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EQUITABLE GROWTH, FINANCE & INSTITUTIONS INSIGHT

Institutional Investors and Sustainable Infrastructure

A Global Review of case studies to finance the infrastructure gap

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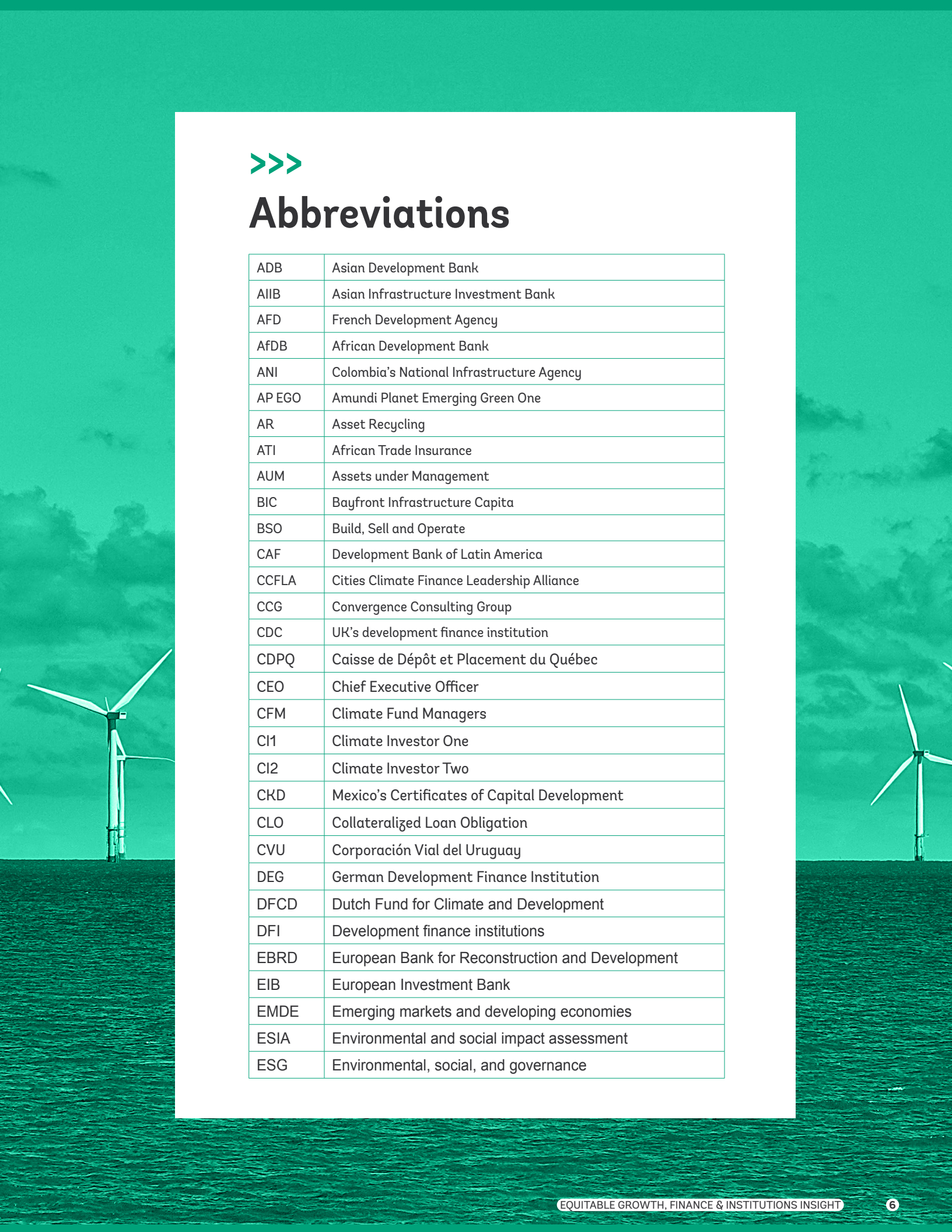
Contents

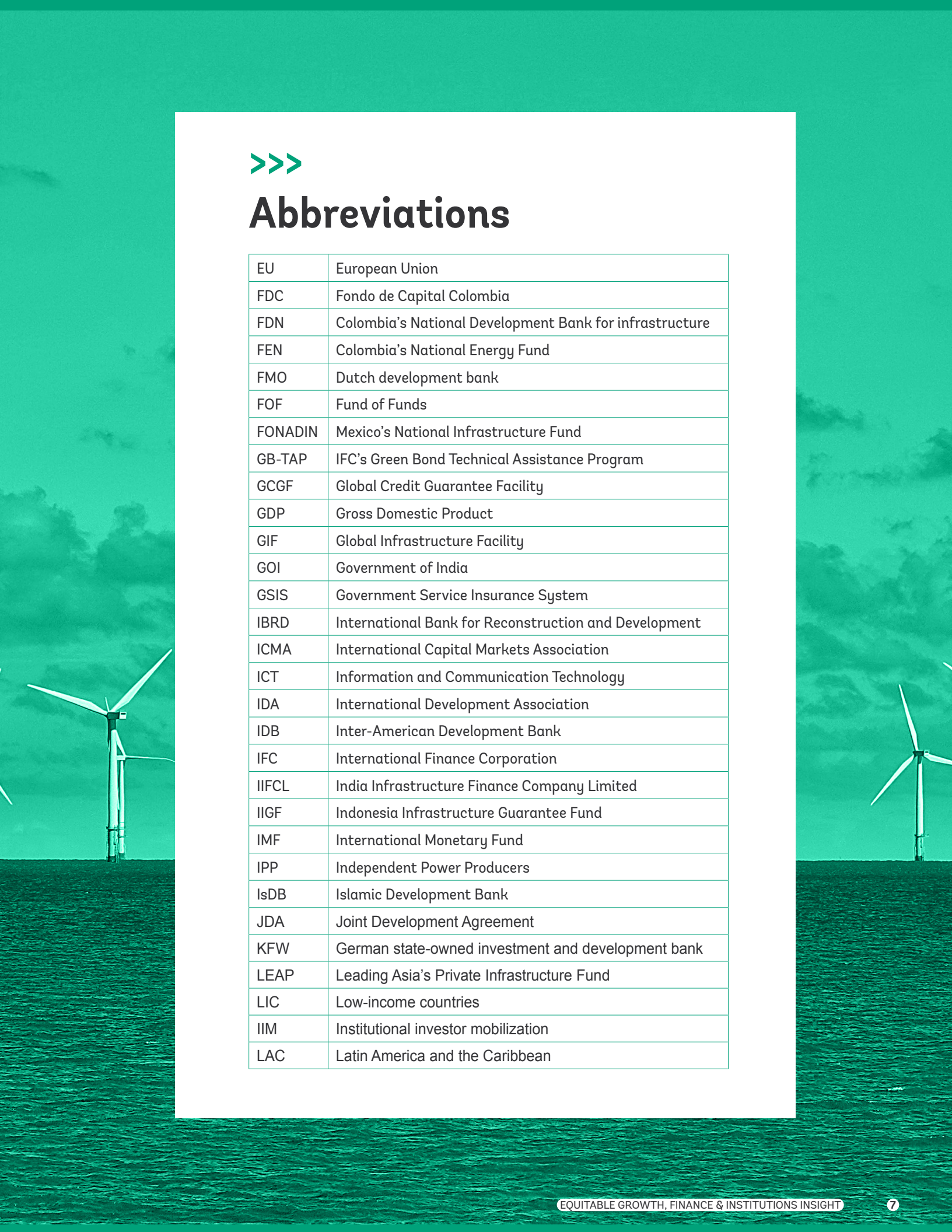
Contents

Contents



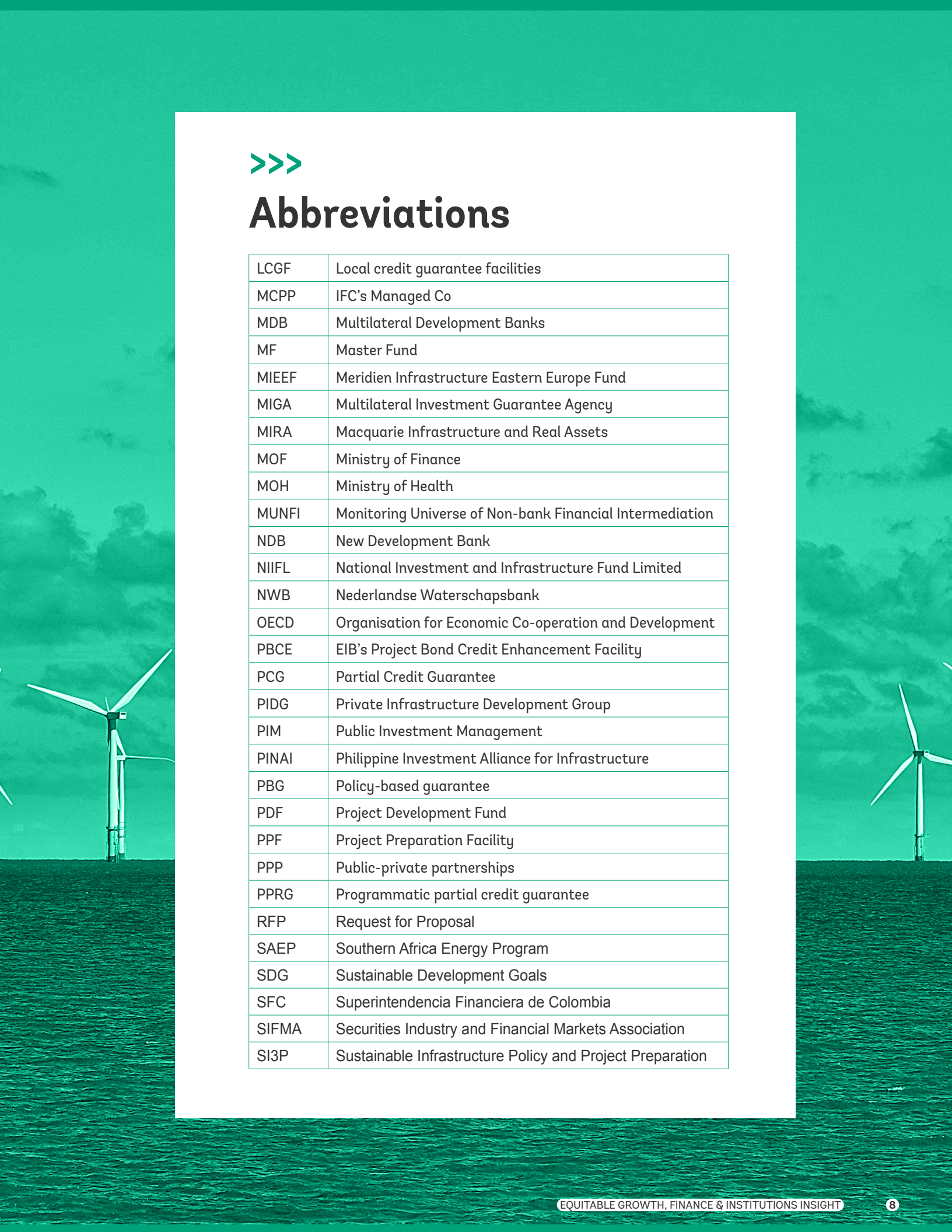
Abbreviations

ADB	Asian Development Bank
AIIB	Asian Infrastructure Investment Bank
AFD	French Development Agency
AfDB	African Development Bank
ANI	Colombia's National Infrastructure Agency
AP EGO	Amundi Planet Emerging Green One
AR	Asset Recycling
ATI	African Trade Insurance
AUM	Assets under Management
BIC	Bayfront Infrastructure Capita
BSO	Build, Sell and Operate
CAF	Development Bank of Latin America
CCFLA	Cities Climate Finance Leadership Alliance
CCG	Convergence Consulting Group
CDC	UK's development finance institution
CDPQ	Caisse de Dépôt et Placement du Québec
CEO	Chief Executive Officer
CFM	Climate Fund Managers
CI1	Climate Investor One
CI2	Climate Investor Two
CKD	Mexico's Certificates of Capital Development
CLO	Collateralized Loan Obligation
CVU	Corporación Vial del Uruguay
DEG	German Development Finance Institution
DFCD	Dutch Fund for Climate and Development
DFI	Development finance institutions
EBRD	European Bank for Reconstruction and Development
EIB	European Investment Bank
EMDE	Emerging markets and developing economies
ESIA	Environmental and social impact assessment
ESG	Environmental, social, and governance



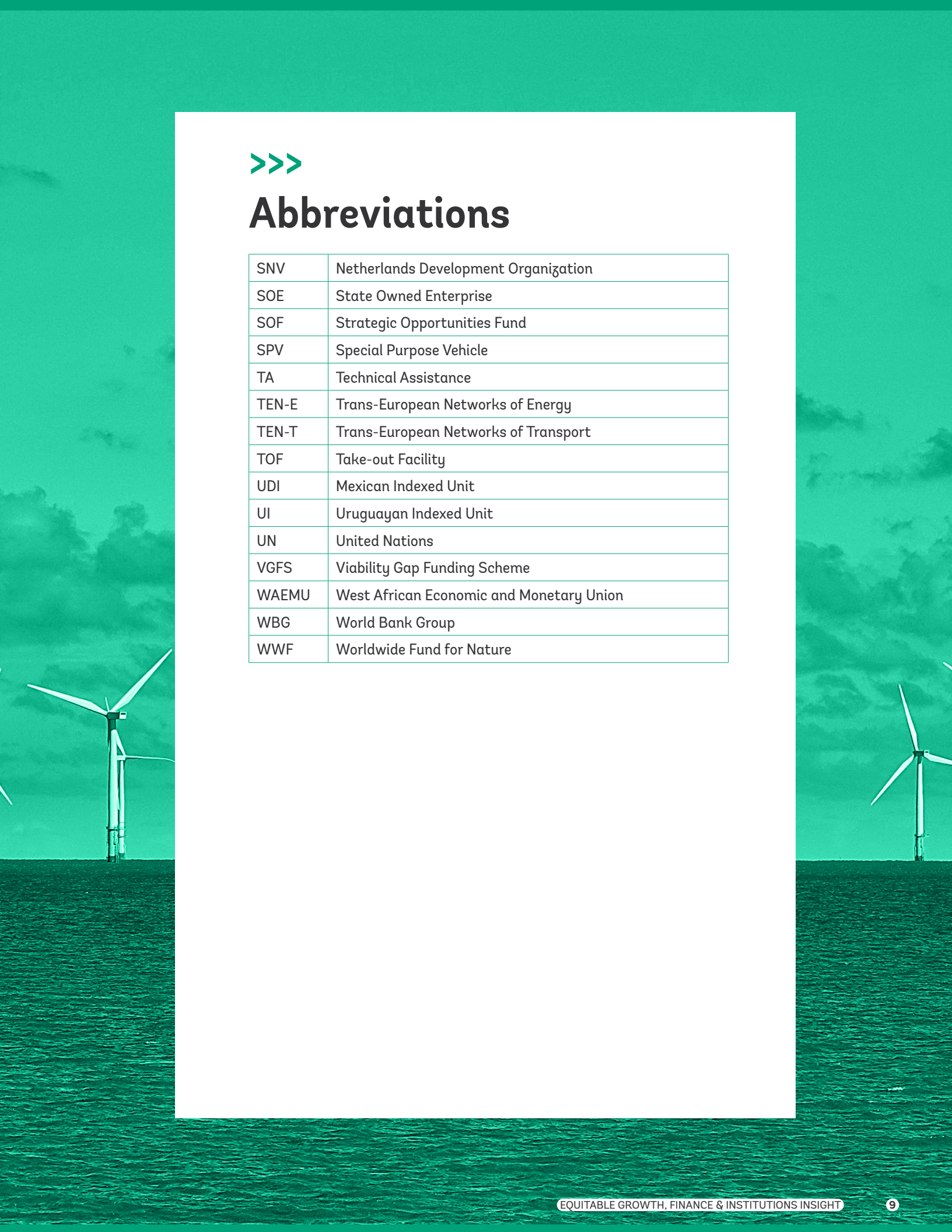
Abbreviations

EU	European Union
FDC	Fondo de Capital Colombia
FDN	Colombia's National Development Bank for infrastructure
FEN	Colombia's National Energy Fund
FMO	Dutch development bank
FOF	Fund of Funds
FONADIN	Mexico's National Infrastructure Fund
GB-TAP	IFC's Green Bond Technical Assistance Program
GCGF	Global Credit Guarantee Facility
GDP	Gross Domestic Product
GIF	Global Infrastructure Facility
GOI	Government of India
GSIS	Government Service Insurance System
IBRD	International Bank for Reconstruction and Development
ICMA	International Capital Markets Association
ICT	Information and Communication Technology
IDA	International Development Association
IDB	Inter-American Development Bank
IFC	International Finance Corporation
IIFCL	India Infrastructure Finance Company Limited
IIGF	Indonesia Infrastructure Guarantee Fund
IMF	International Monetary Fund
IPP	Independent Power Producers
IsDB	Islamic Development Bank
JDA	Joint Development Agreement
KFW	German state-owned investment and development bank
LEAP	Leading Asia's Private Infrastructure Fund
LIC	Low-income countries
IIM	Institutional investor mobilization
LAC	Latin America and the Caribbean



