014 there were 21,826 small towns, of which 1,425 were county seats and 20,401 other ADTs. The number of county seats has been declining slowly, mainly due to the fact that some suburban counties under the prefecture- or provincial-level municipalities are converted into a district of the municipality as a result of urban built-up area expansion. As the data over the last ten years indicates, small towns continue to be an important component of China’s urban system despite rapid urbanization and metropolitan growth.

The total population living in small towns is generally believed to be over 200 million, accounting for at least 15 percent of the national population. The total population living in town districts—the urban core of towns—reached 312 million in 2014, accounting for about 42 percent of China’s urban population and 23 percent of the national population (Campanaro & Masic, 2017).

Addressing poverty in small towns is critical for achieving China’s 13th Five Year Plan development goals, as well as the World Bank’s twin goals of ending extreme poverty and promoting shared prosperity. Empirical evidence shows that income (and poverty rates) is significantly lower (and higher) in small towns than big cities (Ferré et al, 2012). In China, the per capita incomes of small towns around major cities, such as Beijing and Shanghai, are often much lower than in cities in low-income central provinces. For example, Chicheng County, located near Beijing municipality, had an urban household income per capita of RMB 12,726 in 2010, while Chengdu, a big city in the West, had RMB 20,835. Other international data also confirms the income disparities between small towns and big cities. In India, for example, among urban areas, the poverty rate in small towns (population less than 50,000) was double the rate in large towns with a population of 1 million or more (30 percent to 15 percent). In Vietnam, the 634 smallest towns, with an average population of about 10,000, are home to more than 55 percent of the urban poor (Lanjouw & Marra, 2012). Small towns can play an important role in reducing poverty in peri-urban areas if policies that nurture economic activity and improve residents’ access to basic services and jobs.

Addressing poverty in small towns is critical for achieving China’s 13th Five Year Plan development goals, as well as the World Bank’s twin goals of ending extreme poverty and promoting shared prosperity.
are implemented. Policies that improve service delivery and foster non-agricultural job creation in small towns and peri-urban areas can offer rural migrants better livelihoods, thus helping to reduce both urban and rural poverty. In countries where population density is high in smaller towns, such as China, the scale economies may be sufficiently large enough to make service delivery, including infrastructure related services, cost-effective (World Bank, 2013).

Small towns have long been expected to play a buffer role in China’s urbanization management policy. Policy makers and city planners have long attempted to have small towns serve as a buffer for rural-to-urban migration, through policy interventions. The expectation is that some migrants can be absorbed by the small towns instead of jamming to the larger cities. This policy has never been successful for various reasons. The most significant reason is that urban employment prospect in small towns is not as attractive as that of larger cities. Another key reason is that the urban services provided by small towns are generally much less desirable.

In reality, small towns do have specific roles to play in the urban system and urbanization process. First, many small towns can serve as a nodal point between urban and rural areas for the flows of goods and materials going to the rural areas. Second, they can serve as the first level of urbanized areas that provide public services to the surrounding rural areas, such as schools and health clinics. Many migrant workers purchase homes in small towns near their countryside for their left-behind children and elders. Third, small towns are increasingly becoming the home of many rural households who no longer engage in farming. Most recently, the government promotes targeted interventions to protect and improve the small towns with unique values of long history, cultural heritage, and environment amenities.

From a socio-economic standpoint, small towns will continue to hold their place in the functioning of China’s urban system. Despite the general trends of urbanization toward larger cities, there is no obvious reason that small towns will decline in the future. They offer attractive features, such as
low cost of living, slow pace of lifestyle, quiet living environment, better air quality, in most cases, and proximity to rural areas that appeal to certain groups of households, especially the rural households leaving the farmland from the surrounding areas. Some of the small towns may attract urban households that seek a quiet, less crowded lifestyle. Therefore, the majority of small towns will continue to exist and to be viable for the foreseeable future.

Moreover, small town development is considered an important component of China’s New Urbanization Strategy. The Decision on Major Issues Concerning Comprehensively Deepening Reforms issued by the government in November 2013 called for the relaxation of household registration control of farmers settling in towns and small cities. Thus, small towns were expected to play an important role in becoming settlements for the newly urbanized population. The 13th National Economic and Social Development Five-Year Plan called for effort to encourage in-situ urbanization of 100 million rural population especially in central and western China. This effort is expected to influence the further development of small towns.

### 3.2 Current Status of Infrastructure Development in Small Towns

Infrastructure development in small towns lags considerably behind cities. Nation-wide data on the levels of infrastructure services across small towns is not available. However, some available local data and anecdotal evidence shows that infrastructure services in small towns are generally inadequate and of poorer quality than the national average. In 2014, for example, the average per capita investment for basic urban infrastructure in Shaanxi Province’s small cities and towns was only 68 percent of the national level. The percentage of population with access to water supply, road space per resident, and length of drainage pipes per square kilometer of built-up area were respectively 89, 74 and 67 percent of the national average. Operations and maintenance expenditures were minimal (World Bank, 2014). According to a study by World Bank (2012), in 2009, the gas coverage rate was 91 percent in cities but only 62 percent
for county towns; for wastewater treatment, the coverage rate was 75 percent in cities but only 42 percent for county towns; and water coverage rate was 96 percent in cities as compared to 84 percent in county towns. The lower level of urban infrastructure services in small towns is not a surprising phenomenon. All around the developing world, small towns generally have poorer infrastructure services mainly because of their poorer economic status, although towns enjoy better infrastructure services than rural villages.

Inadequate infrastructure services in small towns are mainly due to inadequate public investment for infrastructure. According to the World Bank (2012) study, investments and public resources had been mostly directed to the highly urbanized big cities, leaving the less urbanized towns underfunded.

3.4 Constraints in Small Town Infrastructure Finance

The sustainability of traditional small town infrastructure finance can be measured in different ways. The credit rating of a sub-national government represents a formal opinion of the sub-national government’s capacity and willingness to repay debt in time. The commonly practiced rating analysis is a matrix of political, economic, budgetary, financial, and institutional variables deemed relevant to the sub-national government’s creditworthiness. In general, the sustainability of Chinese local government debts is dubious if being judged by these measurements. The sustainability of small town government debts would be more dubious.
Small towns face several constraints on their creditworthiness as they lack the ability to adjust both revenue and expenditure. In China’s vertical fiscal system, the lower the level of government is the less fiscal autonomy it has. The financial resources of China’s small town government are limited, and most township governments do not have independent budget. The China’s National Audit Office released the audit result of 54 counties in 2012 and found that 49 percent of counties’ public expenditure relied on upper government transfers. In 45 western counties, the share of transfer was 62 percent. And only three counties had primary budgetary surplus to meet the needs of public expenditure (NAO, 2012).

Over the last ten years, many third-tier and fourth-tier municipalities have excessively developed land for overly ambitious real estate development. As a result, housing supply in some of these cities is already in excess of demand. Without continuing real estate development, land-based financing will not work. Without land-based financing, these cities will not be able to borrow.

With the cooling down of the real estate market and consequentially of land markets, many cities would find little fiscal space for borrowing. There is no attractive alternative source of municipal finance. Property tax has not yet been introduced. The central government is in the process of drafting the first national property tax law. It may take possibly some years before the law is passed by the National People’s Congress. It would take a few more years for cities to establish a workable property tax assessment and administration capacity. Therefore, it is fair to expect that property tax will not become a major source of municipal finance in the foreseeable in China.

The Ministry of Finance has been actively promoting public-private partnership in infrastructure financing even at the local level. Most provincial governments respond by coming up with a long list of projects offered for PPP financing. However, without a robust revenue from users or the adequate fiscal space to support the project, projects in small towns are likely to elicit limited private sector interest.

3.5 A Case for Specialized Financial Intermediaries for Small Town Infrastructure Development

The Amended Budget Law gives local governments limited rights to issue bonds for infrastructure investment. This does not apply to the level of small towns. Nowadays, the State Council allows only provincial level governments to issue bonds, although it is anticipated some of the bond proceeds are expected to go to lower level governments. It is reasonable to expect some conflicting priorities in such as the provincial governments have their own infrastructure investment priorities which they may wish to finance through government bonds, thus leaving little room for municipalities to get a share of the bond tranches under the limit set by the State Council. There are a total of 661 municipalities in China, of which 4 are at the provincial rank, 282 at the prefectural rank, and 375 at the county level. For most municipalities and all small towns, local government bonds will be most likely beyond their reach for at least the next few years.

In general, small towns have very limited capacity to raise funds for infrastructure investment projects.
town governments to access capital markets could be close to zero. Therefore, small town governments will remain unserved by the capital market for many years to come if no reform action is taken.

At the same time, the amended Budget Law has closed the door for local governments to borrow from other financial institutions through their financing platforms. It can be expected that many municipal governments and all small town governments will not have access to other debt-finance unless further amendment is made to relax the strict control. Their infrastructure financing needs will be largely unserved by the financial sector or they will rely on risky shadow banking system.

