Managing Currency Risk to Catalyze Climate Finance

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ABOUT CLIMATE POLICY INITIATIVE

CPI is an analysis and advisory organization with deep expertise in finance and policy. Our mission is to help governments, businesses, and financial institutions drive economic growth while addressing climate change. CPI has seven offices worldwide, in Brazil, India, Indonesia, South Africa, the United Kingdom, and the United States.

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EXECUTIVE SUMMARY

Emerging markets and developing economies (EMDEs) face a daunting challenge in securing sufficient climate finance to limit global warming to 1.5°C. Local capital markets in many EMDEs lack depth, are characterized by high interest rates, short maturities, and insufficient volumes to meet climate-related needs, and can, at best, provide only about 50% of the funds needed for the climate transition[1].

The gap will have to be met by international climate finance from public and private sources. Estimates for climate investment needs in EMDEs vary from USD 1 trillion to USD 2 trillion annually by 2030 to reach net zero greenhouse gas emissions by 2050. However, currency risk remains a key barrier to deploying international capital to climate projects in EMDEs.

This paper explores risks arising from the mismatch between debt denominated in "hard" currencies (e.g., US dollars or euros) and the revenues used to repay the debt denominated in local currencies—as is frequently the case for climate-related projects. In such situations, depreciation of the local currency can make debt repayment more expensive in local currency terms, threatening the financial viability of projects.

The first section of this paper analyzes the sources and effects of currency risk for climate investments in EMDEs. Several key challenges emerge, including:

- **Affordable long-term lending for climate projects in EMDEs is often unavailable in local currency,** but hard currency loans create risks for actors across the climate investment landscape. Borrowers (e.g., EMDE governments and local private companies) face increased debt burdens in the event of currency devaluation. This, in turn, creates heightened credit risk for loan providers (e.g., DFIs and foreign investors).
- **Commercial financial products to hedge currency risk are often costly for borrowers in EMDEs.** These products are priced based on a combination of the real and perceived risks of investing in EMDEs, which hedge providers must estimate in advance to set the price ex-ante. Their costs often fully offset the lower interest rates available for hard currency loans for climate projects.

While stronger macroeconomic policy frameworks and deeper financial markets in EMDEs are the most effective long-term solutions to these challenges, affordable hedging mechanisms to reduce the delivered cost of capital and unlock private climate finance for EMDEs are critical near-term measures. To that end, several innovative solutions have been suggested for countries at different levels of financial development, and which are at varying stages of implementation.

The second section of this paper examines five solutions, either at the proposal stage or in early implementation, to better understand their operation and potential to improve the affordability of hedging tools and enhance local currency lending:

1. **A donor-funded guarantee facility** planned by The Currency Exchange Fund (TCX) to complement its existing offerings.
2. **Eco Invest Brasil**, a partnership between the Brazilian government and the Inter-American Development Bank.

1 Songwe V, Stern N, and Bhattacharya A., 2022. Finance for climate action: Scaling up investment for climate and development. Grantham Research Institute on Climate Change and the Environment, London School of Economics and Political Science: London, https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2022/11/IHLEG-Finance-for-Climate-Action.pdf

3. **An onshore DFI hedging platform** to support local currency lending by DFIs (named Delta by its sponsors).
4. **An MDB transfer mechanism** developed by FSD Africa.
5. **An FX hedging facility in India**, developed through the Global Innovation Lab for Climate Finance.

These innovative models use various mechanisms to affordably mitigate currency risks for climate projects in EMDEs. These include enhancing concessional capital to subsidize hedging products, creating onshore platforms to facilitate local currency financing, refinancing loans from multilateral development banks (MDBs) in local currency to recycle capital, and spreading currency risks among different stakeholders.

Each solution has tradeoffs, and several are market-specific, which may impede their replicability. They may also face challenges to their long-term financial sustainability, implementation speed, and scale.

CPI has compared these solutions across various aspects – as summarized in the table below.

Table ES1. Summary of innovative approaches

	TCX donor facility	Eco Invest Brasil	Onshore DFI hedging platform (Delta)	FSD Africa	CPI FX Facility
Status	Piloted	Implemented	Proposal	Proposal	Proposal
Contribution to local capital market development	Building market liquidity and capacity building for public debt management	Working with local FIs	Policy dialogue, capacity building, working with local FIs	Working with local institutional investors	Working with local institutions
Climate focus	Yes	Yes	No (but investments will be aligned with DFI climate strategy)	No (with potential to do so)	Yes
Below-market rates	Yes	Yes, cost paid by end customers	No (but client DFIs may offer below-market rates)	No	Yes (only for >4.5% depreciation)
Financial sustainabiliy	No[2]	Possibly	Yes[3]	Yes	Possibly[4]
Donor funded	Yes, on a limited basis	For tail-end risks only	No (other than initial capital investment)	No	Seed funding and tail-end risks
Easy to scale/ replicate	Yes	Challenging in markets other than Brazil	Possibly, but setup may take time in each market	Adjusting MDB operations would take time	Potentially, in the right market

2 The facility may be able to phase down subsidies over the long term as recipient countries strengthen macroeconomic policies.
3 The platform aims to be financially sustainable without subsidies beyond initial equity investments from DFIs.
4 The facility could be financially sustainable as it draws annual payments from private entities, but it still requires donor funds to cover extreme risks. There's also a risk of non-payment if the expected benefits do not materialize.

RECOMMENDED ACTIONS

To meet EMDEs' climate finance needs, innovative financing mechanisms such as those analyzed in this report must be implemented and scaled urgently. Key to this effort is a collaborative approach involving donors, MDBs, and EMDE governments, each playing a vital role in fostering sustainable financial practices aligned with climate objectives.

As each EMDE faces unique challenges, it is critical to recognize that different markets require tailored solutions to effectively address their unique challenges. The three climate-focused proposals target high-emitting emerging economies such as Brazil and India, where local currencies are more accessible. This highlights the discrepancy with least developed countries (LDCs), which are low emitters with very underdeveloped financial markets. There is a significant need for highly concessional financing for climate-related investments in LDCs, which are often left behind in climate finance efforts. (That said, concessional interventions should complement rather than compete with local financial products, so as not to inhibits private markets development).

- **Concessional capital providers (donor governments, philanthropies, DFIs, MDBs, etc.)** can contribute concessional capital to help scale mechanisms that provide more affordable hedging solutions.
- **MDBs** can consider running pilot programs to adapt and scale some of the above models across EMDEs. At the same time, MDBs could also expand on local currency lending and provide technical assistance to deepen domestic capital markets and enhance financial sector resilience.
- **EMDE governments** can strengthen macroeconomic policies and regulatory frameworks to support the growth of their financial sectors, implement strategic country platforms to align financial and climate goals, and enact reforms to enable effective blended finance structures and the development of secondary markets for climate finance.
- **Research institutions** should analyze how to improve access to and affordability of hedging instruments to effectively scale up international private financial flows. For MDBs/DFIs, research should explore the expansion of local currency lending, the promotion of risk-sharing instruments, and effective blended finance approaches. For the private sector, research should promote participation in currency risk management through government- or MDB-supported products. For EMDE national governments, research should assess the policy adjustments needed to facilitate FX hedging instruments and create an enabling environment for their effectiveness.

CONTENTS

1. UNDERSTANDING CURRENCY RISK IN CLIMATE FINANCE

Currency risk, also known as "foreign exchange risk" or "FX risk", refers to the potential for losses resulting from exchange rate fluctuations that affect the value of an entity's financial liabilities relative to its assets or revenues denominated in different currencies. Finance recipients and providers may both face currency risks.

This paper focuses on how currency risk can inhibit financing for climate-related projects in emerging markets, and therefore refers to the risk that the local currency depreciates against the foreign currency in which loans or investments are denominated, making repayment more expensive in local currency terms. The mismatch between local currency project revenues versus loans to be repaid in hard currency, usually US dollars (USD) or Euros (EUR), may threaten projects' financial stability, particularly for longer-tenor financing and investments.[5]

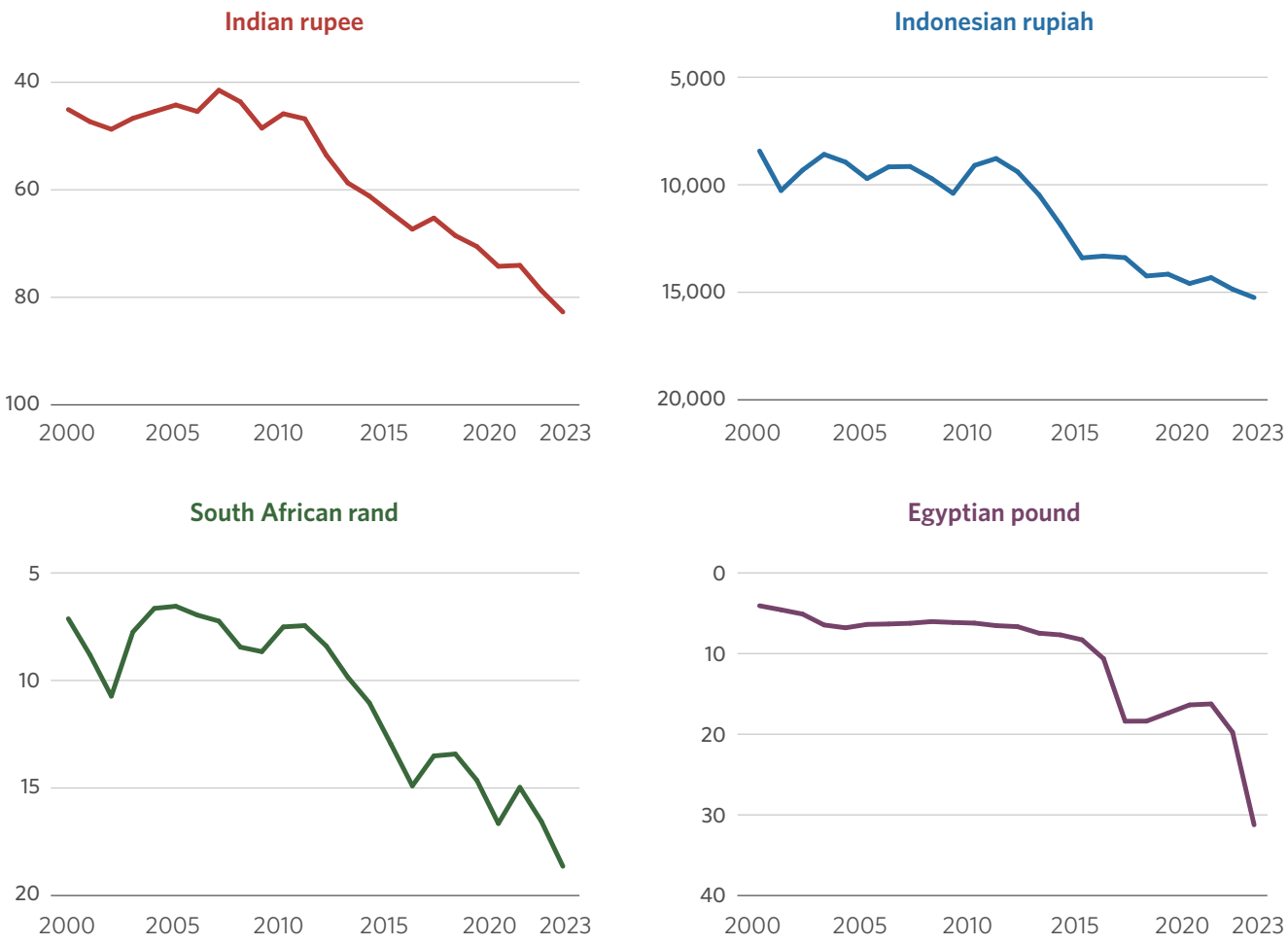
While the term "currency risk" covers multiple subtypes of risk, including market (fluctuation) risk, convertibility risk, transfer restriction and liquidity risk,[6] this paper focuses on currency market risk.

