



FX Solutions in EM Infrastructure

Innovative Approaches to Mitigating Currency Risk in Emerging Markets

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Agenda

I. Objective and Constraints

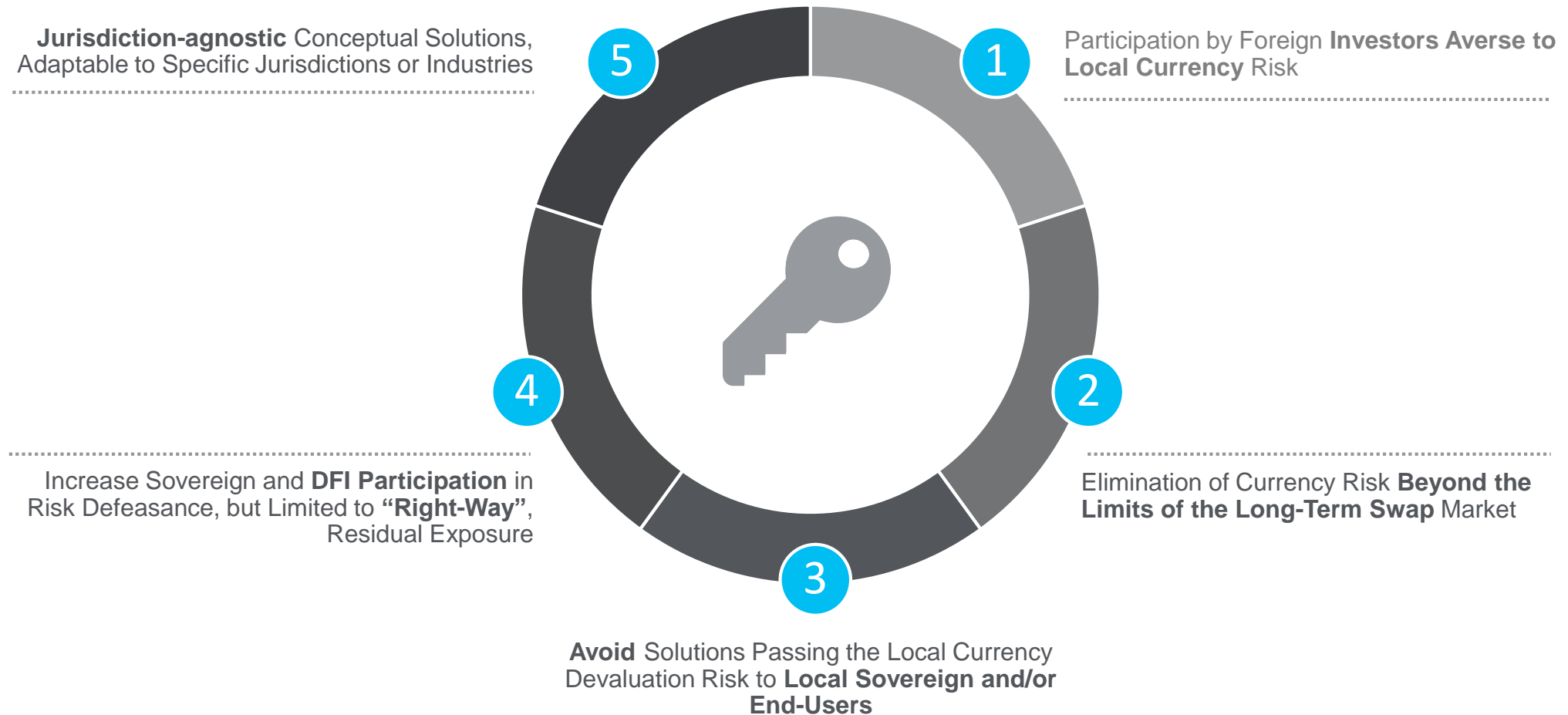