The pass through of funds from provincial-level bond issuances are to be used to finance public projects that generate insufficient revenue to cover all their capital costs. The PPP approach is useful for larger projects but will not likely provide a viable approach for the financing of smaller projects or projects that cannot be structured in a way that fits the PPP structure. Therefore, other channels for financing infrastructure for smaller revenue-earning projects need to be explored.

Specialized financial intermediaries may offer an alternative source of debt-financing for the utility and infrastructure service companies of small towns and municipalities. Some utility companies may not operate in full cost recovery and thus require government subsidy support. Their borrowing from IFF would still be possible if they receive stable government subsidies to cover the deficits.

Instead of waiting for further amendments of the Budget Law, it would make sense to explore alternative debt-financing for small-town governments through a pilot experiment of IFF in a carefully selected province. IFFs can serve the public utility companies of small towns. It would require a special endorsement from a relevant competent authority to experiment with IFF for small town government.
There are several preconditions and considerations that would need to be taken into account in the planned shift to bond market financing. The stated rationale for the shift is that bond markets allow transparency and accountability that is not so easy to achieve under bank lending or UDIC-based financing. It is not clear, yet, if all the implications of this measure have been considered, including the pace of this change. Preconditions and considerations related to bond market development more broadly that would need to be discussed include the following:

- There is not a long-term finance market, nor on the side of investors, instruments or overall framework;

- There is too much guidance on direct issuance on municipal debt (e.g., established maturity structure and caps on maximum rates);

- Better functioning bond markets would generally be needed (e.g., liquidity, pricing, market segmentation, long term government bond yield curve, etc.);

- Reliable regulatory structures for new fixed-income market structures would need to be developed (e.g., project finance and securitization frameworks);

- Not all infrastructure can be financed through bond markets in a cost-effective way (e.g., bank loans may be more suitable for financing the construction phase of many infrastructure projects); and

- Lingering tax and regulatory framework that favors hold to maturity rather than secondary market trading for banks and other bond holders.
4 Proposed Infrastructure Financing Facilities (IFFs)

Since local governments in China need long-term, low-cost financing, it would be most suitable if they had access to long-term institutional investors, such as pension funds and life insurance companies. However, obtaining low-cost bond financing requires that bonds be highly rated and issued at a scale and frequency that will generate ready demand for the bonds based on their liquidity and creditworthiness. According to international experience, capital markets are more suitable for large and medium-sized cities, less so for small cities and towns. Small towns are faced with the problem that individually their financing needs are too small, their stand-alone credit-worthiness too weak, and their expertise too limited to allow them to do so on their own.

In order to promote the ability of small-town governments to obtain financing for infrastructure projects from financial markets, specialized financial intermediaries (or infrastructure financing facility, IFF) could be established to channel long-term financing to infrastructure projects in small towns. Many developed countries adopt the practice of specialized financial intermediation for small town’s debt financing. Different countries adopted different types of structures and institutions for the same purpose of linking projects (or groups of projects) to the markets, such as bond banks, infrastructure funds, and regional development funds. Examples include local government financial intermediaries in Belgium, Finland, France, Spain, and Sweden; municipal finance corporations in Canada (mostly provincial agencies operating at the provin-
SUSTAINABLE INFRASTRUCTURE FINANCING FOR SMALL TOWNS IN CHINA

In current market conditions in China, there is likely to be a strong demand for low-risk government or quasi-government instruments. A pooling vehicle would be able to satisfy such demand by issuing bonds into the capital markets and on-lending the proceeds to participating small local governments. Such instruments could provide critically needed diversification opportunities to institutional investors, many of which may have investment portfolios that are excessively concentrated on national government securities. IFFs will normally issue bonds with longer tenures than most corporate debt, which can be an additional feature attractive to portfolio managers who are attempting to do asset-liability management of their portfolios.

There are no clear rules that prohibit or restrict the establishment of special financial intermediaries in China, but the introduction of specialized financial intermediaries for small towns must be synchronized with the changes in the Amended Budget Law and other related regulations, particularly for what relates to an on-lending licensing, capacity to issue debt, and an adequate prudential supervision. Additionally, fiscal and financial reforms addressing and guiding small towns in debt management practices as well as financial management reporting would be crucial. See chapter 9 for an analysis of the key regulatory barriers.

4.1 Structure of IFFs

The focus of an IFF is the financing of small municipal projects. By combining small town, SOEs, utility or project borrowings into larger “pools”, IFFs can achieve various economies of scale. IFFs issue large bonds on a regular basis and with standard documentation. This makes the bonds more marketable, attracting more bidders, and thus lowering the cost of debt. Underwriting, listing, and rating agency expenses are also less than they would be if each pool member issued bonds on their own. Additional advantages can be achieved due to scale and knowledge of the capital markets as well as credit rating arbitrage. The latter allows lending funds obtained using their better credit rating to more poorly rated members. Finally, pooling brings a reduction in risk through portfolio diversification and structuring.

Various forms of such facilities have been developed in a number of countries and they have proven to be efficient in providing bond market access for small public bodies or revenue-earning projects. IFFs allow the issuances of bonds, which would in turn be on-lent to individual, small borrowers collectively rather than individually. An IFF is typically structured as is shown in Figure 5.

4.2 Key components of an IFF

IFF SPV: A Special Purpose Vehicle (SPV) is created to borrow, usually in the bond market to

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5 In Canada there are several bond banks that operate at the provincial level. (In Canada these are referred to as municipal finance corporations.) All of these but one have their debts guaranteed of their provincial governments. They were established by the provincial governments, which retain the control and resultant benefit of their consolidated borrowing efforts. The exception is the Municipal Finance Authority of British Columbia (MFA), which was established in 1970. The MFA’s debt is not guaranteed by the provincial government of British Columbia - rather all borrowing has a “joint & several” payment obligation from the MFA’s members, in effect guaranteeing that all debts undertaken by the MFA have the full backing of every unit of local government in the province. It is this type of IFF that is discussed here.

6 For examples of these see FMDV (2015). Also see Council of Infrastructure Financing Authorities (1997).

7 The term “infrastructure financing facility” is used here to denote any form of specialized financial intermediary used to finance infrastructure.

8 A study for the US compares the results of bond bank issues from Maine, Indiana, and Illinois in 1999 to a sample of issues sold throughout the country (but not by bond banks) during the same period. On average, two of these programs appear to borrow at costs significantly lower than the national average (32 basis points for Maine, 58 basis points for Illinois). See Robbins & Kim (2003).
on-lend to municipalities/utilities/projects. The legal structure uses various entity nature (e.g., corporation, government agency, non-deposit financial institution). The IFF then lends the funds that it has raised to finance infrastructure benefiting the members of the pool. The IFF repays its debt primarily using the debt service charges on its loans to its sub-borrowers. However, the facility would also use reserves, liquidity facilities, and its own equity to make sure that such repayments are made on a timely basis and in full.

**Borrowers:** The borrowers are the municipalities, utility companies, or projects. Municipal borrowing is usually in the form of “general obligation” borrowing in which the municipality commits to using all its financial resources to repay the loans. The utilities companies and projects can borrow with their own revenues or together with government guarantees if necessary.

**Equity Investors:** The IFF is established with initial equity by its owners. The equity is used to cover startup expenses and for capital reserves. The equity investors often include public bodies (e.g., national/regional governments or development finance institutions or non-profit organizations) and private investors who expect a financial return from equity investments in the IFF. Equity investments can be both paid-in and contingent. In some cases, the borrowing municipalities also provide equity and are part of the shareholding structure.

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*Source: Authors’ own elaboration.*
4.3 Key Functions/Features of IFFs

An IFF would have four primary functions: fund raising, lending, supporting liquidity and credit quality, and providing advisory services.

**Fund raising by IFF.** The IFF would pool and aggregate the borrowing needs of many small municipalities or projects to create marketable-size bonds and issue such bonds into the capital markets on a regular basis. The pooling can realize various economies of scale and reduce risks through portfolio diversification, which therefore allows smaller projects and municipalities to have wider access to finance at a lower cost.

An IFF needs to maintain a sufficiently high credit rating to be able to issue long-term bonds with attractive pricing. An IFF’s creditworthiness is built upon that of equity investors and the underlying projects it supports. It is essential that the IFF issue comprehensive and regular reports of its activities. This means that an IFF needs to be highly transparent. IFF obligations are usually not guaranteed by the national government or higher level sub-national governments.

**On-lending to IFF borrowers.** The funds raised by the IFF would be held by the entity for the purpose of on-lending to infrastructure projects based on their demand while maintaining adequate reserves to meet the IFF’s liquidity requirements and covering operating expenses. The IFF would provide targeted debt products to finance infrastructure at cost-effective interest rates and with flexible terms. The interest rates for on-lending from the IFF to its borrowers would need to have a margin that reflects the cost of funds and return expectation of the IFF to ensure that it can operate in a self-sustaining manner.

