



# FX Solutions in EM Infrastructure

*Innovative Approaches to Mitigating Currency Risk in Emerging Markets*

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# Agenda

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**I. Objective and Constraints**

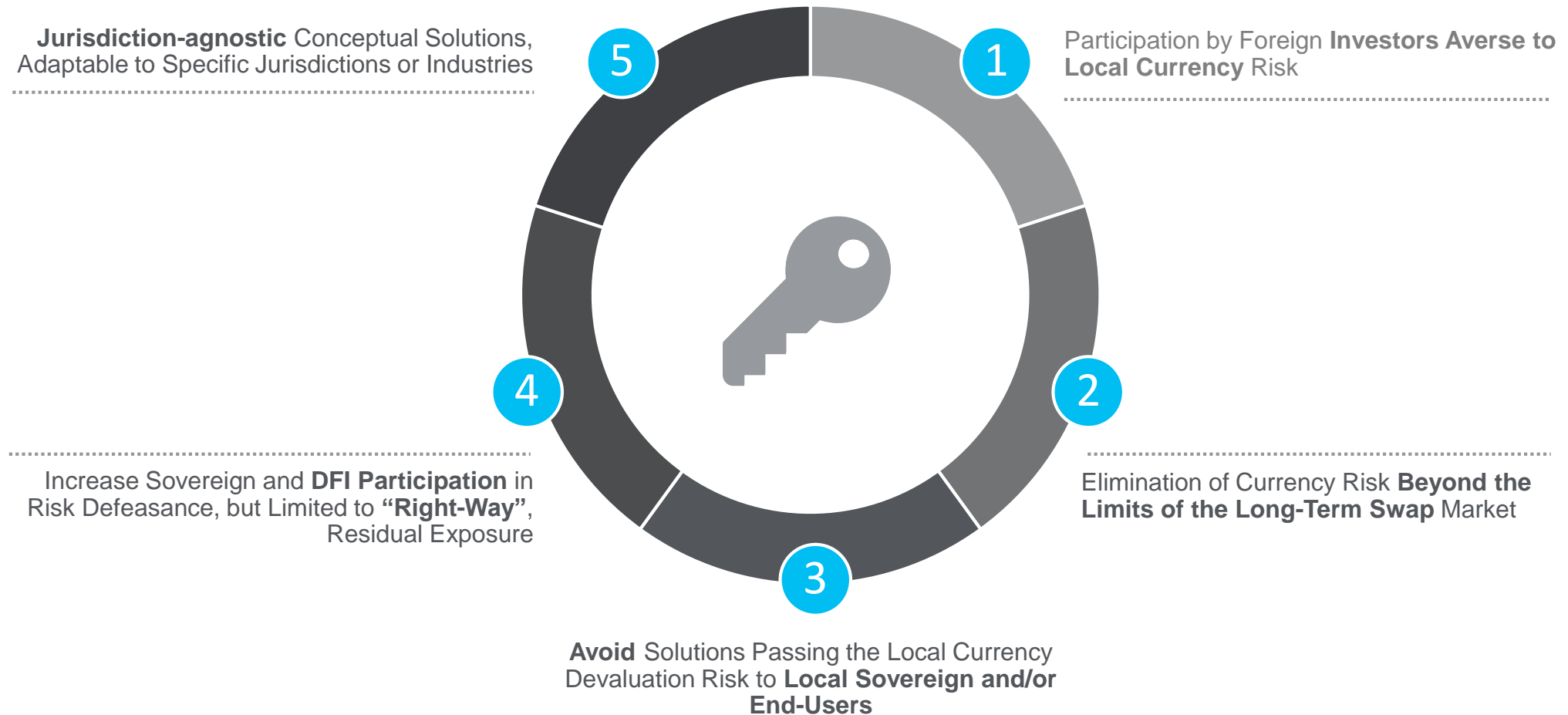
II. Preliminary DFI Feedback

III. Solutions

IV. Synopsis

# I. Objective and Constraints

Objective: Unlock off-shore capital to EM local currency-generating infrastructure projects



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**II. Preliminary DFI Feedback**