II. Preliminary DFI Feedback

III. Solutions

IV. Synopsis

I. Objective and Constraints

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



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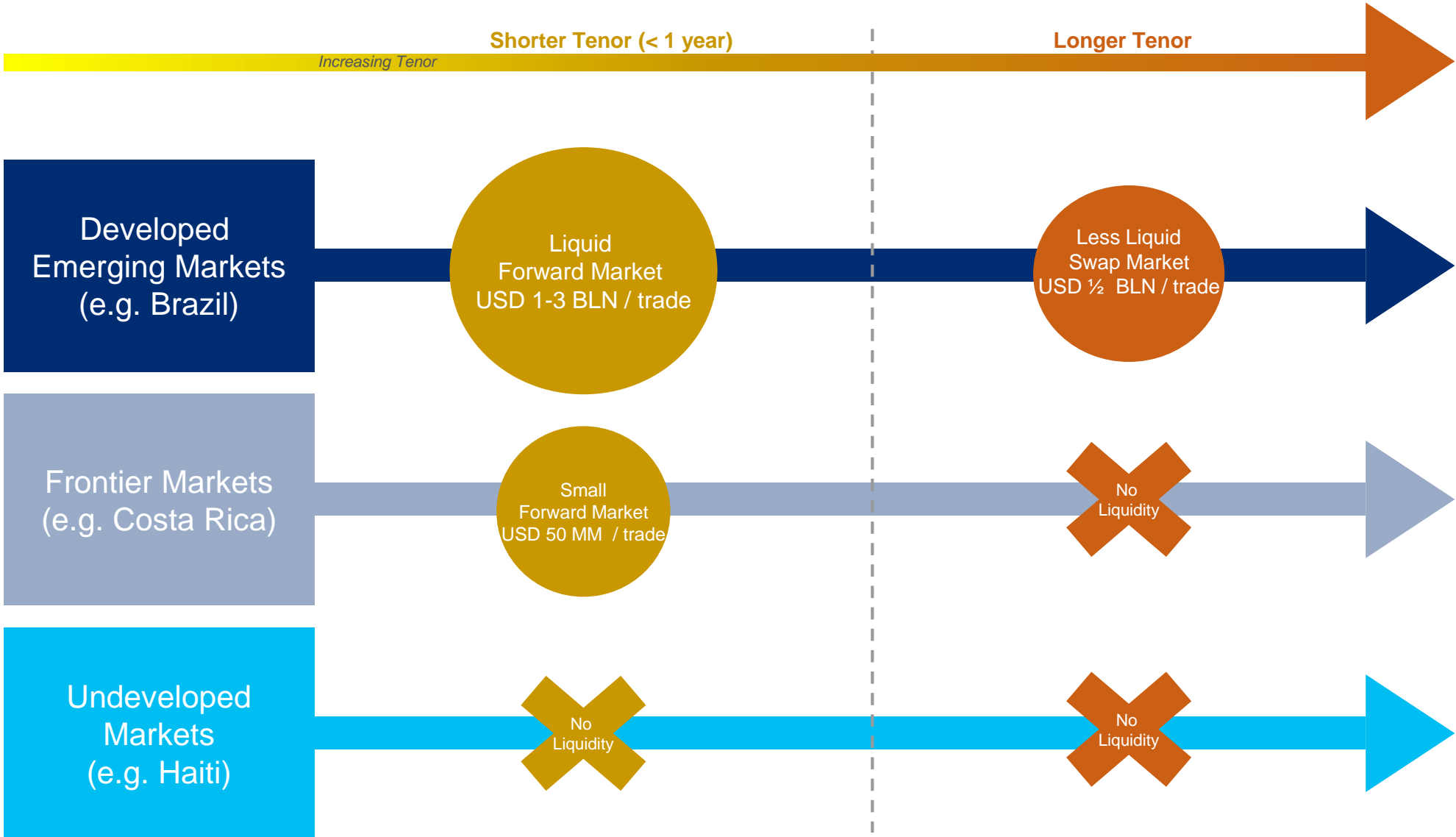
II. Preliminary DFI Feedback