The IFF would primarily lend to public service utilities and infrastructure development corporations. Borrowers would need to commit specific revenue streams or have adequate cash flows from the project to repay the loan. Borrowers include road development corporations with secured revenues from tolls or fuel levy transfers, water utility companies that have adequate cost recovery (and/or dedicated subsidy), and metro/bus companies. Private sector developers that have PPP concession agreements with a local government to develop and operate/maintain an infrastructure facility or utility service would also be eligible to borrow from the IFF. In this regard, the IFF can serve to promote the PPP agenda in China by making longer-term finance available to potential private sector developers.

The IFF may also be used as a vehicle to assist local governments to restructure and refinance their “shadow banking” debt in the domestic bond market to help reduce the risk of a local government credit crisis and contamination of the banking system. IFF loans can include refinancing and restructuring of outstanding local government debt, in addition to providing new money for new infrastructure investments.

**Supporting liquidity and credit quality.** The liquidity of the securities issued by an IFF is an important consideration, and it affects the appetite for, and pricing of, those products. IFF liquidity management would require sustaining sufficient volumes of ‘benchmark’ securities in the market. The implicit assumption made is that the debt requirements of the local government sector are large enough to support a market for such debt instruments.

Moreover, adequate credit support arrangements would be required to satisfy the concerns of investors around the ability of the IFF to meet its liabilities over the short and long run. It is anticipated that the IFF’s liabilities will be secured by debentures providing a claim over its members’ local government general and project revenues. Additional credit enhancement could come from partial credit guarantees for other tiers of govern-
ment or from Development Finance Institutions (DFIs) on specific loans made to the IFF’s members.

Providing advisory services. The IFF often provides advisory services and training to its members in areas such as financial structuring of infrastructure projects, risk assessments, debt and liquidity management, and a selection of financial products. This will be in the IFF’s own interests as it will benefit from improved budgetary discipline and financial sustainability on the part of its members. It will also likely provide inside information on each municipality’s management capabilities and financial situation that will be useful for the IFF’s assessment of the municipality’s creditworthiness.

4.4 General IFF design Considerations

Accountability: Local governments in an IFF should remain focused on managing their levels of financial risk. Regardless of how it is capitalized, the IFF should be accountable first and foremost to the participating government entities. However, there should be potential for partial ownership and a role in governance by higher-level governmental bodies and possibly the private sector, which will reduce the financial risks in terms of credit rating. In China, IFF would be established by provincial government to serve the needs of small towns. In the US, the lower-level government are shareholders in IFF-type institutions. This may be more complicated to apply in China given the administrative structure and may encounter political and practical challenges.

More fundamental than ownership structure for governance is the integrity and independence of the IFF’s management, and the transparency and accountability of its operations. The ownership structure must provide strong incentives for efficient management. Standard tools in corporate management are independent external audits that are publicly released, public reporting of audited accounts, and boards of directors that are independent of day-to-day management and effectively oversee it. Another approach is to hire a private-sector asset manager that reports to the bond bank’s governing board. Last, and very important, is the fact that the bond bank will itself be entering and reporting to the private capital market. Its securities will be rated and scrutinized by prospective bondholders. A good discussion of various ownership structures is provided in Peterson (2006a).
**Regulatory and tax treatment:** Another important consideration is how the IFF’s securities will be evaluated by banks (capital adequacy requirements and their potential use as repo collateral) and other institutional investors (portfolio restrictions and requirements). The tax treatments of IFF securities will affect their attractiveness to institutional investors and thus their pricing. Clear legislation and regulation can help to solve these issues. However, this may be more difficult when there is private ownership of the IFF, which requires dividend payments or other forms of return.

**No exclusivity obligation:** Membership in the IFF should not require an obligation to use the IFF loans exclusively (as this may discourage participation and cause market distortion), and members could retain the right to gain services and finance from other entities including banks. Some specific infrastructure projects (especially PPP projects) may be large enough and have sufficiently high credit. In this case, a municipality would benefit if such projects are financed by issuing its own bonds instead of going through the IFF.

**Some functions outsourced:** IFFs often outsource functions like payment collections and credit analysis to specialized private sector firms or other government bodies both to obtain the necessary expertise and to reduce operating costs.\(^{10}\)

**Minimum level of participation:** It is necessary to require a minimum level of participation in an IFF as only after a critical mass is achieved can an IFF become attractive for inward investors. This requires stakeholders to access the facility for credit in a consistent manner. Securing sufficient initial participation will be one of the major challenges to create an IFF.

**Leverage:** One of the key issues that needs to be considered in the design of an IFF’s financing structure is the level of leverage that it will able to achieve. The primary consideration is the probability that the debt service payments received by the IFF from its loans will fully cover, on a timely basis, the scheduled debt service payments due by the IFF on its outstanding bonds. The IFF also must have ready access to funds that can be used to cover debt service payment obligations on its own debt even if there are shortfalls in payments on the portfolio of loans to its members. While leverage is often measured by the total amount of funds the IFF has borrowed relative to paid-in equity capital, the actual calculation used by regulators and rating agencies is more complicated. An IFF’s capital base (or “claims paying basis”) can consist of paid-in equity capital, contingent equity capital (i.e., capital that will be made available by investors as needed and under specific conditions), accumulated reserves from retained earnings, any “sinking funds” it has established, grants from governments or non-profits, and funds that have been borrowed (or are available for borrowing) on a long-term basis.\(^{11}\) In addition there will be funds available to

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\(^{10}\) An important design question is which services will be provided by the bond bank’s permanent staff, and which will be procured by contract. Most bond banks in the United States have very small staffs. Many contract with private sector asset managers for day-to-day operations. Bond banks may approve individual loans, but contract with commercial banks for loan origination and servicing. In such cases, the bond bank acts as an “apex bank” selling its own securities and using the proceeds to purchase loans from originating banks. Banks may be paid a fee, or may markup the interest rate. The bond bank may also use the contract to share risk with originators, either through partial guarantees from the originating bank, or by having the originator retain a fractional interest in the individual loans (Peterson, 2006a).

\(^{11}\) Initially the New Zealand (Local Government Funding Agency) LGFA had 45 million ordinary shares on issue, 20 million of which remain uncalled. All ordinary shares rank equally with one vote attached to each ordinary share. It also uses Borrower Notes for financing—These are subordinate debt instruments (which are required to be held by each local authority that borrows from LGFA in an amount equal to 1.6% of the aggregate borrowings by that local authority). LGFA may convert borrower notes into redeemable shares if it has made calls for all unpaid capital to be paid in full and the LGFA Board determines it is still at risk of imminent default.
the IFF on a short-term basis from various liquidity facilities. See Figure 6 below.

The amount of leverage that is prudent for an IFF to operate depends on the frequency of expected defaults in the pool of loans, expected losses in the event of defaults, and the duration of periods when the IFF will have to replace or supplement debt service payments for portfolio loans. Very high leverage is possible if most debt servicing problems are temporary, requiring the IFF to serve essentially as a liquidity facility—providing temporary “topping” up on debt service payments from municipal projects. In most cases public infrastructure projects, once they have completed construction and been put into operation, should eventually be able to repay all capital expenditures and operating expenditures. However, there may be temporary cash flow problems serious enough to cause debt service problems. The role of the IFF, as a pooled financing structure, is to protect lenders to the IFF from being affected by such cash flow problems. Thus the IFF needs sufficient funds available to meet all debt service deficiencies in its pool of loans to municipalities at all times.

In summary, the following factors are critical to the design of an IFF:

- The preferred IFF model needs to achieve lower financing costs for its participants as compared with the estimated current borrowing costs of most small-town, local governments.
- The preferred model does not require explicit credit support from other tiers of government and is unlikely to require substantial legislative change. These are important factors in measuring the costs (including time costs) and risks inherent in the subsequent implementation process.

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12 For example, Municipal Financing Authority of British Columbia’s available liquidity to respond to temporary payment interruptions included in 2014 a modest debt reserve fund of C$104 million, C$2.5 billion from sinking fund set aside and unrestricted retained earnings of C$40 million. The authority also had a C$200 million line of credit available. In total these exceeded its annual debt service obligations (Fitch Ratings, 2015).

**FIGURE 6. Determinants of IFF Leverage**

![Diagram showing the determinants of IFF leverage](image-url)

*Source: Authors’ own elaboration.*
The preferred model should contribute positively to promoting a culture of sustainable debt use.

4.5 Use of IFFs in Various Countries

Pooled infrastructure financing facilities have been used in a number of OECD countries as well as developing countries. Examples include local government financial intermediaries in Belgium, Finland, France, Spain and Sweden; municipal finance corporations in Canada (mostly provincial agencies operating at the provincial level); and municipal bond banks in the USA (state instrumentalities operating at the state level). Developing countries such as India, Philippines, South Africa, Kenya, Mexico and Colombia also provide some relevant lessons. Table 2 lists some examples of existing IFFs in the developed countries, which include a number of highly rated facilities. In other countries where they do not currently exist, notably Australia and the U.K., planning for such vehicles is relatively advanced.