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## II. Preliminary DFI Feedback

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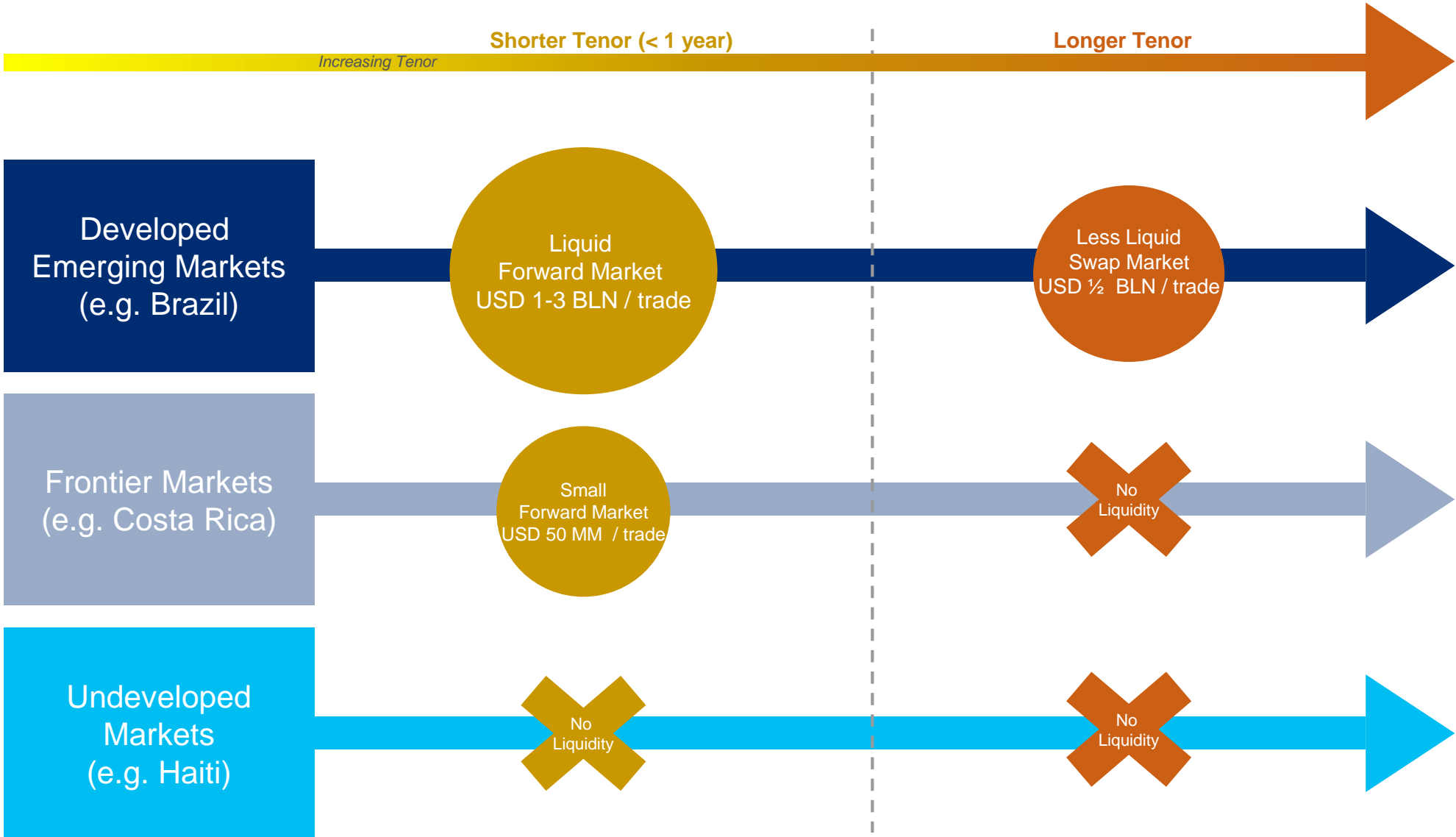
Emphasis on simplicity, new roles of the multilaterals and needs of the most undeveloped emerging markets

