"China-West-Developing Markets" Infrastructure Collaboration - Chinese bilateral financing, One-Belt-One-Road, host government PPP, and western capital markets
We have started to track a subsection of OBOR projects, worth a total of >250B USD

Contract Value of Projects by Region in PwC OBOR Database

In billion USD

- **Southeast Asia**: 55.7 • China-Thailand Railway by CRCC, a 23 billion USD project that goes across major SEA countries to Singapore
- **South Asia**: 22.6 • Nuclear power plant in Pakistan by CNNC, a 9.6 billion USD project as ~25% of total one-belt-one-road contracts package with Pakistan
- **Africa**: 50.0 • Licensing agreement of an aluminum ore in Guinea by China Power Investments, at 6 billion USD, the biggest aluminum ore contract outside China
- **Central Asia**: Others<br>Industrial Parks<br>Water
- **Middle East**: Oil & Gas<br>Power<br>Transportation (ground, air, sea)
- **East Europe**: Others<br>Power<br>Transportation (ground, air, sea)
- **North America**: Power<br>Transportation (ground, air, sea)
- **Total**: 257.0

*Projects are collected from publicly available sources with a focus on projects contracted after the announcement of one-belt-one-road strategy

Source: literal search, Strategy& analysis

*Prepared for client
List of Countries along One Belt One Road

There are 65 countries along One Belt One Road, which includes:

**Middle East Europe (16)**
- Poland
- Romania
- Czech Republic
- Bulgarian
- Lithuania
- Slovenia etc.

**Commonwealth of the Independent States (11)**
- Kazakhstan
- Uzbekistan
- Ukraine
- Kyrgyzstan etc.

**South Asia (8)**
- India
- Pakistan
- Bangladesh
- Nepal etc.

**Southeast Asia (11)**
- Indonesia
- Thailand
- Malaysia
- Vietnam
- Singapore etc.

**South Asia**
- India
- Pakistan
- Bangladesh
- Nepal etc.

**West Asia & North Africa (16)**
- Saudi Arabia
- United Arab Emirates
- Egypt
- Iran
- Turkey
- Israel etc.

Source: literal search, Strategy& analysis
While China will fund up to trillion dollars to OBOR/FOCAC, this is only a fraction of global infrastructure demand

Developing Markets Infrastructure Demand
2015-2025 estimates, billion USD

- Total infrastructure demand
  - ~10,000
- Other funding sources
  - CDB total assets
  - Total Chinese State OBOR Finance
  - Silk Road Fund
  - AIIB
  - Signed projects

Indicative: Transport alone will be ~$10T
Southeast Asia alone will be $2.5T

- Total asset of CDB; other funders such as ExIm Bank has similar level of assets
- Only small part will be used on OBOR
- CDB tracked 60+ potential OBOR projects worth up to $89B – but not all will be realized
- Realized via a myriad of instruments / funds
- Planned funding at $40B, of which Phase I of $10B is committed from CIC, CDB, ExIm.
- Latest agreed committed funding of $100B, of which China contributes $30B
- 50 signed MOUs related to OBOR added up to ~10B USD of lending

1) CDB = China Development Bank; AIIB = Asian Infrastructure Investment Bank
Source: Public sources, World Bank, Strategy& analysis

Chinese state funding

100% 85% 15% 10% 0.4% 0.3% 0.1%
~10,000 8,480 1,600 (accumulated) ~1,000 (accumulated) 40 30 10
Example: Country deep dive - Nigeria

- China Railway Construction (CRCC) has won a coastal railway project with contract value $12 billion from the Nigerian government in 2014.

- Power Construction Corporation of China has signed a $1.3 billion contract with Nigeria government to build power plant in Sep. 2013.

- CRCC has won a public road project with contract value $12 billion from the Nigerian government in 2014.

- CHINA HARBOUR ENGINEERING COMPANY signed a $45 million contract with Nigeria to reconstruct Warri harbor in 2013.