Abbreviations

LCGF	Local credit guarantee facilities
MCPP	IFC's Managed Co
MDB	Multilateral Development Banks
MF	Master Fund
MIEEF	Meridien Infrastructure Eastern Europe Fund
MIGA	Multilateral Investment Guarantee Agency
MIRA	Macquarie Infrastructure and Real Assets
MOF	Ministry of Finance
MOH	Ministry of Health
MUNFI	Monitoring Universe of Non-bank Financial Intermediation
NDB	New Development Bank
NIIFL	National Investment and Infrastructure Fund Limited
NWB	Nederlandse Waterschapsbank
OECD	Organisation for Economic Co-operation and Development
PBCE	EIB's Project Bond Credit Enhancement Facility
PCG	Partial Credit Guarantee
PIDG	Private Infrastructure Development Group
PIM	Public Investment Management
PINAI	Philippine Investment Alliance for Infrastructure
PBG	Policy-based guarantee
PDF	Project Development Fund
PPF	Project Preparation Facility
PPP	Public-private partnerships
PPRG	Programmatic partial credit guarantee
RFP	Request for Proposal
SAEP	Southern Africa Energy Program
SDG	Sustainable Development Goals
SFC	Superintendencia Financiera de Colombia
SIFMA	Securities Industry and Financial Markets Association
SI3P	Sustainable Infrastructure Policy and Project Preparation



Abbreviations

SNV	Netherlands Development Organization
SOE	State Owned Enterprise
SOF	Strategic Opportunities Fund
SPV	Special Purpose Vehicle
TA	Technical Assistance
TEN-E	Trans-European Networks of Energy
TEN-T	Trans-European Networks of Transport
TOF	Take-out Facility
UDI	Mexican Indexed Unit
UI	Uruguayan Indexed Unit
UN	United Nations
VGFS	Viability Gap Funding Scheme
WAEMU	West African Economic and Monetary Union
WBG	World Bank Group
WWF	Worldwide Fund for Nature

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Executive Summary

Annual investments in infrastructure in 2020, combining public[1] and private sector financing sources, were around US$2.7 trillion, leaving a gap of US$0.7 trillion. The gap is even larger if 2050 zero net emissions commitments are considered, as it is estimated that around 60 percent of emissions come from the energy and transport sectors. The private sector will need to play a significant role to fill this gap, given EMDEs fiscal constraints, aggravated by the economic and social consequences of the COVID-19 pandemic and the war in Ukraine.

Development finance institutions (DFIs) have limited direct lending capacity, ranging between US$350 billion to $400 billion annually[2]. Therefore, their efforts to develop innovative structures to increase the leverage of their balance sheets and optimize private capital mobilization need to be significantly expanded and intensified. These should target more prominently global and domestic institutional investors in EMDEs whose US$134 trillion of assets under management have a negligeable exposure to infrastructure in EMDEs.

This report proposes several types of interventions and financial structures DFIs could lead for a greater role of global and local capital markets in financing infrastructure in EMDEs. Recommendations are informed by a thorough analysis of the most promising cases studies where DFIs could play a key role; a survey of a sample of the largest global institutional investors and asset managers; and interviews with practitioners from multilateral and domestic DFIs. For greater clarity, barriers preventing channeling capital flows from institutional investors into infrastructure assets in EMDE countries have been structured into three categories: (a) availability of an inventory of bankable projects, (b) government actions failures, and (c) financial markets failure. Proposed solutions are presented under this same structure, though none of these categories is absolute, as they often overlap.

The global review reached several critical conclusions that could guide more effective use of DFIs' balance sheets in the mobilization of institutional investors.

1. i.e. government, development financial institution and donors.
2. A sample of the largest 20 DFIs completed by the authors provides an estimate of a combined lending capacity of US$330.64 billions per year.

- *Whole life cycle approach*. There are greater benefits in the full engagement of DFIs with EMDE project sponsors from the early stage of conceptualization through the provision of debt and equity finance. This approach is particularly valuable for low-income countries with weak institutions and shallow financial markets. Middle income countries have also benefitted from this approach though, the support has been less intensive and more focused on targeted advisory and policy interventions across the whole cycle. In both cases, the inclusion of strong DFI-led advisory services has made a substantial difference.

- *Domestic DFIs* can play an important role addressing government actions failures and financial markets failures to mobilize institutional investors. Domestic DFIs can adopt very different roles depending on the country context such as, among others, backstopping government risk, taking the risk of sponsoring innovative financial structures, supporting the government with sophisticated skills on project preparation and financial structuring, facilitating the dialogue between global and domestic private financiers with the government. Several transformational projects have shown that even government owned DFIs can lower projects' perceived risks provided they operate under a strong corporate governance framework and have strong financial expertise. An example is FDN in Colombia, which is majority government owned but includes DFIs and private investors among its shareholders. Support from multilateral DFIs has been important in most successful cases.

- *Transforming loans into investible assets* for global institutional investors has yielded the highest financial leverage impact. Bank type loans are more appropriate instruments to finance infrastructure, given their greater flexibility for potential contingencies in infrastructure projects. In this context, private markets instruments making this transformation (e.g., infrastructure debt and equity funds, co-lending investment platforms, collateralized lending obligations platforms) have been more successful than public markets instruments.

- *Both global and domestic investors should be targeted* by DFIs to optimize private capital mobilization. Global investors (hard currency) represent approximately 89 percent of the available funds. Local investors (local currency) represent approximately the other 11 percent. The larger share of global investors means that the bulk of projects can only be financed in hard currency, which results in foreign exchange risk to governments or investors, depending on the project risk allocation, given that most projects have revenues in local currency. None of the analyzed cases have solved satisfactorily the foreign exchange risk. Depending on the country and project, solutions could attract both types of investors separately or jointly, as seen by some local co-investment platforms.

Proposed solutions are presented in two groups: (a) the first one, proposes reinforcing and expanding the successful solutions based on the reviewed case studies and (b) the second one, proposes exploring the development of new standardized solutions seeking to scale up asset allocations by both global and local institutional investor.

REINFORCING AND EXPANDING SUCCESSFUL EXISTING SOLUTIONS.

The first type addresses the lack of an investible pipeline. Interventions following a whole life project cycle approach have the most promising results, such as FMO's sponsored Climate Investor One specialized in energy projects across several countries, or the IFC-led InfraVentures supporting all phases of a project in a single country. A more targeted approach as the Project Preparation Facilities such as the World Bank–led GIF and the EBRD-led SI3P should also be replicated and expanded with more grant-based instruments.

The second type of interventions address the government obligation failures. The most successful interventions are the credit enhancements provided by multilateral DFIs, such as the World Bank, or by domestic DFIs providing support to mitigate governments' failure on their contractual obligations (e.g. timely payments, expropriation, etc.). The latter require strong governance, technical capacity, and independence from government as their only or main shareholder. In certain contexts, Global DFIs could play a catalytic role in helping EMDE governments establish domestic DFIs and providing financial support to boost the institutions' credit ratings.

The third type address the lack of suitable financial instruments. Among the most relevant interventions are those that transform project loans into investible assets by global and domestic institutional investors. Successful examples include IFC's MCPP Platform and Bayfront Infrastructure Capital Collateralized Lending Obligations (CLO) platform. Other, important instruments are the DFIs guarantees and political risk insurance products such as those offered by MIGA. These are playing an important role in addressing cross-border risk and expanding access of EMDE infrastructure to the global institutional investors market.

NEW LARGE-SCALE STANDARDIZED SOLUTIONS COMPLEMENTARY TO EXISTING INSTRUMENTS.

Large scale infrastructure finance solutions for mobilizing institutional investors have not been developed yet by any single or multiple DFI-led initiative. Even if existing project pipeline scarcity was addressed, institutional investors would not be able to invest in infrastructure in the amounts needed. The main obstacle is that the bulk of global and domestic investors only have the capacity to invest in standardized instruments, with regular cash-flows, ideally indexed to inflation, and with a risk-return profile of investment grade or above. Infrastructure assets are by nature non-standardized and depending on the stage of the project cycle are riskier than investment grade. So, the jury is still out on whether DFIs or financial intermediaries will be able to develop a standardized instrument matching the risk-return profile required by most of global and domestic investors. A possible perspective is that large-scale financing solutions would apply only to a segment of projects in more developed EMDEs and in certain sectors that are easier to standardize (e.g. certain energy and transport projects). The more complex projects, in countries with weaker institutions and higher risk, would require tailored solutions such as the ones, mentioned above, that DFI's have been successfully implementing.

Another critical challenge is handling the foreign exchange risk, given that the infrastructure gap can only be filled if global investors are tapped. So far, this risk can only be mitigated partially by either maximizing investments from domestic investors, or transferred partially by using hedging instruments in international markets. However, not all currencies have deep financial markets offering foreign exchange hedging, and there will always be a tail risk that governments' in EMDEs will need to take.

Based on the analysis above, three types of complementary new solutions are recommended to explore further to access global and domestic institutional investors that would require a thorough feasibility analysis:

a. *Global Standardized Approaches.* Standardized hard-currency instruments or vehicles could be developed in the global investment grade category optimizing the use of existing risk mitigation instruments from different DFIs (e.g., AA or AAA rated), aligned with global institutional investors risk-return profiles. Three features should be considered by the entities offering these instruments: (i) standardized debt instrument and of its underlying asset, (ii) no requirement of an explicit sovereign guarantee, and (iii) commercial viability and long-term financial sustainability. This type of asset class standardization may be achieved only with a set of institutional arrangements that can perform consistent and standardized credit analysis, financial structuring, due diligence, supervision, and monitoring on the underlying assets. The details of the institutional arrangements offering such an instrument or menu of instruments exceed the objective of this paper and are not discussed. Existing financing vehicles informing this option include IFC-led MCPP and the Clifford Capital–led Bayfront Infrastructure Capital platform for collateralized lending obligations.

b. *Local Credit Guarantee Facility (LCGF).* This option could be created in select EMDEs where the financial leverage of an AAA (national scale rating)-backed capital structure would have relatively high financial impact via the provision of local currency credit guarantees. These LCGFs would have to be structured locally to adapt to each set of capital market regulations in selected EMDE countries (similar to InfraCredit in Nigeria). A global "umbrella" institution with local subsidiaries in each selected market could also be created. The local subsidiaries could include local partners (e.g., domestic DFIs or other capital markets institutions) to strengthen their local knowledge and origination capacities.

c. *Co-Investment Platforms.* As a complement to the above proposals, DFIs could also support the creation of co-investment platforms in selected EMDE markets, including global and domestic institutional investors investing in long-term local-currency infrastructure assets. Critical requirements to scale up these mechanisms would include: (a) similar originating criteria for the underlying asset, (b) common ESG standards, (c) explicit agreement between participating DFIs to adapt their business model to standard origination, (d) consideration of extending the offering to other sectors different than infrastructure (e.g., housing) for sustainable deal flow, and (e) standard credit enhancement practices. Coinvesting with DFIs would remove a great portion of the risks that global investors perceive to limit optimization of these types of capital flows to infrastructure development.

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BACKGROUND AND RATIONALE

For purposes of this report, infrastructure finance gap is broadly considered as the equivalent of the difference between the (executable) infrastructure investment needs and the amount of available and committed financing (i.e., financially closed transactions) within a given period for EMDE countries. A recent report by the World Bank (i.e., Beyond the Gap, April 2019) estimate that Infrastructure investments required by EMDEs to reach the Sustainable Development Goals by 2030 – *including partially a mitigation and adaptation component* -- have been calculated at the equivalent of 4.5 percent of GDP annually, corresponding approximately to US$ 1.5 trillion per year.[3] Based on available information, between 50% to 60% of the annual investment needs are not being funded today, with a higher concentration in terms of the relative gap in less developed countries[4].

Governments' investments in infrastructure have been declining over the last decade, in part, because of fiscal constraints after the global financial crisis. The pandemic and, more recently, the global economic consequences of the war in Ukraine have aggravated countries fiscal constraints further. Private participation in infrastructure has not compensated the decline over the last decade of public investment in infrastructure. On the contrary, in 2020, a year after the start of the pandemic, private investments in infrastructure fell to US$ 45 billion, the lowest figure since 2004.

Estimates of the total DFI[5] lending capacity per year—not only for infrastructure but for all sectors supporting development—are in the US$350 billion to $400 billion per year range.[6] DFIs do leverage their existing lending capacity and have improved substantially with innovative interventions for the mobilization of additional private capital for infrastructure development. The most recent figures (2019) by the MDB and DFI Group reported US$64 billion of private capital mobilized.[7] It is estimated that an additional US$10 billion per year is mobilized from

3. Julie Rozenberg and Marianne Fay, eds., *Beyond the Gap: How Countries Can Afford the Infrastructure They Need while Protecting the Planet* (Sustainable Infrastructure series, Washington, DC: World Bank, April 2019).
4. The report acknowledges that "from the billions to the trillions," a definition coined in the 2015 Development Report served the purpose of a strong graphic illustration of the dimension of the gap linked to the fulfillment of the SDGs. However, in the best-case scenario for optimization of IIM flows, there is an institutional capacity limitation in EMDE countries that would restrict effective use of large amounts of IIM flows.
5. For ease of drafting the report, DFIs includes all publicly funded institutions that support economic and social development in EMDE countries (multilateral international and regional development organizations, bilateral global and domestic banks, bilateral development agencies, etc).
6. A sample of the largest 20 DFIs completed by the authors provides an estimate of a combined lending capacity of US$330.64 billions per year.
7. Multilateral Development Banks and Development Finance Institutions Group, "Joint Report on Private Finance Mobilization" (IFC, Washington, DC, 2021).

concessional funds to infrastructure development.[8] Further capital increases in the DFIs' balance sheets by shareholders could increase lending and mobilization capacities. However, under current global political constraints, COVID-19 related priorities and new economic and social emergencies resulting from the war in Ukraine, the potential for an agreement among DFIs' shareholders for capital increases is very limited.

In this scenario, the need to mobilize private sector financing for infrastructure in EMDEs is even more pressing. Following the more restrictive bank prudential regulations adopted after the global financial crisis, it became evident that commercial banks by themselves would not be able to provide the amount of capital and long tenors needed for infrastructure. Institutional investors, particularly pension funds, insurance companies, and ear-marked investment funds with long term liabilities and growing liquidity seemed the well-placed financiers to complement bank financing with larger volumes and longer tenors.

Expansive monetary policy since the global financial crisis has resulted in institutional investors assets increasing at growth rates above those of global GDP, at around 5 percent annually.[9] At the end of 2020, global investors managed around US$ 119 trillion invested in hard currency instruments[10], of which only four percent was invested in EMDEs (China excluded), and less than one percent was directed to low-income countries. Exposure to EMDEs is mostly through government bonds and a negligeable fraction of these assets is invested in infrastructure.

There is incomplete information on the weight of infrastructure bonds in the local currency capital markets. The closest proxy found is the overall size of local bond markets reported in an IMF and World Bank staff note to the G20 reporting a market size of around US$ 25.9 trillion (January 27th, 2020). There are no statistics on their overall exposure to infrastructure, however figures for individual countries with most sophisticated financial sectors show also negligeable exposure to infrastructure[11].