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- **Support** for simple solutions
  - Short-Tenor Hedges with DFI Conditional Liquidity Facility
  - Proxy-Currency Solutions - EM-to-EM (aka “South-to-South” in LATAM)
  - Local Development Bank local Currency Loans to International Investors
- **DFIs** play critical role in the solutions, as well as in further development of the emerging derivatives markets
- Mitigation of FX risk in the **least developed jurisdictions** – devoid of any swap market – is most pressing
  - Tripartite division of jurisdictions to: “Developed”, “Frontier” and “Undeveloped” (non-existent) Swap Markets
- Project’s **credit risk in a swap** continues as a key theme in developed EMs

# II. Preliminary DFI Feedback

## Three Types EM Jurisdictions – by Swap Market Liquidity



# Agenda

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## III. Solutions

- Short-Term Hedges with DFI Conditional Liquidity Facility
- Proxy Currency (“EM to EM”) Approach
- Development Bank Local Currency Funding to Off-Shore FIs
  - Sub-Variation with Expanded Investor Base

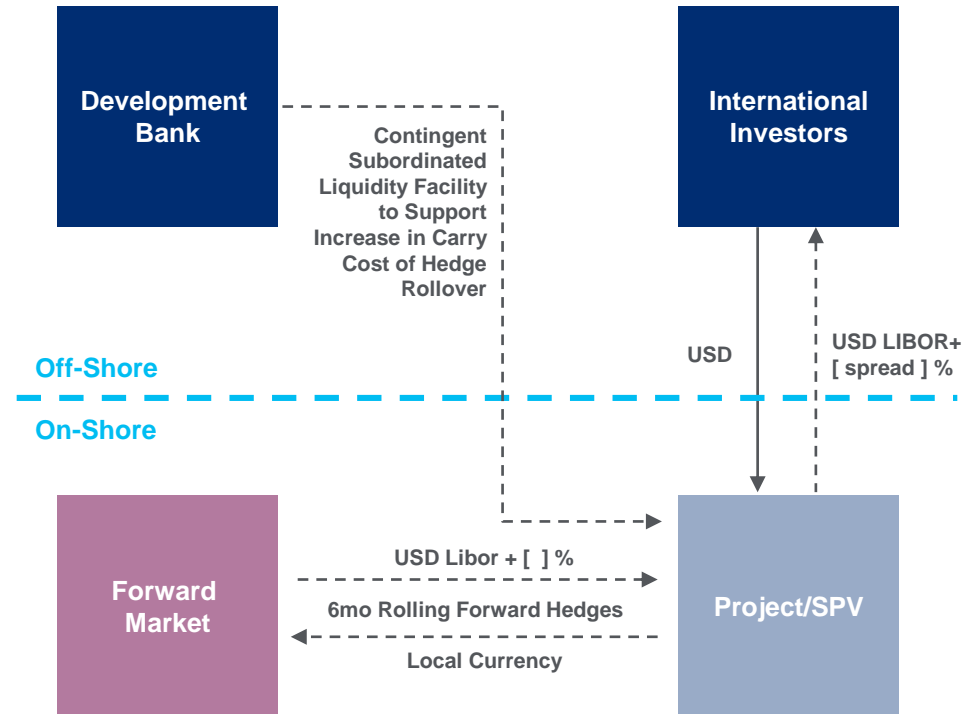
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# III. FX Solutions in EM Infrastructure

## 1. Short-Term Hedging with DFI “Conditional Liquidity Facility”

**Strategy:** Hedge FX risk with short-term (forward) contracts to achieve greater amounts and engage in periodic (historical rate) rollovers.

- EM swap liquidity concentrated in short-tenors ( $\leq 1$ -yr).  
Example - Colombia:
  - COP-USD Forward (1yr) max: USD 2 billion
  - COP-USD 10-yr Swap max: USD 0.5 billion
- Key Risk: Increase in carry cost (local currency interest rates) at each rollover
  - Risk idiosyncratic of EMs
  - Increased carry might preclude project from servicing debt
- Conditional DFI Liquidity Facility
  - Subordinated loan provided to the project, conditional upon increase in carry cost beyond certain level
  - Enables the project to roll-over the hedge and service debt
  - Repayment schedule may stretch over the project’s life
  - EM carry cost inevitably reverts to pre-crisis levels – bolstering the project’s debt-repayment capacity.