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

- **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



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- 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

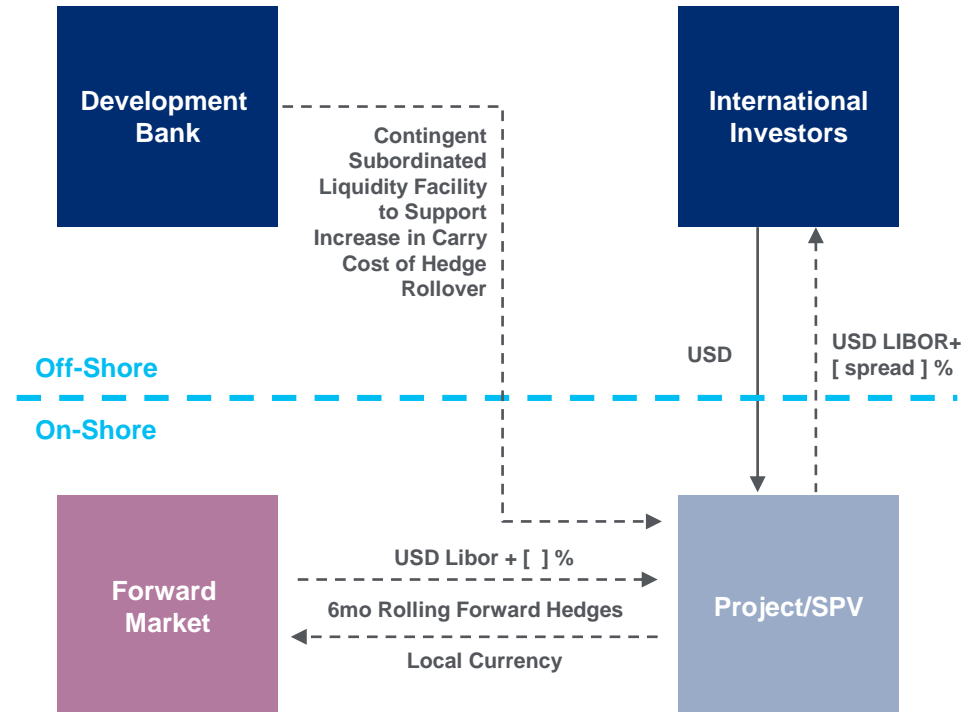
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III. FX Solutions in EM Infrastructure

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 (≤ 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.