LONG-TERM DEPRECIATION VS. SHORT-TERM VOLATILITY

The negative impacts of currency mismatch manifest through two main channels: long-term depreciation and short-term volatility, as illustrated for various emerging markets and developing economies (EMDEs) in Figure 1. Long-term currency depreciation, as shown for the Indian rupee, may occur due to structural factors such as dependence on commodity exports or chronic trade deficits.[7] For long-term loans in foreign currency, this type of depreciation can lead to steady but significant increases in the effective cost of capital, in local currency terms, over the life of the financed project.

5 According to the Bank for International Settlements, the USD is used in approximately 90% of foreign exchange transactions worldwide.
6 See Appendix 2 for descriptions of convertibility risk and transfer risk
7 A detailed overview of the drivers of long-term depreciation are included in Annex 1.

Figure 1. Local currency units relative to USD for selected currencies, 2001-2021



Source: *World Bank Open Data, 'Official exchange rate (LCU per US$, period average),' data.worldbank.org.*

Short-term currency volatility, on the other hand, can cause acute difficulty in making scheduled repayments on foreign currency financing, even if the local currency eventually recovers its value. EMDE currencies tend to be more volatile than hard currencies due to the effects of events such as political upheaval, natural disasters, abrupt policy changes, and global market shifts, in conjunction with shallower trading markets (relative to advanced economies). As shown in Figure 1, the exchange rate of the Egyptian pound against the US dollar depreciated significantly in 2016 and 2023 due to domestic monetary policy reforms.[8]

Sound macroeconomic management and the development of local financial markets in EMDEs are the most sustainable remedies to long-term depreciation and short-term currency volatility. However, such reforms would take years to implement in most cases. In the meantime, currency risk in EMDEs must be addressed to meet immediate international climate finance needs.

8 Capex, 2024. Egyptian Pound Forecast. Retrieved from https://capex.com/en/overview/egyptian-pound-forecast

1.1 THE NEED FOR FOREIGN CURRENCY CLIMATE INVESTMENT

CPI's latest Global Landscape of Climate Finance (2023) measures the total climate finance volume across 2021/2022 to be at only USD 1.3 trillion globally. The 2022 Songwe-Stern report[9] estimated that EMDEs (excluding China)[10] collectively require USD 2.4 trillion per year in climate finance by 2030 (equal to 6.5% of annual global GDP) to keep the target of capping warming at 1.5°C in reach and meet the goals of the Paris Agreement, but domestic markets can only provide up to half of the needed finance.[11] This leaves a substantial gap to be filled by international finance, especially in the short term, however accessing international funds leaves EMDE banks vulnerable to currency risk in their repayments. This circular challenge underscores the critical need to scale up international private investment and the importance of addressing currency risk in doing so.

DOMESTIC CAPITAL CONSTRAINTS

Local capital markets are insufficient to finance the climate transition in most EMDEs at the speed and scale required. While several of these countries' domestic capital markets are increasing in size and scale, many still need significant inward international financial flows, as the amount needed for climate finance exceeds the available domestic savings of EMDEs. While significant volumes[12] could potentially be raised domestically through strengthening domestic public finance and capital markets, this represents a long-term goal that does not address the significant need for climate finance in EMDEs in the short term.

Currently, local capital markets in many EMDEs lack depth and are characterized by limited savings and a paucity of domestic investment vehicles to support large-scale, long-term borrowing. On top of lower accumulated wealth than advanced economies, the predominantly bank-dominated financial systems of EMDEs offer fewer options for domestic savings and investment, and lack the capacity to develop more offerings and deepen the market. As a result of the shallow markets, the cost of capital for private projects is often high enough to make them non-viable—or financing is unavailable in longer tenors. These factors limit incentives for local investment in EMDEs and can contribute to a self-reinforcing dynamic wherein a scarcity of savings leads to requirements for returns that are too high for many climate-related projects. Furthermore, a lack of investable projects limits incentives to develop new domestic savings vehicles.

This is partly due to the type of investor available in EMDEs. Institutional investors that often provide long-term financing in developed economies (e.g., pension funds, insurers, and asset managers) are often absent in EMDEs or invest abroad to avoid (real and perceived) local investment risks. Creating an enabling environment for domestic investment, including through

9 Songwe V, Stern N, and Bhattacharya A., 2022. Finance for climate action: Scaling up investment for climate and development. Grantham Research Institute on Climate Change and the Environment, London School of Economics and Political Science: London, https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2022/11/IHLEG-Finance-for-Climate-Action.pdf

10 For the purposes of this analysis, China is excluded from the EMDE group as it has historically had high domestic savings and continues to attract significant international capital.

11 These numbers are based on analysis set out in the 2022 Songwe-Stern report and are broadly consistent with the work of the International Energy Agency and the Energy Transition Commission.

12 Songwe V, Stern N, and Bhattacharya A., 2022. Finance for climate action: Scaling up investment for climate and development. Grantham Research Institute on Climate Change and the Environment, London School of Economics and Political Science: London, https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2022/11/IHLEG-Finance-for-Climate-Action.pdf

sound macroeconomic policies to facilitate the growth of domestic savings and effective financial regulation and supervision to strengthen the capacity of local financial institutions, is necessary to address these challenges sustainably.

INTERNATIONAL FINANCE AS HARD CURRENCY

Given the significant shortfall in local financing capacity and the lack of depth of in capital markets of many EMDEs, they will continue to rely heavily on international financial flows to bridge their financing gap for the climate transition. According to the latest CPI Global Landscape of Climate Finance (2023), international private finance to EMDEs currently contributes only about $15 billion, or just 28% of total international private finance annually.

When it comes to international public finance, which comprises the majority of climate finance to EMDEs,[13] **loans from multilateral development banks (MDBs) and bilateral development finance institutions (DFIs) are usually denominated in hard currency, mainly USD, EUR, and occasionally Japanese yen (JPY).** MDBs and bilateral development finance institutions (DFIs) primarily borrow and lend in hard currencies, taking advantage of the lower interest rates and greater liquidity of hard currency capital markets compared to those of emerging markets.

This approach helps MDBs mitigate their own currency risk by matching the denominations of assets and liabilities. More than 80% of MDB and DFI lending to Low-Income Countries and Lower Middle-Income Countries is in hard currencies, primarily USD.[14] Some MDBs are mandated to avoid currency risk in their lending operations as part of their risk management strategy. This helps them to maintain their AAA credit ratings, enabling them to secure funding on favorable terms.

1.2 CHALLENGE OF FOREIGN CURRENCY CLIMATE FINANCE IN EMDES

The potential for fluctuation and long-term devaluation of local currencies dents the risk-return profile for climate investments in EMDEs. As a result, investing in climate projects in EMDEs may be perceived as riskier than in advanced economies, resulting in higher financing costs.

CURRENCY MISMATCH IN LONG-TERM CLIMATE FINANCING

Reliance on hard currencies for climate finance in EMDEs poses significant challenges, given that climate projects typically generate revenues in local currency. Unlike oil and gas exports, which generate hard currency revenues, clean energy infrastructure projects primarily generate revenues in local currency, by selling electricity to the local grid. However, due to the factors discussed above, these projects often depend on foreign investment in USD or EUR and therefore often service debts in USD or EUR.[15]

13 Climate Policy Initiative, 2023. Global Landscape of Climate Finance 2023. Available at: https://www.climatepolicyinitiative.org/publication/global-landscape-of-climate-finance-2023/

14 Nifty Nordic Institute for Finance, Technology, and Sustainability. (2023). A Multilateral Solution to Hedging Currency Risk in Developing Country Finance. Retrieved from https://niftys.org/a-multilateral-solution-to-hedging-currency-risk-in-developing-country-finance/.

15 Baker, L. and Benoit, P., 2023. How Project Finance Can Advance the Clean Energy Transition in Developing Countries. Available at: https://www.oxfordenergy.org/publications/how-project-finance-can-advance-the-clean-energy-transition-in-developing-countries/

In addition, renewable energy facilities' long lifespans require long loan tenors, increasing exposure to currency risk. For example, the average lifespan of solar panels and wind turbines is estimated at between 25 and 30 years (US DOE, 2023).[16] To achieve the lowest levelized cost of electricity (LCOE) from these renewable sources and align with traditional infrastructure project finance, the term of financing should ideally match the operating life of the asset. Such long-term financing exposes the project to long-term currency fluctuation risks and increases the cost and complexity of hedging over the life of the loans.

CHALLENGES OF CURRENCY RISKS ACROSS CLIMATE FINANCE STAKEHOLDERS

Currency risk poses differentiated challenges to various actors in the international climate investment landscape. Loan and investment recipients (governments, local private sector companies, and local financial institutions including national and subnational development banks) bear the risk of currency devaluation, which can increase their debt burden in local currency terms. In turn, providers of hard currency financing in EMDEs (MDBs, foreign investors, commercial entities etc.) may see the returns and viability of their investments affected.

Foreign investors[17] based in advanced economies generally seek to minimize currency mismatches on their balance sheets and, therefore, usually make loans and investments abroad in their home (i.e., hard) currency. An exception to when these investors can borrow in local currency to fund investments abroad—but such funding is much more readily available in other advanced economies than in EMDEs for reasons discussed above. As revenues from climate projects are typically in local currency, any depreciation in local currency will increase the cost of hard-currency financing. This risk is primarily borne by the borrower, but the investor faces a credit risk that the borrower may default on repayments due to the depreciation of the local currency. In response, foreign investors may demand higher returns to justify the increased credit risk or choose to divert their funds to lower-risk investments in other geographies, thereby reducing the availability of financing.

Local private sector borrowers, such as project developers in EMDEs, constrained by limited volumes, shorter maturities or higher local interest rates, often still need to borrow in hard currency and manage the consequent currency risk. However, the benefits from this approach omit the cost of hedging instruments, which can ultimately offset the lower interest rates available for hard-currency loans. In fact, the full cost of borrowing in hard currency, including the cost of hedging (if available), will usually equal the cost of borrowing in local currency. On the other hand, unhedged currency risk may necessitate high-cost emergency borrowing to pay for increased debt service costs in the event of significant currency depreciation, sharply increasing the project's debt burden and threatening its viability.