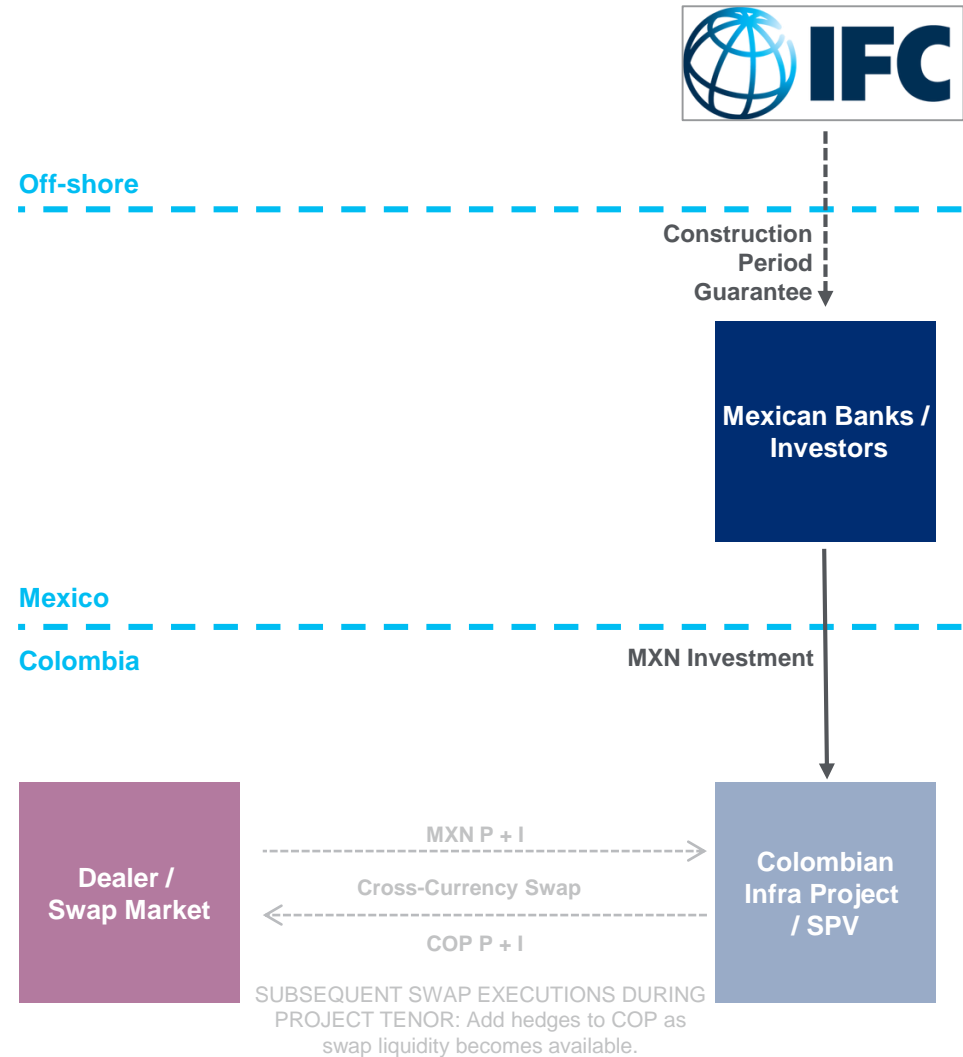


# III. FX Solutions in EM Infrastructure

## 2. Proxy Currency Strategies (“EM to EM”)

**Strategy:** Hedge EM currency risk via funding or hedging in more liquid correlated EM currency(s).

- Rationale
  - mitigate exchange rate risk, when choice is between funding in USD or a correlated local currency
  - EM currencies moving in tandem
    - Regional benchmarks (e.g. COP and MXN)
    - Trading partners (e.g. NPR and INR)
    - Commodity-exporters (e.g. KZT and RUB)
  - if eventually swapping proxy currency to local currency - lower credit risk on the swap
- “Alianza del Pacifico” (Chile, Colombia, Mexico, Peru)
- DFI wrap of the construction risk might be critical to bring local investors to infrastructure projects.