Developed EM

Frontier

Undeveloped

■ Applicable
■ Selective
■ Challenging

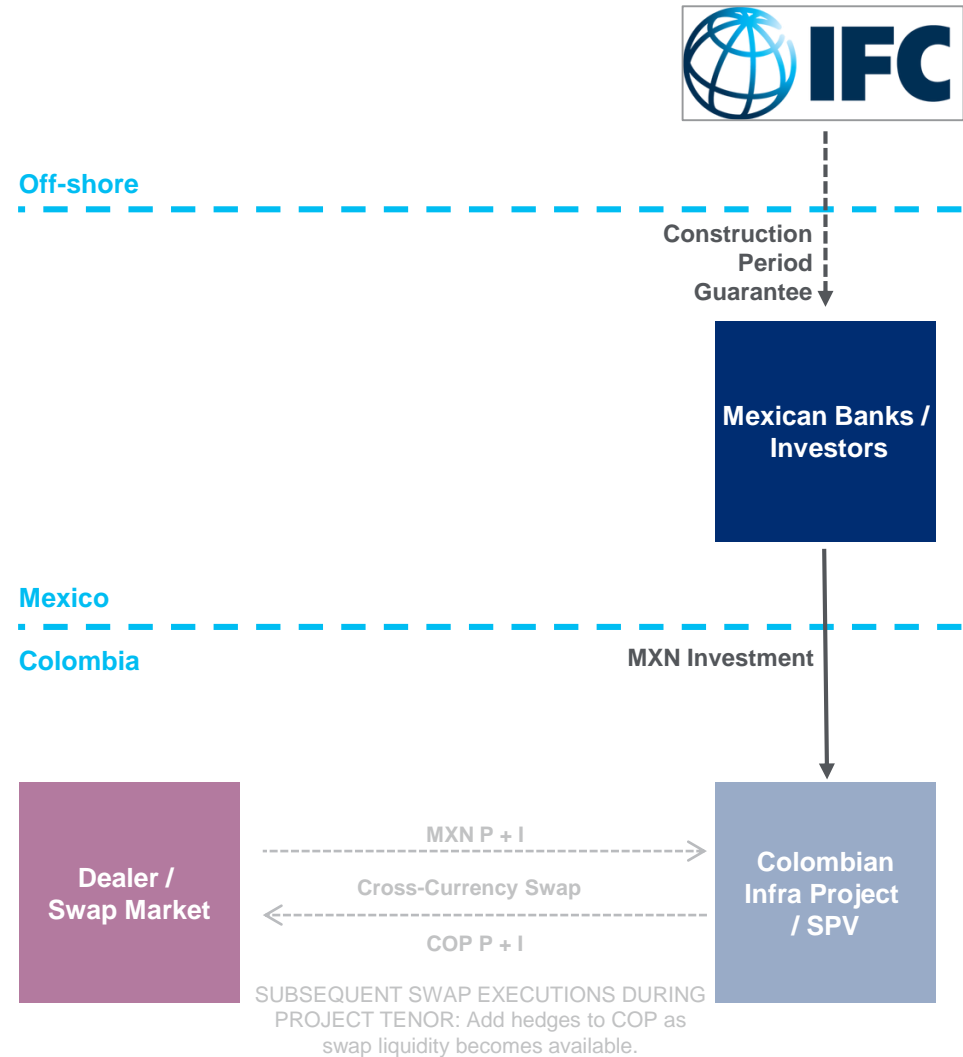
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2. Proxy Currency Strategies (“EM to EM”)

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.

