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GRIDLINES

Sharing knowledge, experiences, and innovations in public-private partnerships in infrastructure

China's emerging role in Africa

Part of the changing landscape of infrastructure finance

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In 2006, which China named the "Year of Africa," it quadrupled its investment commitments to infrastructure in Sub-Saharan Africa, to more than $7 billion. In 2007 China committed another $4.5 billion. Such funds could make a significant contribution toward meeting Africa's infrastructure investment needs. In the power sector, where Africa faces some of its largest gaps, China is investing $5.3 billion, including $3.3 billion in projects that, if completed, will increase the region's hydro generation capacity by 30 percent. China's growing role in Africa has generated much discussion. A new study seeks to add concrete numbers and solid analysis.

Trade between Sub-Saharan Africa and China reached $59 billion in 2007, up from just $9 billion in 2001. Accompanying this boom in trade is growing investment by China in African infrastructure. China's role in financing infrastructure in the region can be understood by looking at the evident economic complementarities. Africa counts among its development challenges a major infrastructure deficit. China has developed one of the world's largest and most competitive construction industries, with particular expertise in the civil works critical for infrastructure development. China's fast-growing manufacturing economy is generating demand for oil and mineral inputs that has rapidly outstripped domestic resources. Africa is already a major natural resource exporter, and with enhanced infrastructure it could develop this potential even further, accelerating economic development in the region.

China's commitments of infrastructure finance for Africa, which had oscillated around $500 million a year in the early 2000s, have grown substantially since 2003. They hit a range of $1.3–1.7 billion a year in 2004–05, peaked at $7 billion in 2006, and then fell somewhat to $4.5 billion in 2007 (figure 1). At least 35 countries in Africa have received financing from China or are discussing funding opportunities. And while about half the projects have involved financing commitments of less than $50 million, the amounts for single projects can be very large. Of the confirmed projects, about half a dozen involved commitments from China of $1 billion or more each.

Structure of China's loans

China's approach to financial assistance, part of a broader phenomenon of south-south economic cooperation, differs from that of traditional donors. Unlike traditional official development assistance, the financing is channeled not through a development agency but through the Export-Import Bank of China. Ex-Im Bank loans account for the vast majority of China's infrastructure finance for Africa. Consistent with the rationale of promoting trade, the financial support is typically tied to the participation of Chinese contractors.

For a growing number of infrastructure loans the Ex-Im Bank is using a deal structure known as "Angola mode," in which repayment is made in natural resources (figure 2). Under this arrangement, increasingly used for countries unable to provide adequate financial guarantees to back

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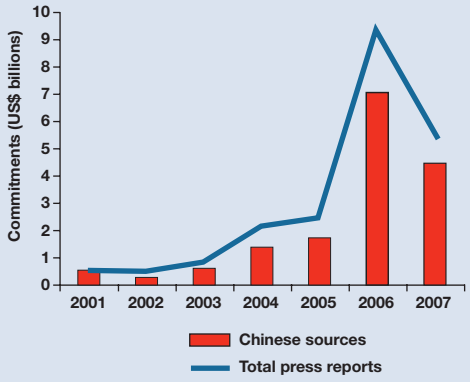
FIGURE 1

Big growth in financial flows from China

Annual commitments by China to infrastructure projects in Sub-Saharan Africa, 2001–07



Source: World Bank–PPIAF Chinese Projects Database, 2008.

their loan commitments, the money is never directly transferred to the government. Instead, a framework agreement covering a program of infrastructure investment is signed with the government. The beneficiary government then awards the infrastructure projects, supported by a credit from the Ex-Im Bank, to a Chinese construction firm. At the same time, it awards a Chinese petroleum company the rights to begin production of the oil or other natural resources that will constitute repayment of the loan. More than $3 billion of infrastructure projects were identified that use the Angola mode as a basis for financing, in countries such as Angola, the Republic of Congo, Gabon, Ghana, Guinea, and Nigeria and backed by resources such as oil, iron, bauxite, and cocoa.