Developed EM

Frontier

Undeveloped

■ Applicable  
■ Selective  
■ Challenging

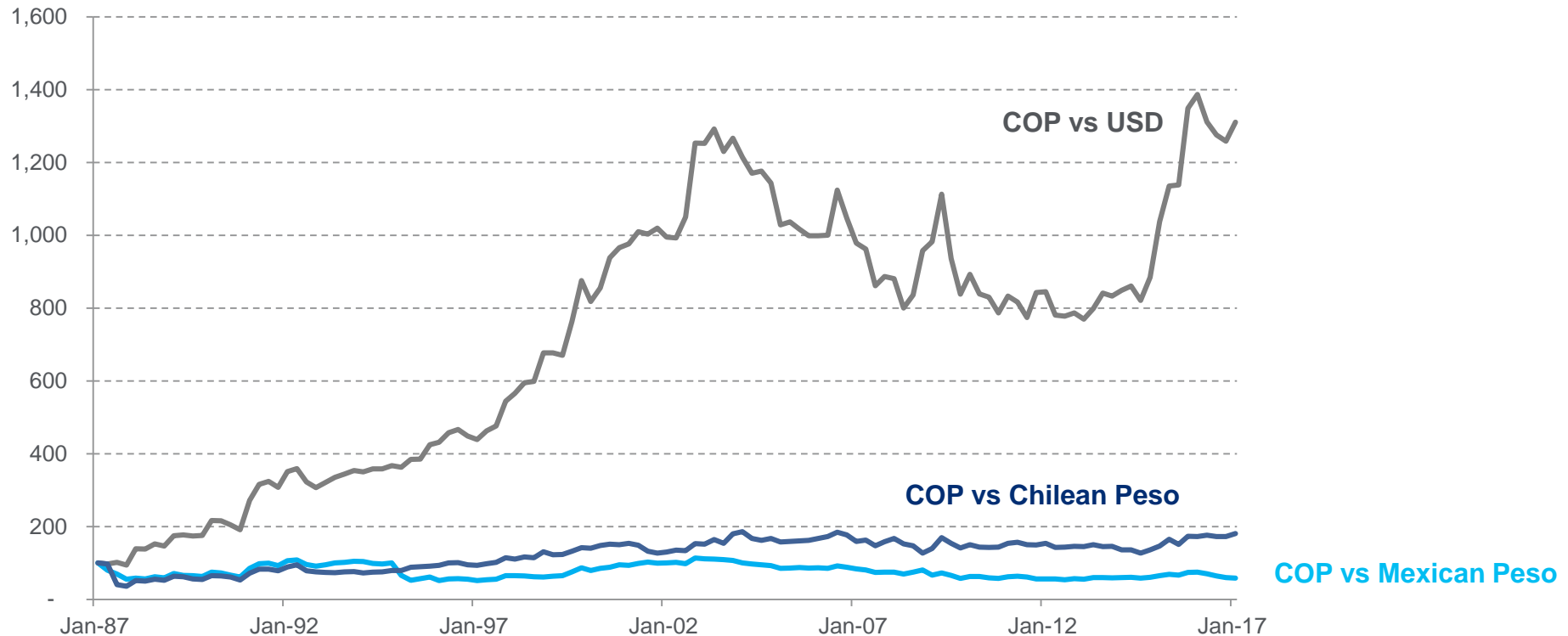


# III. FX Solutions in EM Infrastructure

## 2. Proxy Strategies: Funding or Hedging in more a liquid and correlated local currency (cont'd)

### Historical FX volatility when funding a Colombian Peso Project in: USD vs Chilean Pesos vs Mexican Pesos

Jan 93 – Present, Daily COP/USD, COP/MXN and COP/CLP Exchange Rates, Daily Series