The first pooled local government finance agency was found in Denmark in 1898. Kommunekredit is a cooperative society in which all Danish local authorities have voluntarily joined. The agency issues

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**Table 2. Examples of Existing IFFs**

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>NAME OF ORGANIZATION</th>
<th>DATE OF FORMATION</th>
<th>MEMBERSHIP</th>
<th>OWNERSHIP</th>
<th>CREDIT RATING*</th>
<th>WEBSITE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark</td>
<td>Kommunekredit</td>
<td>1898</td>
<td>All Danish local authorities</td>
<td>100% by local authorities</td>
<td>Aaa/AAA/-</td>
<td><a href="http://www.kommunekredit.com">www.kommunekredit.com</a></td>
</tr>
<tr>
<td>Netherlands</td>
<td>Bank Nederlandse Gemeenten</td>
<td>1914</td>
<td>11 provinces and 406 municipalities</td>
<td>50% by national government and 50% by local governments</td>
<td>AAA</td>
<td><a href="http://www.bngbank.nl">www.bngbank.nl</a></td>
</tr>
<tr>
<td>Norway</td>
<td>Kommunalbanken</td>
<td>1926</td>
<td>All Norwegian municipalities and counties</td>
<td>100% by national government</td>
<td>Aaa/AAA/-</td>
<td><a href="http://www.kommunalbanken.no/en">www.kommunalbanken.no/en</a></td>
</tr>
<tr>
<td>Canada</td>
<td>Municipal Finance Authority of British Columbia</td>
<td>1970</td>
<td>All districts and municipalities in BC</td>
<td>Non-share capital</td>
<td>Aaa/AAA/AAA</td>
<td><a href="http://www.mfa.bc.ca">www.mfa.bc.ca</a></td>
</tr>
<tr>
<td>United States</td>
<td>Vermont Municipal Bond Bank (this was the first bond bank–a number of other states now have them)</td>
<td>1970</td>
<td>Most cities, towns, school systems, water and sewer districts, and other governmental entities in the state</td>
<td>Non-share capital</td>
<td>AA+</td>
<td><a href="http://www.vmbb.org">www.vmbb.org</a></td>
</tr>
<tr>
<td>Sweden</td>
<td>Kommuninvest</td>
<td>1986</td>
<td>90% of all regional and local authorities</td>
<td>100% by local authorities</td>
<td>Aaa/AAA/-</td>
<td><a href="http://www.kommuninvest.se/en">www.kommuninvest.se/en</a></td>
</tr>
<tr>
<td>Finland</td>
<td>Munifin</td>
<td>1990</td>
<td>303 municipalities</td>
<td>16% by national government, 53% by municipalities, 31% by local government pension funds</td>
<td>Aaa/AA+/A+/-</td>
<td><a href="http://www.munifin.fi">www.munifin.fi</a></td>
</tr>
<tr>
<td>New Zealand</td>
<td>Local Government Funding Agency</td>
<td>2011</td>
<td>30 local governments</td>
<td>11% by national government and remainder by participating councils</td>
<td>-/AA+/AA</td>
<td><a href="http://www.lgfa.co.nz">www.lgfa.co.nz</a></td>
</tr>
<tr>
<td>France</td>
<td>Agence France Locale</td>
<td>2014</td>
<td>103 local governments</td>
<td>100% by local authorities</td>
<td>Aa3</td>
<td><a href="http://www.agence-france-locale.fr">www.agence-france-locale.fr</a></td>
</tr>
</tbody>
</table>

*Source: Author’s own elaboration. *Moody’s/S&P/Fitch.*
bonds in various capital markets and then on-lends the proceeds to the local authorities. The bond issuance is supported by a joint guarantee signed by the members, which has been in force since the creation of Kommunekredit but has never been used. Now the agency is dominating the local government credits market in Denmark. Similar examples were found in Nordic countries like Sweden. Nowadays, this is a model still widely adopted. For instance, the newly set up French Local Agency (Agence France Locale) goes in the same direction.

In Canada, there are several bond banks that operate at the provincial level and are referred to as municipal finance corporations. They were established by the provincial governments, which retain the control and resultant benefit of their consolidated borrowing efforts. All of these but one have their debts guaranteed by their provincial governments. The exception is the Municipal Finance Authority of British Columbia (MFA), which was established in 1970. The MFA's borrowing has a “joint & several” payment obligation from the MFA's members, in effect guaranteeing that all debts undertaken by the MFA have the full backing of every unit of local government in the province.

A similar approach is followed by the New Zealand Local Government Funding Agency (LGFA) and was adopted by the original Danish agency. This model is interesting as it is based on mutual control and co-guarantee by its members. This latest model may not necessarily be the easiest to apply in China due to the rich layering of administrative territorial entities and the difficulty that may ensue from coordination.

Bond banks were created in the U.S. for three distinct purposes; first, to provide access to the capital markets for small municipal governments, second, to reduce transaction costs through the pooling of projects and third to raise domestic debts at the lowest possible cost to borrowers and hence taxpayers. Complementing the bond banks are the State Revolving Funds (SRF’s) designed as the financing tools to assist local governments finance water and sanitation by leveraging state grants with domestic debt. In the US model, there are no shareholders as bond banks are created by state law to link capital markets and smaller municipal projects. The key feature of the financing is the legal structure of the transaction and not the balance sheet of the issuer. Different security structures have been developed for the more than 25 pooled lending programs in the United States. The attractiveness of this model,
for the Chinese situation is that the Bond banks are at the state level, allowing for regional differences, appropriate in a large federal country. Further, the Bond Bank structure has some near-universal features which are essential for the urban environment sector: the linkage they provide to long term financing sources (insurance and pension) and the low-cost loans made possible by a low capital base.

The Tamil Nadu Urban Development Fund (TNUDF) was established in India as a Trust in 1996, a legal structure that allowed borrowings from markets and also increased in its own equity capital as the business demands grew. TNUDF disbursed around USD 100 million in its first three years to around 120 local governments for environment and other infrastructures, with water and sanitation constituting a rising share of the portfolio. This trust, with little recourse to the capital, relied on credit enhancements of a debt service reserve fund and repayment from borrower's taxes and fees. The success of TNUDF was facilitated by World Bank capital used for blending with local finance and the set-up of a credit enhancement for debt issued by USAid.

Infrastructure Finance Corporation Limited (INCA) is a private debt fund, and was created in South Africa after the new national government took over after the apartheid regime, as a consortium of major private sector banks with the objective to support the South African municipal bond market, and provide debt finance for local government units, parastatals and private companies involved in infrastructure. INCA is an example of open-access intermediary serving smaller municipalities, based on strict lending criteria. The significant points of differences with the DFV/ GIFF situation are the legal frame work for debt recovery, entity financing as opposed to financing concessions, and the pricing freedom that INCA enjoys.

The World Bank has extensive experience in setting up and financing financial intermediaries, including those devoted to sub-nationals. The track record has been mixed over the years, but overall the Independent Evaluation Group’s (IEG) special study on the subject is positive. The Bank has financed IFFs led to stronger own-revenue flows by the financed entities, better financial management, improved local information systems, and local management of procurement. Weaker results were found to be common in monitoring and evaluation, operations and maintenance, leveraging private finance and poverty focus. All these areas can improve and yield better results. IFFs generally set up as wholesale mechanisms (thus serving many municipalities) have had better outcomes than retail IFFs which served just a few (IEG, 2009). See following table some selected example with related lesson.
**TABLE 3. Selected Examples of IFFs Financed by the World Bank**