Source: literal search, Strategy& analysis
Countries in the OBOR and FOCAC initiatives have highly varied level of public finance conditions

Public Debt of Major OBOR Countries
In % of GDP V.S. in billion USD

Source: IMF, literal search, Strategy& analysis
Current oil price is below government budget breakeven price for many countries

Government Fiscal Breakeven Crude Oil Prices
Major oil exporting countries, 2015, in USD per barrel

<table>
<thead>
<tr>
<th>Country</th>
<th>Crude Oil Price per Barrel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kuwait</td>
<td>$47.1</td>
</tr>
<tr>
<td>Iraq</td>
<td>$70.9</td>
</tr>
<tr>
<td>Libya</td>
<td>$215</td>
</tr>
<tr>
<td>Nigeria</td>
<td>$87.9</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>$103</td>
</tr>
<tr>
<td>Algeria</td>
<td>$111</td>
</tr>
<tr>
<td>Russia</td>
<td>$78</td>
</tr>
<tr>
<td>Venezuela</td>
<td>$89</td>
</tr>
<tr>
<td>Kuwait</td>
<td>$47.1</td>
</tr>
<tr>
<td>Libya</td>
<td>$215</td>
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<td>Nigeria</td>
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<td>Saudi Arabia</td>
<td>$103</td>
</tr>
<tr>
<td>Algeria</td>
<td>$111</td>
</tr>
<tr>
<td>Russia</td>
<td>$78</td>
</tr>
<tr>
<td>Venezuela</td>
<td>$89</td>
</tr>
</tbody>
</table>

Note: The breakeven price of oil is calculated from variables including oil production costs, population size, domestic demand for petroleum products, export percentage, royalties and taxes, exchange rates, non-oil revenue and fiscal expenses.


Countries whose fiscal breakeven prices are below market price would run a fiscal budget deficit.

BRENT CRUDE 06/2016: ~$60
Although Russia’s public external debt is only ~3% of GDP, much is actually borrowed on through SOEs’ balance sheets.

Russia: very low public debt …
Public external debt, % of GDP

… along with descending private debt, but still high
Private external debt, % of GDP

Low level of public debt thus conceals a wider debt burden
In billion USD

Source: central banks, State Administration of Foreign Exchange, literal search, Strategy& analysis
Oil price and sanctions led to drastic increase in Russia’s budget deficit, lowering its ability to finance infrastructure.

Federal Government Budget Comparison 2013 vs 2015, in Context of Infrastructure Demand

in billion USD, 2015, nominal price

2013 Revenue | Fall in oil price | Int’l Sanction, Exchange losses, etc. | 2015 Revenue | 2015 Expenditure | 2015 fiscal deficit

420 | 221 | ~135 | 58 | 227 | -276

Annualized 2015-2020 infrastructure demand: 97B

Note: Assumes USD : Russian Rubles is 1:55.5 in 2015, and 1:31 in 2013; calculation excludes state-level budgets.
Source: Russian Ministry of Finance, Strategy& analysis
Infrastructure demand will be massive, with close to 1T USD of projects identified for 2015-2030

Russia Infrastructure Projects by Value
2015-2030

- Inland water, air, and maritime transport: 100% completed
  - By contract value: 6%
  - By # of projects: 18%

- Roads and bridges: 28% planned
  - By contract value: 28%
  - By # of projects: 46%

- Railway transport: 48% completed
  - By contract value: 48%
  - By # of projects: 24%

- Power & utilities: 18% in progress
  - By contract value: 18%

Case study: Russia

Source: Oxford Economics, literal search, Strategy& analysis
Yet, due to the fiscal condition, government is seeking ~70% from PPP; Chinese lending fulfills only a small portion

The Government is looking to PPP for 70%, or ~680B USD, for financing for its infrastructure need in next 15 years

Russia planned infrastructure spending identified projects / demand 2015-2030, in billion USD