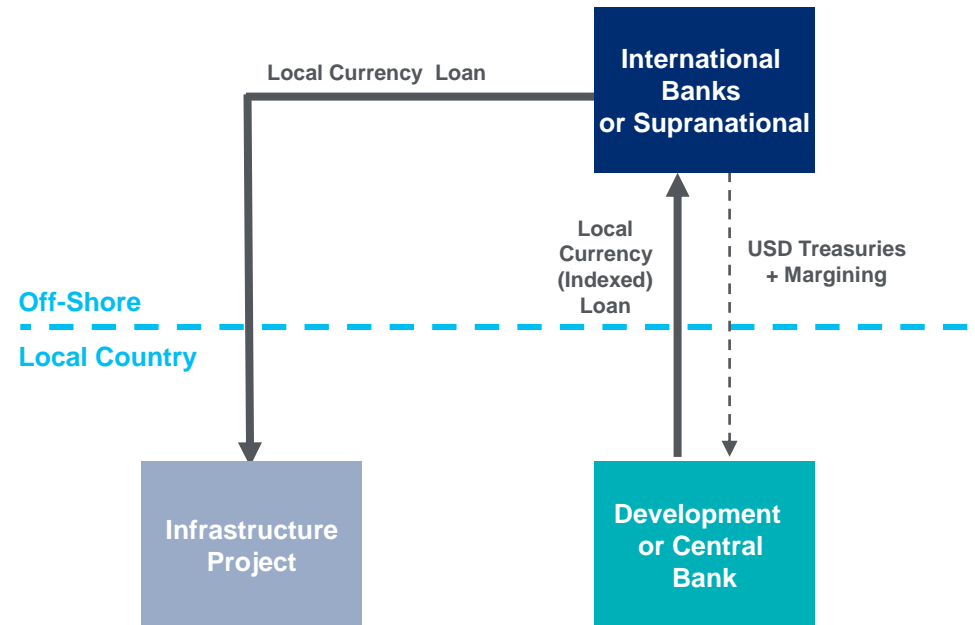


# III. FX Solutions in EM Infrastructure

## 3. Development Bank Providing Local Currency to International Investors

**Strategy:** Local development bank provides local currency liquidity to international banks, who on-lend it to the project.

- Compact and elegant solution - for elimination of both currency and cross-border risk
- No derivative execution at project level
- Relevant for undeveloped markets
- Executed in Kazakhstan, with variations promoted in Colombia, Paraguay
- Proxy currency should be liquid and with expanded yield curve
- Variations
  - **local currency loan** by local development bank to international banks
    - Development Bank has exposure to the bank lenders
  - **local currency repo** on G-10 treasuries
    - Reduced Development Bank's exposure to the international bank lenders, yet bank lenders face "wrong way" credit exposure to CB