<table>
<thead>
<tr>
<th>COUNTRY (NAME OF FI)</th>
<th>PROJECT NUMBER</th>
<th>APP. TIME</th>
<th>WORLD BANK CONTRIBUTION</th>
<th>KEY FEATURE</th>
<th>LESSONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morocco (Communal Infrastructure Fund (FEC)*)</td>
<td>P005406</td>
<td>1983</td>
<td>USD 16 ml; 15 ml line of credit and 1 ml for TA</td>
<td>Lending loans to urban and rural local authorities for urban infrastructure (Retail)</td>
<td>- Full-fledged specialized municipal bank subject to Central Bank regulation, financed with bond issuance, bank loans, purchasing certificates of deposits and credit lines from MDBs. - First bond issuance backed by governmental guarantee but later not needed. - Loan ceilings to reduce credit risk; projecting municipalities' budget surplus and limiting new municipal debt within this surplus.</td>
</tr>
<tr>
<td></td>
<td>P005517</td>
<td>1993</td>
<td>USD 177.3 ml, 176.5 ml line of credit and 0.8 ml for TA</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>P005523</td>
<td>1997</td>
<td>USD 110.3 ml, 110 ml line of credit, 0.3 ml for FEC institutional development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>India (Tamil Nadu Urban development fund)</td>
<td>P009872</td>
<td>1988</td>
<td>USD 300.2 ml, 102.3 ml went to FI: line of credit</td>
<td>Lending loans to small and medium cities &amp; corporations building urban infrastructure (Retail)</td>
<td>- A Trust with participation of 3 private FIs and state gov’t, all guaranteeing its debt. - Self-sustained with bond issuance and sub-ordinate loans from other funding agencies. - Availability of WB’s credit and USAID’s credit guarantee facilitated blending with local finance.</td>
</tr>
<tr>
<td></td>
<td>P050637</td>
<td>1999</td>
<td>USD 105 ml, 80.5 ml went to FI: 80 ml line of credit and 0.5 ml for bond issuance TA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>India (Partial Risk Sharing Facility for Energy Efficiency*)</td>
<td>P128921</td>
<td>2015</td>
<td>USD 43 ml: 12 ml for partial risk sharing facility, 6 ml for TA, and 25 ml from Clean Technology Fund</td>
<td>Providing sub-guarantee to sub-financers of EE projects (Wholesale)</td>
<td>- Half of the funds support lending operations; the other half support a sub-account window for partial risk sharing facility, backed by the CTF guarantee.</td>
</tr>
<tr>
<td>Brazil (Urban Development Fund (FDU)*)</td>
<td>P006435</td>
<td>1989</td>
<td>USD 100 ml, 92.1 ml went to FI: line of credit</td>
<td>Lending loans to Municipalities and public utilities for urban infrastructure (Retail)</td>
<td>- Revolve based on WB loan, IDB loan, state gov’t budget, retaining earnings from operations. - Intensive and early marketing of project ideas. - Private lenders can’t use intercept mechanism thus limiting municipal lending only to state sponsored MDF.</td>
</tr>
<tr>
<td>Colombia (FINDETER*)</td>
<td>P006582</td>
<td>1991</td>
<td>USD 60 ml, 40 ml went to FI: line of credit</td>
<td>Lending to municipalities through commercial banks, for urban infrastructure such as water, sanitation, transport (Wholesale)</td>
<td>- Second-tier FI: using WB loans to rediscount commercial banks’ loans to municipalities to incentivize municipal lending. The banks absorb 100% credit risk. - Voluntary intercept agreements increase the willingness of private sector to make municipal lending. However, this intercept mechanism lacks legal basis in China.</td>
</tr>
<tr>
<td></td>
<td>P006861</td>
<td>1998</td>
<td>USD 49 ml line of credit (75 ml was approved)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Philippines (Municipal Development Fund)</td>
<td>P004501</td>
<td>1992</td>
<td>USD 35.8 ml (40 ml was approved), 24 ml went to FI: line of credit</td>
<td>Lending loans to municipalities for urban infrastructure (Retail)</td>
<td>- A top-down, pre-selected beneficiary approach caused delay in implementation and cost-recovery problems. A demand-driven, competition selection process is recommended.</td>
</tr>
<tr>
<td>Georgia (Municipal Development Fund)</td>
<td>P050910</td>
<td>1997</td>
<td>USD 19.5 ml (20.9 ml was approved), 16.1 ml went to FI: line of credit</td>
<td>Lending loans to municipalities for urban infrastructure in Priority Investment Plan (Retail)</td>
<td>- Precaution for future O&amp;M: sub-borrowers guarantee availability of budgetary resources for infrastructure O&amp;M after projects hand-over - Use of management information system (MIS): provide data &amp; information for timely monitoring</td>
</tr>
</tbody>
</table>

* FIs that mainly lend to green/environmental urban infrastructure.

Source: Authors’ own elaboration; information on projects sourced from WB project documents.
<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>NAME OF FI</th>
<th>PROJECT NUMBER</th>
<th>APP. TIME</th>
<th>WORLD BANK CONTRIBUTION</th>
<th>KEY FEATURE</th>
<th>LESSONS</th>
</tr>
</thead>
</table>
| Romania              | FREE*                                          | P068062        | 2002      | USD 10 ml: 8 ml line of credit and 2 ml for TA | Lending loans to industrial and other energy consumers using EE technologies (Retail) | ■ Use of Fund Manager under a performance based contract; weighting should be further towards performance instead of retainer part.  
■ Transaction costs at project level still high and need pre-investment TA support to sub-borrowers. |
| Bulgaria             | BEEF*                                          | P08483I        | 2005      | USD 10 ml: 4.5 ml for partial credit guarantees, 4 ml line of credit and 1.5 ml for TA. | Lending to utilities / municipalities using EE technology (Retail); Partial credit guarantee (Wholesale) | ■ Failed to attract co-finance with commercial banks during implementation since the size of EE projects was typically small and increased the transaction costs per loan amount for commercial banks. |
| Indonesia            | Indonesia Infrastructure Financing Facility     | P092218        | 2009      | i) USD 100 ml WB line of credit (subordinated debt)  
ii) USD 40 ml IFC equity investment | Lending to infrastructure projects (Retail) | ■ Gov’t established a vehicle SMI to channel its loans and equity investments to IIFF.  
■ Self-sustained by bond issuance. Products include loans, guarantees, equity investment and advisory services. |
| Indonesia            | Indonesia Infrastructure Guarantee Fund          | P118916        | 2012      | USD 29.6 ml: 25 ml for issuing IIGF guarantees, 4.6 ml for TA | Lending to infrastructure PPPs (Retail) | ■ A single window for all gov’t guarantees for infrastructure PPPs, mainstreaming WB policies.  
■ Optimal usage of all guarantee types (IIGF capital, WB funds, and MOF guarantees) based on what risks the underlying funding can cover. |
|                      | Regional Infrastructure Development Fund         | P154947        | 2017      | USD 200 ml, all for Ft; line of credit and TA | Lending loans to subnational govt.’s infrastructure (Retail) | ■ Limited liability SOE set up with equity from Gov’t of Indonesia and long-term low-cost debts from other institutions.  
■ Will borrow through bond issuance in future. |
| Middle East and North Africa (MENA) | Arab Financing Facility for Infrastructure (AFFI) | P121173        | 2010      | i) USD 5 ml DGF funds: 0.5 ml for initial cost of Facility Manager and 4.5 ml for TA window  
ii) USD 50 ml IFC equity | Providing debt, equity investments, guarantees to infrastructure projects in MENA countries (Retail) | ■ The TA window ensure a significant pipeline of viable projects to attract funding from third parties, in form of Shariah-compliant (Islamic finance) and conventional funds.  
■ May finance through issuing bonds in future. |
| Nigeria              | Wholesale Development Finance Institution        | P146319        | 2014      | USD 500 ml: 445 ml line of credit, 35 ml for credit guarantee, 12 ml for TA | Providing loans and guarantees to PFIs financing MSMEs (Wholesale) | ■ Partial credit guarantees (50%) on PFI loans reduce moral hazard and risk of defaults while incentivizing PFIs to lend to MSMEs. |
| Croatia              | Seed Co-Investment Fund & Pilot Venture Capital Fund | P152130        | 2015      | USD 22 ml: 17.2 ml line of credit for VC Fund, 2.7 ml line of credit for Seed Fund, 2.1 ml for TA | Providing equity or semi-equity investments to innovative SMEs (Retail) | ■ Cover management fees of the Pilot VC Fund with WB loans to lower the cost to private investors and ensure structure viability.  
■ Undertake Co-investment Fund and TA first to develop market for the VC Fund. |
| China                | Green Energy Fund*                              | P152109        | 2016      | USD 0.2 ml WB Budget and Trust Fund, for a study on establishing potential Green Funds in China | Providing finance to EE RE and air pollution reduction projects (Retail) | ■ Revolve fund leveraging government budget and MDBs loans to attract commercial capital.  
■ Various financial products: equity investment, debt financing in form of equity, mezzanine, entrusted loans  
■ A market-based energy savings measurement and verification system is critical to implement innovative EE financing. |
5 The Application of IFF in China

5.1 Regulatory Constraints for IFF Establishment in China

Despite the potential of using IFF for small-town infrastructure financing, there are regulatory issues that need to be taken into account for any IFF designs for small towns in China as discussed below.

Regulation of non-deposit taking financial institutions. IFFs are likely to be classified as non-deposit financial institutions and, as such, will need to obtain a permit to make loans to small municipalities for infrastructure projects. In China, banks are lending institutions that are licensed to take individual deposits. The Chinese banking regulations do not allow other financial intermediaries to lend. Recently, however, the Chinese government authorities in charge of banking regulations are considering a new regulation for non-banking financial institutions (NBFI).

This consideration arises from the fact that a number of non-deposit financial institutions (such as trust companies and private equity funds) have already engaged in lending or quasi-lending activities. Some of these institutions actually lend to local governments for infrastructure investment and land development and expect repayment from the land concession revenues of the borrowers. Potential reform in the regulation of NBFI implies that the government is seriously considering opening up the financial market for NBFI to lend under a regulated framework. This may open a door for IFF into the urban infrastructure financing business. However, in the near future, a potential IFF needs to take into account the current barrier in direct issuance of loans.