<table>
<thead>
<tr>
<th></th>
<th>Public</th>
<th>PPP</th>
<th>Private</th>
</tr>
</thead>
<tbody>
<tr>
<td>293B</td>
<td>70%</td>
<td></td>
<td>1%</td>
</tr>
<tr>
<td>969</td>
<td>29%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>676B</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

China’s official bilateral lending, although large at >50B USD, fulfills only a small portion of this opportunity

Recent major loans

“China would push forward the development of silk road economic belt with Russia”
- President Xi, who signed announcement of ‘silk road economic belt’ with Putin during visit to Russia, 2015.5

Recent indirect funding

Source: Oxford Economics, literal search, Strategy& analysis
Similarly, oil exports drive 70% of Nigerian government’s income; 20% decrease in price leads to ~60% more deficit

**Federal Gov. Revenue**

<table>
<thead>
<tr>
<th>Year</th>
<th>Oil revenue</th>
<th>Non-oil revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>7.9</td>
<td>17%</td>
</tr>
<tr>
<td>2009</td>
<td>7.3</td>
<td>34%</td>
</tr>
<tr>
<td>2010</td>
<td>7.3</td>
<td>66%</td>
</tr>
<tr>
<td>2011</td>
<td>11.1</td>
<td>74%</td>
</tr>
<tr>
<td>2012</td>
<td>10.7</td>
<td>80%</td>
</tr>
<tr>
<td>2014</td>
<td>12.9</td>
<td>75%</td>
</tr>
</tbody>
</table>

**General Gov. Balance as % of GDP**

<table>
<thead>
<tr>
<th>Year</th>
<th>Surplus</th>
<th>Deficit</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>1.7%</td>
<td>~70%</td>
</tr>
<tr>
<td>2009</td>
<td>2.2%</td>
<td>~25%</td>
</tr>
<tr>
<td>2010</td>
<td>~70%</td>
<td>~25%</td>
</tr>
<tr>
<td>2011</td>
<td>-0.4%</td>
<td>-4.4%</td>
</tr>
<tr>
<td>2012</td>
<td>~60%</td>
<td>~30%</td>
</tr>
<tr>
<td>2013</td>
<td>-7.0%</td>
<td>-5.1%</td>
</tr>
<tr>
<td>2014</td>
<td>-7.0%</td>
<td>-5.1%</td>
</tr>
</tbody>
</table>

**Crude oil price (USD/barrel)**

<table>
<thead>
<tr>
<th>Year</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015F</th>
<th>2016F</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>97</td>
<td>112</td>
<td>104</td>
<td>53</td>
<td>57</td>
</tr>
<tr>
<td>2010</td>
<td>62</td>
<td>112</td>
<td>96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>80</td>
<td>112</td>
<td>53</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>111</td>
<td>104</td>
<td>53</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>112</td>
<td>96</td>
<td>53</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>96</td>
<td>53</td>
<td>53</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Government has delineated a detailed national infrastructure development plan, to be ~2.9T USD