In this context, even a fraction of institutional investors liquidity, bot global and domestic, could substantially alleviate the infrastructure finance gap. The challenge ahead is to create the conditions for projects to offer the risk-return profiles investors need. DFIs could play an instrumental role in mobilizing private capital flows for infrastructure development. However, they will be constrained by several factors of which two are critical in the short term: mitigating foreign exchange risk of projects and the affordability of projects.

Figures above show that global investors hold 80 percent of assets under management while domestic investors in EMDEs represent only 20 percent. The substantially larger size of global investors involves a structural and difficult problem to solve. On the one hand, global investors are needed to address the infrastructure financing gap because of their sheer size, but their financing is in hard currency. This means that the availability of instruments to transfer foreign exchange risk to third parties would be critical, unless the government, as project sponsor, or investors are prepared to take all or part of the risk. On the other hand, domestic investors, could provide long-term financing in local currency, but would likely fall short of the financing volumes needed. These trade-offs will need to be considered in the lessons learned from the case studies analysed in this report.

The second constraint is affordability. In a world where end users' tariffs and fees could be set at full-cost-recovery levels and where consumers had the disposable income to pay for them, financing infrastructure would be easier, and the gap would be substantially lower. This is not the case worldwide today, much less in EMDE countries and even less so in LDEs. Private capital would only flow into projects if the revenue source for debt and equity is secured. Revenue sources to develop and operate infrastructure assets come from essentially two sources: (a) end-user tariffs and fees and (b) taxes and public budget spending (including subsidies, grants, revenue expenditure and so on). In most sectors, full-cost-recovery tariffs will not be possible, except for some specific sectors such as telecommunications or sectors with commercial clients (such as ports and airports). In this context, no matter how innovative and efficient a financing structure is, a project must have adequate public and DFI support with credible sources of revenue to service and repay the debt and the equity.

8. CCG (Convergence Consulting Group) Analytical Solutions and Data Services data.
9. GISD (Global Investors for Sustainable Development) Alliance, April 2021.
10. Securities Industry and Financial Markets Association (SIFMA) and OECD estimates.
11. Assets Under Management (AUM) held by insurance companies were US$ 39 trillion, by pension funds US$ 42 trillion, and by investment funds (other than money market funds and hedge funds) were 58 trillion, for a total of US$ 140 trillion of AUM held by those institutions (Financial Stability Board, FSB). An IFC report on global capital markets valued the size of the hard-currency global bond market at US$106.8 trillion (as of December 2018). The current report of mobilization of institutional investors capital for sustainable infrastructure will use FSB at the estimate for the size of the global capital markets.

The report will review different initiatives supporting infrastructure development in EMDE countries that provide relevant lessons for mobilizing institutional investors into infrastructure. The analysis is based on three different sources: i) a selection of 19 case studies with relevant approaches to mobilize institutional investors independently of their success; ii) a formal survey of the 12 largest investors in Asia, representing several types of investors - pension funds, insurance companies and asset managers; iii) extensive consultations with practitioners from domestic, bilateral, and multilateral DFIs, including the WBG.

The analysis will be structured along three major constraints for mobilizing private capital into infrastructure that are also relevant for institutional investors: i) the lack of inventory of bankable projects; ii) Government action failures; and iii) financial market failures (see box 1.1. for definitions).

BOX NO. 1.1: MAIN CHALLENGES TO CLOSE THE INFRASTRUCTURE FINANCE GAP

For purposes of this report, the authors have characterized the challenges impeding optimization of institutional investor capital flows to EMDE countries as fitting into three categories:

Inventory of Bankable Projects. This is a constraint that includes current institutional and funding restrictions that impede EMDE countries from preparing solid bankable projects. Restrictions include activities that involve the basics of project preparation (including feasibility analysis, engineering and technical studies, environmental assessments, and so on) through legal and financial structuring, regulatory adjustments, and financial closing.

Government Action Failure. A government intervention (or lack thereof) leading to a negative impact on the expected financial returns of an infrastructure project. This category includes all the standard definitions of regulatory risks, contractual risks (such as breach of contract), political risks (such as convertibility, transferability, expropriation, and so on), and any other government action hindering the project.

Financial Market Failure. All the conditions leading to failure of the market to offer suitable financial products for long-term financing of infrastructure under adequate conditions (such as lack of long-term local-currency financing, limited availability of foreign exchange risk management instruments, limited knowledge of the infrastructure asset class, and so on).

This report recognizes that there is a strong degree of correlation between the three types of challenge categories. Weak capacity to prepare bankable projects could be interpreted as a government action failure, or a financial market failure could also be interpreted as limited capacity to have a solid pipeline of bankable projects. The report uses these categories as a way to organize and present the reader with the different solutions developed by DFIs at large.

Note: Annex No. 2 to the report has a more detailed description of these challenges

The report is organized as follows: chapter 2 discusses in detail the lessons learned and conclusions from the 19 global case studies reviewed; chapter 3 presents the results from the investor survey, which in its majority confirms findings presented in chapter 2; chapter 4 proposes recommendations on which DFI initiatives merit to be supported in scale given their higher chances of success, and provides guidelines on potential more innovative interventions based on lessons learned from the overall analysis presented in the report. Annexes provide detailed descriptions of the case studies and of the methodology followed.

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LESSONS LEARNED FROM CASE STUDIES

2.1. Case studies selected

A selection of 19 case studies were reviewed in detail to draw lessons from different financial interventions or structures to mobilize institutional investors into infrastructure. The case studies were selected according to (a) their innovative approach, (b) the access to institutional investor markets in terms of leverage and efficiency, and (c) availability of information. Table 2.1. lists the case studies used.

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Table 2.1 Case Study Examples of institutional investors and Infrastructure Finance

No.	Case Study	Description
1	Climate Investor One	A donor-driven project cycle approach initiative
2	Malawi, Hydropower—IFC[12]	Project cycle approach support via InfraVentures
3	Elazig Hospital, Turkey	Multiple DFIs driven blended finance structure
4	PBCE, EU, and EIB, Europe	Project bond credit enhancement facility
5	Benin Eurobond issuance	A blended finance structure involving World Bank policy–based guarantee
6	Côte d'Ivoire Energies	A blended finance structure involving World Bank partial credit guarantee
7	MCPP, IFC Global	Co-investment Platform, IFC B loans
8	Bayfront Capital, Singapore	Securitizing banks project loan portfolio with public sector credit enhancement

12. While Malawi-Hydropower case study has not reach financial closing as of June 2021, it presents a useful reference for DFI's support in the early stages of project cycle.

No.	Case Study	Description
9	EGO Green Bond, IFC/Amundi, Global	Fixed-income fund investing in green bonds
10	PINAI, ADB, and Macquarie, the Philippines	Equity fund for infrastructure investments
11	AfDB, Synthetic Securitization, Room2run	Securitization of non-sovereign loans
12	FONADIN, Mexico	Toll road asset recycling via local capital markets
13	Corporación Vial del Uruguay	Toll road asset recycling via local capital markets
14	FDN Colombia	Local DFI mobilizing institutional investors
15	Indonesia Infra Guarantee Fund	A local guarantee fund supporting PPPs
16	InfraCredit–GuarantCo, Nigeria	A donor-driven local credit guarantee fund
17	Enel, Sustainability Bond, Europe	SDG-linked sustainability bond
18	ADB and IIFCL, India	Local credit guarantee facility
19	Kacific, GuarantCo, Pacific Islands	Blended finance solution for information and communication technology investments

2.2. High-Level Outcomes of Case Analysis

Four important insights that can be drawn from the case study analysis: (a) the leverage ratio varies considerably across projects; (b) the involvement of governments, SOEs, MDBs, or a combination, with DFIs is key for the success of transactions; (c) ad hoc solutions or alternative investment vehicles dominate in most case studies and could be difficult to replicate in scale; and (d) private financing can be mobilized through different models to PPPs, such as SOEs tapping capital markets in different ways.. These insights are presented in more detail and then followed by broader findings later in the section.

LEVERAGE RATIO

The analysis of the different case studies provides some evidence on the range of financial leverage of DFIs' interventions. A simple measurement of units of private capital mobilized per unit of DFI risk capital in the transactions shows a range of 2 to 1 to 10 to 1. Interventions with most impact follow an approach in with two distinct features are present: (i) assets are standardized and pooled into a financial vehicle that allows to reach a certain scale, as opposed to a single transaction; and (ii) the pooling vehicle transforms bank loans into an asset that institutional investors can invest in. Examples of these cases include IFC-led MCPP, IFC and Amundi Green Bond Fund, and Clifford Capital–Bayfront Infrastructure Capital.

Leverage ratios mentioned above are relatively low in their bottom range, given the overall needs to finance the infrastructure gap and the size of balance sheets of entities in charge of providing blended finance. It is important to note that leverage ratios vary depending on the degree of development of countries. Least-developed countries from an institutional and financial sector perspective (such as Benin and Côte d'Ivoire) are those with lower leverage ratios. As would be expected, these countries require an intensive intervention of government or DFIs for projects to succeed. Conversely, countries with stronger institutional framework and deeper financial sectors (such as Colombia and Mexico) require a lighter touch.

Further, the case studies that focus on developing bankable projects (i.e. Global Infrastructure Facility housed by the

World Bank under the sponsorship of the G-20 and EBRD's Infrastructure Project Preparation Facility) show that the compound financial leverage of the DFI technical assistance funding together with the DFI risk capital is significantly high.
Intensive role of blended finance partners

In almost all the case studies, a proactive participation of various partners providing blended finance (government, SOEs, MDBs or DFIs) was instrumental for the success of the transaction, well beyond the financial contributions. The intensity of this support has been, in general, in proportion to the degree of economic development of the country. For example, in the case of Malawi, IFC is involved across all phases of the project from project development to financing. However, in more developed countries, such as Turkey, the Elazig Hospital project illustrates that an intensive role of MDBs was still necessary to bring the project to an investment-grade credit rating acceptable for international institutional investors. At least three types of credit enhancements and a co-financing leg, involving three institutions, were needed. In the example of Colombia's successful 4G toll road program, the role of technical assistance was more important than MDB's balance sheet. MDBs supported Colombia with advisory services along the whole project cycle and were assisted by a very proactive government in developing innovative ways to address the market failures preventing institutional investors from financing the infrastructure program. Case studies lead to conclude that blended financial contributions need to be complemented with strong technical and operational skills, as well as in-depth understanding of the whole project cycle.

DOMINANCE OF ALTERNATIVE FINANCING VEHICLES

In most cases, the investment vehicles or financial structures were either designed ad hoc for that particular project or were drawn from the private placement space. This could be explained by the relatively short history of institutional investors in financing infrastructure. However, it raises the question of how much potential there is to reach replicability and scale with these solutions. Along these lines, the jury is still out on whether infrastructure as an asset class is reserved mostly for niche investors or if it could be financed through more standardized solutions aligned with investment policies of the broader institutional investor base. Alternatively, another option is two consider developing two types of approaches: one targeting complex projects with ad hoc solutions aimed at the more sophisticated segment of institutional investors, and another one developing more standardized financial solutions targeting the broader investor base. These questions will be addressed with several proposals in chapter 4.

PRIVATE FINANCE SHOULD NOT BE EQUIVALENT TO FINANCING PPPS

For purposes of developing the lessons learned from the analyzed cases, a broader definition of capital mobilization by institutional investors has been used. In addition to private capital flows to PPPs and private projects, capital flows to SOEs and government agencies have also been considered. In most EMDEs the largest share of infrastructure development is generated by SOEs or government agencies. In countries such as Colombia (i.e., Empresas Publicas de Medellin, EPM), or Brazil (i.e., SABESP), large SOEs used local and global capital markets for capital investment funding. PPPs are a growing segment for infrastructure procurement, but it will take time to become the largest form of procurement given its technical institutional complexities.

The next paragraphs analyze in more detail lessons learned from the case studies considering the three-category definition for the set of challenges hampering larger institutional investor flows mentioned in chapter 1: inventory of bankable projects, government actions failure, and financial markets failure.

2.3. Inventory of Bankable Projects

Throughout the case study review, the lack of a sizable inventory (or pipeline) of bankable projects was the main challenge identified by DFI practitioners, donors, and development institutions and investors interviewed. This has been a well-documented problem in EMDEs for bank financing, as captured by the literature review. It is an even a greater challenge when the objective is to mobilize institutional

investors, as projects have been traditionally structured to target bank financing, and institutional investors have a shorter track record in financing infrastructure.

As mentioned earlier, attracting the pool of liquidity from institutional investors is the most important component of a sound private capital optimization strategy. Institutional investors' risk-return profile is aligned with long tenors and with the, generally, stable cash flows of infrastructure projects. This type of investor is looking for assets and contractual arrangements with a greater degree of standardization and cash flow predictability than banks. Scale is also an important factor to reduce the transaction costs of investing in EMDEs. These requirements cannot be attained by all countries, particularly by those such as lower-income countries and lower-level middle-income countries that have weaker institutions.

Cases studies analyzed show three different ways of developing a pipeline of projects for institutional investors, depending on the degree of development of countries.

PROGRAMMATIC TRANSACTION ADVISORY IN MICS

In countries with stronger institutional frameworks (middle-income countries), MDB approaches exclusively based on transaction advice will suffice. This was the case of IBRD and IFC's support for the 4G toll road development program in Colombia, which became one the largest pipelines of projects in EMDEs, at around US$20 billion. Regarding the generation of a pipeline, the contribution of IBRD and IFC was in supporting the government of Colombia in strengthening the PPP executing agency and standardizing the contractual arrangements of projects, respectively. For IFC, this is part of advisory services provided in a systematic way to support countries along the whole project cycle including, among others, project feasibility, financial and legal structuring, PPP arrangements, and contract negotiation. The advisory approach can have a very high impact, but it is only valid when the country already has the institutions and technical expertise needed to lead the process.

WHOLE LIFE CYCLE APPROACH IN LICS

For countries with weaker institutional frameworks, the case studies show two promising options following the so-called whole-project life approach. This requires the full involvement of donors, MDBs, or both from funding and implementing project feasibility and preparation through co-financing the project with private sector stakeholders.

The first case, IFC InfraVentures, focuses on single-country interventions. IFC engages with governments as a trusted adviser and provides the funding required for feasibility studies and project preparation through procurement. IFC has the option to recover those costs by participating in the equity and debt financing of the project. IFC would also provide support in arranging the different types of financiers, market-based or blended, that would make the project financially viable. It is important to note that in the case study reviewed for the power station in Malawi, several non-commercial financiers would need to participate to make the project viable: the government of Malawi in part of the project's equity, and IDA with a concessional guarantee for the local-debt financing. Additionally, a MIGA guarantee would be required for the international private sector financiers.

The second case, Climate Investor One (CI1), sponsored by the Dutch government through FMO, is also a "whole-life" approach. But it has important differences with the InfraVentures case: it targets only renewable energy projects; it is a project portfolio approach with 6 projects financed and 11 in the pipeline so far (866 megawatt and 1050 megawatt, respectively); it links from the start the project development phase to the equity and debt refinancing phases through three interrelated funds for each phase; it funds the construction phase of projects with only equity sharing concessional capital and commercial capital from institutional investors; most of the crowding in of institutional investors is planned for the refinancing of the projects at the operations phase. The refinancing is planned through senior portfolio bonds issued by the fund that will likely require a credit enhancement. So far it has been successful in financing around US$800 million of projects and is in the process of preparing their refinancing through a bond issuance.

InfraVentures and Capital Investor One are the most promising experiences, with some initial success, in developing a pipeline of projects in countries with weak institutions. As seen in the analysis, both have required intensive and extensive interventions on the part of MDBs and development agencies. Despite the low leverage ratios, the expectation is that this will increase the institutional capacity of beneficiary governments to develop their own pipelines. Challenges that remain are the predominance of hard-currency financing that adds risks to governments' liabilities and the potential conflict of interest of agencies being involved in all phases of the project cycle. There are tools and plenty of experiences to address these situations, but it is important to not undervalue them and to establish standards for any agency that is interested in supporting the "whole-project-life" model.