Local financial institutions in EMDEs may face direct and indirect currency risks. In countries with high levels of dollarization, banks may face direct currency risks by accepting deposits in hard currency while continuing to lend in local currency. In other cases, where borrowers

16 U.S. Department of Energy, 2023. The Life of a Wind Turbine. Available at: https://windexchange.energy.gov/end-of-service-guide#:~:text=The%20Life%20of%20a%20Wind%20Turbine,-Duration&text=How%20long%20do%20wind%20turbines,to%20last%20for%2030%20years

17 Foreign investors are understood as long-term investors providing debt financing for climate projects (not including equity investors). This distinction is based on the highly debt-financed nature of climate investments, where, for example, renewable energy projects are often 70-80% debt-financed, and the fact that equity investments cannot be hedged.

frequently turn to unhedged foreign-currency financing, local banks and other lenders may face indirect currency risk (in the form of credit risk) due to their borrowers' currency risk exposure.[18] Moreover, national governments may encourage local financial institutions to prioritize investments that generate hard currency revenues, such as export-led projects. While this may have macroeconomic benefits, such as bolstering foreign exchange reserves and supporting balance of payments, it can limit the availability of financing for projects that generate local revenues, such as clean energy projects.[19]

Sovereign borrowers with high hard-currency debt may be forced to use more of their fiscal resources for debt service in the case of local currency depreciation. This can divert funds from development priorities and hinder climate efforts. This is a serious issue, given that foreign currency lending makes up about 70-85% of low-income countries' debt.[20] A 2021 IMF-World Bank guidance note indicates that local currency bond markets can protect EMDE governments from such risks, but these remain underdeveloped relative to advanced economies despite significant recent growth. The development of local currency bond markets can take years and involves complex coordination on policy and implementation across multiple public and private stakeholders.[21]

18 IMF, 2011. G20 Note on Global Prospects and Policy Challenges. Available at: https://www.imf.org/external/np/g20/pdf/110211.pdf
19 Schclarek, A. and Xu, J. (2022) Exchange rate and balance of payment risks in the global development finance, Journal of International Financial Markets, Institutions and Money, 79, p. 101574
20 UNCTAD 2022. Climate Change: UN Launches Plan to Make World Weather-Ready. Available at: https://news.un.org/en/story/2022/12/1131432
21 IMF, 2021. Guidance Note For Developing Government Local Currency Bond Markets. Available at: https://www.imf.org/en/Publications/analytical-notes/Issues/2021/03/17/Guidance-Note-For-Developing-Government-Local-Currency-Bond-Markets-50256

2. ADDRESSING CURRENCY RISK

Borrowers transacting in foreign currencies often use hedging instruments to protect against currency fluctuations. "Locking in" an exchange rate for future debt service can stabilize the cost of loans. Borrowers usually use hedges that match the duration of their project financing to align risk management with the lifespan of each investment.

As hedging instruments are priced at market rates, which include a cushion for potential volatility, their costs can be significant. Innovative instruments that reduce hedging costs and improve the affordability of local currency financing are therefore needed to drive international private climate finance to EMDEs.

2.1 STANDARD CURRENCY RISK MITIGATION TOOLS

There are four common currency risk hedging instruments, though their availability varies significantly across countries.

- **Forward contracts**: An agreement made today between an investor and a bank (the hedging instrument provider) to exchange a specified amount of one currency for another at a predetermined rate on a future date.
- **Futures contracts**: Similar to forward contracts, these are contracts to buy or sell a specific currency at a predetermined price on a set date. The difference is that they are standardized in nature and accessible on exchange markets, making them more suitable for smaller investors.
- **Options**: Contracts offering investors the right (but not the obligation) to exchange currencies at a specified rate in the future. They provide flexibility and enable investors to capitalize on favorable rates, at a cost.
- **Swaps:** These involve the exchange of loan principal and interest payments in one currency for another, at a predetermined rate.

More developed financial markets tend to have a broader range of hedging options with longer tenors than less developed markets.

Commercially available hedging tools are viewed as costly because they are priced to reflect current market conditions and represent an explicit cost to insure against uncertain future risks. In particular, forward contract exchange rates[22] are typically based on the covered interest parity condition,[23] under which the forward rate exactly offsets the (ex-ante) difference in interest rates between the two currencies over the term of the contract. Critics claim that these hedging tools are overpriced in certain EMDE currencies, pointing out that forward rates often exceed actual (ex-post) rates of currency depreciation.[24] Full analysis of currency risk hedge

22 A forward exchange rate is an agreed-upon rate for exchanging currency in the future.

23 Covered interest parity is a financial principle that helps to determine forward exchange rates. Under this condition, the difference in interest rates between two countries should be equal to the difference between the current exchange rate and the forward exchange rate. So if an investor invests in another country to take advantage of the higher interest rate, the forward rate will be adjusted so that when the investor converts the earnings back to his home currency, he will receive no more money than if he had invested in his home country.
Figures are from a 2015 analysis and do not reflect current market rates.

24 Persaud, A., 2023. Unblocking the Green Transformation in Developing Countries with a Partial Foreign Exchange Guarantee. Available at: https://www.climatepolicyinitiative.org/wp-content/uploads/2023/06/An-FX-Guarantee-Mechanism-for-the-Green-Transformation-in-Developing-Countries.pdf

pricing is beyond the scope of this paper, but it is clear that this pricing reflects both the risks that providers assume in offering the hedge and a return on capital to the providers.

The price of market hedging tools usually fully offsets the lower interest rate available on foreign currency loans for climate projects in EMDEs. For example, a 2015 analysis of clean energy projects in India indicated that hedges for hard currency loans typically cost 600 to 700 basis points, making the hedged cost of the foreign currency loan roughly equivalent to the nominal cost of a local currency loan.[25] Borrowing foreign currency to finance projects in EMDEs can, therefore, be viewed as a way to disaggregate the project's risks. While the overall level of risk remains constant, such disaggregation creates an opening for targeted interventions by public actors to manage currency risk and reduce the effective cost of capital for climate projects.

Commercial markets for currency hedging products are usually concentrated in major financial centers within developed countries. Although many EMDEs have successfully developed onshore debt and equity markets to raise local currency funds, they tend to lack robust markets for currency hedges and other complex financial products. Some analysts believe that the expansion of onshore hedging markets could contribute to financial sector development in EMDEs, thereby, supporting more local currency financing of climate projects over the long term.[26] Conversely, some financial services are only required in a few major centers, making offshore markets complementary to local financial markets. While this paper does not delve into the optimal location for currency hedging markets, it is clear that interim solutions are necessary to manage currency risk, including access to offshore markets.

2.2 COMMERCIAL HEDGING STRATEGIES: ROLLING HEDGE APPROACH

Many commercial banks and large industrial houses with in-house treasury operations use rolling hedges to manage currency risks in markets where long-term hedging options are expensive or limited. This involves periodically renewing short-term hedging instruments to cover the foreign exchange risk for the next phase of longer-term exposure.

Mechanism: Rather than entering into a long-term hedge for a loan's duration at the outset of a project, which can be prohibitively expensive or unavailable, this strategy uses a series of short-term hedges that are renewed or "rolled" over time. For instance, for a 20-year loan, a borrower could enter a 5-year hedge and roll it forward four times. By accepting a tenor exposure mismatch — where the hedge duration does not match the loan duration — the borrower can sometimes reduce the cost of the hedge. Long-term hedges, particularly for over ten years, tend to be significantly more expensive because they price in potential future uncertainties, requiring lenders to maintain more capital and take on additional costs.

Analysis: There is a risk that the cost of hedges will significantly increase each time they are rolled over due to significant exchange rate volatility or depreciation and/or changes in the relative interest rates between the two currencies. This approach also poses liquidity risks, which are pronounced in markets that lack depth where small changes in supply and demand can significantly increase the cost of rolling hedges.

25 Utpal Bhaskar.,2015. India may leverage clean energy fund to hedge foreign loans. Livemint. Available at: https://www.livemint.com/Politics/ZfmQqAhTj0YR6epa7DS53J/India-may-leverage-clean-energy-fund-to-hedge-foreign-loans.html

26 Ilyina, A.,2004. The role of financial derivatives in emerging markets. In Emerging local securities and derivatives markets (Chapter IV). International Monetary Fund. Retrieved from https://www.elibrary.imf.org/display/book/9781589062917/ch04.xml

2.3 EXISTING DFI SOLUTIONS TO ADDRESS CURRENCY RISK

Several development finance institutions (DFIs) have increased their local currency lending, driven in part by local borrowers' requests for such loans to mitigate currency risk. DFIs, including the European Bank for Reconstruction and Development (EBRD), the Inter-American Development Bank (IDB), and the International Finance Corporation (IFC), have provided these loans. For example, the IFC has lent about USD 27 billion in 68 local currencies over the past decade, with local currency lending accounting for about 25% of its annual long-term commitments.[27] Nevertheless, these increases are not sufficient to meet the need for affordable, long-term climate finance in EMDEs.

BACK-TO-BACK FUNDING

Many DFIs lend in local currencies via back-to-back funding. Under this strategy, DFIs borrow funds in the same currency, amount, and tenor as they lend to their clients, or use hedging mechanisms such as swaps to achieve the same effect. This allows the DFIs to eliminate currency risk from their local currency lending, which is often encouraged or required by their risk management frameworks.[28]

Working mechanism: DFIs secure local currency for back-to-back funding directly from local markets or through swaps with institutions such as TCX. This ensures that the terms of the money that MDBs borrow or hedge are aligned with the local currency loans that they then extend to borrowers.

For example, the IFC often uses back-to-back financing with a local market counterpart through its Global Trade Liquidity Program.[29] In some cases, these swaps are sourced from offshore markets, which can provide better depth and pricing.[30]

Analysis: Back-to-back hedging mechanisms have proven insufficient for scaling up local currency lending in EMDEs, primarily due to DFIs' inability to secure the necessary long-term funding in local currencies. While DFIs can match funding needs via local currency borrowing or hedges for short-term lending, long-term local-currency financing is not always available or can be prohibitively expensive in shallow markets, thereby raising interest rates for borrowers. In addition, the operational complexity of back-to-back funding makes it difficult to close loans. As a result, specified loan terms, including maturity, interest rates, and financial covenants, can change during loan origination and may differ from borrowers' preferences[31].

27 The IFC also indirectly helps mitigate currency risks by encouraging local lending in local currency. For example, the IFC uses a range of products—such as Significant Risk Transfers, Unfunded Risk Participations, and Risk Sharing Facilities—to manage credit risk, thereby reducing the risks of local lenders and incentivizing them to increase domestic lending.

28 Christelle Fink; Lankes, H.P.; Sacchetto, C.; June 2023. Mitigating foreign exchange risk in local currency lending in fragile states. Available at https://www.theigc.org/publications/mitigating-foreign-exchange-risk-local-currency-lending-fragile-states.

29 IFC, 2024. Global Trade Liquidity Program. Available at: https://www.ifc.org/en/what-we-do/sector-expertise/financial-institutions/globl-trade/global-trade-liquidity-program

30 CPI interview with IFC representatives, 2024.

31 CPI interview with EBRD, AIIB representatives, July 2024.

TCX HEDGES FOR FRONTIER CURRENCIES

The Currency Exchange Fund (TCX) was established in 2007 by a group of DFIs to provide currency hedging derivatives in frontier markets where commercial providers are unwilling to operate.