On-lending. Currently IFFs would not be allowed to issue loans, and thus have to work through a trustee bank for issuing loans, or make equity investments (like any other infrastructure funds in the market). This has implications to the design of the IFF that differ from the practice in other countries. As a result:

- Municipal borrowing from the IFF on a “general obligation” basis will not be possible. Instead the IFF lending would be directly to municipal projects (on a non-recourse basis) and utility companies. Non-recourse project and utility company financing is risker than lending to municipalities. The creditworthiness of the project usually cannot be higher than that of the

14 The fact that the IFF would be lending primarily to municipal projects and utility companies means that the credit analysis skills of its staff would need to be different. Typically an IFF would focus on evaluation of municipal finances. While this can be challenging, especially if the municipality does not have good financial accounting and stable revenue sources, it does have the benefit that over time there would be a steady accumulation of knowledge about each municipality since each would likely be borrowing from the IFF in order to finance a number of projects. In contrast, when lending to projects on a non-recourse basis each will need to be evaluated “from scratch”, i.e., without utilizing or relying on any previous work for assistance. While lending to utilities might be repetitive, it will be less so than for municipalities. Thus the credit review process for the IFF will likely be more complex and time consuming than is typical for an IFF that lends only to municipalities.
municipality. If the IFF also lends to companies (such as construction companies that might use the funds as bridge financing for infrastructure projects) and takes unsecured corporate credit risk, the impact on the IFF’s rating will be even more pronounced.

- Given the higher risk involved in lending to projects and utilities, the degree of leverage the IFF could use would be lower than is typical for IFFs that lend to municipalities.

- Since the IFF would not be lending to the smaller cities, the use of a transfer payment “lock box” structure, another important risk mitigation, could not be used to reduce the IFF’s credit risk.

**Use of a revenue stream as collateral.** The Amendment of Budget Law prescribes in paragraph 1 of article 16 that fiscal transfer payments should be used to promote equal basic public services between regions as the main target. In other words, in the current Chinese fiscal system, the fiscal revenue of the corresponding local governments and the subsidies and transfer payment from higher-level governments are primarily used for basic public services, which cannot be used as a guarantee to repay the debt of local governments. Only extra-budgetary revenue minus the extra-budgetary expenditure can be used to mediate the local debt deficit. In China, using transfer payment intercept mechanisms to improve local-government credit is still a lack of relevant legal basis. However, it is arguable that the transfer payment intercept is not designed as a kind of financial guarantee but as a set-up to enable debt-financing to flow to basic public infrastructure services. It is ultimately used for the right purpose.

**Inadequate reporting and disclosure standards.** Public information is the precondition of effective risk assessment and management, but currently in China, the debt information is not transparently accounted for and reported. Previously, budget information provided by some government departments were often too vague for legislators and the public to supervise. After the State Council issuance of the government comprehensive, financial report
system reform program in 2014, it is expected that in 2020, local government will start to release their balance sheets to the public. A pending issue, however, remains the fact that in China, accounting is done on a cash basis and not according to accrual accounting criteria. Some pilot activity at the central-government level is taking place to explore a transition to international accounting standards, however, this is a long journey and far from being accomplished, either at the central level, and much less at the local level. The implication for the IFF is that unless clarity and transparency are adopted by the participating stakeholders regarding the underlying projects, pricing of the debt instruments issued will be higher and their overall marketability and attractiveness much lower.

Only revenue earning utilities and infrastructure projects are allowed to borrow. In other words, towns cannot borrow on their budget; only their revenue-earning utilities and infrastructure projects can. Therefore, the specialized financial intermediary will be able to serve only revenue-earning utilities and self-standig infrastructure projects.

The cumulative impact of these regulatory constraints will have a significant impact on the IFF, which will be reflected primarily in its creditworthiness (and thus its rating). IFF’s in other countries that lend to municipalities are rated highly in large part due to the relatively high creditworthiness of the municipalities that borrow from it.

5.2 An IFF for Small-Town Infrastructure Financing in the Shanghai Region

SMG is proposing to transform its DFV into a full-fledged infrastructure financing facility with the capacity to raise funds in domestic capital markets, as well as to on-lend into specific sub-projects with proper project appraisal and fiduciary oversight capacity. Shanghai Municipal Investment (SMI) Group is the main sponsor of the IFF and has proposed the creation of a Shanghai Green Urban Infrastructure Financing Facility (GUIFF) for small-town related projects but also larger green projects in other provinces.

The Facility plans to invest in urban environmental infrastructure projects, mostly public utilities and PPPs. The initial focus will be the Shanghai region, but the Facility is expected to expand to Yangtze River Delta Region and ultimately cover Yangtze River Economic Belt in the future. The Facility will invest primarily revenue-earning projects, which are bankable with contract terms, tariffs and subsidies agreed between the sponsoring governments and service providers. Any subsidy would be reflected in the annual local government budget, but there will be no government guarantee for loan repayment. SMI has put together an initial pipeline of projects (see in Box 5.3.1).

Given SMI’s strong capabilities as an infrastructure project developer and its financial strength, such a Facility should be able to help mobilize infrastructure projects that might otherwise find it difficult to attract financing on their own. The aggregate impact in terms of scale will be constrained by the limited financial leverage the Facility would have, which will mostly depend on the frequency of expected defaults in the pool of loans, the expected losses in the event of defaults, and the duration of periods when the IFF will have to replace or supplement debt service payments for portfolio loans.

It is possible that the Facility’s investment in projects will provide sufficient credit enhancement—via equity and mezzanine debt—that project bonds might then be used to attract longer-term, lower-cost financing from institutional investors (both domestically and internationally).

SMI’s effort could serve to demonstrate the viability of such a facility. This could then lead to other financially strong UDICs in China, setting up a similar infrastructure financing facility rather than the current practice of shadowy infrastructure
**Box 5.3.1. Initial Pipeline for the GIFF**

SMI has put together an initial pipeline of projects, as illustrated below by capital expenditure (CAPEX) required, sectors and sources of public support:

**Figure 5.3.1. Total Number of Potential Projects in Pipeline in the Region**

<table>
<thead>
<tr>
<th></th>
<th>No. of Projects</th>
<th>No. of Project W/O CAPEX</th>
<th>CAPEX Required (RMB Billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>In Shanghai</td>
<td>11</td>
<td>3</td>
<td>34.37</td>
</tr>
<tr>
<td>Outside Shanghai</td>
<td>5</td>
<td>2</td>
<td>19.90</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
<td>5</td>
<td>54.37</td>
</tr>
</tbody>
</table>

*The required CAPEX is not yet decided.*

**Figure 5.3.2. Potential projects sponsored by:**

**Figure 5.3.3. Source of direct project revenue**

**Figure 5.3.4. Potential Projects will be sponsored by**

**Figure 5.3.5. Type of Proposed Projects**

**Figure 5.3.6. Sources and Type of the Public Sector Support**

*Source: SMI*
funds. As a result, the overall impact could be to develop a new source of financing for infrastructure projects that would not create additional debt for local governments or for the UDICs.

There is a danger that the current infrastructure funds being established in China may create unintended consequences if they are too broadly used to by-pass restrictions on UDICs financing of municipal projects. Infrastructure funds will not likely lead to greater transparency in municipal financing and may delay the process of moving municipal financing into the capital markets. Experience in other countries has shown that infrastructure funds are also costly, both in terms of the cost of financing to municipalities and the returns going to institutional investors.

5.2.1 Potential structure for the Shanghai GIFF: Lending via a Trustee Bank

Due to the potential regulatory constraints on a newly formed IFF lending (as discussed above), a possible GIFF structure consists of lending via a trustee bank (see figure 7). Such “Entrusted Loan” approach might circumvent some issues posed by the current regulatory framework related to on-lending restrictions. Such an approach will increase the financial cost of financing to projects because a bank will likely charge a fee for this service. The GIFF might seek a long-term entrustment cooperation agreement with one of China’s development banks, for example China Development Bank, and obtain a lower rate for the administrative fee that would not have a significant impact on the cost of financing. This could be a transitional option for an

**FIGURE 7. GIFF Structure 1**

Source: Authors’ own elaboration.
IFF until it can establish itself and obtain a permit or the regulations are changed to allow IFFs to lend to municipalities. Also, unless there is a change in the prohibition against municipalities borrowing from banks, the trustee bank would be limited to lending to projects or utilities.

5.2.2 Potential structure for the Shanghai GIFF: Lending directly to Projects

Future reforms of regulation on NBFI may remove the barrier for IFFs to make loans directly to projects and utility companies. In this case there would be no need to involve a trustee bank and the structure would look like that shown below in figure 8. Alternatively, it is possible that the GIFF seek lending licensing at set up, according to one of the existing umbrellas of financial intermediaries currently considered by Chinese law, albeit not perfectly fitting with its mandate and nature. The most adequate structure would have to be studied in depth by a legal team during preparation. This solution would also be a sub-standard solution since capital adequacy and other prudential aspects may be driven by serving the requirements of the China Banking and Regulatory Commission which may not be suitable for the purpose of the GIFF. Also, there is no guarantee at this point that such strategy would be successful (i.e., that the license would indeed be granted).