PROJECT PREPARATION FACILITIES

Shortcomings in the ability of governments to prepare projects and the risks associated with the development of a strong pipeline of bankable projects are risks that DFIs are very familiar with and for which solutions and innovations are taking place. Both the World Bank and the EBRD have invested substantial resources (leveraged with donor funding) to establish initiatives to assist EMDE governments with the development of bankable projects through the full project cycle. The Global Infrastructure Facility (GIF), a G20 Initiate housed in the World Bank, is a multi-donor and DFIs project preparation facility for private capital mobilization in infrastructure. The GIF has extended US$80 million of project preparation and structuring support to over 105 infrastructure projects, which can create US$ 75 billions of investable infrastructure assets, of which two thirds will be private financing.

In a similar effort, the EBRD created in 2014 the Infrastructure Project Preparation Facility, which evolved in 2019 into a more comprehensive program, Sustainable Infrastructure Policy and Project Preparation (SI3P), which covers the full range of advisory activities (including PPP, upstream assistance, transactions, and renewable energy auctions), along with project preparation, funding, and procurement. With committed resources for the equivalent of US$60 million, SI3P has helped member countries develop US$10 billions of investable infrastructure assets. Both facilities have by now overcome their own project cycle development and are expected to increasingly generate more investable infrastructure assets (bankable projects) in the coming years.

2.4. Government Action Failure

Lack of trust in government actions related to honoring their upstream and downstream obligations in infrastructure projects has been cited as a key obstacle to mobilizing private capital, particularly for institutional investors. In some cases, there are legitimate reasons for investors to question the government's capacity to honor their obligations given fiscal, institutional, and political constraints. However, in many other cases the mistrust is related to asymmetric information on the side of investors.

MDBs and international and domestic DFIs have a long track record and a broad range of instruments in addressing real or perceived credit risk from governments. Most successful instruments include partial credit risk guarantees, first- and second-loss instruments, liquidity lines, political risk insurance, and other insurance products. These instruments have worked well for bank financing and for sophisticated investors such as sovereign wealth funds and select pension funds. However, for the broader international and EMDE domestic institutional investor base, a higher degree of protection is required, in some cases as much as 100 percent coverage. This option would reduce substantially the number of viable projects from an economic and financial point of view. However, the case analysis has provided two examples that could inform new approaches.

CONCERTED DFI EFFORTS TO REDUCE GOVERNMENT PROJECT RISK

The hospital for the city of Elazig in Turkey is a good illustration of a concerted effort of several MDBs and DFIs (MIGA together with EBRD, IFC, FMO, and Proparco) that helped pierce the sovereign credit rating of Turkey in international markets. This effort was even more valuable in the case of PPPs in health

infrastructure, where the public sector is the owner of the asset and the provider of the health service, thus presenting some of the most complex government failure risks. In the case of the Elazig Hospital, most of the government action failure risks related to cross-border risks (such as expropriation, currency convertibility and transfer, and breach of contract) were covered by MIGA, whereas EBRD provided a Construction Support Facility, which covered arrangements and delays in the engineering, procurement, and construction contract, as well as a Revenue Support Facility, which covered risks during the operational phase.

The combination of credit enhancement instruments proved essential to earn a rating for this transaction two notches above Turkey's sovereign rating ceiling and therefore to attract European institutional investors. The main challenge of this transaction for replicability is its high complexity, given the multiple MDBs and DFIs involved, which increased transaction costs. Despite the concerted support of DFIs the improved credit rating was not reflected in the pricing of the transaction. However, it could be argued that institutional investors would not even have considered the project without the support of the DFI's. It also provides a precedent for greater standardization of combined credit enhancements and for the value of combining cross-border risks with liquidity lines. Another challenge to consider is that this transaction focused on mobilizing hard-currency investors, leaving the government of Turkey with the currency risk.

MIGA: CLIMATE CERTIFIED PROJECT BOND, REFINANCING OF SIX OPERATIONAL POWER PLANTS IN EGYPT

On June 22nd, 2022, MIGA issued a political risk insurance for US$ 98.3 million to a private corporation (Virtuo Finance S.A.R.L.) in support of the refinancing of six operational solar power plants in Egypt's Benban Solar Park (the largest photovoltaic solar park in Africa, 380 MW). The refinancing will be implemented via the issuance of a green bond by Virtuo, reducing financial costs and improving project's financial viability. The transaction was rated BBB+ in the global scale (Scope Ratings), substantially higher that Egypt's sovereign credit rating (B with stable outlook). Without the credit enhancement provided by MIGA global institutional investors would not have been able to participate.

The green bond benefits from certification by the Climate Bond Initiative and was independently verified by DNV (leading technical consultancy in climate change). The Bond issuance was structured into two tranches: (a) US$ 250 million bought by the EBRD and others DFIs, and (b) US$ 84.5 million distributed among global institutional investors. The second tranche (BBB+) is enhanced by MIGA's political risk insurance coverage for 19-years and a liquidity support facility provided by EBRD. MIGA's support will cover the sponsors against the following risks: breach of contract, expropriation, war and civil disturbance and currency transfer restrictions. The Benban Solar Park Project is contributing to meeting Egypt's goal of reaching 20% of the energy mix in renewables by the end of 2022.

Source: MIGA, June 2022

DOMESTIC DFIS BACKSTOPPING GOVERNMENT RISK

A second approach to improving trust in government obligations is the domestic solution through national DFIs that are majority owned by the government. This option was showcased by the Indonesia Infrastructure Guarantee Fund (IIGF) and by the Colombian National Infrastructure Fund (FDN). The IIGF was created in 2010 with the sole purposes of providing guarantees to cover the risk of one of the most important government action failures—the contractual risks that SOEs and government agencies party to PPP contracts would not honor their commitments (such as off-take contract payments and termination payments). In its first 10 years of operation, the IIGF has provided the equivalent of US$4.7 billion in guarantees supporting PPPs in Indonesia. These PPP arrangements have mobilized the equivalent to US$22.3 billion in infrastructure investments (debt and equity) from both the global and local financial markets. Despite the objective of mobilizing institutional investors, IIGF guarantees have only served to attract bank lending. This is mostly due to reasons outside the scope of action of the IIGF, such as

the small institutional investor base in Indonesia. However, the principle of having a domestic DFI providing contractual risk guarantees for domestic investors could be very relevant in other contexts with a larger investor base.

In the case of Colombia, the development bank, FDN, offered a multipurpose liquidity facility in the 4G toll road projects to address potential delays from the government on its payment obligations. The liquidity facility favored all financiers, including banks and institutional investors. FDN used US$1.2bn of its capital, allowing a total mobilization of US$6.2 billion, of which US$1.8 billion came from domestic institutional investors, achieving a leverage of 1:6. The difference with Indonesia was the existence of larger domestic pension funds and insurance companies. It is important to note that developing other instruments, such as infrastructure debt funds and project bonds (reviewed in the next section), were also necessary to mobilize domestic institutional investors. However, the liquidity facility provided by FDN was a necessary first step for the success of these transactions.

Domestic DFIs (majority owned by the government) might at first sight appear as an ineffective financial structure given that the ultimate underlying risk is still backed by the Government. However, vis-à-vis mobilizing private capital, institutional investors seemed to feel more comfortable and more willing, when the institution supporting government risk, had the three following features: (i) it was ring-fenced from the overall budget process, (ii) had financial autonomy, and (iii) had good corporate governance.

2.5. Financial Market Failure

This section discusses lessons learned from transactions that have targeted more specific ways to mobilize institutional investors. As mentioned earlier, the optimization of private sector financing of infrastructure in EMDEs should involve long-term institutional investors. To reflect more accurately the main challenges, investors are classified in this section into two categories (a) global institutional investors buying hard-currency based assets and (b) local institutional investors buying local-currency assets.

Each type of investor group (international versus domestic) tapped for infrastructure finance presents different advantages and challenges. Global investors represent around 80 percent of the global pool of liquidity and with the right instruments can provide larger and more consistent capital. Thus, there is the need to create a standardized hard-currency based asset class (e.g., project bonds), despite the different underlying cross-border risks from EMDEs. The main challenge is the foreign exchange risk global investors transfer to governments. Domestic investors, on the other hand, represent only around 20 percent of global liquidity. The main advantage of mobilizing them is the lack of currency mismatch and the creation of investment options for local pension funds to channel domestic savings to increase the growth potential of the domestic economies.

GLOBAL INSTITUTIONAL INVESTORS
TRANSFORMING LOANS INTO INVESTIBLE ASSETS

The most successful and promising instruments to mobilize global investors are those that provide exposure to loans, like those provided by banks, through different intermediate platforms. This is not surprising as the flexibility of loans is better aligned with the different types of cash flow profiles needed for infrastructure projects than project bonds. Loans are also easier to renegotiate in the event of project contingencies

The three platforms that have been identified as most successful in helping institutional investors access lending portfolios are the IFC-led Managed Co-Lending Portfolio Program (MCPP), the Bayfront Infrastructure Capital (BIC) platform for collateralized loans, and the Amundi Green Bond Fund (Planet Emerging Green One, AP EGO). Each approach presents different angles depending on the context they operate. DFIs have played a role in sponsoring, structuring and credit enhancing these types of transactions and attracting global institutional investors. Both DFIs (catering to the public and private sector) can play a role subject to the nature of the underlying assets (loans).

IFC-led Managed Co-Lending Portfolio Program (MCPP). The IFC-led MCPP expands the syndication process of B loans to include a wider base of European institutional investors.

This IFC innovation looks for pools of liquidity other than the standard bank markets to tap into. Institutional investors can buy a US dollar asset class with the standardization that an IFC B loan provides. Investors assume the underlying EMDE risk of the different projects, but under the protective umbrella of IFC, which offers consistent practices of credit analysis, risk allocation, procurement, due diligence, and monitoring and oversight. This approach translates into a consistent asset class independent from the geographical location of the project loan. Since 2013, the MCPP has mobilized US$10 billion from global institutional investors to support IFC loans for its three business lines (manufacturing, infrastructure, and financial institutions). This type of alternative investment vehicle allows the use of the "unlisted space" among institutional investors acquiring project bank loans. The structure is flexible and can be adapted to different investor classes. It has a strong replicability potential to expand the participation of global institutional investors in EMDE infrastructure project loans. The main drawback of this platform has been the long project preparation cycles—between two and three years—during which investors are required to commit funds ahead of their actual disbursement. A possible solution would be to develop loan warehouse facilities in banks' balance sheets. This would have a double benefit for institutional investors: the timing of investments would match their availability and investors would be able to enter projects at a more advanced stage of development (preferably after construction) with a lower risk profile.

Bayfront Infrastructure Capital (BIC). Along the lines of the MCPP experience, but with the objective of deleveraging banks' balance sheets with EMDE project loan assets, Clifford Capital together with five large commercial banks (DBS, HSBC, MUFG, SMBC, and Standard Chartered) created BIC. This platform (take-out facility) is used to buy project loans with exposure in Asia and the Middle East from the five commercial banks and in turn issue a collateralized bond (CLO asset-backed securities) in US dollars for placement among global institutional investors. BIC launched in July 2018 having US$458 million in CLO securities with underlying project loan risk from 37 bank operations, from 17 different countries and eight different sectors. This option creates a bridge for institutional investors into bank loans. It also addresses the challenge found by MCPP of finding a suitable pipeline of assets within shorter timeframes. The BIC platform does not use a significant portion of blended finance (just a 10% subordinated tranche held by Clifford Capital), but it is an innovative way of developing investible assets that could be matched with blended finance if necessary.

Planet Emerging Green One (AP EGO). The third relevant example is the green bond fund AP EGO, managed by Amundi (Credit Agricole Global Asset Manager) and launched jointly with IFC in 2018. IFC together with support from other DFIs (EBRD, EIB, and Proparco) structured a dedicated fund to acquire green bonds issued by financial institutions from EMDE countries. The fund, with only 10 percent of first- and second-loss coverage, was able to raise US$1.42 billion (90 percent from European institutional investors) during its launch. As a complement, an IFC-managed technical assistance program promotes the creation of the new asset class by developing the supporting institutional and regulatory architecture required for green bonds (including help with policies, regulations, training).

CROSS-BORDER RISKS

Cross-border risks, including foreign exchange risk, in the case studies addressing the global investor markets were mitigated through different mechanisms available at the country level in each particular transaction[13].

MIC project piercing sovereign credit rating. In the case of the Elazig Hospital, MIGA political risk insurance was used, whereas in the Capital Investor One portfolio of energy projects, off-taker contracts were in US dollars. However, unless transactions can enjoy a full-wrap credit guarantee of a global AAA institution covering debt service payments, there is always a residual foreign exchange risk borne by the final investor. It could be argued that, even in the case of a full coverage of debt service payments by a AAA institution, there is a residual risk under a systemic financial crisis that the AAA institution might default in its commitments. The additional challenge is the foreign exchange risk for governments when projects' revenues are generated in local currency. So far this risk can only be addressed by mobilizing local currency but, as explained below, the pool of funds in local markets is limited.

13. Foreign exchange risk in projects cannot be mitigated once liabilities are contracted under hard currency for a project with revenues in local EMDE currency. The risk caused by this currency mismatch can only be transferred (via adequate instruments such as swaps and forwards, if available). However, the presence of robust local currency markets at adequate price and tenor conditions does allow to mitigate this by contracting part of project's liabilities in local currency.

LICs accessing hard currency. The World Bank, using its guarantees product line, assisted two African countries, Benin and Côte d'Ivoire, that had little to no experience accessing the pool of European institutional investors. In 2018 and 2019 both countries successfully issued Eurobonds. Benin used an IBRD policy-based partial guarantee together with complementary coverage by African Trade Insurance (ATI) to provide a full guarantee helping place their sovereign "trademark" in the European capital markets. This helped pave the way to Benin's being able to place additional sovereign bonds without any type of DFI support in 2019 and 2021.

A similar case was experienced by Côte d'Ivoire, though targeting infrastructure finance more directly. In April 2019, Côte d'Ivoire Energies (CI-Energies) used an IDA partial credit guarantee (€180 million) complemented by additional second-loss coverage by ATI to support 100 percent of the project loan debt service for €300 million placed in the European markets. After this loan placement, Côte d'Ivoire successfully closed new financing led by IFC for a 288-megawatt private combined cycle power plant.

Both countries benefited from structural monetary arrangements of the West African Economic and Monetary Union (WAEMU), where their local currencies were linked to the euro.

The conclusion of the analysis on global investors mobilization is that the analyzed financial structures are highly replicable. However, they all encounter a common challenge: how to standardize a US dollar–denominated asset class—in large scale—for EMDEs' infrastructure while mitigating most of the cross-border risk and achieving an investment grade rating. Chapter 4 will attempt to provide some recommendations of solutions to be explored further to overcome such a challenge.

LOCAL INSTITUTIONAL INVESTORS

Tapping into the smaller local-currency component of the institutional investor markets eliminates cross-border risks for investors and governments, but other type of challenges remain that are difficult to overcome. Domestic institutional investors do not have enough critical mass to finance infrastructure in scale, as is needed in EMDEs. In those markets where a relevant investor base has developed, it generally lacks the experience and sophistication to invest in infrastructure assets. Additionally, the capital market ecosystem in EMDE countries is not supportive of investments in infrastructure. The markets lack (a) depth, (b) knowledge of the infrastructure assets, (c) regulations supportive of infrastructure investments, and (d) providers of alternative investment vehicles used in other jurisdictions for infrastructure investments.

However, the upside of using the leverage of DFIs and institutional building capacity is high in EMDE local-currency markets. An important component of the overall solution to optimize private sector flows into infrastructure is linked to the development of long-term local-currency financing. Besides the mitigation of the cross-border risks, an added benefit is that governments would have strong incentives to honor their contractual obligation to avoid financial distress on domestic pension funds and insurance companies. This is an important consideration for potential co-investment platforms deciding between domestic and global institutional investors, as will be discussed further.

The solutions that seem to provide the best leverage for domestic institutional investors have involved comprehensive solutions, with a domestic DFI or credit enhancement platform supporting the standardization of infrastructure investment vehicles. There are four types of approaches that can be considered successful, depending on the context: (a) domestic guarantee providers such as GuarantCo in Nigeria, (b) domestic platforms to recycle assets after the construction phase (Mexico and Uruguay), (c) DFIs supporting comprehensive solutions including credit enhancement, as well as innovative investment vehicles (Colombia), and (d) co-investment platforms (India and Mexico).