The "Angola mode" relies on natural resources to repay infrastructure loans

Financing terms

The China Ex-Im Bank's terms and conditions are agreed on a bilateral basis, with the degree of concessionality depending on the nature of the project. On average, the Chinese loans offer an interest rate of 3.1 percent, a grace period of 4 years, and a maturity of 13 years. However, there is significant variation in all these parameters across countries, with interest rates ranging from 1 to 6 percent, grace periods from 2 to 10 years, and maturities from 5 to 25 years. Based on the OECD Export Credit Agreement definition, the average grant element of these loans is 18 percent, while a loan with a grant element of 35 percent is considered to be concessional. Given the wide variation in financial terms across countries, a subset of the Chinese loans do fall above the concessionality threshold.

The average grant element associated with private creditors to Sub-Saharan Africa is 5 percent, while that associated with official creditors rises to 54 percent.

Financial flows by sector

Most of China's infrastructure finance for Africa in 2001–07 was divided fairly evenly between two main sectors: power (especially hydropower) and transport (especially railroads), followed by telecommunications (mainly equipment supply). Water projects attracted the least. China's overall financing activity by sector shows a focus on the types of projects that contribute to expanding the productive potential of the economy.

Power

By far the largest infrastructure gaps in Africa arise in the power sector. Generation capacity and household access in the region are around half the levels observed in South Asia and a third of those in East Asia and Pacific. China's central focus in this sector is on the construction of large hydropower projects. By the end of 2007 China had committed at least $3.3 billion toward the construction of 10 major hydropower projects. Once completed, these will provide a combined generating capacity of more than 6,000 megawatts, a significant fraction of the 17,000 megawatts of hydropower generating capacity existing in Africa today. However, it is not clear whether the two hydropower projects in Guinea and Nigeria that account for 60 percent of the committed amount will move forward.

Beyond hydropower, China has also been active in building thermal power stations. The most significant have been in Sudan, where more than 1,400 megawatts of thermal power capacity are being added with China's support, and in Nigeria, where China Ex-Im Bank is financing construction of three thermal power stations with a combined capacity of 800 megawatts.

Rail

China's first big foray into African infrastructure was the construction of the Tanzania–Zambia railway in the 1970s. Recent years have seen renewed activity by China in the African rail sector, with

financing commitments on the order of $4 billion. These include rehabilitation of more than 1,350 kilometers of existing railway lines and the construction of more than 1,600 kilometers of new railroad.

The largest deals have been in Nigeria, Gabon, and Mauritania. In Nigeria the China Ex-Im Bank has committed $1 billion for construction of the Abuja Rail Mass Transit System and another $2.5 billion for rehabilitation of 1,315 kilometers of the Lagos–Kano line. China Ex-Im Bank is also preparing to finance the 560-kilometer Belinga–Santa Clara rail line in Gabon as part of a $3 billion package centered on the Belinga iron ore reserve. In Mauritania a 430-kilometer railroad linking Nouakchott to phosphate-rich Bofal is being financed by a $620 million China Ex-Im Bank loan.

Roads

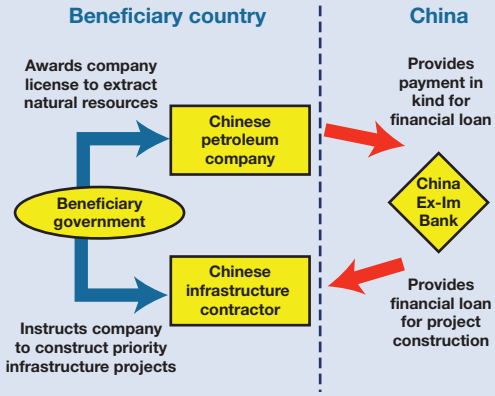
China has supported road projects across Africa. More than 18 recent projects with financing from China have been recorded, for construction or rehabilitation of more than 1,400 kilometers of road. But the total amount for confirmed road projects, at around $550 million, is substantially smaller than that reported for power and rail. Indeed, only two of the projects with financing from China exceeded $100 million, both of which were in Angola and part of a China Ex-Im Bank line of credit provided in 2004.

Telecommunications

China's involvement in telecommunications takes the form mainly of equipment sales to service providers. Some of these involve normal commercial contracts between Chinese manufacturers and public and private operators in Africa. But some entail intergovernmental financing tied to purchases of Chinese equipment by state-owned telecommunications incumbents.