Working mechanism: TCX offers non-deliverable currency hedging products for predominantly private sector financing in over 90 frontier market currencies with maturities of up to 25 years. TCX trades with its investors and a wide range of commercial banks. It offers forward contracts and cross-currency swaps to mitigate currency risk for its clients associated with providing loans in USD or EUR with their debt service payments indexed to the local currency exchange rate. The approach is to address currency risk associated with local currency lending through a single specialized institution on a global portfolio basis.

TCX has a capitalization of approximately USD 1.5 billion, supported by the European Commission, five governments and a range of MDBs and DFIs. It is currently expanding its coverage to include public-sector financing.

Analysis: TCX seeks to support the creation of currency markets by using its balance sheet to pool, diversify, and transform risk across maturities and volumes. An analysis of approximately 6,000 hedging transactions in mostly low-income countries over 15 years shows that TCX has an average annual return of 1.6%, demonstrating a history of sustainable risk diversification and sound pricing strategies. In addition, TCX has experienced significant growth in transaction volume, reaching USD 2.5 billion in 2023, and has begun to secure additional capital. It has also partnered with the European Commission to improve the affordability of its FX hedging services. It has taken initial steps to develop deliverable products with partners including MIGA and Frontclear. Despite its growth, TCX cannot yet support the large volume of loans that DFIs are seeking to distribute in frontier market currencies.

EBRD'S SME LOCAL CURRENCY LENDING PROGRAM

The EBRD uses a range of mechanisms to support local currency financing in its countries of operation. These include cross-currency swaps, FX swaps, bonds, and direct borrowing from local financial institutions. Where possible, it also seeks to move away from the traditional MDB back-to-back funding approach. Furthermore, the EBRD has a broader approach to currency risk, which includes building local currency liquidity pools and policy support for developing local financial markets. This approach is described in detail in section 2.4 below as the basis for a comprehensive onshore DFI hedging platform.

One notable EBRD effort to support local currency lending is a donor-supported program aimed at reducing lending margins for small and medium-sized enterprises (SMEs) in selected countries[32] that are committed to developing their local currency markets since 2017[33].

Working mechanism: As an offshore institution, the EBRD tends to charge higher credit margins to account for country risk where the loan is made. To align its pricing of local currency loans with that of local banks, the EBRD works with a donor fund that provides a first-loss guarantee.

32 Countries include Armenia, Georgia, the Kyrgyz Republic, Moldova, Mongolia, Serbia, Tajikistan, Tunisia and Ukraine
33 EBRD, 2024. SME Local Currency Programmes. Available at: https://www.ebrd.com/what-we-do/sectors-and-topics/sme-local-currency-programmes.html

This allows the EBRD to reduce its credit margins for SMEs while ensuring that its all-in borrowing rates do not undercut local banks.

Contributions from various donors support the SME local currency lending program, which, as of 2023, totaled USD 76.8 million for risk sharing.[34] Loans are made exclusively to SMEs in EBRD countries and are conditional on these countries' commitments to support policies that promote the development of their domestic capital markets.

Analysis: The EBRD's SME local currency lending program can foster economic development by increasing SMEs access to local currency loans. This enables them to invest and grow their businesses without the burden of currency risk. In addition, the use of donor funds as a first-loss credit guarantee may be a particularly effective way of using scarce concessional resources because it can leverage private investment, multiplying the impact of the initial funding.

By seeking to maintain parity with all-in lending rates from local banks, the program avoids undercutting local institutions and inhibiting local market development, but on the other hand may not contribute to reducing the cost of capital for climate-related projects in target countries.

Additionally, the program's dependence on donor support in the case that funds are reduced due to borrower defaults may make it less sustainable in the long run. This concern has not materialized to date as repaid loans have effectively been reallocated to finance new projects, meaning that the donor funds have been minimally used so far. In addition, the program is designed as a temporary solution to help SMEs access local currency financing until host countries strengthen their domestic capital markets. As the development of local markets takes time, the fund may be needed for several years to come.

2.4 INNOVATIVE CURRENCY HEDGING MODELS

In addition to the established models above, CPI has also analyzed five innovative solutions to address currency risk, lower the cost of hedging instruments, or lower the cost of local currency lending that have been part of the international financial architecture reform conversations. Each of these solutions, either at the stage of proposal or early implementation, aims to overcome one or more downsides of the commercial hedging mechanisms. We outline each approach with our analysis and suggested areas for further research below, followed by a comparison of all the proposals covered.

The five proposals are:

- A donor-funded guarantee facility to be established by TCX in addition to its existing offerings
- Eco Invest Brasil, a partnership between the Brazilian Government and the IDB.
- An onshore DFI hedging platform to support local currency lending.
- An MDB local currency transfer model, developed by FSD Africa.
- An FX Hedging Facility in India, developed through the Global Innovation Lab for Climate Finance.

34 These include the ETC Multi-Donor Fund, including the US Treasury, SECO of Switzerland, Japan, and the EBRD Shareholder Special Fund.

TCX DONOR-FUNDED GUARANTEE FACILITY

TCX is seeking to establish a partial donor-funded guarantee facility to improve the affordability of its hedging products.[35]

Origin and status	Having piloted this blending platform with the support of the European Fund for Sustainable Development, TCX is in discussions with donors to expand it, with the goal of facilitating up to USD 10 billion for climate-related projects.
Mechanism and funding	A donor fund is used to guarantee TCX a return of 1.6% on a portfolio of supported hedges. The set return allows TCX to significantly reduce its uncertainty premium for supported hedges, leading to an overall cost to clients that is well below TCX's standard, risk-reflective rates.
Climate inclusion	Focused on projects that contribute to the Sustainable Development Goals (SDGs), including climate projects.
Contribution to local capital markets	TCX engages with market participants to support liquidity in local markets and with local authorities to build debt management capacity.
Financial sustainability	The facility relies on donor funding to reduce the cost of hedges for clients. Over the long term, however, TCX hopes that economic and financial development in target countries, along with capacity building and positive feedback effects on macroeconomic policies, will naturally reduce the need for donor subsidies.
Investment pipeline	With a long track record of managing currency risk transactions and supporting green projects, TCX is well-positioned to identify and develop a pipeline of investable mitigation and adaptation projects.
Speed/scale of Implementation	Donor capital would allow the project to ramp up quickly, building on TCX's existing portfolio.

ANALYSIS

The TCX guarantee facility aims to facilitate significant affordable private capital for climate projects in EMDEs by reducing currency risk premia. TCX's small-scale pilot demonstrated potential for expansion, with a focus on climate-related initiatives.

Reliance on donor funds would not allow the facility to be a permanent solution, but it could be implemented at scale in the short term. Financial viability could be reduced if significant losses were to be suffered early on, which could create negative donor perception and reduce their support. If this scenario can be avoided, the growth of currency risk markets should eventually improve liquidity and crowd in private risk capital, thus lowering hedging costs.

Areas for further research

Short-term: While TCX has a strong track record, more information and data are required to assess the effectiveness of its piloted price-sharing mechanism. In addition, information on how TCX intends to ringfence the facility on its balance sheet and how the subsidy will operate vis-à-vis market rates is not currently public.

Long-term: More research could be conducted on the facility's long-term sustainability, particularly the expected volume and duration of donor support and its potential scalability to additional geographies beyond TCX's initial priority markets.

35 TCX. 2023. Scaling Up Currency Risk Hedging for Low and Lower Middle-Income Countries. Climate Policy Initiative. Available at: https://www.climatepolicyinitiative.org/wp-content/uploads/2023/09/TCX-Proposal-for-Mitigating-FX-Risk.pdf

ECO INVEST BRASIL PARTNERSHIP BETWEEN THE BRAZILIAN GOVERNMENT AND IDB

Eco Invest Brasil is a program of the Brazilian government and the IDB that includes a long-term FX liquidity component.

Origin and status	The program was launched in 2024 and is currently operational. It aims to facilitate currency hedging to support the mobilization of private capital for climate projects in Brazil.
Mechanism and funding	This program focuses on mitigating currency risk for climate projects that are able to increase their local-currency revenue in line with general inflation following a depreciation of the local currency. Such project are encouraged to use short-term currency hedges availalbe from local financial institutions in Brazil or self-finance a sinking fund to hedge regular fluctuations in the Brazilian real exchange rate. To mitigate the risk of large depreciations of the real exchange rate, the IDB provides a hard-currency credit line (intermediated by the Brazilian government) to allow these projects to service foreign-currency debt. Draws upon this credit line would be repaid over the short- or medium-term as Brazil's real exchange rate appreciates again, and project increase their revenues in line with general inflation.
Climate inclusion	Targets climate-relevant projects with the ability to increase revenues in line with inflation and is housed under the Brazilian National Climate Fund.
Contribution to local capital markets	Encourages use of short-term currency hedges provided by local financial institutions.
Financial sustainability	Projects fund their own risk management by increasing their prices in line with inflation, promoting financial viability over time.
Investment pipeline	The IDB and the Brazilian government are likely to have an existing pipeline of investment-ready climate projects.
Speed/scale of Implementation	The IDB-supported credit line will allow for a rapid response to currency fluctuations. However, wider application and scaling up will depend on further evaluation of the model and its applicability to other market conditions.

ANALYSIS

This innovative model for managing currency risk is based on the observation by its designers that while nominal exchange rates in emerging markets tend to depreciate against hard currencies over time, real exchange rates—the exchange rate adjusted for inflation —tend to be much more stable, particularly in countries with strong macroeconomic policies and institutions.[36] This suggests that foreign currency-funded projects in these countries may be less vulnerable to currency risk over the long term if they can increase their prices (and revenues) in line with general inflation, thereby offsetting increased costs of foreign currency debt following a period of depreciation.

Nevertheless, a project's ability to increase prices over time does not solve the challenge of making scheduled payments on foreign currency debt if those payments are due shortly after a bout of nominal depreciation. To address this liquidity challenge, the facility's designers note that in countries with strong macroeconomic policies, real exchange rates tend to fluctuate above and below a stable trend line, in short-term cycles. Because these cycles are relatively short, local financial institutions in emerging markets may be able to hedge projects' currency risks at a

36 Persaud, A., 2023. Unblocking the Green Transformation in Developing Countries with a Partial Foreign Exchange Guarantee. Available at: https://www.climatepolicyinitiative.org/wp-content/uploads/2023/06/An-FX-Guarantee-Mechanism-for-the-Green-Transformation-in-Developing-Countries.pdf

reasonable cost. A project with foreign currency debt may also be able to manage this short-term risk by making foreign currency payments into a sinking fund when the country's real exchange rate appreciates and draw upon this when the local currency depreciates.