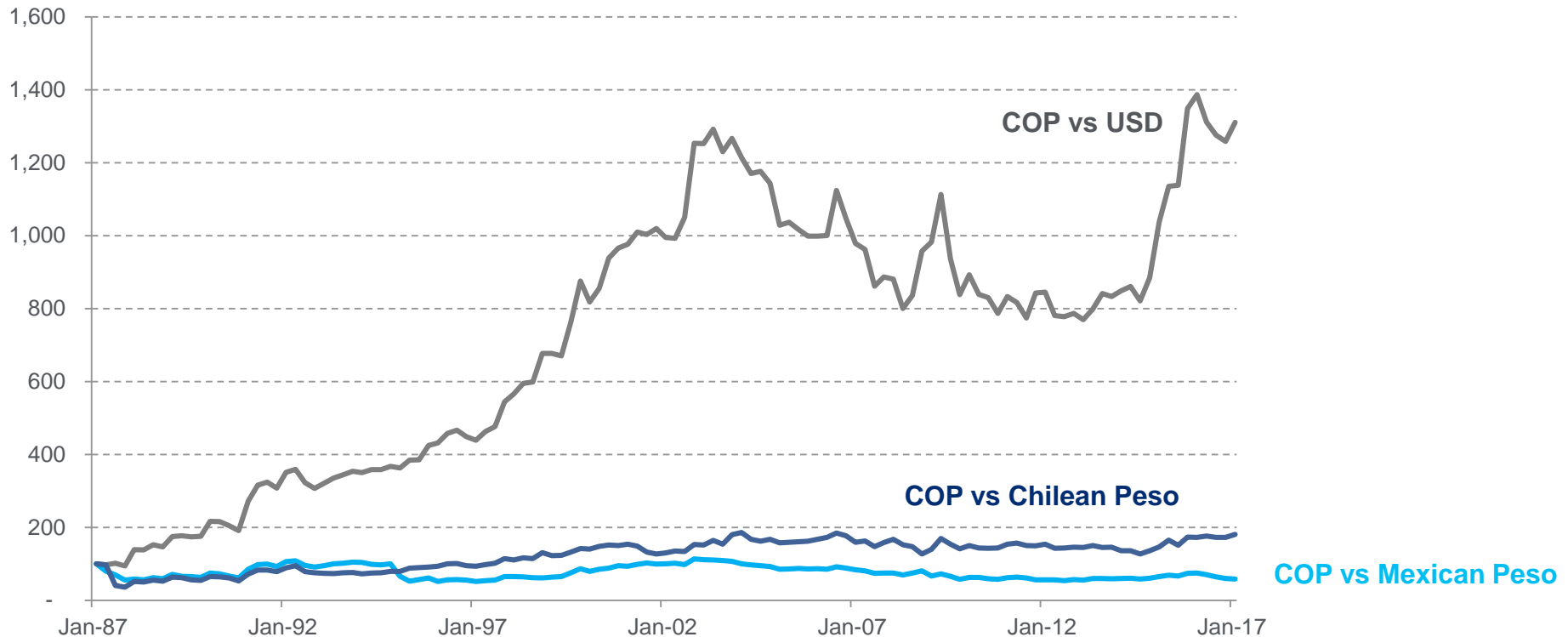


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2. Proxy Strategies: Funding or Hedging in more a liquid and correlated local currency (cont'd)

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

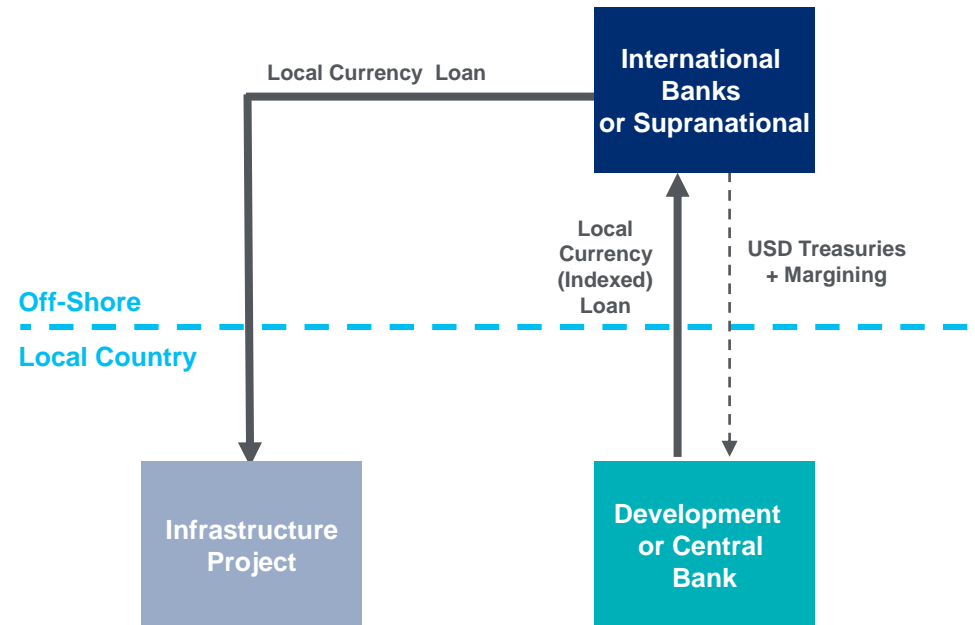


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3. Development Bank Providing Local Currency to International Investors

