Financing of Infrastructure Projects through Capital Markets: Issues and Remedies

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Capital markets infrastructure financing

Why?

- **Distributing** scarce financial resources for optimal benefits
- **Reducing** overreliance on traditional commercial banking
- **Attracting** more investors by returns and diversification

How?

- **Increase** liquidity by providing refinancing options after construction
  - Bank lenders, governments and other institutions can **recycle** their capital into new projects
- Well-developed **sovereign bond** and **corporate bond** market is pre-requisite for a successful project bond market

Where?

- In recent years, bonds **outstripped** syndicated loans as source of infrastructure finance in non-Japan Asia
  - While progress in Asian local currency (LCY) has been remarkable, growth has been concentrated in **government bonds**
Market maturity varies across the region

The Asian-Pacific capital markets can largely be categorized into three types: Mature, Emerging, Frontier

- **Hong Kong, Republic of Korea, Malaysia** and **Singapore** at the forefront in terms of development
- **China, India, Indonesia** and **Thailand** are restricted by lack of depth and liquidity
- Markets in **most other countries** are still in their nascent stage

<table>
<thead>
<tr>
<th>Stock Market</th>
<th>Mature Markets</th>
<th>Emerging Markets</th>
<th>Frontier Markets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bond Market</td>
<td>Developed and liquid</td>
<td>Emerging</td>
<td>No/Limited market</td>
</tr>
<tr>
<td></td>
<td>Developed with liquid government and corporate bond markets</td>
<td>Relatively developed government and emerging and LCY corporate bond market</td>
<td>No/Limited government bond market</td>
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<tr>
<td>Project Bond</td>
<td>Emerging</td>
<td>Infancy</td>
<td>Conceptual</td>
</tr>
<tr>
<td>Credit Rating</td>
<td>Medium to High</td>
<td>Low to Medium -</td>
<td>Highly speculative or no rating</td>
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</table>
Basel III regulations require stricter monitoring and disclosures.

- Higher costs of lending and higher capital requirements for the banks.
- Higher costs passed SPVs translating to diminished project IRR’s (internal rates of return).

Commercial loans
- Short term
- Long term

Sovereign bond market

Corporate bond market

Project bond market

Why bonds and not loans?

- Ability to lock in a long-term interest rate at issuance through the life of the bond.
- SPV has more flexibility to operate and make decisions.
- Generally loan tenors are shorter than for bonds.
- Gives access to newer investors.
Types of debt capital markets instruments

Source: Asian Bonds Online

Size and distribution of LCY bond market, September 2018

- Kazakhstan Temir Zholy JSC (KTZ) 2017 5-yr Rub 15 billion bond rated Baa3
- EGAT 2018 15/20-year Bht 3/7 billion bonds rated BBB+
- Indian Railway Finance Corporation Limited 2017 10-yr $500 million green bond rated BBB-

Source: Asian Bonds Online
Securitization & Credit Rating

• A special purpose vehicle (SPV)...
  ✓ Set up by for a particular project only (i.e. constructing, operating the project and has no other business)
  ✓ Structures debt securities into tranches rated by rating agencies and issues them to investors
  ✓ Depends on revenue streams only

• Investors carry out due diligence on the potential viability of the project,
  ✓ Detailed review of whether project risk allocation protects the project company sufficiently

• However, terms like pricing, tenors and yields of a project bond are hard to decide because...
  ✓ Project bonds are not standard as the underlying infrastructure asset itself is unique
  ✓ Lack of experience/ knowledge or alternatives
  ✓ No reliable long-term yield curve reflecting risk/return values over time
  ✓ Project bonds benchmarked against corporate bond indexes in reality
Sovereign Bond Market

Case Study: Kazakhstan Temir Zholy JSC (KTZ)

National rail corporation, with track record of serial issuance of sovereign backed bond issuance for corporate finance purposes

- 100 percent state-controlled, vertically integrated national rail corporation
- Raises funds by way of bond issuance through a wholly owned subsidiary, KTZ Finance
- Proceeds on-lent to KTZ
- Surety structure of guarantee claim on KTZ for repayment of the bonds and coupon interest
- First issuance in 2017 of RUB15.0 billion senior unsecured bond maturing in 2022
- Rating of Baa3 from Moody's
- Latest issuance of CHF 170 million Eurobond by KTZ in 2018 for refinancing purposes
Project Bond: Tiwi-MakBan, Philippines

PHP 10.7 billion (equiv USD 225 million), placed in 2015 for two among the world’s largest (442 MW and 234 MW) geothermal capacity plants

- First credit-enhanced LCB and first Green Bond in Philippines
- 75% PCG by ADB, leading to rating uplift to a target of BBB/A-
- First Climate Bond certified in emerging markets for a single project