The Eco Invest Brasil program designers also acknowledge that emerging markets occasionally face larger and sharper bouts of real depreciation, which are often correlated with cycles in global financial markets. To help manage this tail component of currency risk, the Eco Invest Brasil facility has established a credit line from the IDB, which will provide affordable, short- or medium-term hard currency loans to climate-relevant projects in Brazil (intermediated by the Brazilian government) during periods of severe depreciation. The proceeds from these loans will allow the projects to meet their obligations on foreign-currency debt, and the borrowers will repay the IDB as the country's real exchange rate recovers in subsequent years. Accordingly, this facility aims to use the MDB's ability to provide counter-cyclical financing to reduce the cost of managing currency risk, while ensuring that the projects themselves pay for the operations through their ability to raise prices in line with inflation.

While this presents an innovative and promising model for mitigating currency risk in major EMDEs beyond Brazil, some aspects should be analyzed in greater detail as MDBs consider scaling it up. The fund's long-term financial sustainability is yet to be tested.

Areas for further research

Additional analysis of real exchange rate dynamics across a range of major EMDEs would enhance understanding of the risks assumed under this model. While project sponsors may be able to hedge short-term cycles in the real exchange rate with local financial institutions, rolling such hedges during periods of depreciation could be expensive. Similarly, a hard currency sinking fund might be depleted after multiple periods of depreciation in quick succession. In addition, an MDB providing large credit lines to multiple EMDEs with correlated real exchange rates may face a sizeable contingent exposure to these countries' currencies.

Further analysis is needed to identify additional countries where this model could work. While countries with less developed financial systems and macroeconomic policies may not be ideal candidates, implementing such a facility in just a few large EMDEs could make a meaningful contribution to increasing global climate finance.

The types of projects that could borrow from MDB credit lines should also be examined, as many may face contractual, market, or political challenges in increasing their revenues in line with inflation. This is particularly important given that the mechanism's reliance on projects' ability to raise prices effectively passes the cost of currency depreciation on the projects' end customers.

DELTA: AN ONSHORE DFI HEDGING PLATFORM

Delta is a proposed onshore platform within EMDEs to help DFIs increase local-currency lending by borrowing local currency on a short-term basis, on-lending this to DFIs on a long-term basis, and prudently managing associated liquidity and interest rate risks. The Delta platform would complement offshore platforms such as TCX and would also engage with local public and private stakeholders to support the long-term development of local money markets.

The Delta platform would source local-currency liquidity from multiple sources, with a preference for onshore mechanisms. The platform would borrow greater volumes of local currency than it on-lends to DFIs, with the excess used as a buffer to manage liquidity risk arising from the mismatch between the platform's short-term liabilities and long-term loans to DFIs. Delta's sponsors would collaborate with local stakeholders, including central banks and commercial banks, to improve money markets and monetary operations.[37]

Origin and status	Proposed in 2023 by AIIB, EBRD, IGC, and financial markets development company Frontclear.
Working mechanism and funding	The Delta platform would borrow local currency in EMDEs from multiple sources, including domestic banks, local subsidiaries of international banks, FX swaps, and bond or note issuances, on a relatively short-term basis. The bulk of this local-currency liquidity would be lent or swapped to DFIs over longer terms, allowing the DFIs to fund their local currency loans on a back-to-back basis. However, the platform would retain a local currency liquidity pool (invested in high-quality liquid assets such as government securities, and short-dated FX swaps), which could be used to repay the platform's borrowings if they can not be rolled over at a reasonable cost due to market volatility. In this manner, the Delta platform aims to absorb and manage currency risk on behalf of DFIs, allowing them to increase local-currency lending. The platform would be capitalized with equity investments from participating DFIs, as well as other donor funds where available.
Climate inclusion	While there is no specific climate focus, the Delta proposal is inspired by the global need for increased climate finance. The platform could be used by participating DFIs to implement their Paris-alignment plans in a sustainable manner.
Contribution to local capital markets	A key element of this proposal is to support the development of local money and financial markets and engage in related policy dialogues. In addition to technical assistance and policy engagement, the platform's operations as a borrower and lender of local currency could contribute to local market depth. Success would depend on the interest of local banks and the commitments of country authorities to improve the functioning of local markets.
Financial sustainability	The platform is intended to be financially sustainable, without subsidies other than its initial capital. It would generate income through a positive margin between the cost of its local-currency borrowings and its loans to participating DFIs. Financial sustainability would be underpinned by the fact that onshore local-currency liquidity is generally cheaper and more predictable than offshore alternatives, and by prudent risk management and adequate capitalization. EBRD has used a local-currency financing model similar to the Delta platform for the past two decades, which has demonstrated consistent financial sustainability. That said, as a new entity, the platform may be subject to high set-up costs in the face of yet-undetermined demand.
Speed/scale of Implementation	The Delta platform has the potential to scale with DFIs that are active in EMDEs and dedicated to improving their local market functions. However, it would first have to attract donor funding for equity capital. As discussed below, the platform may only be able to operate in EMDEs with relatively advanced financial systems. Overall, however, the Delta proposal is a longer-term endeavor requiring collaboration and a buy-in from public and private stakeholders.

37 CPI interview with AIIB & EBRD representatives, July 2024.

ANALYSIS

The Delta platform has the potential to facilitate increased local-currency lending by DFIs that are not able to absorb currency risk themselves. Additionally, the sponsors' commitment to long-term technical assistance and engagement with local market participants (public and private) may accelerate financial development in the EMDEs where it is active, contributing to the supply of domestic finance for climate action.

However, the platform may need to overcome certain challenges. Since the platform is proposing to absorb currency risk on behalf of DFIs, the quality of its own risk management practices will be critical to maintaining its credit rating at a level that allows DFIs to transact with it. In particular, the platform will need to actively manage both the sources of its local-currency funding and the liquid assets in which it invests its loss-absorbing liquidity pool, under potentially volatile market conditions; this may require substantial staff resources given that dynamics are likely to be different in each market in which the platform operates.

Additionally, the platform's need to source substantial quantities of local-currency liquidity and place such liquidity in high-quality, short-term assets may constrain its operations in EMDEs with less developed financial sectors. This is not a significant flaw in the proposal given the large climate finance needs in countries that could host the Delta platform but it does highlight the need for currency risk solutions for less-developed markets as well. Finally, if the platform absorbs large quantities of local-currency liquidity in the markets where it operates, it may end up in competition with domestic public borrowing, potentially driving up costs for the local government—although this concern may not apply in markets with excess liquidity and an inadequate supply of investable assets.[38]

Areas for further research

Short-term: To begin operations, the Delta sponsors will need to identify the initial EMDEs in which the platform could operate and assess the size of the demand for onshore hedges in these markets. Additionally, further research is needed on appropriate risk management practices for the platform, including on the sizing of loss-absorbing liquidity pool and its investment criteria, as well as the minimum capital levels required.

Long-term: Over the long-term, the platform's sponsors would need to identify appropriate plans and policies to support financial development in the markets where it operates, including the amount of local-currency liquidity the platform could absorb without causing stress in the local market. Finally, Further research is needed to explore how the platform could operate effectively in countries with underdeveloped money markets, exploring alternative strategies for sourcing liquidity and investing in safe, short-term assets.

38 CPI discussions with AIIB & EBRD representatives, July 2024.

FSD AFRICA: MDB PORTFOLIO TRANSFER

FSD Africa's proposed solution[39] aims to test the potential for transferring MDB loan portfolios to local investors, freeing up MDB capital for new lending and potentially supporting local currency financing in targeted emerging economies.[40]

Origin and status	This solution proposed by Kenya-based non-profit development organization FSD Africa was a winner of the 2023 MDB Challenge Fund. A pilot project is being explored to assess potential opportunities and challenges for implementation. A consultation has revealed strong interest in the proposed investment structure among domestic investors in selected countries.
Working mechanism and funding	This proposal explores the potential to transfer MDB-financed private sector loan portfolios to local institutional investors in EMDEs. Loans targeted for sale to the local investors would be for "brownfield" assets, i.e., assets that are operating and generating cash flow for debt service. The proposal aims to allow MDBs to recycle capital more quickly and increace the pace of loan origination, while helping institutional investors in EMDEs develop by gaining access to new asset classes. Recognizing that MDB loans are usually denominated in hard currencies, FSD Africa is evaluating options to reduce currency risk among private-sector borrowers by enabling the conversion of the MDB loans to local currency as they are transferred. FSD Africa has not settled on a specific mechanism for this conversion, but is considering three approaches: (1) refinancing MDB loans into local currency on the local spot market; (2) helping MDBs issue securiteis in local currency to fund the loans to be tranferred; and (3) helping local institutional investors co-invest, in local currency, with MDBs on a project-by-project basis. Target countries are African markets with deep institutional investor bases, namely Kenya, Nigeria, Ghana, Tanzania, Uganda, Cote d'Ivoire, and Senegal.
Climate inclusion	While climate is not currently a focal point, this proposal aims to allocate funds from refinancing toward investments that include climate projects. It also intends to exclude investments in high-carbon emitting sectors.
Contribution to local capital markets	Supporting the development of local capital markets by facilitating investment in new asset classes by domestic institutional investors is the primary objective of this proposal.
Financial sustainability	This approach can be financially viable, given the involvement of local institutional investors. Success will depend on the economic stability of the markets and actors involved.
Project pipeline	The model has not yet been piloted, but initiating the pilot phase would be critical to determining the future direction of the model and advancing the development pipeline toward larger scale deployment.
Speed/scale of implementation	Adjusting MDB operating models and securitizing loan portfolios would take time and effort, but presents a potential long-term solution that supports the development of local financial markets.

ANALYSIS

Offering local financial institutions (e.g., pension funds) the opportunity to invest in MDB-created assets could gradually shift MDB portfolios from originate-to-hold to an originate-to-distribute model. Under the existing model, MDBs hold loans or assets on their books until maturity, which ties up their capital, limits their capacity for new lending, and causes them to retain all the risks associated with these assets. In contrast, the originate-to-distribute model would enable MDBs to distribute their loans and assets to other investors, freeing up capital to finance more projects. By enabling local institutional investors to participate in financing climate and development projects in EMDEs, this proposal could also contribute to the growth and development of financial markets in these countries.

39 The MDB Challenge Fund is a grant-making initiative that supports proposals designed to increase MDBs' lending capacity and advance reforms that remove barriers to financing. See: https://mdbchallenge.com/ (Accessed 7 December 2023).
40 FSD Africa. 2023. Inception Report: Local Currency Solution for Multilateral Development Bank Portfolio Transfer.

However, the specific mechanism that FSD Africa will employ to convert the hard currency-denominated MDB loans to local currency remains unclear. Without this step, the proposal may contribute to local financial market development in EMDEs, but it would not significantly reduce currency risk for climate-related projects in these countries. Furthermore, the three approaches to addressing currency mismatch discussed in FSD Africa's feasibility study each present challenges, including potentially pressuring foreign exchange reserves in host countries and difficulties in issuing long-term securities in local currency.

Areas for further research

Short-term: Further research should focus on identifying key implementation challenges, particularly regarding the mechanism for converting MDB loans into local currency and the practicalities of the portfolio transfer process (including the treatment of MDBs' preferred creditor status). It will be important to identify which MDBs are open to adopting an originate-to-distribute approach. Research should explore whether adjustments are needed to MDBs' operating models to support this approach. Another key area of focus is the need for further risk mitigation or risk-sharing strategies to attract local investors at scale.