Developed EM

Frontier

Undeveloped

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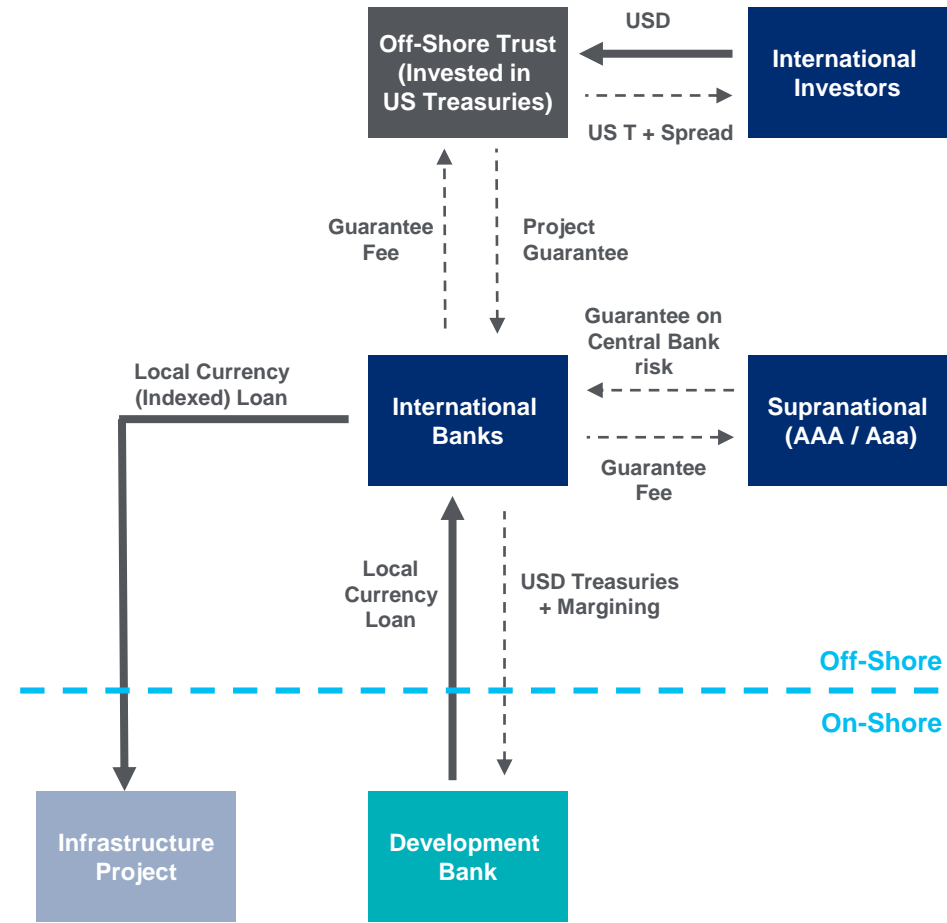
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# III. FX Solutions in EM Infrastructure

## 3. Development Bank Providing Local Currency to International Investors (cont'd)

**Strategy:** Development Bank provides local currency liquidity to international banks, who on-lend it to the project. Banks buy protection from international investors.

- Dynamics
  - International investors' hard currency kept off-shore (in a trust), providing USD return;
  - Project funded locally in local currency.
- Benefits
  - Access to investors unwilling to run FX risk
  - No exchange rate risk (as project is funded locally)
  - Cross-border risk isolated to an event of default
  - No swap involved
- Challenges
  - **Residual local currency appreciation risk** in project EOD (“right-way” risk)
  - Reliance on local currency funding sources.



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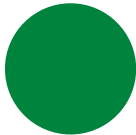
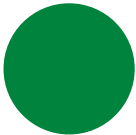
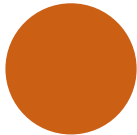
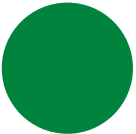


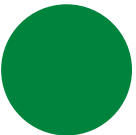
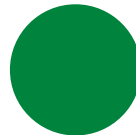

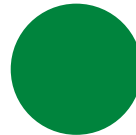


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## Solutions - Jurisdictions Matrix

<i>Solution</i>	Developed	Frontier	Undeveloped	<i>Residual Risk</i>	<i>Potential Risk-Absorbers...?</i>
Short-Term Forward with DFI Liquidity Facility				Increase in Carry (LCY interest rates)	Supranational, Sovereign, TCX, Dealers
Proxy Currency Strategies				<ul style="list-style-type: none"> <li>• Basis Risk (between 2 EM currencies)</li> <li>• Construction Risk</li> </ul>	<ul style="list-style-type: none"> <li>• Basis Risk – Sovereign</li> <li>• Construction Risk – Supranational</li> </ul>
Development Bank Local Currency Funding or Repo				<ul style="list-style-type: none"> <li>• Development Bank (Repo) Credit Risk</li> <li>• Floating Rate Risk</li> </ul>	<ul style="list-style-type: none"> <li>• Supranational, Dealers</li> <li>• TCX</li> </ul>
Development Bank Local Currency Funding w Expanded Intl Investor Base				<ul style="list-style-type: none"> <li>• DB (Repo) Credit Risk</li> <li>• Local currency appreciation in project EOD</li> <li>• Floating Rate Risk</li> </ul>	<ul style="list-style-type: none"> <li>• CB credit risk – Supranational, Dealers</li> <li>• LCY Appreciation – Sovereign, Dealers</li> <li>• Floating Rate - TCX</li> </ul>

 Applicable  
 Selective  
 Challenging

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