Domestic guarantee platform. On domestic guarantees, GuarantCo provides a successful example of a joint international and domestic guarantee platform, InfraCredit, rated AAA on the local scale given the involvement of capital global donors rated AAA and AA globally. This allows the platform to provide guarantees up to five times its capital. As illustrated in the case study, so far it has provided full-wrap guarantees to five corporate and project bonds amounting to the equivalent of US$244 million. This is a first step toward

a gradual migration to provisioning partial credit guarantees that would allow greater leverage of its capital. Building on this partial success, GuarantCo is replicating the concept in Pakistan. In November 2020 GuarantCo, together with InfraCo Asia, launched a credit guarantee vehicle to provide credit enhancements to local-currency corporate and project bonds in Pakistan local capital markets, InfraZamin.

Asset recycling. Other relevant solutions tapping into the local institutional investors' pool of liquidity is the recycling of brownfield infrastructure public sector assets via the issuance of asset-backed securities. Mexico, through FONADIN, and Uruguay, through the Corporación Vial del Uruguay (CVU), are two relatively large asset-backed securities transactions in which the local institutional investors played a catalytic role in providing new funding for new infrastructure development. FONADIN in 2018 and 2019 issued the equivalent of US$1.1 billion of toll road asset-backed securities for the Mexico–Puebla Highway in local currency instruments listed in the local Exchange. CVU, during the period 2017–20, issued toll road asset-backed securities of the national road network, for the equivalent of US$450 million in local-currency index instruments and US dollars in the local capital markets. Mexico's was the largest asset-backed security in the transport sector in the region. Uruguay's was the largest issuance of a project bond in the domestic markets. Both transactions did not require any external credit enhancement and were rated AAA in local currency because of the strength of the structure and the solid traffic history of the toll roads.

DFI support to new investment instruments. The third option to consider is a more comprehensive approach, as followed by FDN in Colombia. As discussed previously, FDN supported the 4G toll road program with several complementary instruments and interventions. Here the emphasis is on FDN's support of infrastructure debt funds and infrastructure project bonds. These instruments did not exist in Colombia before and were developed while considering the profiles of local institutional investors. FDN's multipurpose liquidity facility, mentioned above, enabled bringing these investment vehicles to a local credit rating of AA. The combination of these interventions supported the mobilization of the equivalent of US$1.8 billion of capital from domestic pension funds and insurance companies, which represented 25 percent of the capital mobilized in Colombia's toll road program.

COMPLEMENTARITIES BETWEEN DOMESTIC AND GLOBAL INVESTORS

Co-investment platforms. Finally, a very promising option is the development of investment platforms that allow for co-investment between global and local investors, which has allowed infrastructure projects to benefit from investment scale and from lower cross-border risks brought by global and domestic investors, respectively. Examples are the experience of National Investment and Infrastructure Fund in India (see box 2.4) and CDPQ (Caisse de Dépôt et placement du Québec) in Mexico and Colombia. Global investors, as described in chapter 3, have strong incentives to invest through a co-investment platform, because they benefit from the local knowledge and because the government action failure risk is substantially mitigated. These types of approaches in selected EMDE countries can rapidly provide economies of scale to local-currency markets.

BOX 2.4: NATIONAL INVESTMENT AND INFRASTRUCTURE FUND LIMITED (NIIFL), A CO-INVESTMENT PLATFORM

This is a collaborative investment platform for international and Indian investors, anchored by the Government of India. NIIFL invests across asset classes such as infrastructure, private equity and other diversified sectors in India, with the objective to generate attractive risk-adjusted returns for its investors. NIIFL thinks long-term, believes in generating returns through efficiently operating its investments through economic cycles, and is committed to sustainable investing principles.

After about two years of organizational and institutional ramp-up, NIIF saw major investments from the AIIB, ADB, and international institutional investors. As of early 2021, NIIF manages approximately USD 4.5 billion in capital spread across its three component funds: the Master Fund (MF), Fund of Funds (FOF), and Strategic Opportunities Fund (SOF). The GOI has planned to maintain an overall 49 percent stake in all funds of the NIIF, with its current commitments standing at USD 2.74 billion. Through its different windows, NIIF offers a co-investment platform for DFIs and global institutional investors seeking long term assets in the Indian markets but with the comfort of participating together with the GOI.

The NIIF's MF focuses on core infrastructure project investments, such as energy, roads, and ports. It has raised approximately USD 2.1 billion in capital from investors, including the Abu Dhabi Investment Authority (USD 1 billion), the Canada Pension Plan Investment Board (USD 600 million), and Temasek Holdings Limited (USD 400 million). In the energy sector, NIIF invested USD 284 million in the Ayan Renewable Power company (based out of India), with the intent of NIIF to stand as a majority stakeholder. Ayana was established in 2018 by the CDC Group (a UK finance institution) to tackle India's energy capacity needs through renewable and decarbonized energy solutions, including numerous solar projects totaling 1,100 MW capacity. The NIIF MF has also pursued joint ventures and partnerships to invest in smart infrastructure, port operations and logistics, and tollways.

Though still quite young, the NIIF has so far been able to leverage additional capital from DFIs and institutional investors to finance infrastructure assets in India.

Source: NIIF Annual Report (2020), World Bank (Strategic Investment Funds, 2019)

Paramount to both global and local institutional investors, and reflected in the case studies under consideration, is the continuous and intensive involvement of DFIs, together with government agencies responsible for the execution of infrastructure projects. Most of the analyzed cases took a cycle of three to seven years before completion was reached. This length of time usually crosses paths with democratic elections bringing—most of the time—changes to the government administration. Continuity of the DFIs' efforts can prove crucial in these changing situations.

Tapping into both categories of the institutional investor market (that is, global and local, or hard currency and local currency) seems to be the most advantageous strategy to increase flows into infrastructure development in EMDE countries. Most investment-grade investments in infrastructure in both global and local markets (corporate or project issuances) have some degree of tradability, even if limited, that can signal pricing and provide mitigation to the liquidity risk. For the wide category of infrastructure-related asset classes with EMDEs' underlying risk, tradability is very limited. This vulnerability is seen as important for some institutional investors in their decision-making process, affecting yields and terms and conditions. One of the reasons it is so difficult—even with the most robust financing structure—for a project bond to pierce the pricing ceiling of a sovereign bond in both local and international bond issuance is the "liquidity risk" of a project bond versus a sovereign bond. Project bonds will never have the liquidity of a sovereign bond, but improvements in their tradability can make a very important difference in their risk profile.

Insights from case studies of local markets illustrate the strong potential for leveraging DFIs' risk capital to EMDE countries to support the development of financial structures that can attract local institutional investors, and in some cases global institutional investors. Chapter 3 4 will reflect the views of a sample of the largest global investors on these issues.

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GLOBAL INSTITUTIONAL INVESTORS' VIEWS

This chapter details the key highlights of interviews of a sample of 12 large global institutional investors on infrastructure investments in EMDE countries.[14] The purpose of the survey was to establish the main challenges faced or perceived by these subsets of institutional investors, as well as the investors' views on potential solutions driven by DFIs. Respondents comprised senior-level executives, including chief investment officers, managing directors, and heads of infrastructure investments of the selected sample of institutional investors. Results of the interviews corroborate and support the key obstacles identified in other sections of this report that limit private capital flows into infrastructure development in EMDE countries, as well as the main lessons and major findings of the 19 case studies.

The institutional investors interviewed have varying investment strategies, ranging from greenfield investments to brownfield investments, as well as indirect investments through co-investment platforms. The sample interviewed comprises organizations across all four key categories of investors relevant for infrastructure finance: pension funds, insurance companies, asset managers, and sovereign wealth funds (see figure 4.1, which illustrates their weight in the survey)[15].

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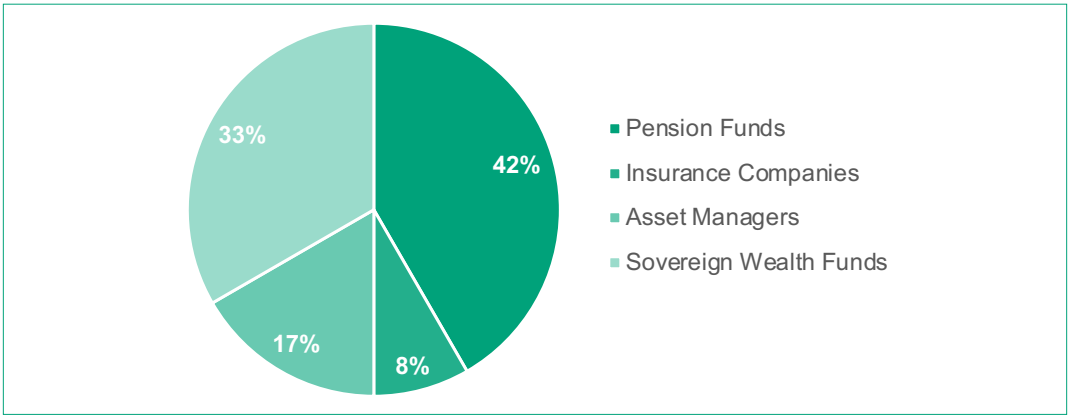
Figure 2.1. Institutional Investors in the KPGM Sample



14. A survey with a sample of global institutional investors was subcontracted by the report project team to KPMG (Singapore office). The survey was based on a questionnaire built from the description of the key factors hampering institutional investors' capital flows into infrastructure development, as described in chapter 2 of this report.
15. For the most part, institutional investors are "passive" investors, and risk averse. A good portion of them invest directly in government bonds that finance public infrastructure. Trade-offs from financing directly the infrastructure project are still subject to debate. Also, some institutional investors invest in EMDEs infrastructure via close-ends investments funds structured as limited partnership to mitigate some of the risks.

Interviews were structured along three topics: (a) challenges hampering private capital flows to infrastructure development in EMDE countries, (b) challenges and market opportunities for investments in green financing instruments, and (c) potential solutions to mitigate such challenges. A summary of the outcomes of the interviews follows, organized by the three main factors that impede optimization of institutional investors' capital flows to infrastructure development in EMDE countries (inventory of bankable projects, government actions failures, and financial markets failures). It is important to note that all institutional investors highlighted that *"no two emerging markets and developing economies are the same."*

3.1 Inventory of Bankable Projects

An infrastructure project is deemed bankable by institutional investors only if it can demonstrate the long-term ability to compensate both debt and equity with an adequate level of return, while covering all operating and related expenses.

LACK OF SIZABLE PROJECT PIPELINE

One of the biggest challenges those institutional investors identified in investing in EMDEs is the lack of a visible project pipeline containing *"sizeable, big-ticket, and bankable investment opportunities."* Across EMDEs, the public sector is seen to lack adequate funding support and capacity building to prepare and develop high-value projects that are bankable to the private sector. This insufficiency results in the development of a pipeline composed of smaller-scale transactions that is not aligned with the investment mandate and risk appetite of institutional investors.

Most institutional investors noted that there is a strong preference for big-ticket investments and that they specifically favour jurisdictions that have a strong pipeline to avoid one-off transactions. The rationale for this preference is based on the following facts: (a) time and capital requirements for project preparation and due diligence require a certain minimum investment threshold; (b) investing in EMDEs' infrastructure development requires specialized understanding of the regulatory and institutional frameworks, the local legislation, and the political landscape, which becomes extremely costly for one-off projects; and (c) in EMDEs, large-scale transactions within a programmatic approach tend to have better project preparation performed by the public sector—*and often with assistance from DFIs*—which ensures a smoother transaction and due diligence process for the institutional investor.

POLITICIZATION OF INFRASTRUCTURE

Institutional investors interviewed accept that infrastructure development is inherently a political process in nature, driven by the government's policy objectives as well as those of key stakeholders (end users, workers, and others). As shown on more than a few occasions, the political character of infrastructure increases risks in EMDE countries of significant disruptions to the development of an infrastructure project pipeline. This politicization is more typically manifested in the time gap between the project preparation life cycle and the electoral life cycle. In most cases, a new administration in an EMDE government may lack the political will (or funding) to support infrastructure projects that will be completed and visible only in the next administration or, in some cases, that have been sanctioned by the previous administration. As reflected in the investors' survey, the politicization of infrastructure development is not uncommon in EMDEs. It manifests itself in different types of obstacles, such as private sector sponsors facing difficulties in obtaining required approvals (including but not limited to land acquisition, licensing, and permitting) for the infrastructure development. These types of events would adversely affect the timeline of the project and increase risks and transaction costs for the private sector.

3.2 Government Actions Failure

The following three outcomes summarize what the subset of interviewed institutional investors perceived as the main government actions failures.

LACK OF STABLE AND TRANSPARENT REGULATORY AND LEGAL FRAMEWORK

The inherent fast-changing political nature of many EMDE jurisdictions creates challenges in building a stable and

transparent regulatory and legal framework upon which investors operate. All institutional investors interviewed identified the lack of a stable and transparent regulatory and legal framework as the "*most significant challenge and a major deterrent for institutional investor capital flow into emerging markets."*

The absence of a stable regulatory and legal framework often results in the modification or cancellation of the project transaction process (from preparatory through to transactional phases). An example highlighted by surveyed investors is the recent public tender process for a public transit project in Southeast Asia. Although the process was originally open to all international investors, the relevant authority unilaterally changed the bidding criteria, restricting it to local bidders. These types of actions put at risk institutional investor's confidence in the market, particularly after significant resources have been invested in the preparation of the transaction. In addition, some respondents cited examples of governments not complying with their obligations under concession agreements, such as failing to grant increases in toll rates to compensate investors for inflation.

For institutional investors to trust in EMDE jurisdictions, it is paramount that the public sector be able to show a track record of regulatory stability, coupled with an independent legal and institutional framework ensuring that contractual obligations are honoured and enforced over the life of the asset. Respondents cited a long list of examples across EMDEs of contractual obligations the government had not complied with, procurement rules that were effectively bypassed, and, at the most extreme, concession agreements that were terminated without compensation to the investor.

NON-STANDARDIZATION OF AGREEMENTS

Infrastructure projects are inherently complex in nature and include a vast array of contracting, financing, and legal documentation that must be prepared and reviewed when developing a project. Institutional investors noted that bespoke infrastructure transactions are being brought to market in EMDEs, offering unique structures and nonstandard contractual terms. Although these unique structures and nonstandard terms may be justified given the nature of the transactions, they also create additional complexities, resulting in extra time and resources during project preparation and due diligence.

Institutional investors identified that non-standardization of project agreements presenting a major challenge for investing in EMDE jurisdictions. For smaller-scale transactions, costs incurred to conduct due diligence are often not justifiable, considering the limited level of returns to the private sector. For PPP projects, transaction costs pertaining to technical, legal, and financial advisory services can be significant.

The standardization of PPP contracts would improve the project preparation process and would provide additional comfort to institutional investors during the due diligence stage. Furthermore, this standardization would assist government contracting agencies that may lack the capability or capacity. Finally, the standardization of contracts facilitates the preparation of larger transactions and the bundling of projects, which would increase the value of the transaction and hence institutional investors' interest in the transaction[16].

COUNTERPARTY CREDIT RISK

Across the majority of EMDE jurisdictions, a government contracting agency will be the primary counterparty responsible for remunerating the private sector party through the governing contract (that is, off-take agreements). The survey highlights that those institutional investors considering EMDE infrastructure projects perceive payment risk by contracting government entities to be among the main factors influencing their assessment. For example, in countries where the "*state electricity or utility company is the primary off-taker of electricity, the track record and creditworthiness of the off-taker is a significant factor in providing comfort to investors and in assessing the overall attractiveness of the market."* In addition to a government contracting agency (or the government itself) with a strong credit rating, institutional investors would also require the contracting party to have a strong track record of implementing infrastructure projects and of meeting all financial obligations.

16. While contract standardization is a strong investors' request that will help mobilize additional capital, standardizing agreements for different infrastructure sectors and projects is not fully achievable. A degree of standardization in common clauses could be possible but not for the full agreement.

3.3 Financial Market Failure

Financial market failures are essentially linked to two types of constraints: (a) availability of long-term hard-currency financing within transferable or bearable cross-border risk levels and (b) availability of long-term local-currency financing at adequate terms and conditions. Across the investors interviewed, multiple important challenges were identified within these two constraints.