Under this structure, the IFF would lend directly to projects or utility companies (see figure 8). This might be a useful interim solution while smaller cities build up their own capacities to structure and monitor projects and establish their credit

**FIGURE 8. GIFF Structure 2**

Source: Authors’ own elaboration.
ratings. However, the long-term objective should be for the smaller cities to be able to structure and manage projects themselves and to take responsibility for financing their infrastructure using all their fiscal resources.

5.2.3 How a GUIFF Would Operate

Project solicitation: The GUIFF would solicit projects from the cities/towns—possibly with the assistance of MoF and the Shanghai Municipality. The projects could include self-financing projects, projects dependent on future government payments for services or availability, and projects that combine both sources of funding.

Project evaluation: The GUIFF would evaluate proposed projects for their feasibility, “value for money”, and creditworthiness. A creditworthiness assessment tool that evaluates borrowers’ debt service capacity, indebtedness and overall financial position should be developed to facilitate project and borrower selection.

Project structuring: Various types of project structures could be considered. Some projects might be structured in the form of public-private partnership (PPP), with non-recourse financing made to a project SPV. Some projects can be operated by utility companies or state-owned enterprises (SOEs) that would secure payment based on project revenues or on corporate guarantees. Interest rates charged by the GUIFF could also vary depending on the credit risk of each lower-tier government and/or project it sponsored. This will help the GUIFF to avoid “adverse selection” problems.

Initial external funding: Once the GUIFF selects the projects to be financed, it will need to obtain funding. To accelerate its start-up, the GUIFF would greatly benefit from World Bank initial funding via a Financial Intermediary Loan (FIL), mainly to cover construction risks. Once it has a portfolio of performing projects, the GUIFF could then easily begin issuing bonds to match the debt service payments it receives to the payments on the bonds it issues, raising funds from the capital market. These funds will in turn be on-lent to the projects under a revolving fund mechanism.

Bond issuance: The GUIFF bonds should be rated by one or more qualified credit rating agency to facilitate their purchase by as many domestic and international investors as possible. While a properly structured GUIFF should be able to issue bonds with relatively high ratings, it may be useful for the GUIFF to issue two tranches of bonds—senior and subordinated. The subordinated debt tranche would provide first loss protection to senior debt tranche. The subordinated debt bonds would receive lower ratings than the senior debt bonds. These bonds should be attractive for infrastructure fund investment. Such funds should have the expertise to evaluate the risks of the GUIFF’s infrastructure projects and typically seek the higher returns of subordinated debt. The senior debt would likely need to obtain credit ratings and have a high enough rating to be attractive to banks and institutional investors.

GUIFF credit rating: In order to issue bonds, the GUIFF (independently of the structure it uses) will likely need to obtain a credit rating from one or more credit rating agency. If properly structured and capitalized, the GUIFF will likely have a relatively high rating. Its association with the Ministry of Finance and Shanghai Municipality would pro-

15 As noted above, under the new Government guidelines the MoF will vet on-lending between upper- and lower-tier governments. The MoF will also assess each local government’s debt performance, using metrics such as debt to revenue and repayment ratios, and will issue warnings to local governments that become over-indebted.

16 World Bank FIL would be made to the Ministry of Finance, which could then channel the funds to the IFF.

17 The total costs of using a combination of mezzanine and senior debt could be held down if the mezzanine debt is provided by a DFI or government policy bank that is willing to make this investment in order to promote the development of IFFs in China.
vide some assurance to investors and likely give a boost to its “stand-alone” rating by credit rating agencies. Over time as it develops experiences and records in selecting good projects and proper debt servicing, its ratings will improve. This is important, as it will then be able to secure lower-cost bonds and pass some of this savings on through its loans. Guarantee for bond issuance provided by a third party may also help to obtain a sufficiently high credit rating, supporting GUIFF to issue medium to long-term bonds with attractive pricing.

**External guarantees:** Ideally, the GUIFF should have no explicit guarantee from national or provincial government or corporate (SMI) guarantee for the repayment of its bonds. Bond purchasers would essentially take the credit risk of a pool of projects, with the additional protection provided by GUIFF’s debt service reserve accounts and liquidity facilities that will help to ensure timely debt service payment, as well as GUIFF’s capital which would provide some first loss credit enhancement. Thus, bond buyers will need to evaluate (or rely on credit rating agencies to evaluate) the risk of the IFF’s degree of leverage and the ability of GUIFF in selecting appropriate projects and efficiently managing the disbursement flows and collections to ensure timely debt servicing. This has potential to provide significant market discipline for small-town infrastructure financing. If a guarantee is used, for instance to support bond issuance, GUIFF should avoid full guarantees as they generally cause investors to focus only on the rating of the guarantor, not on the underlying credit structure of the transaction and the credit strength of the borrowers.

**5.3 Pipeline and Considerations for Projects Selection**

Once the counties’ public utilities and SOEs and towns express an interest to participate in the GUIFF, it is then necessary to assess the demand for projects and their potential pipeline. The criteria for selecting qualified projects to finance might include, among others, the potential eligible projects, the minimum and maximum funding limits, required stage of project preparation, minimum degree of self-financing, etc.

Selection and evaluation of the potential projects should follow an approach combining both individual analysis and portfolio management. The purpose of the individual analysis is to ensure that the project itself meets the selection criteria by GUIFF and assesses whether the project is a good underlying asset for the GUIFF. In addition to the common project evaluation about commercial and operational viability, economic value of the project should also be taken into consideration.

However, the nature of pooling in the GUIFF means that project evaluation should also follow a “portfolio management” approach to optimize the structure of the project portfolio and minimize potential risks. The IFF should try to develop a portfolio of projects that diversifies risks while maximizing the usage of the financing resources. For such a portfolio, it is necessary to take into consideration features of a project, such as sub-sector (water and wastewater treatment, landscaping, power and etc.), geographic location, type (new projects, rehabilitation, expansion of existing infrastructure, or rejuvenation), and size. In addition, the GUIFF needs to balance project allocation among its stakeholders’ cities/small towns. Table 4 provides some recommendations for project evaluation and selection.

The sectors eligible for GUIFF funding include transportation assets and services (including rehabilitation of existing roads, reconstruction or construction of new roads, landscaping, public transportation facilities, ports, and urban transportation), water and sanitation (water supply, sewerage, wastewater treatment, drainage, and erosion), solid waste management, electricity generation, transmission and distribution, and municipal
TABLE 4. Considerations for GUIFF Portfolio Selection

<table>
<thead>
<tr>
<th>ASPECTS</th>
<th>SELECTION CRITERIA AND CONSIDERATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sector and type</td>
<td>- A balanced portfolio of infrastructure subsectors and project types is desirable to reduce correlation of risks in the loan portfolio</td>
</tr>
<tr>
<td></td>
<td>- However, it may be necessary to initially focus on specific sectors so as to limit the project evaluation and management skills needed</td>
</tr>
<tr>
<td>Size</td>
<td>- Higher concentration risks and less efficient use of pooled resources if individuals are very large</td>
</tr>
<tr>
<td></td>
<td>- Lower cost efficiency if the project size is too small</td>
</tr>
<tr>
<td></td>
<td>- Target range of CAPEX required: RMB [1~10] billion</td>
</tr>
<tr>
<td>Projected outcomes</td>
<td>- The expected Internal Rate of Return (IRR) (estimated by forecasting future costs and revenue flows) should be above a defined level</td>
</tr>
<tr>
<td></td>
<td>- The expected Economic Rate of Return (ERR) (i.e., including social returns such as job creation, improvement in public health, and etc. taken into consideration) should be above a defined level</td>
</tr>
<tr>
<td>Local government</td>
<td>- There should be public support for the project to be financed by the GUIFF</td>
</tr>
</tbody>
</table>

Source: Authors’ own elaboration.