Long-term: Research should aim to assess the potential for replicating this model in other markets and with other MDBs, particularly outside Africa. It would be relevant to assess whether there are any persistent challenges associated with the originate-to-distribute model that could affect sustainability and scalability.

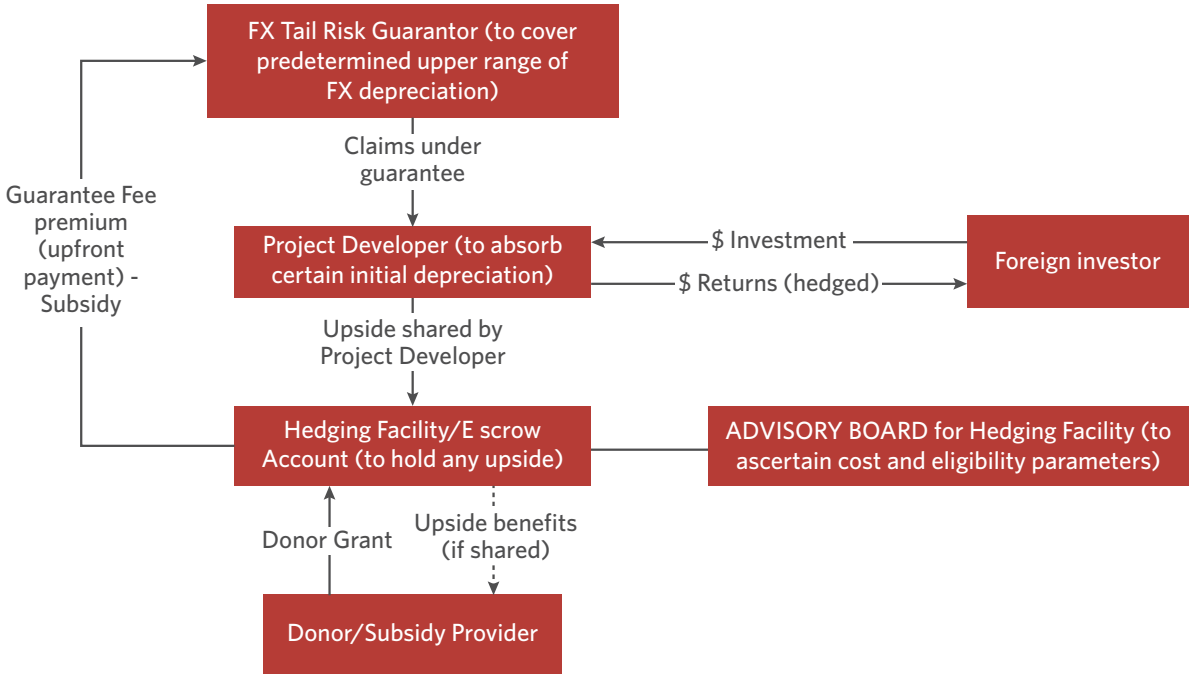
CPI: FX HEDGING FACILITY

The FX Hedging Facility was proposed by CPI[41] and developed under the India Innovation Lab for Green Finance[42] to manage currency risk for renewable energy projects in India.[43]

Origin and status	Proposed by CPI in 2015 and developed under the India Innovation Lab for Green Finance in 2016. However, the mechanism has not been implemented due to regulatory constraints and market conditions in India.
Working mechanism and funding	By dividing depreciation risk into tranches, the FX Hedging Facility would allocate specific ranges of currency fluctuation to different stakeholders (See Figure 2). The proposed financial structure includes three stages: • **Initial establishment with donor support:** Public grants would initialize the hedging facility and fund the payment of the currency tail risk guarantee. • **From 0% to 4.5%**: Project entities/investors would commit to a fixed annual payment to the hedging facility to cover the risk of currency depreciation of up to 4.5% per annum. If depreciation were less than 4.5% (e.g., 3%), then the upside (1.5%) would be transferred to the hedging facility as risk capital. This could be returned to the donor or the project developers/investors after the tenor of the debt. • **From 4.5% to 99.7%:** The FX Facility would use the upside of the annual payment from the project entities/investors to pay an underwriter to cover currency risks from 4.5% up to a defined cap (typically set at a 99.7% confidence level). • **Beyond 99.7%:** Public grants from donors will fund extreme tail risks associated with currency depreciation.
Climate inclusion	Designed to support investors/developers in the renewable energy sector.
Contribution to local capital markets	The facility could support the local market by working with domestic financial institutions, providing competitive, market-based rates. This requires significant buy-in from local actors including local developers and hedging facilities
Financial sustainability	The facility has the potential for financial sustainability as it relies on annual payments from project developers and private entities. However, the model still depends on donor funds to manage extreme tail risks. Additionally, if the actual benefits are less than expected (no upside), there is also a risk that these payments may not be made
Project pipeline	The proposal is not in discussion to be implemented. It would rely on existing market appetite for renewable energy project funding in any future target country.
Speed/scale of implementation	While the instrument has been developed, it would need to find the right market for successful implementation.

41 Climate Policy Initiative, 2015. FX Hedging Facility. Available at: https://www.climatepolicyinitiative.org/fx-hedging-facility/
42 Ibid
43 Ibid

Figure 2. Transaction Structure of the FX Hedging Facility



ANALYSIS

The FX Hedging Facility could attract foreign investors to a target country's clean energy sector by mitigating currency risk. This may particularly benefit small- and medium-scale renewable energy projects that otherwise struggle to access foreign capital due to their size and the high costs of commercial FX hedging instruments.

The facility is also designed to provide an upside benefit to project developers/investors, allowing for efficient use of public grants. In commercial swaps, any upside benefit (i.e., if the currency depreciation is lower than the forward exchange rate) is retained by the swap provider. In contrast, the proposed structure would see this transferred to donors or users. This may reduce the cost of currency hedging and the funds required from donors.

The "tranche" strategy allows for relatively affordable rates. Having renewable energy developers absorb the first 4.5% of currency loss can result in lower-than-average commercial hedging costs. While the 4.5% is still significant, it is more affordable than typical hedging instruments, which can add 6-7% to the total cost of capital. It is also possible that increased donor funding could yield even more favorable rates.

The FX Hedging Facility has been incubated with CPI's Global Innovation Lab for Climate Finance but has not been tested to date due to regulatory constraints and market-related challenges in India. CPI India analysis suggests that the Indian market lacks the required depth for these derivatives, given that partial hedging instruments such as the tranche system are not common in the country, but the instrument could be piloted in the right market if it had a champion.

Areas for further research

Short-term: Understanding why the proposed instrument did not secure government support in India and exploring whether its organization or description could be simplified could provide insight into its viability in other markets. It may be worth exploring whether MDBs and DFIs could develop and scale similar facilities using in-house resources.

Long-term: Research should focus on determining the level of financial market maturity required to implement the FX Hedging Facility, and on identifying what support is necessary for India (or other target markets) to achieve this.

2.5 COMPARATIVE ANALYSIS

The common, MDB and innovative approaches presented above have different strengths and weaknesses. The table below provides a snapshot of these approaches based on publicly available information as of September 2023.

Table 1. Comparison of proposed currency hedging solutions

	Common approaches		DFI approaches		Innovative approaches				
	Commercial banks' rolling hedges	**TCX**	**DFI back-to-back funding**	**EBRD SME local currency lending**	**TCX donor facility**	**Eco Invest Brasil**	**Onshore DFI hedging platform (Delta)**	**FSD Africa**	**CPI FX Facility**
Status	Implemented	Implemented	Implemented	Implemented	Piloted	Implemented	Proposal	Proposal	Proposal
Contribution to local capital market development	None	Capacity building	None	Capacity building	Building market liquidity and capacity building for public debt management	Working with local FIs	Policy dialogue, capacity building, working with local FIs	Working with local institutional investors	Working with local institutions
Market used	Offshore	Offshore	Offshore	Offshore	Offshore	Onshore	Onshore	Onshore	Onshore
Climate focus	No	No	No	No	Yes	Yes	No (but investments may be aligned with DFI climate strategy)	No (with potential to do so)	Yes
Project pipeline	Yes	Yes	Yes	Yes	Yes	Possibly[44]	Yes	No	Possibly[45]
Below-market rates	No	No	No	Yes	Yes	Yes, cost paid by end customers	No (but client DFIs may offer below-market rates)	No	Yes (only for >4.5% depreciation)

44 There is likely to be a ready pipeline of climate investment projects.
45 The proposal will depend on the market interest in renewable energy financing in potential target countries.

	Common approaches		DFI approaches		Innovative approaches				
	Commercial banks' rolling hedges	**TCX**	**DFI back-to-back funding**	**EBRD SME local currency lending**	**TCX donor facility**	**Eco Invest Brasil**	**Onshore DFI hedging platform (Delta)**	**FSD Africa**	**CPI FX Facility**
Includes subsidies	No	No	No	Yes	Yes	No	No	No	Yes
Financial sustainabiliy	Possibly	Yes	No	No	No[46]	Possibly	Yes[47]	Yes	Possibly[48]
Donor funded	No	No	No	Yes	Yes, on a limited basis	For tail-end risks only	No (other than initial capital investment)	No	Seed funding and tail-end risks
Has a host institution	Yes	Yes	Yes	Yes	Yes	Yes	TBC[49]	Yes	No
Suitable for quick implementation	Already implemented at scale				Yes	In certain markets	No	No	Not in target market
Easy to scale/ replicate					Yes	Challenging in markets other than Brazil	Possibly, but setup may take time in each market	Adjusting MDB operations would take time	Potentially, in the right market

46 The facility may be able to phase down subsidies over the long term as recipient countries strengthen macroeconomic policies.
47 The platform aims to be financially sustainable without subsidies beyond initial equity investments from DFIs.
48 The facility could be financially sustainable as it draws annual payments from private entities, but it still requires donor funds to cover extreme risks. There's also a risk of non-payment if the expected benefits do not materialize.
49 While the instrument has sponsoring institutions, no announcement of a host institution has been made.

3. CONCLUSION AND RECOMMENDATIONS

Overcoming risks associated with hard currency investment can help scale up international private finance for EMDEs. This is an essential short-term measure, given that such countries cannot currently secure sufficient finance from local capital markets for their climate action.

Analysis of the five innovative proposals to mitigate currency risk for climate finance in EMDEs in this report yielded several key takeaways:

1. **Concessional capital will likely be necessary in the short term to make currency risk hedges affordable in EMDEs.**

Currency risk mitigation proposals that focus on the affordability of currency risk tools largely rely on concessional seed funding to buy down costs and/or absorb potential tail risks. This can address the disconnect between the market rates for hedging instruments and what stakeholders in EMDEs are capable of paying, particularly for long-term climate projects.

This reliance on concessional capital may pose an issue for the long-term sustainability of proposed solutions. While some intend to use a diversified currency portfolio to mitigate risks in the long term, any occurrence of extreme tail risks in the short term could erase donor capital. Regular replenishments may also be needed to keep instrument prices low and/or to support local market capacity building.

It is important to recognize that while these solutions are essential in the short term, concessional financing should complement, rather than compete with, local financial products and institutions, to avoid hindering the development of private markets.