PROJECTS IN EMDES HAVE UNDER-PERFORMING RETURNS

One pressing and recurring challenge identified was that projects often do not offer a return for investors that can compensate them for the inherent risks of financing infrastructure development in EMDEs. In general, higher returns on investments in EMDEs are not competitive when compared with similar investments in advanced economies, on a risk adjusted basis. Returns are often deemed to be insufficient to meet the requirements in investors' own mandates when taking EMDE risk. Although the issue is not exclusively circumscribed to EMDEs, institutional investors in these jurisdictions often bear a higher level of risk linked to political, regulatory, legal, and financing factors.

Institutional investors in greenfield assets also bear harder-to-mitigate risks typical of the early stages of projects, such as development and construction risks. Most of the respondents were not actively pursuing greenfield projects in EMDE markets. This factor limits respondents' engagement in EMDEs further, as their infrastructure gap is mostly in greenfield projects.

Returns are negatively affected by the following three factors. The first factor is the unavailability or high cost of EMDEs' currency hedging instruments. In many EMDEs, institutional investors need to hedge their currency risk given foreign exchange volatility in EMDEs and the limited capacity to raise local currency on a nonrecourse basis. The second factor is the unavailability or high cost of instruments to mitigate political or regulatory risks. These risks, as previously explained, are critical when countries lack a good track record of contractual compliance. Instruments such as political risk insurance can help build such a track record and provide comfort to investors. However, the number of countries able to access these instruments is limited, or the cost may not be commercially justifiable. The third factor, in jurisdictions where long-term local currency debt financing is not readily available, is the need for investors to price in and bear the refinancing risk, which affects the average expected return in their investments.

INABILITY TO RAISE LOCAL CURRENCY LONG-TERM FINANCING ON A NON-RECOURSE BASIS

Access to long-term local-currency financing on a non-recourse basis is seen as critical in mobilizing private capital. A challenge highlighted by institutional investors is the inability to raise long-term financing in local currency in EMDE jurisdictions where the underlying contract remunerates the investor in local currency. In addition, infrastructure contractual agreements (such as concessionaire agreements and power purchase agreements) are long-term in nature, often exceeding 20 years. Institutional investors seek to raise long-term local-currency financing that is aligned to the tenor of the contractual project agreement. In instances where only short-term local-currency financing is provided, institutional investors will need to bear refinancing risk. This risk exposes investors to the possibility that the financing cost may be higher than assumed, may be unavailable, or may only be available on terms that are not compatible with the existing transaction structure. The tenor mismatch between long-term infrastructure assets and short-term local-currency financing impedes larger capital flows from institutional investors to infrastructure development.

Institutional investors have also expressed that certain EMDE markets lack the necessary capital market depth to finance big-ticket transactions in local currencies. Although local-currency financing may be available for smaller ticket transactions, the market does not have the depth, size, and pool of capital market instruments necessary to fund larger capital projects.

ACCESS AND AFFORDABILITY OF CREDIT ENHANCEMENT INSTRUMENTS

As previously described, institutional investors often rely on the access and availability of credit enhancement instruments to overcome the political and macroeconomic risks that are present in many EMDE jurisdictions. Such credit enhancement instruments may include political risk insurance, cash flow stabilization mechanisms, partial-credit or full-credit guarantees for cash flow recovery, credit substitution, and others. Although these credit enhancement instruments could play a pivotal role in the future of infrastructure investment in EMDEs, their availability to institutional investors on a broad scale is limited.

In other instances, credit enhancement instruments are available in the market, but at a relatively high price (high premium) that lowers their expected return on the project. One institutional investor interviewed in the survey highlighted this issue in a project for a port development in Turkey. Given the recent currency and debt crisis that Turkey experienced between 2018 and 2020, the investor sought to purchase political risk insurance as a risk mitigation instrument to counter potential exposure to political and regulatory risks. The insurance premium was so high that its cost far outweighed the potential mitigated risks and would have significantly reduced the expected rate of return.

3.4 Green and Sustainable Financing

Green and sustainable financing instruments to finance infrastructure development are a recent advent that includes green bonds and environmental, social, and governance thematic bonds. Institutional investors are increasingly looking at sustainable financing instruments to finance EMDE infrastructure. All the interviewed institutional investors were knowledgeable about this asset class and expressed positive views on investing in these instruments.

LACK OF CONSISTENT REPORTING STANDARDS

There remains a lack of consistency, comparability, and reliability of reporting standards for green and sustainable investments globally, which is a key challenge for investors seeking to finance green and sustainable infrastructure. Various institutional investors noted that "*a consistent international reporting standard will ensure that investors, sponsors, and corporations are playing by the same set of rules and will avoid the greenwashing of assets in the market.*"

Institutional investors interviewed have identified consistency in reporting standards as useful to assist in their investment choices and the use of green and sustainable financing for investment in EMDE infrastructure. Given the long-term nature of infrastructure investments, institutional investors do not want to invest capital in assets that will be deemed non-green or non-sustainable in the future as a result of frequent changes to standards that lack international acceptance. The inclusion of a consistent international set of reporting standards for green and sustainable investments would promote a globally consistent set of disclosures and principles across jurisdictions, would identify specific consistent metrics, and would support coordination across the international community.

VIABILITY OF GREEN FINANCING ON A STAND-ALONE BASIS

Respondents have commented that governments often support green and sustainable financing initiatives with grants or subsidies. Institutional investors expressed that it is critical for green and sustainable financing to work *"on a standalone basis without government support, grants, or subsidies. This will ensure that the market does not become reliant on such forms of support on a go-forward basis."* Further, institutional investors would often price government-supported financing mechanisms at a discount, as they are viewed as a "short-term solution that is unlikely to continue in the long-term." A common view among investors was that *"the fiduciary duty to maximize returns and use green financing are not mutually exclusive."*

INSTITUTIONAL INVESTORS SEEK OPTIMAL FINANCING STRUCTURES

A common theme that arose throughout the interview process is that, as a result of institutional investors' fiduciary responsibility to optimize returns to shareholders, any financing solutions

that investors access must provide optimal financial outcomes. As such, many institutional investors do not specifically seek out green and sustainable financing solutions strictly because of their green or sustainable classification. Such solutions also need to meet a threshold of financial returns to satisfy investors' fiduciary agreements with shareholders.

3.5 Potential Solutions to Optimize Institutional Investors' Capital Flows

The institutional investor interviews have identified multiple key challenges that are persistent in infrastructure investments in EMDE jurisdictions. The World Bank Group and other DFIs can play a key role in implementing innovative financing solutions that may help institutional investors overcome these challenges to optimize and increase institutional investor capital flow into EMDEs. This section presents the solutions that institutional investors have expressed as most relevant for their needs.

CREATION OF CO-INVESTMENT PLATFORMS

Institutional investors seeking access to EMDEs often lack the necessary resources, experience, and insight into the market to pursue many of the available transactions. Most successful experiences show that institutional investors seek to enter a new market through a co-investment mechanism with other institutional investors or with a strong local partner. Across the interviews performed, institutional investors identified a co-investment platform led by the WBG and other DFIs as a solution that the investment community would welcome. The creation of such a platform would give institutional investors access to a transparent portfolio of viable investment opportunities that is diversified across different EMDE jurisdictions and asset types. Furthermore, a co-investment platform would have the ability to aggregate or pool small-ticket transactions into a single bundled investment that might improve the attractiveness of the investment to the private sector. The WBG and other DFIs would then be able to securitize such a bundled investment, which would improve the credit ratings of the investment and diversify the risk profile.

Respondents have observed that the World Bank, through its relationships with government sponsors of projects and upstream interventions, would be able to ensure a level of quality checks with respect to the projects. Many survey respondents spoke highly of the relatively recent initiative of the government of India to develop NIIF as a co-investment platform (see box 2.4. above).

ASSISTANCE IN PROJECT PREPARATION

The World Bank and other multilateral institutions have access to and relationships with the public sector of EMDE jurisdictions. Through these relationships, institutional investors have identified that a relevant solution would be the development of project preparation facilities (PPFs) and assistance in early-stage project preparation to ensure that high-quality projects are brought to market. A PPF would allow for the necessary project preparatory processes (such as financial and technical feasibility studies and environmental and social impact studies) to be funded before such projects are presented to private investors. The PPF would also help ensure that these projects are bankable. Additionally, a PPF could provide support at the transactional phase, including during the running of the tender (including elaboration of RFP documentation and evaluation leading to the selection of a preferred bidder) and through to financial close.

A PPF would ensure that a greater number of bankable projects could be brought to market, thus creating a visible long-term viable pipeline for institutional investors. Assistance in project preparation may expedite the project preparation and due diligence processes for institutional investors, thereby increasing the attractiveness of the investment.

CREATION OF AFFORDABLE CREDIT ENHANCEMENT INSTRUMENTS (FACILITIES)

Institutional investors seeking access to EMDE investments often require credit enhancement instruments to overcome the complex set of risks inherent in each jurisdiction. These products often have limited availability or are priced at high premium levels, making them unattractive to the private sector. Institutional investors have noted that a possible solution that the World Bank and other DFIs could develop is the creation of affordable credit enhancement instruments to help institutional investors access EMDE infrastructure investments. Specific credit enhancement instruments that interviewed institutional investors highlighted were partial credit guarantees or full wraps that ensure cash flow recovery, as well as affordable political risk insurance[18].

18. This proposed solution comes straight from the investors survey and reflects their perception at the time. Behind the "affordability" concept for credit enhancement instruments, there is a portion of standardization and eligibility issues as well.

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ADDRESSING THE CHALLENGES

MDBs and DFIs have been designing and implementing innovative approaches and instruments to address the challenges that hamper optimization of institutional investor flows to EMDEs' infrastructure development. Their solutions have had varying degrees of success and replicability, depending on the context. This global review has analyzed a subset of solutions selected following the criteria of relevance and effect. Based on the examples reviewed, there are several critical conclusions that would guide a set of broader recommendations included in this chapter. The following seven points summarize the conclusions of this report:

- *The benefits of a programmatic approach*. Case studies with greater impact are those in which EMDE governments are committed to launching a comprehensive program in infrastructure finance, either in a specific sector) or through a standardized approach to infrastructure finance. This approach allows for scale and some level of standardization, which in turn could substantially lower transaction costs and reduce uncertainty for private sector sponsors and financiers. It also allows governments to systematically address bottlenecks along the whole project cycle of the program, from structuring of projects upstream to financial close and contract management. In addition, programmatic approaches can have good results when DFIs, particularly private sector DFIs, lead a portfolio-based solution across one or several countries. Government-led programmatic approaches are preferable, but they require strong institutions that can implement programs across political cycles.

- T*he benefits of a whole-life approach.* The whole-life approach sometimes overlaps with the programmatic approach. Single projects are generally more successful and have greater influence when governments' DFIs are involved in the whole project cycle. Generally, this type of support requires substantial grant and concessional resources for project preparation and additional resources for lending and credit enhancement of the project. Leverage ratios in these projects tend to be low given the increased amounts of blended finance needed in the context of low-income countries (LICs) with lower credit rating weak institutions. However, it is a principle that should operate in almost all approaches through different modalities of blended support. For example, in middle-income countries (MICs), the whole-

life approach should focus on setting from the upstream (namely, project preparation and procurement) standards that would facilitate institutional investors' participation in the downstream phase of projects. This strategy could include a range of actions, from developing standard processes and contracts that considers requirements of institutional investors, to assess financial policies and regulations that may be an obstacle for the investors' involvement. The whole project cycle approach would ensure that all pieces fit and that projects can be easily replicated with optimal use of DFI resources.

- *The benefits of domestic DFIs.* Results are still not conclusive on what an ideal domestic DFI is, but there are some good examples that show the added benefits and contributions of domestic DFIs' involvement in infrastructure finance programs, particularly in the early stages of project development. Important contributions from domestic DFIs include knowledge of local market conditions; skills and financial expertise; greater flexibility for financial innovations; decision-making ability; lend long-term in local currency and the ability to remain at arm's length from the central government, among other things. These benefits assume that the DFI has the means to keep up with state-of-the-art financial skills and has a governance structure that ensures it is managed by prioritizing technical, commercial and financial decisions, within exiting political economy challenges. These benefits are optimized when -along the domestic DFIs – global and regional DFIs are also involved.

- *Transforming loans into investible assets* appealing to global institutional investors—with co-investment platforms—has resulted in the highest financial leverage impact. The flexibility of loans from commercial banks is better aligned with the cash flow profiles and potential renegotiation needs, if any, of infrastructure projects, as opposed to project bonds from capital markets. These approaches have mobilized institutional investors to take EMDE project risk while at the same time improving DFIs and commercial banks' underwriting capacities.

- *Supporting proactively different modalities of institutional investor mobilization into infrastructure.* In advanced economies, institutional investors have participated in PPPs and non-PPPs into infrastructure (i.e., infrastructure projects in markets such as Canada, USA, and UK have had a robust participation of institutional investors in their financing). This has also been the case in some high middle-income EMDEs. However, in many EMDEs, financing of infrastructure SOEs, domestic DFIs and large infrastructure programs may be more suitable to mobilize institutional investors, subject to meeting their risk-return requirements. In these cases, the focus should be on financial structures, instruments or vehicles that achieve a minimum of investment grade rating to attract institutional investors. This effort should be accompanied with actions ensuring SOEs and domestic DFIs have the appropriate skills and governance, as previously mentioned.

- *Trade-offs between international and domestic investors*. Global investors hold approximately 80 percent of the global assets under management (AUM), whereas domestic investors in EMDEs hold only 20 percent of assets. Each of the two groups presents advantages and challenges when they are financing infrastructure. On the one hand, global investors are indispensable to reach the required scale to fill the infrastructure financing gap, but their involvement requires careful management of foreign exchange risks, except in cases where the underlying asset generates revenues in hard currency. On the other hand, domestic investors have limited scale and capacity, but they contribute much-needed long-term finance in local currency. Solutions should be developed to attract both types of investors separately or jointly, depending on the country and project context.

- *The role of capacity building and advisory services to EMDE governments.* Most of the successful solutions presented include a component of advisory services, throughout the project life cycle, that has been instrumental in the mobilization of institutional investors. In all approaches in this chapter, it would be important to include an advisory component with two objectives: (a) to build country capacity on project investment management and PPP frameworks, governance, institutional skills and processes, transparent regulation and legal frameworks, financial sustainability of sectors, improving overall

investment environment, etc.; (b) develop local financial market regulation to allow prudent investment by local and international institutional investors into infrastructure; (c) identify and prepare project pipelines with risk return profile that would meet the risk-return considerations of institutional investors. This role is enhanced when sector and institutional reforms are part of a much longer vision rather than addressing priorities of short-term political cycles. The EBRD through its Sustainable Infrastructure Policy and Project Preparation (SI3P) created in 2019 has assisted member countries develop US$ 10 billions of investable infrastructure assets.

These guiding principles aim to optimize institutional investor financing with the least recourse to blended finance. They also seek to support structural changes in the infrastructure finance ecosystem in which projects take place, so that blended finance solutions can be further optimized or withdrawn, where not needed. Most of these principles can be found in the projects supported by DFIs analyzed for this report. However, there could be greater focus in ensuring governments adapt enabling reforms in a more systematic way, which avoids lower leverage ratios or limited replicability of projects.

The proposed solutions introduced in this chapter follow a dual-track approach: (a) reinforce and expand the set of solutions that have worked well, based on this report's findings and (b) explore the development of new large-scale solutions that could significantly increase participation of global and local institutional investors to EMDEs' infrastructure development. The proposed solutions will address in different degrees the three types of failures used in the analysis of the cases selected for the report—namely, project inventory failures, government actions failures, and financial markets failures.

4.1. Solutions That Strengthen Current Approaches

Recommendations in this section seek to strengthen existing interventions by adding features that have shown the best results. DFI's interventions are grouped by the problem they are trying to solve (project pipeline, government actions, or financial markets failures). Most of the solutions address all three problems identified, but with different emphasis in each challenge. The main limitation of the DFI's interventions proposed in this section is that their scalability relies on replicating each approach more times, with adjustments depending on the country or project context. Although this is a valid option, it limits the degree of standardization required by the broader base of institutional investors.