TABLE 5. Considerations for Specific GUIFF Project Selection

<table>
<thead>
<tr>
<th>CRITERION</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic relevance</td>
<td>The sub-project shall contribute to national/provincial priorities and contribute to sustainable economic growth.</td>
</tr>
<tr>
<td>Government ownership and</td>
<td>Identify the governmental authorities and agencies involved in the design and implementation of the sub-project.</td>
</tr>
<tr>
<td>institutional framework</td>
<td>Explain the institutional framework to which the sub-project will be subject.</td>
</tr>
<tr>
<td>Legal and regulatory framework</td>
<td>A review of the laws and regulations which will impact the sub-project’s design, implementation and operation.</td>
</tr>
<tr>
<td>Feasibility</td>
<td>Analyze the sub-project’s technical feasibility and the key risks.</td>
</tr>
<tr>
<td>Financial and economic</td>
<td>Assess the financial viability of the sub-project. The assessment will include but not limited to revenue forecast, sources of financing, and maintenance costs over the project life cycle, payback period, return on investment.</td>
</tr>
<tr>
<td>Public sector considerations</td>
<td>Describe the public sector support that need to be provided to make the sub-project bankable.</td>
</tr>
<tr>
<td>Attractiveness as a PPP</td>
<td>Assess the interest of the private sector in the sub-project and why the sub-project would be attractive as a PPP.</td>
</tr>
<tr>
<td>Procurement</td>
<td>Assess type of procurement and whether or not the procurement will be in compliance with World Bank (WB) procurement requirements.</td>
</tr>
<tr>
<td>Safeguards</td>
<td>Assess whether or not the sub-project will have a positive environmental impact and is in compliance with WB environmental and social safeguards.</td>
</tr>
</tbody>
</table>

Source: Authors’ own elaboration.
infrastructure (paving, street lighting, rehabilitation/expansion of existing infrastructure).

**Screening Criteria for Eligible Sub-projects.** Each sub-project will be assessed through a set of screening criteria for financing under the Facility. Table 5 below lists a possible list.

**Prioritization screening criteria.** Once the sub-projects are selected for appraisal, a priority list of sub-projects can be ranked according to a weighted matrix in case the demand for financing is larger than the current capacity to fund/on-lend. Table 6 highlights a possible prioritization matrix that could be adopted.

**Selection of Eligible Sub-projects.** A short-list of potential eligible sub-projects would be prepared based on the screening results. Strong sub-projects will be selected for appraisal. Figure 9 shows a decision tree on the selection process.

### TABLE 6. Prioritization Screening Criteria for Individual Projects

Scoring from 0 to 5 (0 = None, 1 = Poor, 2 = Fair, 3 = Average, 4 = Good, 5 = Excellent)

<table>
<thead>
<tr>
<th>SCREENING CRITERIA (WEIGHT)</th>
<th>SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Strategic Fit (20%)</td>
<td></td>
</tr>
<tr>
<td>Weighted Score of Strategic Fit</td>
<td></td>
</tr>
<tr>
<td>2. Readiness of Project (20%)</td>
<td></td>
</tr>
<tr>
<td>- Degree of preparation and development of projects</td>
<td></td>
</tr>
<tr>
<td>- Level of information available, including feasibility studies and other project preparation documents</td>
<td></td>
</tr>
<tr>
<td>Weighted Score of Readiness</td>
<td></td>
</tr>
<tr>
<td>3. Complexity of Implementation (60%)</td>
<td></td>
</tr>
<tr>
<td>- Ease of moving to project implementation, including procurement, financing, safeguards</td>
<td></td>
</tr>
<tr>
<td>- Ability of the sub-project to generate sufficient cash flows to meet its financial obligations</td>
<td></td>
</tr>
<tr>
<td>- Bankability of sub-project</td>
<td></td>
</tr>
<tr>
<td>Weighted Score of Complexity of Implementation</td>
<td></td>
</tr>
<tr>
<td>Total weighted score</td>
<td></td>
</tr>
</tbody>
</table>

*Source: Authors’ own elaboration.*

**FIGURE 9. Decision Making Tree for Project Election**

- **Screening Results**
  - Satisfactory as a sub-project: Go to appraisal
  - Not satisfactory as a sub-project: Drop
  - Inadequate information: Request additional information

*Source: Authors’ own elaboration.*
Moving to the next stage of development and implementation will need a concerted effort by all tiers of government. Broadly, the next steps for this initiative should be: policy consultation with national, provincial, prefectural, county, and small towns stakeholders; further commercial and legal investigation of the preferred option, including consultation with the local government sector to test demand; identifying commitments, costs, and resources to move into the ‘build’ phase; and assessment of demand for projects and potential pipeline (Ernst & Young, 2013).

Developing the momentum for the GUIFF will require consensus among the various levels of government that are involved—the national government, the Shanghai government, and the local small-town governments. This consensus primarily relates to accepting the case for action and the substance of the solution.

A well-motivated coordinating body is needed to launch the GUIFF. This body will organize and manage the GUIFF, but it will also need to have the political and financial clout to determine which political sub-divisions will be allowed to participate in the GUIFF.

This suggests that utilities at the county level may be the appropriate level of stakeholders to participate in the GUIFF, with some small towns to be considered, which demonstrate sufficient budgetary control and management capacity.

The assessment in this study about possible options should be validated with updated information and discussion. This study provides only preliminary evaluations in several areas, which have not been consulted with stakeholders. In particular, the commercial structure of the preferred option(s) needs to be further developed, with special attention to the role and function of the entity; the risk allocation between investors, intermediaries, and borrowers; and the credit risk related to lending to the GUIFF. Further assessments are needed for the following aspects detailed below.

**Role and functions of the GUIFF:** The role of a collective vehicle is to meet the needs of local governments by securing long-term, low-cost debt finance and conducting credit risk assessments of infrastructure projects. But the functions of GUIFF could be more broadly defined to include an educative function and ad-hoc financial advice related to borrowing. The value of these services, and a more precise understanding of need, could be further tested with local governments.

**Credit risk enhancement:** The credit risk of IFF can be mitigated by issuing financial instruments enhanced by protection against arrears or defaults on loans to its individual members. There are many possible forms of credit enhancement, including the transfer payment “lock-box” and reserve accounts mentioned above. It is also possible for some creditworthy third party to provide a partial credit guarantee. The implementation process would benefit from testing perceptions of the strength of the protection implied in the preferred option with potential investors. It is assumed that an appropriately-structured IFF would be well-received and there would be appetite for bonds issued by it. However, it would be worth testing this further as the preferred model is developed.
possibly through a structured questionnaire and interview process.

**Credit rating:** A preliminary credit rating exercise could be very useful, assuming there is a level of consensus about the preferred option and a broad—albeit indicative—level of interest within small local governments. Such a rating would add substantially to the level of confidence in the level of demand for IFF bonds. It would also help to estimate the potential “risk arbitrage” savings that financing through the IFF would have over small towns obtaining financing on their own. (It should be kept in mind that the rating of these bonds would improve gradually over time if the IFF builds credibility and demonstrates the robustness of its credit fundamentals.)

For example, the New Zealand Local Government Funding Agency engaged the major international ratings agencies to assign a “shadow” credit rating prior to going live, and this was an important step in building market presence and credibility.

**Accounting treatment:** The accounting treatment of participation by small utilities in the GUIFF will ultimately reflect the substance of the commercial arrangements attached to accessing credit through the facility. Without knowing the precise nature of those commercial arrangements, it is too early to offer a view on the impacts for financial reporting by small local governments and related entities. However, some important considerations are:

- Each stakeholder will be responsible for repaying its own debts, meaning these amounts are likely to be recognized as debt on their balance sheet. It is important to be clear that the GUIFF is not a means of shifting recognition of debts from local government.

- The treatment of the mutual guarantee in the preferred option would depend, among other factors, on the likelihood of it being exercised.
Depending on the terms of a general guarantee, it could be treated as a provision on balance sheet or, where payment is considered remote, it could be treated as a contingent liability requiring disclosure only. Guaranteeing the performance of a specified debt—as opposed to a GUIFF’s obligations—could be a financial guarantee and recorded as liabilities.

- The consolidation of a GUIFF is also important to consider from a balance sheet perspective. Again, depending on the final structure of the entity, it is possible that members would need to consolidate parts of the GUIFF’s obligations. A key test in this respect is who has management power for the GUIFF and who benefits from the variable returns from operations. If there is no requirement for consolidation, then membership could be considered a joint venture. A key test with respect to joint ventures is whether management and decision-making powers are contractually shared.

Legal considerations: A critical part of the legal review is likely to be an analysis of the necessary amendments to legislation which will allow small local governments to establish and participate in a collective vehicle and allow the GUIFF to both borrow and lend directly. The scope of the review could be tailored to the level of definition of the commercial structure of a preferred option. There are clear benefits in avoiding substantial amendments to the extent possible because it is less likely the venture would be delayed in political processes.

Costs associated with the set up: The costs of establishing the entity would be substantial, and it is necessary to have early consideration of how to fund them. The costs include management, operational and advisory personnel and training, systems and equipment, and transaction costs. Precedent models suggest these costs could be several million dollars. There are several ways to fund the establishment costs, and these options should be identified at an early point. A contribution across various tiers of government may, for example, be part of the process of reaching consensus on a way forward.

Early considerations about how to fund establishment costs are also important because it could impact appetite and patronage. For example, to the extent that these costs are to be recovered from participants, there may be a perception that ‘early movers’ would pay a disproportionately larger share, which could deter participation. Further, there may be a case of creating incentives for participation by shifting or deferring the owners’ share of establishment costs (if others than SMI).
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