The largest telecommunications project by far has been in Ethiopia. The $1.5 billion Ethiopia Millennium Project involves the rollout of a national communications backbone and the associated rollout of mobile coverage in rural areas. Another salient example is the National Communication Backbone Project in Ghana aimed at rehabilitation and expansion of fixed-line communications technology in the country. The Ex-Im Bank is helping to finance this $70 million project, initiated by the Ministry of Communications, through a $31 million concessional loan.

FIGURE 2
How the "Angola mode" works



Water and sanitation

Most of the water and sanitation projects were smaller in scale and more focused on meeting immediate social needs. About $320 million was committed to this sector, 60 percent of which was absorbed by projects in Angola. The largest recorded project has been in Mauritius, where China Ex-Im Bank committed $64 million to the construction of a water treatment plant and distribution network in 2007. China's water supply projects include a number of smaller dams (not related to hydropower) in Cape Verde and Mozambique.

Financial flows by country

Cases of Chinese infrastructure finance for which the amount of commitments was available and confirmed were recorded in 27 countries across Sub-Saharan Africa. Despite this broad reach, there is a heavy geographic concentration of finance. Four countries (Nigeria, Angola, Ethiopia, and Sudan) together account for 70 percent of Chinese financing commitments; Nigeria alone accounts for nearly 30 percent. The rest of the funding includes sizable volumes on the order of $800–1,000 million provided to Guinea, Ghana, and Mauritania.

Nigeria

China's engagement in Nigeria amounts to total financing commitments of $5.4 billion. Activities date back to 2002 with the agreement on the first phase of the National Rural Telephony

The financial flows from China offer an important development opportunity for Africa

Project, when China's two telecom giants, ZTE and Huawei, began actively pursuing equipment supply and network rollout projects for both fixed and wireless service in the country. In 2005 China Ex-Im Bank agreed to finance construction of thermal power stations at Papalanto, Omotosho, and Geregu. Ex-Im Bank financing was substantially scaled up in 2006. Agreements were reached on almost $5 billion of projects, including major railway construction and upgrading projects and the 2,600-megawatt Mambilla hydropower project. These major rail and hydropower projects agreed to in 2006 are under review by the authorities, however, and it is not clear whether they will go ahead.

Angola

In Angola the line of credit extended by the Ex-Im Bank in 2004 amounted to $2 billion, half of which went into repair of infrastructure damaged during the country's 27-year civil war. The loan was backed by an agreement to supply China with 10,000 barrels a day of Angolan crude. This was the first major example of what has come to be known as the Angola mode. The Center for Chinese Studies at Stellenbosch University in South Africa indicates that the interest rate on the loan has been lowered from the initial 1.5–1.7 percent to 0.25 percent, and that the loan has a 3-year grace period and a 15-year repayment term (Corkin 2006). In 2007 China Ex-Im Bank issued another $2 billion loan reportedly devoted entirely to infrastructure needs.

Ethiopia

In Ethiopia, where China's engagement amounts to $1.6 billion, activities began in 2002 with projects in the power and road sectors. But the main focus of China's infrastructure finance in the country has been the telecommunications sector. In 2006–07 China agreed to provide financing for the Ethiopia Millennium Project to create a fiber-optic transmission backbone across the country and roll out the expansion of the cellular GSM network, with an estimated 8.5 million new connections. The project is being financed under export seller's credit arrangements.

Sudan

Since 2001 China has committed more than $1.3 billion in support of Sudan's broader infrastructure development needs. Over the 2001–07 period infrastructure projects with Chinese support were developing coal- and gas-fired thermal stations, adding more than 1,400 megawatts of new thermal generating capacity. By far the highest-profile power project in the country is the 1,250-megawatt Merowe dam, where construction has been under way since early 2004. At the time the contracts were signed, this massive $1.2 billion hydropower project was the largest international project in which China had ever participated (although it has now been superseded by the Mambilla hydropower project in Nigeria).

Conclusion

Sub-Saharan Africa lags behind other developing regions on most standard indicators of infrastructure development. That has prompted African leaders to call for greater international support in this sphere. They have typically welcomed China's fresh approach to development assistance, which eschews interference in domestic affairs and emphasizes partnership and solidarity among developing nations. China's new role creates challenges for governments and civil society actors. But despite the potential challenges, Chinese finance offers an important development opportunity for Africa, reaching a scale large enough to make a material contribution toward meeting its vast infrastructure needs.

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