**Infrastructure Spend per Sector**
2014-2043, in billion USD

<table>
<thead>
<tr>
<th>Sector</th>
<th>2014-2043 Spend</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy</td>
<td>2,850</td>
<td>• Increase generation capacity by 340GW at USD 1.1 bn/GW</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Increase refining capacity to 2000 kbpd at USD 20m/kbpd</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Build 11,000 km 330KV and 15,000 km 132KV transmission lines at USD 0.9m/km and USD 0.2/km respectively</td>
</tr>
<tr>
<td>Transport</td>
<td>900</td>
<td>• Build 100 000km new roads at USD 1.5m/km</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Build functional urban transportation in all major cities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Increase aviation passenger capacity from ~5 million to 110 million passengers per annum at USD 200 m/million passengers</td>
</tr>
<tr>
<td>Water, agric, and mining</td>
<td>800</td>
<td>• Give access to sanitation to ~200 million additional people by 2043 at a cost of USD 400-700 per person</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Increase iron ore production at capex cost of USD 100mn/mta</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Double percentage of arable land cultivated</td>
</tr>
<tr>
<td>ICT</td>
<td>400</td>
<td>• Build 200 000 new base stations at USD 250,000 per base station</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Build sufficient fibre backbone to support broadband roll out at USD 50 000/km of fibre</td>
</tr>
<tr>
<td>Housing</td>
<td>300</td>
<td>• Build 1 million on houses per annum for the nest 30 years at USD 10,000 per house</td>
</tr>
<tr>
<td>Social Infrastructure</td>
<td>300</td>
<td>• Build 100 new universities at USD 200 mn/ university</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Build 800000 new classrooms at USD 30,000/classroom</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Hospitals : 100 general hospitals at cost of USD 40 m per hospital</td>
</tr>
<tr>
<td>Security</td>
<td>150</td>
<td>• Build 3,000 new police stations at USD 1.5m/ station</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Build 2,000 new fire stations at USD 2 m/ station</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Build 100 new prisons at USD 10 m/prison</td>
</tr>
</tbody>
</table>

**Source:** literal search, Nigeria Gov., Strategy& analysis
The Government explicitly looks to PPP for half of financing of its projects – especially in ICT, energy, AWM, social, etc.

Funding Source of Public and Private Sectors
In billion USD at 2010 constant prices

<table>
<thead>
<tr>
<th>Sector</th>
<th>Public</th>
<th>Private</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Transport</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>ICT</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>AWM</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Housing</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Social</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Security</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Split represents weighted total

Source: Nigerian official sources, public sources, Strategy& analysis

Case study: Nigeria
**Case study: Nigeria**

**There are wide possibilities of fund-raising for PPP for Nigeria – with different pros/cons and levels of ease**

**Example PPP funding sources for Chinese players in Nigeria**

<table>
<thead>
<tr>
<th>Funding Source</th>
<th>Costs</th>
<th>Ease of access</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chinese funding</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Bilateral policy lending | - | - | • Rates: 1%~2%  
• China gov. offer special low rates for infra. projects in Nigeria |
| Sovereign bonds Issued by China Gov. | - | - | • Rates: 3.58%  
• Low cost feasible way if Nigeria projects could be tied to China credit |
| Chinese commercial bank | - | - | • Rate ~5-8%  
• Moderately available, but FX risks against foreign project |
| **Int'l Institutions** | | | |
| WB PPP Program for Nigeria | - | - | • For infrastructure dev. In Nigeria, provide consulting service to support tech./legal/transaction, fund sourcing and management, and even provide physical building to these agencies  
• Well connected to Nigeria infra. dev. Agencies of various types |
| Nigeria Infrastructure Advisory Facility (NIAF) | - | - | |
| **Nigerian debt markets** | | | |
| Bank term loans | - | - | • Rates: 20%~25%; Potentially available but high interest rate |
| Nigerian Sovereign Investment Authority | - | - | • Rates: US CPI + 5%, currently 5%~6%  
• Interest rate is mid-to-high and scale of fund is limited |
| Infrastructure bonds | - | - | • Rates: target 2% added to inflation of Nigeria, (current 12%~13%)  
• Mid-high cost but feasible fundraising way if credited by 3rd party |
| **Global equity market** | | | |
| Infrastructure funds (eg. JV) | - | - | • Rates: various a lot depend on projects invested  
• Funds would prefer to invest by itself and required yield can be high |
| Raising in Hong Kong | - | - | • Rates: ~11%  
• Free market that local Nigeria could raise fund at medium costs |
| Corporate debt in Europe (euro bonds) | - | - | • Rates: 1-3% recently  
• Added benefits if euro depreciates; but has FX risks |

*Note: Indicated rates are nominal excluding related and indirect costs*

*Source: literal search, Strategy& analysis*
The Central Java Power Plant in Batang is a model project under PPP scheme of 4~5 billion USD investment