2. **Currency risk solutions that do not have a climate focus can be implemented in line with funders' Paris alignment strategy to ensure climate-friendly investment.**

Three of the five proposed solutions have climate considerations as their main investment focus (TCX donor facility, Eco Invest Brazil and CPI FX Facility), and aim to address the need for affordable local currency funding for climate projects. The remaining two solutions (Delta platform and FSD Africa) could be implemented in a way that aligns with participating DFIs/MDBs' Paris alignment strategy.

The three climate-focused proposals target high-emitting emerging markets where there are pipelines of climate projects and local currency may be easier to access. This highlights the discrepancy between emerging markets, such as Brazil and India, and least developed countries that historically are a) low emitters and b) frontier currencies that are more challenging to provide and hedge for. There is still a significant need for affordable local currency lending in least-developed countries, which are often already left behind in climate finance.[50]

50 Climate Policy Initiative, 2023. Global Landscape of Climate Finance 2023. Available at: https://www.climatepolicyinitiative.org/publication/global-landscape-of-climate-finance-2023/

3. **As well as addressing currency risk in the short term, solutions also seek to deepen domestic markets to make local lending a more viable option in the long-term.**

Most of the proposed solutions and some current DFI approaches aim to contribute to local market development. In some cases, such as FSD Africa's proposal, this involves the direct involvement of local institutional investors. In others, such as TCX's current offerings and proposed donor facility, the financial institution has dedicated resources to support knowledge on local currency lending and help institutions access local currency loans. The Delta proposal, in addition to building local currency liquidity pools, also focuses on policy and capacity building to support the growth of domestic financial markets.

RECOMMENDED AREAS FOR ACTION

There is urgency to implement and scale up currency risk mitigation solutions, such as the innovative proposals presented in this report, with a focus on evaluating their effectiveness in different contexts. This can catalyze significant capital to meet climate goals in EMDEs by supporting investments in local currencies and making hedging instruments for climate-related projects more accessible and affordable.

Achieving this will require collaboration among donors, MDBs and EMDE governments. We outline recommended actions by actor below.

These channels can effectively deploy capital to make hedging instruments more affordable and also reduce overall investment risk, thereby catalyzing capital mobilization.

Providers of concessional capital (Donor governments, philanthropies, DFIs, MDBs) can fund mechanisms that improve the availability and affordability of local currency loans and currency risk management solutions to reduce hedging prices or absorb potential tail-end risks for climate projects in EMDEs.

- Concessional capital providers should consider all of the innovative proposals discussed in this report: TCX donor facility, Eco Invest Brazil, Delta platform, FSD Africa and the CPI FX Facility.

MDBs can expand local currency lending through innovative solutions and continue supporting local capital markets in EMDEs. This includes:

- Expanding local currency lending, including by considering more flexible risk assessments that allow engagement with a wider range of domestic financial institutions.
- Scaling up offshore hedging mechanisms, such as TCX, and utilization of secondary markets for distributing currency risk, as well expanding the availability of transfer & convertibility risk cover.[51]
- Exploring which markets that they operate in could adopt models similar to Eco Invest Brazil.
- Piloting FSD Africa's portfolio transfer proposal in EMDEs to test and refine the model in different market conditions.

51 Report of the Independent Expert Group, 2023. The Triple Agenda: A roadmap for better, bolder and bigger MDBs volume 2. Available at: https://icrier.org/g20-ieg/pdf/The_Triple_Agenda_G20-IEG_Report_Volume2_2023.pdf

- Further developing the Delta DFI onshore local currency.
- Providing targeted technical assistance and capacity building for the development of local financial markets in EMDEs.

EMDE Governments can take action to make local currency climate finance more widely available in the longer term by strengthening domestic financial markets. This includes:

- Intensify efforts to establish sound macroeconomic policies and regulatory frameworks that support the growth and sophistication of the domestic financial sector, and to improve public debt management capacity.
- Implement country-sector platforms to strategically align financial sector development with climate goals and ensure coordinated progress across government and the private sector.
- Prioritize regulatory reforms that enable blended finance structures and support the development of secondary markets for climate-related financial assets.

Research institutions can analyze ways to improve access and affordability of hedging instruments to effectively scale international private financial flows.

In relation to MDBs/DFIs, research could explore:

- How MDBs and DFIs can expand their local currency lending and promote risk-sharing instruments that limit the impact of currency depreciation on borrowers.
- Effective blended finance approaches, including guarantees and concessional capital, to improve the affordability of hedging instruments and reduce investor risks.
- Which currency risk mitigation interventions have been most effective to date, including identifying key challenges and new approaches that could enhance these efforts.

In relation to the private sector, research could explore:

- How to encourage private actors to become more involved in FX risk management solutions. This could include government- or MDB-supported products that effectively manage and spread risk, such as guarantees and risk-sharing schemes.

In relation to EMDE national governments, research could explore:

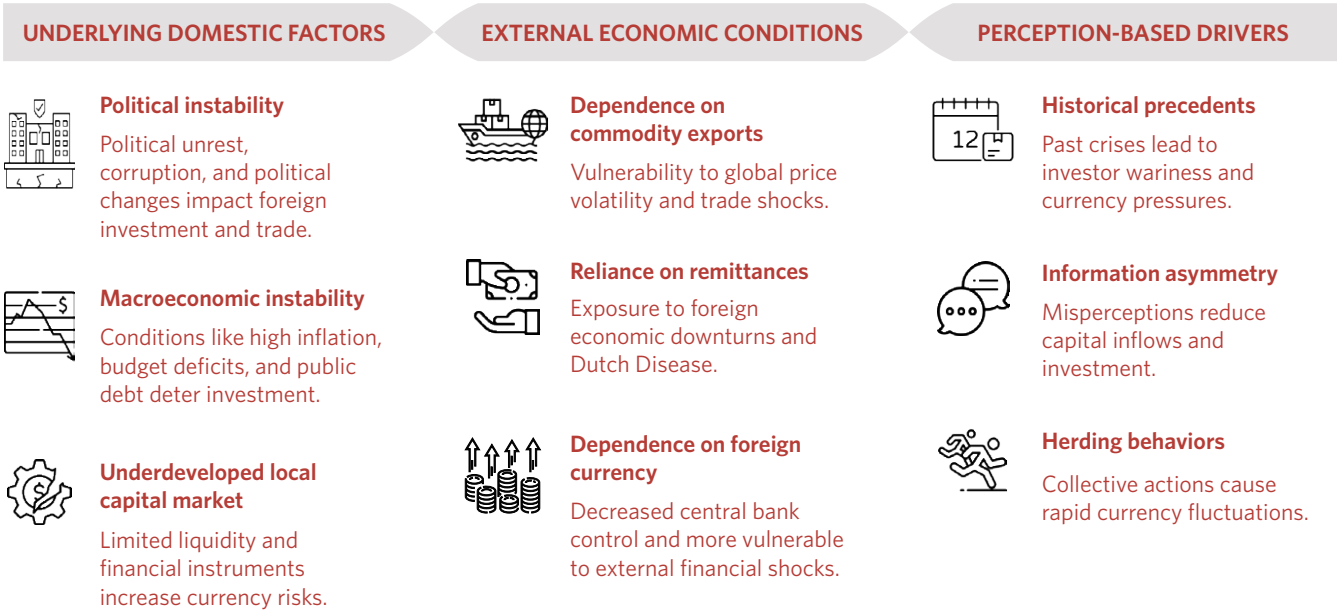
- What national-level policy adjustments are needed to facilitate FX hedging tools. This could provide insights into how governments can create a more conducive environment for such tools to be effective and widely used**.**

APPENDIX

1. REASONS FOR CURRENCY FLUCTUATIONS

Currency values fluctuate due to various interacting factors, including domestic factors and external economic conditions. Market perceptions also play a central role by influencing how investors and traders react to a country's economic and political stability. These factors are outlined in Figure 3 and then further elaborated below.

Figure 3. Reasons for currency fluctuations



DOMESTIC FACTORS

- **Political instability**: Politically unstable countries may experience currency depreciation. Political unrest, corruption, and frequent changes in government can discourage foreign investment and destabilize trade agreements, resulting in reduced demand for the country's currency.
- **Macroeconomic instability**: The absence of stable macroeconomic conditions, often evidenced by persistently high inflation, substantial public debt, and financial sector vulnerability, can discourage foreign investment. Such conditions increase the likelihood of currency depreciation.
- **Underdeveloped local financial markets**: Financial infrastructure in EMDEs is often less diverse and shallower than in developed countries. For example, while developed countries use sophisticated financial instruments to hedge against risks, many EMDEs are still developing basic financial services. This includes access to bank credit, comprehensive

insurance markets, and strong stock and bond market capitalization and turnover.[52] This leaves EMDEs less equipped to deal with economic shocks and currency fluctuations.

EXTERNAL ECONOMIC CONDITIONS

- **Dependence on commodity exports**: Countries that depend on commodity exports for a large portion of their revenues are vulnerable to global price fluctuations. In addition, large foreign revenues can lead to the phenomenon of Dutch Disease,[53] an influx of foreign currency that leads to an appreciation of the local currency, making exports less competitive internationally. Such appreciation can hurt domestic export sectors and increase vulnerability to future currency shocks.
- **Reliance on remittances:** Countries that depend on remittances from their diaspora are exposed to the economic climates of the remitting countries. On the one hand, an economic downturn abroad can reduce remittance inflows, possibly limiting foreign currency availability and depreciating the local currency. On the other hand, large remittance inflows, similar to large revenues from natural resources exports, can lead to the Dutch Disease phenomenon described above.
- **Dependence on foreign currency**: Partial dollarization,[54] in which a country adopts a major foreign currency (often USD) as its primary or secondary monetary tool alongside its local currency, can build confidence but can also create currency risks. These are particularly present in the banking sector when banks borrow or hold deposits in foreign currency (liabilities) but lend in local currency. Moreover, to avoid balance sheet mismatches, banks may transfer currency risks to final borrowers when they lend in foreign currency.[55] In either scenario, if the local currency depreciates against the foreign currency, banks or end-borrowers will find it more difficult to repay foreign currency debts using their local currency earnings. Lastly, partial dollarization can limit a central bank's ability to execute effective monetary policy because it has less influence over the part of the economy that is in foreign currency.[56] This can increase the economy's exposure to currency risks.