Source: Presentation Material, Asia Pacific Carbon Forum 2016
Infrastructure as an asset class

- Infrastructure as an asset class is not uniform
- Many ways to dissect making it harder to benchmark against other fixed income categories
- Each project unique and normalization of portfolio is difficult with limited data
- Project risk allocation is different resulting in different expectation of returns.
- Bond investors seek more reliable projects i.e. brownfield with certainty and proven revenues

 Construction risk arises from **credit risk** and **timing risk**

 Bonds with this risk deemed the most difficult to handle, depending on the construction’s duration, novelty, complexity, susceptibility to delay, and the experience and resources of the SPV

 Reserve accounts should be sized smartly to avoid **negative carry** and to make the project **cost-efficient**
Bonds can be many colors...

**Social impact bonds** applies a payment-for-result scheme

**Align** impact investment with social and environmental outcomes

**Allow** private impact investors to invest capital upfront for public projects

**Green bonds** are issued to finance environmentally friendly projects e.g. renewable energy, clean transportation and sustainable water management

**Blue bonds** are issued to finance marine and ocean-related projects e.g. river integration, removal of river pollution and coastal zone reorganization

**Islamic bonds** are well-developed in Malaysia, Indonesia, Turkey for power generation and toll roads

Sharing of risk and revenue generated from physical assets in accordance with **Islamic law** financing

Three types: **Musharakh**, **Ijarah** (rental) and **Murabahah** (profit)

**Masala bonds** are an initiative of India and IFC to **eliminate currency risk** from an overseas bond issuance

The bonds are introduced to **finance** infrastructure projects, **fuel** internal growth and **internationalize** the Indian currency
Local financial intermediation sector can be the primary source of project finance while it can be a participant as a subscriber of project bonds, issuer of corporate bonds.

Bankability requirements - a project should include fiscally responsible, affordable with optimal risk allocation enforceable contract to provide compensation and creditworthiness.

Interest rates, exchange rates, inflation and informational asymmetries, lead to vulnerabilities in the financial system.

Regulatory frameworks should be reviewed and adjusted to fit non/limited recourse financing.

Project bond market needs an eco-system e.g. credible support institutions; bond arrangers, trustees and rating agencies to develop.

An investor protection framework can help nurture the growth and development of local capital markets.

Macroeconomic Stability

Financial Sector Infrastructure

Capital Market Infrastructure

Securities Regulation

Investor Protection

Enabling Environment for Project-Based Debt Market

Infrastructure Project Structure
## Project Bond Development Strategies

<table>
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<tr>
<th>Standardization</th>
<th>Increasing Bond Maturity Tenors</th>
<th>Strengthening Credit Rating Accountability</th>
<th>Developing Credit Enhancement Mechanisms</th>
<th>Securitization opportunities</th>
<th>Procuring authority capacity</th>
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<td>Plain vanilla bond is more likely to be funded</td>
<td>Low maturity of Asian bonds remains an impediment to using project bonds. Institutional capacity building can improve market making and information sharing</td>
<td>Rating business in Asia has shallow regulatory oversight, creating a fundamental conflict of commercial interest. Country-level regulations, strong oversight and reporting systems are needed.</td>
<td>Lower sovereign ratings of most countries create a hurdle for investors. Improving the risk profile via guarantee, insurance products, fiscal and regulatory policies.</td>
<td>Pooling assets and repackaging into interest-bearing securities. Underlying interest and principal payments pass to purchasers of securities.</td>
<td>Create capacity to understand and structure. Provide sufficient time to bidders to arrange market assessment of the bond for bids and compliance with regulatory requirements including from credit rating companies to rate the bond issuance.</td>
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Ensuring a ‘bankable’ supply of infrastructure assets

Energy: Low hanging fruits with low complexity and built in exclusivity and revenue adequacy mechanisms

- Brownfield projects such as in renewable energy
- Most investment funds have a mandate for sustainable investments in their portfolio

Transport: Hard currency producing investments such as ports and airports and availability payment type toll roads

Water supply concessions, where the off take is a take or pay by a state-owned incumbent utility

- Subject to financial health of the off taker under the concession (typically, a municipal corporation) and supply of raw water (for example, India).

Source: Credit Suisse Asset Management 2010
Market-based approach is needed

**Emerging Markets**
- Strengthen certain corporate bond market
- Collaborate with development banks
- Expand investor base and reinforce legal environment

**Frontier Markets**
- Stable macroeconomic environment
- Developing investor base vs. Developed market access
- Tap Institutional investors via infrastructure financing

**Mature Markets**
- Increase asset size via securitization
- Develop infrastructure funds/SPV listing
- Credit enhancements for project bonds
- Review prudential framework related to investment limits

Source: Dreamstime.com
Thank you!
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