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

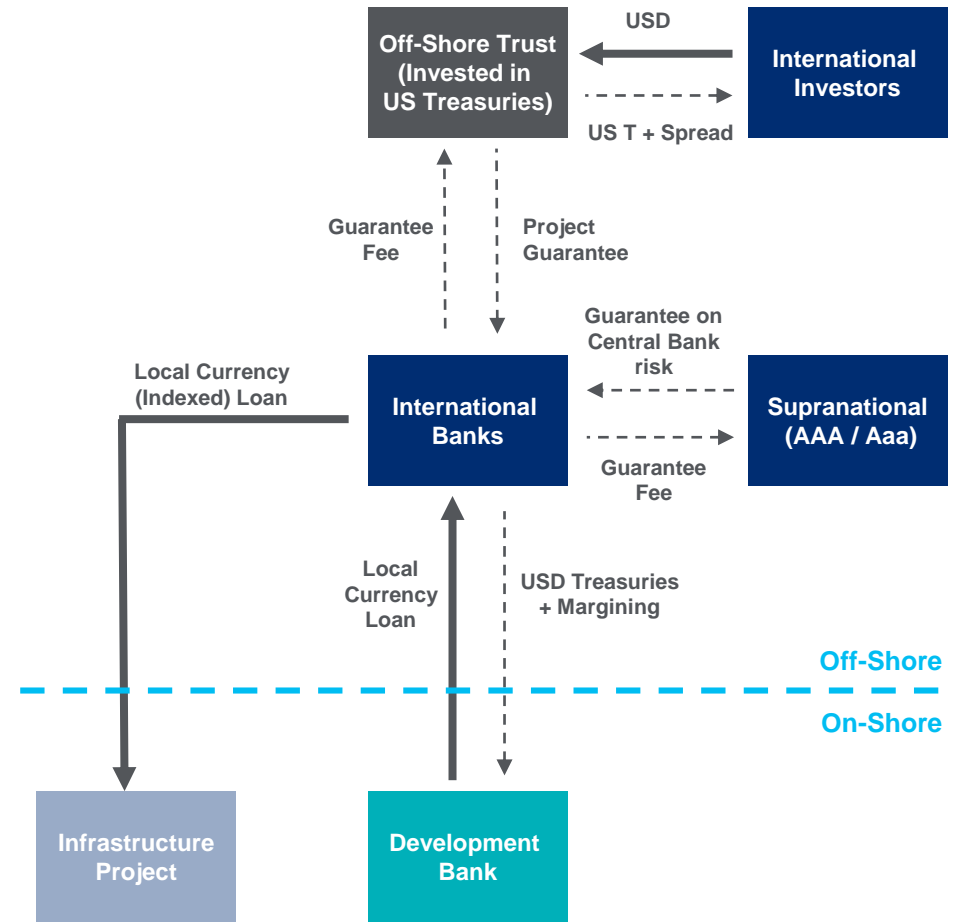
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III. FX Solutions in EM Infrastructure

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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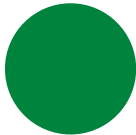
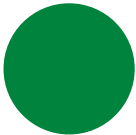
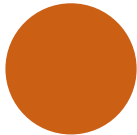
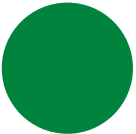


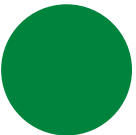
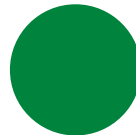

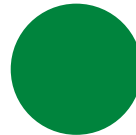


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Solutions - Jurisdictions Matrix

<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"> • Basis Risk (between 2 EM currencies) • Construction Risk 	<ul style="list-style-type: none"> • Basis Risk – Sovereign • Construction Risk – Supranational
Development Bank Local Currency Funding or Repo				<ul style="list-style-type: none"> • Development Bank (Repo) Credit Risk • Floating Rate Risk 	<ul style="list-style-type: none"> • Supranational, Dealers • TCX
Development Bank Local Currency Funding w Expanded Intl Investor Base				<ul style="list-style-type: none"> • DB (Repo) Credit Risk • Local currency appreciation in project EOD • Floating Rate Risk 	<ul style="list-style-type: none"> • CB credit risk – Supranational, Dealers • LCY Appreciation – Sovereign, Dealers • Floating Rate - TCX

 Applicable
 Selective
 Challenging

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