4.1.1. Addressing the Lack of Inventory of Bankable Projects

Three types of solutions have been identified as being most effective: *whole life cycle approaches, upstream project support,* and *upstream advisory support*. The effectiveness of each approach depends on the level of development of countries and the strength of public institutions.

Whole life cycle approaches, in which the engagement starts at project conceptualization and continues through project preparation and project completion, seem to be the "best value" option for MDB and DFI interventions in LICs and low-MICs with weaker institutions. These models include use of (a) grant and/or concessional funds for project feasibility and preparation and (b) support through different means in project financing, both in the construction phase and the operation and maintenance phase. Climate Investor One is a relevant approach on a cross-country portfolio basis, with three interlinked funds—one each for project preparation, construction financing, and take-out for the operations phase. An equally valuable alternative is the IFC InfraVentures approach, with grant support at the project preparation level and the possibility of financing downstream through a combination of commercial and concessional funds. These models provide strong signals of financing commitments and align the incentives of both the sponsoring EMDE governments and those of potential investors. The drawbacks of these options are the intensive engagement of DFIs for long cycles and the need to manage potential conflicts of interest for private sector DFIs (i.e. being in the project structuring to tender and in the financing of the project). During the last three years, IFC has undertaken a much larger, whole-of-

organization approach to build infrastructure project pipeline called Upstream, a cross sectoral approach to all projects at the Institution. Infraventures has been folded into Upstream involving a large strategic shift for the whole organization, including significant budget allocations, 300 plus dedicated staff, corporate targets reaching several projects, regular reporting to the Board, close integration with IFC's mainstream business, among others.

Dedicated upstream facilities for project preparation, such as the World Bank–anchored Global Infrastructure Facility (GIF), and the EBRD–anchored SI3P have been successful at addressing the risks associated with the development of a pipeline of bankable projects. This approach has shown better results in high-tier LICs or MICs with stronger government institutions. Their focus is on project preparation but, depending on the case, they also get involved in financial close. Both facilities are at a stage in their own project development cycle whereby the learning curve is reaching completion, and results are becoming consistent. Initiatives such as GIF and SI3P can be expanded, and consideration should be given to increasing grant and/or non-reimbursable component of these facilities to increase their support, especially in LIC countries. To make real progress addressing the development of bankable projects pipeline, efforts such as the IFC's case cited in the previous paragraph, need to be considered by DFIs and other development institutions.

It goes well beyond a single initiative or vehicle. My comment is that if DFIs/MDBs are really to make progress on addressing an investible pipeline they will need to consider measures like this – indeed several DFIs are moving in this direction.

Upstream technical assistance and advisory support on project investment management -PIM, *PPP frameworks and project preparation* have shown very positive results in countries with institutional capacity to lead project development cycle. Advisory support has not traditionally been considered part of blended finance support. However, it can substantially increase leverage of DFIs intervening in the financing phase of projects. This has been the case, for example, in Colombia's 4G toll road program, where the World Bank Group's support to establish the transport PPP agency (ANI) and develop the standards for project structuring and PPP contracts facilitated the large-scale mobilization of institutional investors, among the largest in EMDEs.

4.1.2 Addressing Government Actions Failure

As seen in the country cases analyzed, credit enhancement and risk mitigation products from highly credit rated multilateral institution ("AA" or "AAA") provide greatest comfort in EMDE markets to institutional investors. These products could be provided on an individual project basis or through a programmatic approach to a portfolio of projects in one or several sectors. Two types of solutions have shown successful results: (a) targeted de-risking of government-related obligations by domestic and/or international DFIs, and (b) credit guarantees covering debt service payment defaults under any circumstance provided by domestic and/or international DFIs.

Specialized domestic DFIs or credit enhancement platforms have relevant examples of success in providing credit guarantees to protect debt service in local currency from delays from government project sponsors (for instance, line ministries or SOEs). These institutions specialize in the provision of partial credit guarantees (as defined by the World Bank[19]). They are government-led local development financial institutions that may include in their equity structure other shareholders, such as DFIs; other types of donors; and, in some cases, private financiers. Ideally, these institutions would need to be AAA rated at the national credit rating scale. The business model with best results replicates some of the features seen in Colombia in the FDN, such as strong government and MDB support, robust liquidity position, contingency liability management, standardized documentation, and professional staffing. A second model, with support from donor countries, is GuarantCo through its domestic partnerships, such as InfraCredit in Nigeria. In addition, the creation of a guarantee vehicle exclusively covering a government's contractual defaults in PPP arrangements, such as the IIGF in Indonesia, will be favorable for local currency investors.

In successful cases, the added value of these institutions lies in their technical expertise, strong governance, and

19. A partial credit guarantee mitigates private lenders against debt service defaults due to defaults caused by a government's action or inaction to meet specific contractual obligations.

institutional capacity to de-risk government payment and performance obligations in specific projects. A major challenge would be managing the contingent liabilities created by covering the contractual risks that government will not honor their commitments in PPP transactions. Many factors, such as relationship with and ownership by the Government, underlying contractual provisions for payment recourse, sector diversification, etc. will help manage these contingent liabilities; however, there is a degree of systemic risk given that all the events of default are related to a common denominator, the government's behavior. MDBs could help governments create these types of specialized institutions via a well-designed advisory and technical assistance program and could provide financing products during the initial project life cycle of the institution to improve its credit standing and liquidity position. DFIs could also participate in the capital structure and/or provide long-term financing, which would strengthen the institution's credit rating and could positively affect global investors' appetite for infrastructure assets covered by the domestic DFI.

DFIs providing partial risk guarantees have had different degree of success in mobilizing institutional investors. Their main limitation has been reaching scale and reduce transaction time. However, this is still a very valid approach for large projects in which the coordinated effort of several DFIs is needed, or in smaller projects in which it can have a strong demonstration effect. An option to add on a more systematic basis would be a *programmatic partial risk guarantee (PPRG)* to reach scale and higher leverage, provided it is complemented with actions to ensure there is a pipeline of projects in one or several sectors.

In early 2016, the government of Argentina launched an auction-based renewable energy program to scale up private sector participation in the energy sector (namely, the Renewable Argentine Initiative, or RenovAr). To mitigate the termination risks of government's failure in their contractual obligations under the PPP arrangements, the World Bank provided a partial risk guarantee for the RenovAr program[20]. The total size of the guarantee was US$ 480 million, supporting the generation of 1,033 megawatts of additional renewable capacity covering 27 different projects (for example, wind, solar, small hydro, and biogas). The World Bank partial risk guarantee helped leverage approximately US$3.2 billion of new financing for the sector.[21]

These types of "wholesale" mechanisms to support an infrastructure investment program in a sector or under a multisector approach via the structuring of a PPRG might also assist in standardizing the underlying infrastructure asset. Having a DFI involved improves due diligence standards and well-developed project documentation. Complemented with a technical assistance program under a whole project life cycle approach, it would help establish a new asset class. A PPRG could be used to support a local currency project bond issuance supporting a sectoral infrastructure investment program. It is expected that this approach would provide the necessary scale to attract IIM, subject to addressing the risk-return expectations.

DFI´s providing political risk, credit enhancement and breach of contract insurance. The largest provider of these products is Multilateral Investment Guarantee Agency (MIGA[22] a member of the World Bank Group). An important feature is that it does not require counterindemnities from governments[23]. MIGA offers political risk insurance solutions that addresses government actions failures in four concrete and frequent deterrents to hard currency based private capital mobilization: (a) currency inconvertibility and currency transfer restriction; (b) expropriation cover; (c) war and civil disturbance; and (d) breach of contract coverage[24]. A recent example (2020) of the impact of these type of credit enhancements was the MIGA coverage of the Djibouti's government sovereign guarantee supporting the "implementation agreement" between Red Sea Power (private developer) and the Ministry of Energy including a 25-year off-take agreement (take or pay) with the national electricity utility (Electricity de Djibouti), a state-owned enterprise. This type of support unlocked US$ 63 million financing for a 60 MW wind farm project in the Ghoubet region in Djibouti[25].

More recently, MIGA started offering a new line of product known as **"Non-Honoring of Financial Obligations, (NHFO)"**. These credit enhancement solutions seek to facilitate access by sovereign governments, sub-national entities, and state-owned enterprises (SOEs) to commercial bank lending and global capital markets funding[26]. They have

22. Refer Annex for more details on MIGA products.
23. Other entities, such as U.S International Development Corporation (DFC) and African Trade Insurance (ATI) Agency provide similar products but in a smaller scale
24. See details in annex.
25. Climate Investor One (Case Studies) is providing an equity investment in the wind farm equivalent to US$ 25 million.
26. Issuers must be rated at least BB- minus and above in the global scale. The type of transactions is focus on cross-border financing including export finance. In these transactions borrower's payment obligation id unconditional and irrevocable (not subject to any other event). The NHFO is not appropriate for non-recourse project finance.

some “market oriented” properties very attractive to mobilize financial institutions and institutional investors capital, such as: (a) no requirement of a counterindemnity or any sovereign government guarantee (or backstop) for eligible borrowers, (b) protection to the lender against losses resulting from failure to make a payment when due under an unconditional financial payment obligation or guarantee, and (c) no requirement for the investor to obtain an arbitral award in order to file a claim for compensation with MIGA. This last property was highlighted in the investor’s survey as an important demand in other risk mitigation products offered by DFIs. In addition to supporting mobilization of private capital, the product also creates cost savings for the borrower resulting from a) MIGA being recognized as a highly rated institution and b) MIGA NHFO product being recognized as fully BASEL compliant credit risk mitigation instrument.

4.1.3 Addressing Financial Markets Failures

Solutions addressing financial markets failure differ greatly depending on whether they intend to mobilize global or local institutional investors. As discussed, it is important to mobilize both types of investors because they bring different benefits and challenges. Global investors bring scale but increase foreign exchange risk to borrowers because they generally invest only in hard currency, whereas domestic investors provide local currency but have smaller liquidity levels. As described in the next section, the approaches and instruments that have been most successful fall into two categories: those targeting global investors and those mobilizing mostly local investors.

MOBILIZING GLOBAL INSTITUTIONAL INVESTORS

Transforming infrastructure commercial loans into an investible asset for institutional investors. These approaches, as explained in the case studies analysis, are the ones showing greater capital mobilization rates. In all modalities, success lies in (a) achieving some degree of standardization and in (b) institutional investors delegating due diligence and risk monitoring to an experienced third party. The three approaches that have provided best results include co-investment platforms with an MDB, such as IFC’s MCPP; the recycling of bank loans into an off- balance-sheet vehicle, such as Bayfront’s CLO; and investment in a fund holding bonds issued by financial entities such as the Amundi Green Bond Fund. All three approaches are equally valuable and could be expanded further. The only drawback is that they depend on the existence of a continuous pipeline of projects. An option would be to complement these facilities with some of the project preparation approaches mentioned in section 4.1.1.

Addressing cross-border risk. MDB guarantee products including World Bank, MIGA, etc. have been successfully using its products to mobilize global institutional investors to finance projects in hard currency but that generates local currency revenues, practically addressing and mitigating the cross-border transfer and inconvertibility risks. As seen in the example of the Elazig Hospital (health infrastructure in Turkey), where revenues to the project company were denominated in Turkish liras but provides the equivalent currency conversion in payments through appropriate conversion rate, MIGA termination coverage coupled with EBRD reserve facilities and other structural features, allowed for issuance of investment grade bonds to European investors in euros[27].

MOBILIZING LOCAL INVESTORS

Domestic DFIs/platforms. In addition to addressing government actions failures, as discussed, some domestic DFIs have been very effective in mobilizing domestic institutional investors. The domestic DFIs’ knowledge of local conditions and their flexibility have allowed them to offer appropriate instruments. This has been the case for FDN in Colombia through credit-enhancement instruments or a co-investment approach through infrastructure debt funds. The challenges for DFIs to address financial markets failures are, as previously mentioned, are underpinned by having a solid governance structure and a professional staff and avoiding crowding-out the private financial sector[28].

Asset recycling (AR) securitization structures. AR securitization structures include both monetizing value from

27. MIGA is also able to support financing in local currency as recently demonstrated in transaction for the Government of Bogota, enabling the government to borrow in local currency (from BBVA via a non-honoring of financial obligations) , in order to respond to pandemic and strengthen quality of healthcare infrastructure & services https://www.miga.org/project/bogota-covid-19-pillar-1-1
28. See a detailed coverage on key design features and success factors for public infrastructure fund, including its corporate governance requirements covered in Global Review of Public Infrastructure Funds (internal review process). Infrastructure Finance, PPPs & Guarantees Global Practice (IPG GP), World Bank Group, June 2020.

income-generating real assets (e.g., toll income, regulated revenues from electricity grid operations, etc.) and recycling of commercial loans provided to infrastructure projects and SOEs. Such structures allow for participation of institutional investors into an investable asset class. Solutions that have worked in domestic markets are narrower than those in global markets. They have focused on recycling assets into SPVs issuing securitized bonds. This has been the case with Mexico's securitization of toll roads held by the public infrastructure fund (FONADIN), and in Uruguay's CVU program. In both cases, the point of departure was a sizable pipeline, the lack of construction risk, transparent regulation, a robust risk allocation, and strong government support.

DFIs across the infrastructure finance spectrum worldwide have developed a myriad of risk mitigation approaches and instruments as a response to the challenges to increase mobilization of private capital, particularly from the institutional investors market. The report highlights many of the approaches and instruments utilized by the World Bank Group as well as other DFIs. Due to report 'space" limitations and resources constraints, experiences from other DFIs were not included. Other DFIs not referenced in the report, do also have a battery of risk mitigation instruments to face the three challenges impeding higher levels of private capital mobilization (i.e., inventory of bankable projects, government actions failures, and financial market failures).

4.2 New Solutions targeting scale: Global Standardized Approaches

Global capital markets today are directing less than four percent of their total resources to EMDE countries, if China is excluded of which a negligeable amount is invested in infrastructure.[29] As explained in this report, even the most successful examples in mobilizing institutional investors have limited scale, except for some specific country programmatic initiatives (e.g., Colombia 4G toll roads). It is still an open question whether the broader less sophisticated global investor base will be able to invest in sufficient volumes to bridge EMDEs infrastructure financing gap. However, even if only the current four percent exposure of global capital to EMDEs was doubled to eight percent, around US$ 5 trillion could be mobilized[30]. This would substantially alleviate the current dimension of the financing gap.

This section proposes three types of new approaches to complement the already tested solutions recommended in the previous section. It would be critical that DFIs take a leadership role, in coordination or partnership with private sector stakeholders, as indicated by conclusions from the case analysis, stakeholder interviews and investor survey conducted under this report. More detailed proposals of specific instruments or institutional arrangements are outside the scope of this report and would need to be proposed by select DFI's as appropriate.

Proposed new lines of work would require complementary actions on the following three fronts:

- Assess the feasibility of developing standardized hard-currency instruments or vehicles in the global investment grade category, exploring similar results via the combination of existing risk mitigation instruments from different DFIs (e.g., AA or AAA rated), for consideration by global institutional investors,
- Deepening, expanding, and standardizing existing platforms supporting local currency infrastructure project bonds and loans (i.e., standard structuring process, risk coverage and documentation), and
- Assessing the feasibility of developing co-investment platforms between global institutional investors and local institutional investors in local currency instruments or a currency mix.

4.2.1 Critical features for Hard Currency Solutions

Access to global institutional investors' markets on a large scale in US dollars and euros will demand the type of intermediary vehicles and platforms that we have seen in the case reviews of the IFC-led MCPP scheme, the joint IFC-Amundi Green Bond Fund, the Clifford Capital–led Bay Infrastructure Capital, and the AfDB synthetic securitization scheme (see Annex No.

29. The authors could not find a reference as to the weight of infrastructure bonds in the local currency capital markets. The only available reference was to the domestic corporate bonds. IMF and World Bank staff note to the G20, January 27, 2020: "The overall size of the domestic corporate bond markets in EMDEs in terms of GDP remains small [with the exemptions of large corporate bonds markets in China and Malaysia], and financial institutions (in particular banks) are the major issuers of corporate bonds. Non-financial corporations in the majority of EMDEs continue to rely mostly on bank financing. In addition, very few types of instruments are available, and the markets lack liquidity."
30. Based on the SIFMA and OECD estimates of a hard currency global market of US$ 119 trillion by the end of 2020. Recent annual growth rates of global capital markets have average around 5%.