Project background: Central Java Power Plant (CJPP) Project in Batang

The CJPP is:

- One of the ten model infrastructure projects of PPP scheme proposed by Indonesia Gov.
- An 2,000MW greenfield coal-fired power plant
- Indonesia’s largest power plant to be built for power shortage
- 4~5 billion USD of CAPEX, increased from 3 billion USD originally
- To begin operating in late 2018 with first 1,000 MW unit and followed by the second 1,000 MW unit in 2019

Project Details

- **Project Sponsor**: PT Bhimasena Power Indonesia
- **Parent company**: J-POWER(Japan): 34%; Adaro Power(Indonesia):34%; Itochu: 32%
- **Contract Period**: 25 years to build, own, operate and transfer the power plant
- **Recipient of power**: PT PLN (electricity utility owned by the Indonesian government)
- **Location**: Pemalang, Central Java
- **Status**: Pre-permit development
- **Gross Capacity**: Unit 1: 1000 MW operating, Unit 2: 1000 MW operating
- **Technology**: Ultra-supercritical[1]
- **Original start date**: Unit 1: 2016; Unit 2: 2017
- **Latest projected start date**: Unit 1: 2018; Unit 2: 2019
- **Coal Type**: lower quality coals
- **Coal Source**: Indonesia
- **Financers**: World Bank, Japanese Bank for International Cooperation

Source: literal search, Strategy& analysis
Compared to EPC scheme, J-Power and Itochu had to drive more cooperation under BOOT scheme of PPP

PPP scheme of the CJPP: Build-Own-Operate-Transfer (BOOT)

**Phase 1: Government & company agreements**
- PT PLN (State owned-Electricity Utility)
- 25 years of power procurement
- Guarantee of power procurement from PLN
- Indonesia Infrastructure Guarantee Fund
  - By Indonesia Gov. and World Bank

**Phase 2: Company & financer agreements**
- Sponsors: J-Power, Itochu, Adaro
  - Ownership: 34%, 32%, 34%
- Project Company: Bhimasena Power Indonesia (BPI)
  - JV of J-Power, Adaro Power, Itochu
- Loan agreements

**Phase 3: Construction & Operation agreements**
- Financer: JBIC, IFC
- Operation & Maintenance Contract

**Phase 4: Transfer of assets**
- PT PLN (State owned-Electricity Utility)
- Transfer contract of the whole Power Plant

**Legend:**
- Agreements
- Entities

*Source: literal search, Strategy& analysis*
The Project company, Bhimasena Power Indonesia, will be the functioning core for the CJPP project

Project company structure of the CJPP

- J-Power (34% Ownership)
- Itochu (32% Ownership)
- Adaro (34% Ownership)

The Project Company

Bhimasena Power Indonesia (100% Ownership)

Core Asset

Central Java Power Plant

Financers

- Electricity power procurement, for 25 years
- Transfer of core asset (the central Java power plant) to Indonesia Gov., 25 years later

Legend:

- Project company
- Other entities
- Cash payer
- Cash receiver

Source: literal search, Strategy& analysis
At current stage, the major financers are JBIC but BPI still need to find other financers

Financing model of the CJPP

Japan Bank for International Cooperation (JBIC)

- JBIC is a policy bank of Japan Gov. who requires every project to pass their environmental review

Probably
60% of project investment

- JBIC is considering funding 60% (over 400 billion yen) of the plant’s construction using public funds, and is currently conducting environmental review for the project, reported 2014.8.