Perception-based currency risks in EMDEs: Beyond economic and political factors, perception-based currency risks can significantly influence foreign investment dynamics and currency volatility in EMDEs**.** These can sometimes overshadow a country's underlying economic fundamentals. As a result, investors may demand higher returns to compensate for uncertainties, thereby increasing the cost of investment. Key drivers of perception-based risks include:

- **Historical precedents**: Past financial crises, defaults, or other negative events can shape current perceptions and create lasting wariness of an EMDE's financial stability.[57] Investors may become overly sensitive to news that suggests a repeat of past events, even if current circumstances are different. As a result, investors may be more hesitant to invest or hold the country's currency, leading to selling pressure and potential currency depreciation.[58]

52 Fink C, Lankes HP, and Sacchetto C. 2023. Mitigating foreign exchange risk in local currency lending in fragile states: Review and options.
53 International Monetary Fund. "Dutch Disease: Too much wealth managed unwisely." Finance & Development. https://www.imf.org/en/Publications/fandd/issues/Series/Back-to-Basics/Dutch-Disease.
54 Data on the extent of partial/informal dollarization in EMDE
55 Fink, C., Lankes, H. P., & Sacchetto, C. (2023). Mitigating foreign exchange risk in local currency lending in fragile states: Review and options.
56 Ibid.
57 Kaminsky, G. L., Lizondo, S., & Reinhart, C. M. (1998). "Leading Indicators of Currency Crises". IMF Staff Papers, 45(1), 1-48
58 ibid

- **Information asymmetry**: Investors' unfamiliarity with the unique political and economic circumstances of a given EMDE can heighten risk perceptions.[59] For example, economic challenges in one country may lead investors to perceive neighboring countries as equally risky due to broad regional categorizations, even where their economic situations differ. As a result, investors may become more risk-averse, leading to reduced capital inflows.
- **Herd behavior**: Financial markets are sometimes driven by the collective actions of investors.[60] When prominent investors or institutions withdraw from an EMDE because of perceived risks, this can have a cascading effect, causing others to follow suit regardless of objective economic assessments. Such a reaction in the broader market can lead to rapid and significant currency fluctuations.

2. DIFFERENT TYPES OF CURRENCY RISKS

- **Convertibility risk** is the potential inability to convert a local currency into a foreign currency, particularly major reserve currencies such as the US dollar or Euro, at a market rate due to regulatory restrictions or limited foreign exchange reserves.[61] For example, if an investor wants to convert profits earned in the local currency of a country into US dollars but faces restrictions or prohibitive costs due to government policies or insufficient foreign exchange reserves, they are experiencing convertibility risk.
- **Transfer restriction risk** refers to restrictions on the transfer of converted funds out of a country, which can affect the repatriation of profits and investments[62]. For example, even if an investor successfully converts local profits into US dollars, they might still face restrictions that prevent them from transferring these US dollars out of the country.
- **Liquidity risk** is the risk that there will not be enough of a particular currency available to settle transactions smoothly without significantly affecting the price of the currency.

Convertibility, transfer, and liquidity risks can all pose significant risks to businesses and the economy, affecting their ability to trade or meet foreign debt obligations. Thus, even if a project is financially successful and generates sufficient local currency, the borrower may have difficulty repaying foreign loans if the required currencies, usually dollars, are scarce or difficult to exchange in the country.

3. COST OF CAPITAL ACROSS VARIOUS COUNTRIES

A CPI analysis reveals that while a solar project in the EU might require around 8% rate of return to attract private capital, this figure rises to around 22% in major emitting markets in EMDEs. This difference highlights the significant financial challenges EMDEs face in making such projects viable, largely due to macroeconomic and currency risks. Although the CPI research

59 Persaud, A., 2023. Unblocking the Green Transformation in Developing Countries with a Partial Foreign Exchange Guarantee. Climate Policy Initiative. Available at: https://www.climatepolicyinitiative.org/wp-content/uploads/2023/06/An-FX-Guarantee-Mechanism-for-the-Green-Transformation-in-Developing-Countries.pdf

60 Calvo, G. A., & Mendoza, E. G. (2000). "Rational contagion and the globalization of securities markets". Journal of International Economics, 51(1), 79-113.

61 Greene, J.E. and Isard, P. (2024). "Currency Convertibility and the Transformation of Centrally Planned Economies". [online] International Monetary Fund. Available at: <https://www.elibrary.imf.org/display/book/9781557752147/ch002.xml

62 Ibid

focused on solar energy, this approach could guide risk premiums for various other renewable energy investments.[63]

Table 2. Cost of capital across various countries*

Country	S&P Rating	Climate Investment Risk Premium (CIRP)	Cost of Debt (Climate Project)	Required Rate of Equity Return (Climate Project)
Germany	AAA	1%	2.8%	8.3%
Australia	AAA	3%	5.4%	8.5%
Sweden	AAA	2%	3.4%	9.3%
USA	AA+	2%	5.3%	10.3%
UAE	AA	2%	4.5%	12.6%
Saudi Arabia	A-	6%	9.3%	14.3%
Chile	A	10%	12.1%	14.4%
Indonesia	BBB	9%	9.1%	14.7%
Morocco	BBB-	10%	12.8%	15.9%
India	BBB-	9%	11.4%	17.2%
Vietnam	BB	12%	14.0%	19.4%
Peru	BBB	8%	11.7%	21.3%
Brazil	BB-	14%	7.8%	22.2%
South Africa	BB-	15%	20.3%	25.8%
Ghana	B-	19%	22.7%	28.3%
Tanzania	B	18%	24.1%	29.6%
Nigeria	B+	17%	25.2%	30.8%
Egypt	B	18%	29.5%	35.1%
Uganda	B+	17%	30.2%	35.8%
Mozambique	CCC+	22%	32.8%	38.3%
Tunisia	CCC+	23%	36.5%	42.1%
Sri Lanka	D	16%	38.1%	43.7%
Zambia	CCC-	29%	45.4%	51.0%
Argentina	CCC+	24%	54.1%	59.7%

*Based on data as of January 2023

63 Climate Policy Initiative. (2023). Cost of Capital for Renewable Energy Investments in Developing Economies. Available at: https://www.climatepolicyinitiative.org/publication/cost-of-capital-for-renewable-energy-investments-in-developing-economies/

REFERENCES

Baker, L. and Benoit, P., 2023. *How Project Finance Can Advance the Clean Energy Transition in Developing Countries*. Available at: https://www.oxfordenergy.org/publications/how-project-finance-can-advance-the-clean-energy-transition-in-developing-countries/

Calvo, G. A., & Mendoza, E. G., 2000. *Rational contagion and the globalization of securities markets*. Journal of International Economics, 51(1), 79-113.

Capex, 2024. *Egyptian Pound Forecast*. Retrieved from https://capex.com/en/overview/egyptian-pound-forecast

Cities Climate Finance Leadership Alliance, 2023. *Increasing Subnational Pension Funds' Climate Investments*. Available at: https://citiesclimatefinance.org/publications/increasing-subnational-pension-funds-climate-investments

Climate Policy Initiative, 2015. *FX Hedging Facility*. Available at: https://www.climatepolicyinitiative.org/fx-hedging-facility/

Climate Policy Initiative, 2023. Global Landscape of Climate Finance 2023. Available at: https://www.climatepolicyinitiative.org/publication/global-landscape-of-climate-finance-2023/

Climate Policy Initiative, 2023. *Cost of Capital for Renewable Energy Investments in Developing Economies*. Available at: https://www.climatepolicyinitiative.org/publication/cost-of-capital-for-renewable-energy-investments-in-developing-economies/

EBRD, 2024. *SME Local Currency Programmes*. Available at: https://www.ebrd.com/what-we-do/sectors-and-topics/sme-local-currency-programmes.html

Fink C, Lankes HP, and Sacchetto C., 2023. *Mitigating foreign exchange risk in local currency lending in fragile states: Review and options*.

FSD Africa. 2023. Inception Report: Local Currency Solution for Multilateral Development Bank Portfolio Transfer. https://fsdafrica.org/wp-content/uploads/2024/06/Report-Local-Currency-Solution-for-Multilateral-Development-Bank-Portfolio-Transfer-004.pdf

Greene, J.E. and Isard, P.,2024. *Currency Convertibility and the Transformation of Centrally Planned Economies*. Available at: International Monetary Fund. Available at: https://www.elibrary.imf.org/display/book/9781557752147/ch002.xml

IFC, 2024. *Global Trade Liquidity Program*. Available at: https://www.ifc.org/en/what-we-do/sector-expertise/financial-institutions/globl-trade/global-trade-liquidity-program

Ilyina, A.,2004. *The role of financial derivatives in emerging markets. In Emerging local securities and derivatives markets (Chapter IV).* International Monetary Fund. Retrieved from https://www.elibrary.imf.org/display/book/9781589062917/ch04.xml

IMF, 2011. *G20 Note on Global Prospects and Policy Challenges*. Available at: https://www.imf.org/external/np/g20/pdf/110211.pdf

IMF, 2021. *Guidance Note For Developing Government Local Currency Bond Markets*. Available at: https://www.imf.org/en/Publications/analytical-notes/Issues/2021/03/17/Guidance-Note-For-Developing-Government-Local-Currency-Bond-Markets-50256

IMF, *Dutch Disease: Too much wealth managed unwisely.* Finance & Development. https://www.imf.org/en/Publications/fandd/issues/Series/Back-to-Basics/Dutch-Disease.

Kaminsky, G. L., Lizondo, S., & Reinhart, C. M.,1998. *Leading Indicators of Currency Crises*". IMF Staff Papers, 45(1), 1-48

Nifty Nordic Institute for Finance, Technology, and Sustainability, 2023. *A Multilateral Solution to Hedging Currency Risk in Developing Country Finance.* Retrieved from https://niftys.org/a-multilateral-solution-to-hedging-currency-risk-in-developing-country-finance/.

Persaud, A., 2023. *Unblocking the Green Transformation in Developing Countries with a Partial Foreign Exchange Guarantee*. Climate Policy Initiative. Available at: https://www.climatepolicyinitiative.org/wp-content/uploads/2023/06/An-FX-Guarantee-Mechanism-for-the-Green-Transformation-in-Developing-Countries.pdf

Report of the Independent Expert Group, 2023. The Triple Agenda: A roadmap for better, bolder and bigger MDBs volume 2. Available at: https://icrier.org/g20-ieg/pdf/The_Triple_Agenda_G20-IEG_Report_Volume2_2023.pdf

Schclarek, A. and Xu, J., 2022. *Exchange rate and balance of payment risks in the global development finance*, Journal of International Financial Markets, Institutions and Money, 79, p. 101574

Songwe V, Stern N, and Bhattacharya A., 2022. *Finance for climate action: Scaling up investment for climate and development*. Grantham Research Institute on Climate Change and the Environment, London School of Economics and Political Science: London, https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2022/11/IHLEG-Finance-for-Climate-Action.pdf

TCX, 2023. *Scaling Up Currency Risk Hedging for Low and Lower Middle-Income Countries*. Climate Policy Initiative. Available at: https://www.climatepolicyinitiative.org/wp-content/uploads/2023/09/TCX-Proposal-for-Mitigating-FX-Risk.pdf

U.S. Department of Energy, 2023. *The Life of a Wind Turbine*. Available at: https://windexchange.energy.gov/end-of-service-guide#:~:text=The%20Life%20of%20a%20Wind%20Turbine,-Duration&text=How%20long%20do%20wind%20turbines,to%20last%20for%2030%20years

UNCTAD, 2022. *Climate Change: UN Launches Plan to Make World Weather-Ready*. Available at: https://news.un.org/en/story/2022/12/1131432

Utpal Bhaskar.,2015. *India may leverage clean energy fund to hedge foreign loans*. Livemint. Available at: https://www.livemint.com/Politics/ZfmQqAhTj0YR6epa7DS53J/India-may-leverage-clean-energy-fund-to-hedge-foreign-loans.html

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