Other financers to be found

- IFC (International Finance Corporation) is marketing the project to potential investors, as financial advisor of the project company

40% of project investment

The Project Company

Bhimasena Power Indonesia

Indonesia Infrastructure Guarantee Fund (IIGF)

- IIGF is 100% owned by Indonesia gov. and supported by World Bank on advisory and financial assistance

Power Procurement Guarantee

- Indonesia Infrastructure Guarantee Fund, set up collaboratively by World bank and Indonesia Gov., has provided 33.9 million USD of government guarantee to ensure that PLN will purchase electricity power from BPI

Source: literal search, Strategy& analysis
Construction of CJPP has been heavily delayed due to difficulty of land acquisition but has started again recently

Timeline of CJPP project

2011.10
SPV Set-up
• Joint venture of the project company, Bhimasena Power Indonesia, was formed

2012.10
Project Plan
• Original plan for beginning of construction was drafted

2013.10
Project Delay
• Bhimasena Power Indonesia announced that construction would be delayed at least two years due to environmental assessments, local opposition
• The major difficulty lies in land acquisition

2014.6
Force Majeure
• Bhimasena Power Indonesia declares force majeure, a legal clause that allows companies to walk away from contracts soured by external events
• Only 85% of land has been acquired
• Indonesia Gov. invoked the law for this project that land could be acquired for public interest

2015.4
Project Restart
• Bhimasena Power Indonesia announced restart of the construction
• Land acquisition has been 100% completed

2016~2019
Project Complete
• Planned commercial start The Central Java Power Plant is originally in 2016
• Due to delay in land acquisition, the estimated commercial start at 100% capacity is 2019

Source: literal search, Strategy& analysis
Within major financing options, concessional loans are the preferable choice for overseas projects of China EPCs

Major Financing Options of EPC projects

- **Export credit**
  - Export credit: gov. provide seller’s credit and buyer’s credit to support exportation of domestic goods
  - Concessional loans: Concessional Loan and Preferential Buyer's Credits, provided by gov.

- **Project financing**
  - The project entity as the borrower to get financed by banks on the basis of project future returns
  - Usually applied to projects with mature tech., stable income, low market or management risk

- **Syndicated loan**
  - Syndicated loans are usually led by one bank and participated by several banks to provide financing to the same borrower under the same negotiated agreement

<table>
<thead>
<tr>
<th>Comparison: Concessional / Business Loan</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Concessional Loan and Preferential Buyer’s Credit.</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Rates</td>
</tr>
<tr>
<td>Cost</td>
</tr>
<tr>
<td>Approval procedure</td>
</tr>
<tr>
<td>Banks</td>
</tr>
<tr>
<td>Credit insurance</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

- For the Concessional Loan and Preferential Buyer's Credit., the advantage is low financing cost and no credit insurance required; But only applicable to gov. projects not including private sector projects, and approval time is long due to long procedures between gov.

- Commercial loan has the advantage of fast approval procedure and private sectors could apply, while credit insurance is required on top of higher financing cost

*Source: literal search, Strategy& analysis*
### Application processes & offerings are different between ‘Gov. Concessional Loan’ and ‘Preferential Buyer’s Credit’

#### Comparison between offerings

Both of the two types of loans are provided by China EXIM BANK in the form of buyer’s credit, but the offerings are different:

<table>
<thead>
<tr>
<th></th>
<th>Gov. Concessional Loan</th>
<th>Preferential Buyer’s Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In RMB</td>
<td>In USD</td>
</tr>
<tr>
<td>2</td>
<td>100% funded</td>
<td>85% funded</td>
</tr>
<tr>
<td>3</td>
<td>Longest maturity: 20 years</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Maximum Interest rate: 3%</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Commitment fee: 0.75%</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Management fee: 1%</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Minimum of loan allocated to Chinese party of the project: 50%</td>
<td></td>
</tr>
</tbody>
</table>

Source: literal search, Strategy& analysis

#### Comparison between application processes

Application of both types of loans are initiated by the borrowing country but the reviewing processes are different:

<table>
<thead>
<tr>
<th></th>
<th>Gov. Concessional Loan</th>
<th>Preferential Buyer’s Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Borrowing country proposes application to China Exim Bank</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>The project will be reviewed by China Exim Bank</td>
<td>China Exim Bank will sign general loan agreement with the borrower</td>
</tr>
<tr>
<td>3</td>
<td>For project that passes the review, Dpt. of foreign assistance of ministry of commerce of the PRC would sign framework agreement with borrowing country</td>
<td>The borrower will propose his project to the Ministry of commerce of the PRC, who would then confirm the project after taken advice from relevant dpt., and then the project is reviewed by China Exim Bank</td>
</tr>
<tr>
<td>4</td>
<td>China Exim Bank will sign the loan agreement based on gov.’s framework agreement</td>
<td>China Exim Bank will sign detailed loan agreement with borrower</td>
</tr>
</tbody>
</table>

Source: literal search, Strategy& analysis
Leading Chinese SOEs are rapidly taking advantage of low rate US dollar – and most recently Euro – bond issuance

Bonds issued in US and European Capital Markets by Mega SOEs of China
X-axis: date, Y-axis: interest rate of bonds

- COFCO, 10Y, $500m
- State Grid, 30Y, $800m
- CRCC, 10Y, $800m
- State Grid, 10Y, $700m
- COFO, 5Y, $500m
- Shanghai Electric, 5Y, $500m
- Bank of Communications, 12Y, €500m
- Bank of Construction, 3Y, €500m
- Bao Steel, 3Y, €500m
- Bank of Construction, 5Y, €500m
- Shanghai Electric, 5Y, $500m
- State Grid, 10Y, €300m
- State Grid, 7Y, €700m
- State Grid, 10Y, $700m
- State Grid, 30Y, $800m
- COFCO, 5Y, $500m
- State Grid, 5Y, $500m
- Sinopec, 5Y, $500m
- Sinopec, 7Y, $500m
- Sinopec, 10Y, $550m
- Sinopec, 30Y, $1.2b
- Sinopec, 5Y, $1.1b
- Sinopec, 7Y, €500m
- Sinopec, 10Y, €1.2b
- Sinopec, 5Y, €500m
- State Grid, 5Y, $500m
- State Grid, 30Y, $800m
- COFCO, 5Y, $500m
- State Grid, 5Y, $500m
- State Grid, 30Y, $800m
- State Grid, 5Y, $500m
- State Grid, 30Y, $800m
- State Grid, 5Y, $500m
- State Grid, 30Y, $800m
- State Grid, 5Y, $500m
- State Grid, 30Y, $800m
- State Grid, 5Y, $500m
- State Grid, 30Y, $800m

Legend:
- 5 years of maturity
- 10 years of maturity
- 3 years of maturity
- 12 years of maturity
- 7 years of maturity
- 30 years of maturity

Interest rates are generally declining

Source: literal search, expert interviews, annual reports, Strategy& analysis
There has been a flood of Chinese companies issuing low-cost euro bonds to take advantage of negative interest.

Examples of bonds issued by China players in European Capital market

<table>
<thead>
<tr>
<th>Date</th>
<th>Issuer</th>
<th>Bond type</th>
<th>Amount</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013.9</td>
<td>China National Offshore Oil Corporation</td>
<td>7 year euro bond</td>
<td>500 million Euro</td>
<td>Not disclosed but was mid-high</td>
</tr>
<tr>
<td>2013.11</td>
<td>Industrial &amp; Commercial Bank of China</td>
<td>RMB bond</td>
<td>2 billion RMB</td>
<td></td>
</tr>
<tr>
<td>2014.3</td>
<td>Sinopec</td>
<td>5 year USD bond</td>
<td>2.75 billion USD</td>
<td>2.626%</td>
</tr>
<tr>
<td>2014.3</td>
<td>Sinopec</td>
<td>10 year USD bond</td>
<td></td>
<td>4.461%</td>
</tr>
<tr>
<td>2014.3</td>
<td>Sinopec</td>
<td>30 year USD bond</td>
<td></td>
<td>5.417%</td>
</tr>
<tr>
<td>2014.3</td>
<td>Sinopec</td>
<td>7 year euro bond</td>
<td>550 million euro</td>
<td>2.74%</td>
</tr>
<tr>
<td>2014.4</td>
<td>China Construction Bank</td>
<td>Swiss franc bonds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014.5</td>
<td>Bank Of China</td>
<td>RMB bond</td>
<td>1.5 billion RMB</td>
<td></td>
</tr>
<tr>
<td>2014.5</td>
<td>Agricultural Bank of China</td>
<td>RMB bond</td>
<td>1.2 billion RMB</td>
<td></td>
</tr>
<tr>
<td>2015.1</td>
<td>State Grid</td>
<td>7 year euro bond</td>
<td>700 million euro</td>
<td>1.54%</td>
</tr>
<tr>
<td>2015.1</td>
<td>State Grid</td>
<td>12 year euro bond</td>
<td>300 million euro</td>
<td>2.45%</td>
</tr>
<tr>
<td>2015.3</td>
<td>China Construction Bank</td>
<td>Senior euro notes</td>
<td>500 million euro</td>
<td>1.5%</td>
</tr>
<tr>
<td>2015.2</td>
<td>BaoSteel</td>
<td>Unsecured bonds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015.2</td>
<td>China State Shipbuilding Corporation</td>
<td>3 year euro bond</td>
<td>500 million euro</td>
<td>1.7%</td>
</tr>
</tbody>
</table>

“For China, bonds issued in European capital market are expected to grow from <5% of total oversea bonds issued, to 10%~15% in 2015, almost tripled from previous years”

-Interviewed financial industry expert

Source: literal search, Strategy& analysis
Perpetual bonds are mainly issued in USD and Euro by financial institutes as a Equity financing tool

International Market of Perpetual Bonds
In billion USD, 2013

Description of Perpetual Bonds

- A perpetual bond is a financial tool positioned between bonds and equity financing:

- It’s liquidation order is prior to equity financing (preferred and common stock), after debt financing (secured and non-secured liabilities)

- There’s no maturity date (or very long maturity), but redemption provision added to the bond

- Investors can’t get their total investment back at any specific time point, but they could get interests periodically

- Interest rates are relatively high, and could be changed (increase periodically, or increase under agreement, e.g. increase for every 3~5 years)

- Issuer should pay off the interests of perpetual bonds before distributing dividends to preferred / common stocks

- There’s no restriction to force issuer to do credit rating or credit guaranty (though credit rating and credit guaranty would help to do equity underwriting)
PowerChina was the first EPC owned by central gov. to issue perpetual bond oversea in 2014.10

PowerChina’s Issuing Structure of Perpetual Bonds

1. **Domestic**
   - 7.9 million RMB of registered capital
   - Platform company with ~500 million RMB assets

2. **Oversea**
   - Actual issuer

### Descriptions of PowerChina’s Perpetual Bond

<table>
<thead>
<tr>
<th>Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Issuing period</td>
<td>8~10 weeks from credit rating to issuing</td>
</tr>
<tr>
<td>Issued amount</td>
<td>500 million USD</td>
</tr>
<tr>
<td>Yield</td>
<td>4.05% for the first 5 years Dynamically increase 5 years later</td>
</tr>
<tr>
<td>Rating agencies (2)</td>
<td>Moody (rated at A3), S&amp;P</td>
</tr>
<tr>
<td>Global coordinators (2)</td>
<td>HSBC, Standard Chartered</td>
</tr>
<tr>
<td>The joint bookrunners, and lead agencies (5)</td>
<td>HSBC, Standard Chartered, Bank of Communications (HK), China Construction Bank Internationa, Bank of China (Shanghai)</td>
</tr>
</tbody>
</table>

Sources: Expert interviews, Strategy& analysis
Thank you

We welcome further discussions with relevant stakeholders

Contact

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Phone: +86 13910825448