1 on IIM Cases to this document). This type of interventions (i.e., an EMDE infrastructure project bond or standardized loan) can be scaled-up globally only with a set of institutional and intermediary arrangements with adequate capacity and experience to undertake consistent and standardized credit analysis, risk coverage, financial structuring, due diligence, supervision, and monitoring.

This section proposes the consideration of three critical features when designing a global standardized approach to optimize hard currency capital mobilization from global institutional investors. The details of the institutional arrangements that could offer an instrument or menu of instruments with such features are not discussed and could be explored, as appropriate in a different follow-up study that may be undertaken separately after this report. Features for a new type of instrument not contemplated in the first set of solutions in section 5.1. include the following:

i. **Increased standardization of the debt instrument and its underlying asset**

As described in Chapter III -- *on key results from the interviews with global institutional investors* -- some of the more challenging constraints faced by investors are related to the following critical issues, among others: (a) non-standardization of project contractual documentation in respect to transfer of key financial risks to investors and lenders, such as early termination compensation, etc. (i.e., in project agreements, etc.), (b) mitigating government contracting agency counterparty creditworthiness risk, (c) low quality of reporting standards (i.e., consistency and reliability, particularly in climate change related investments), and (d) limited access and availability of affordable credit enhancements instruments.

In order to reach scale and standardization as required by investors, proposed instrument or financing approach would need to: (i) operate on a portfolio basis to reach critical mass; (ii) benefit from credit enhancement that would bring the asset to/above investment grade (for instance, B- to BBB or BBB to A (equivalent) on the global credit rating scale depending on the country credit rating and project structures); and (iii) comply with minimum common standards on project contract documentation and reporting. The entities that may offer this product should have the skills to participate actively in project structuring, due diligence of projects, monitoring and supervision, and taking remediation actions, when necessary, with the Governments and project companies[31].

The features mentioned above would limit the range of assets and geographies that can realistically achieve the risk-return profile acceptable to institutional investors. This would likely include projects in MICs or high credit-quality projects in select LICs that meet threshold rating requirements of investors. Despite these limits, the proposed approach could still target a substantial amount of the infrastructure finance gap, particularly in the large MICs.

ii. **No requirement of an explicit sovereign guarantee**

For the proposed global approach to mobilize hard currency financing in the quantities and swiftness needed, the product offered should not be dependent on the issuance of a sovereign counter-guarantee to generate the standard investment grade global asset. Otherwise, the institutional processes, government red tape, political economy, transaction costs[32], principle of risk sharing involved, and others would most likely deter the original objective (i.e., optimize private capital mobilization from large institutional investors).

To support this critical feature, the institutional arrangements would need to be evaluated for a business model similar to the insurance model followed by MIGA and other entities, such as ATI, DFC. This analysis should also consider the impact of market-based risk premium that would be charged by such insurance business model for its financial sustainability but also its affordability to different countries and projects.

It should be underscored that governments should not perceive credit enhancements with no government counterindemnity as a “free ride”. Even without an explicit government guarantee, if the external guarantor pays due

31. The credit analysis, pricing, portfolio management, procurement procedures, environmental safeguards, supervision, and monitoring practices of the institutional arrangements supporting this global approach would mirror those of the DFIs catering for private sector projects
32. out-of-pocket expenses related to the structuring of the counter guarantee transaction such as legal fees, process costs to access central government decision-making, any other costs related to the obtention of the government’s counter guarantee.

to a government event of default, the guarantor will still exercise its subrogation rights to recover its losses from the government. In these cases, even without the explicit guarantee, the government will require a contingent liability management system in place[33].

iii. **Commercial Viability and long-term Sustainability**

The proposed global approach should be commercially viable and not depend on subsidies or concessional finance. In this context, the follow-up study proposed above should evaluate the institutional arrangement and business model that could offer such product(s). The evaluation should also include the potential to reach critical mass needed to achieve economies of scale to generate a global asset class for investors.

This type of global approach to hard currency financing will cater to the full spectrum of infrastructure project sponsors (i.e., private, PPPs and public sector institutions). The proposed global approach falls into the category of large-scale solutions referenced in the dual-track approach at the beginning of the chapter.

Summarizing from the above description, the value added of this type of global approach to hard currency financing would be threefold.

- First, it would bring a critical mass of EMDEs assets linked to infrastructure into investment grade, acceptable to a broader range of global institutional investors.
- Second, it would support greater standardization of EMDEs assets by establishing a more homogenous risk coverage and more standardized project documentation and investment instruments.
- Thirdly, when appropriate, it would complement credit enhancements with whole-life-cycle support to projects with a window with a project preparation facility and technical assistance. The latter depending on projects could include policy and regulatory advisory to governments or SOEs linked to the projects.

Withdrawing from case studies analyzed, this type of global approach has the potential to mobilize institutional investors in a much greater scale than by the case-by-case approaches. However, the role of current DFIs and MDBs would continue to have a key role in mobilizing investors, including complementing such global approach.

4.2.2 Local Credit Guarantee Facilities

The collective size of the local currency capital markets in EMDEs is likely to increase as countries continue to grow and improve their saving capacity. In the meantime, EMDEs will continue to represent a fraction of the global hard-currency capital markets. However, helping develop those markets and creating mechanisms to access funding from local institutional investors effectively mitigates the cross-border risks and a relevant amount of the government action failure risk.[34]

As seen in the case studies of GuarantCo in Nigeria and FDN in Colombia, the development of local credit guarantee facilities (LCGFs) supported by well rated development financial institutions can have a large effect on selected EMDEs' local currency capital markets by facilitating long-term local currency funding from local institutional investors. Providing local currency credit guarantees would contribute to standardizing infrastructure as an asset class at country level, standardizing the level and nature of due diligence required to provide additional comfort to the investors. This is particularly important in capital markets in middle-income countries with a growing presence of institutional investors, such as pension funds, insurance companies, and other dedicated funds.

The report proposes the creation of LCGFs in select EMDE markets where the financial support of an AAA (globally rated)-backed capital structure would have relatively high financial leverage impact via the provision of local currency credit guarantees. The LCGFs will only need to reach AAA at the national ratings level, which explains relatively high financial leverage international DFIs. For the domestic investors the relevant issue would be that the LCGF is rated AAA at the local level. In terms of organization, the LCGF would be created at a country level in coordination with the relevant government

33. A contingent liability management system in line with World Bank and IMF practices (PFRAM models).
34. Local project bond holders (pension funds, insurance companies, and others) will become important stakeholders in the performance of the bond. Their interest will be aligned with that of the project sponsors in the presence of a government's default on its commitments.

authorities. Its capital structure in each selected EMDE countries will be represented by highly rated DFIs catering to private sector business, and key local stakeholders such as domestic DFIs and others.

An additional option to considered would be an "umbrella" organization at the global level replicating via local subsidiaries LCGFs in selected countries. Having a local credit guarantee institution within the global organizational scheme—has many advantages, such as: easier adaptation to local capital market regulations; inclusion of government development financial institutions and other relevant local players in the capital structure of the LCGFs; and greater market reach for transaction origination purposes. The GuarantCo business model in Nigeria is a good illustration of this option—*GuarantCo being a regional "umbrella" institution*—and of the processes needed to replicate these types of local credit guarantee institutions in selected EMDE markets.

Creating a global institution as an umbrella organization (that is, an LCGF holding), with local subsidiaries in each selected EMDE market, would follow the same corporate governance, business model, and requirements of the institutional arrangements for a hard currency solution. It would be a ring-fenced global institution with a DFI-led capital structure (DFIs catering to the private sector). Its main objective would be the provision of credit guarantees to local-currency infrastructure project bond issuances via the creation of LCGFs in selected markets. The LGCF holding would follow the same procedures (namely, credit analysis, pricing, portfolio management, procurement, environmental safeguards, supervision, and monitoring), as DFIs catering to private sector projects. The LGCF holding company would transfer all these responsibilities via training and institutional building to each LCGF. Consideration should be given to exploring partnerships options with global DFIs already developing experiences in these local guarantees business (e.g., PIDG and Guarantco).

4.2.3 Co-investment Platforms

These co-investment platforms used innovative financial structures to convert loans into investible assets for institutional investors. The three platforms should be replicated and expanded as part of the solutions offered by DFIs to optimize capital flows from institutional investors. In the case of BIC, recycling banks' loans with a securitization vehicle has a double benefit. First, it mobilizes global institutional investors to participate indirectly in EMDEs' infrastructure. Second, it frees up space in banks´ balance sheets to fund new projects. In the case of the IFC-Amundi bond fund, establishing a fund to buy green bonds issued by commercial banks in emerging markets is helping the formation of a new asset class and is facilitating access to global institutional investors. The green bond joint facility is strongly supported by an advisory and project preparation window. Finally, in the case of IFC's MCPP, a very innovative and flexible structure is able to leverage IFC´s syndication capacities for its project loans, selling down loan participations to large institutional investors. MCPP optimizes the financing flows from global capital markets to EMDE countries and increases IFC's lending capacities.

Co-investment platforms between global and domestic investors are also being implemented with successful results in the mobilization of institutional investors for local-currency markets. There are two examples to note of growing relevance. The first case is the National Investment and Infrastructure Fund (NIIF) established in 2015 by the government of India as a co-investment platform for global and local investors. The NIIF has already raised US$2.1 billion from global institutional investors such as Abu Dhabi Investment Authority, the Canadian Pension Plan Investment Board, and Temasek Holdings Limited. It also has investments from major DFIs such as ADB and AIIB (i.e., their private sector arms).

The second example is the model spearheaded by the CDPQ with the creation of several co-investment platforms in selected EMDE markets. In 2015, CDPQ launched CKD Infrastructure Mexico in Mexico as a equity investment platform in partnership with FONADIN and all five local pension funds. It targets investments in mature local infrastructure assets amounting to the equivalent of US$2 billion in local currency and with a 50-year investment horizon. Along the same lines, in June 2018, CDPQ launched an equity infrastructure fund (namely, Fondo de Capital Colombia, or FDC) in Colombia as a joint capital risk investment platform to acquire equity participation in Colombia's 4G and 5G infrastructure programs. FDC is a joint

venture between CPDQ and FDN together with the four local pension funds, with a target investment equivalent to US$1 billion. More recently, on May 21, 2021, CPDQ announced the signature of a memorandum of understanding with the Indonesian Investment Authority, APG Asset Management (the largest pension fund in the Netherlands), and the Abu Dhabi Investment Authority to create a co-investment platform for Indonesian transport infrastructure with a capacity of the equivalent of US$3.75 billion in local-currency assets. These types of innovative schemes were market driven sponsored by domestic DFIs.

As a complement to the proposed solution via the creation of LCGFs, DFIs could also support the creation of co-investment platforms in selected EMDE markets to lure global institutional investors to the domestic markets to acquire long-term local-currency infrastructure assets. It is noted that the investor risk perception participating in such platforms would differ by the nature of financial support, i.e., equity vs debt. Coinvesting with DFIs would remove a great portion of the risks that global investors perceive to limit optimization of these types of capital flows to infrastructure development. DFIs' knowledge of risk management in EMDE markets would be complemented by applying their governance and procurement procedures on a systematic basis. In addition, in selected EMDE countries, these co-investment platforms could include a window to improve the tradability of infrastructure assets by standardizing their structure (project bonds) and by providing liquidity to buy and sell these assets, creating the basis for price signaling and the start of a secondary market.

Developing in large scale these types of co-investment platforms (i.e., warehouse and securitization of underlying assets) catering to both local and global institutional investors, will require great efforts and intense collaborations by the originating DFIs. Crucial requirements to scale up these mechanisms include, among others: (a) similar originating criteria for the underlying asset, (b) common ESG standards, (c) an explicit agreement between participating DFIs to adapt their business model to standard origination, (d) consideration of extending the offering to other sectors different than infrastructure (e.g., housing) for sustainable deal flow, and (e) standard credit enhancement practices.

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ANNEX 1: REVIEW OF CURRENT PRACTICES SUPPORTING INSTITUTIONAL INVESTOR MOBILIZATION

The report reviewed 19 cases that were innovative and replicable and that addressed at least one of the three main challenges hampering capital flows into EMDE countries. The 19 analyzed solutions are described in this report through two different modes: (a) 15 selected solutions are portrayed as summaries included in this chapter (sections 3.1 to 3.6 and (b) other targeted solutions are reflected in the text of this chapter as boxes (boxes 3.1 and 3.2 Annex 1 includes the full description of 10 selected case studies.

What follows is a summary and highlights of the key contributions of the analyzed cases as they relate to innovative approaches and transactions that optimize capital markets flows with the potential for replicability[35]. Cases have been grouped into five types of solutions or lines of work for MDBs. The first three types of solutions apply to mobilizing international institutional investors (these are whole-project life cycle approaches, credit enhancement by DFIs, and investment platforms), and the last two types of solutions cover examples focused on mobilizing domestic institutional investors (namely, asset-recycling mechanisms and local DFIs with catalytic responsibilities). Several of the selected case studies could be classified under several of these categories. For the purpose of this paper, those examples are discussed under the category that is most relevant.

A1.1 Whole-Project Life Cycle Approaches

These case studies support project portfolios or single transactions from the initial stages of prefeasibility analysis into the financing stage. They are generally intense in blended financial resources and the number of MDBs or DFIs involved, and they require a very flexible approach from financiers. As illustrated following, this approach is valuable for those countries with weaker institutions and financial sectors.

A1.1.1 Climate Investor One (CI1)

CI1 is a blended finance and capital recycling facility sponsored by the government of the Netherlands through its Entrepreneurial Development Bank, FMO.[36] It focuses on delivering renewable energy infrastructure projects, such as solar, on-shore wind, and run-of-river hydroelectricity, in developing countries in an accelerated manner. CI1, through an innovative investment platform, develops, constructs, and operates renewable energy projects through its "whole-of-life financing solution." CI1 is structured around three different funds that support financing the project life cycle of a sustainable infrastructure investment, and it addresses fundamental risks hampering the flow of private capital.

The Development Fund addresses the project supply-side risk and finances project preparation and technical assistance to develop bankable projects. It has a straightforward financing structure in which donors commit capital to the fund in the form of reimbursable grants. The project preparation funds provided to the project company are repaid once the construction starts and the funding from the Construction Equity Fund and project sponsors are injected into the project company. The Development Fund is a capital preservation facility; it is a not-for-profit vehicle.

35. Fully developed case studies are available upon request.
36. Blended finance, a structuring mechanism that strategically uses public or philanthropic capital, or both, to catalyze additional private capital and increase private investment, has emerged as a promising solution to help deliver the goals of the Paris Agreement and achieve the SDGs. See Stanford, "Sustainable Finance Initiative," Spring 2020.

The Construction Equity Fund addresses the equity financing risk for sustainable projects and finances the equity injection of CI1 into the renewable energy project (special purpose vehicle). It is financially structured as a three-tier capital structure that reflects risks and rewards allocations:

- **Tier 1.** This tier is the junior equity position. It is based on donor capital and absorbs the higher portion of the risk, acting as the enabler to attract private capital—and capital from other sources—into tiers 2 and 3. This portion of the financial structure (funded by donors) provides direct and indirect political risk mitigation to the other two tiers. Tier 1 represents US$160 million (20 percent).
- **Tier 2.** This tier represents the ordinary equity tranche of the fund from commercial investors and DFIs. This tier is risk mitigated by the first-loss nature of the tier 1 capital, providing limited downside protection for investors. Tier 2 represents US$320 million (40 percent).
- **Tier 3.** This tier represents the senior equity tranche from two institutional investors: NWB (Nederlandse Waterschapsbank), with the lion's share of investments in this tranche,[37] and Aegon Asset Management, an investment fund manager based in the Hague, the Netherlands, with over €400 billion under management and rated A− by S&P. The Atradius Dutch State Business (export credit agency) provides a full guarantee to tier 3 investors.[38] Tier 3 represents US$320 million (40 percent).

The Refinancing Fund addresses the long-term financing risk after project completion and provides long-term senior debt to reduce the cost of capital and optimize the project capital structure. This Fund will source capital from institutional investors and other lenders looking for investment opportunities but without development and project completion risks. The Refinancing Fund is secured by the assets seeking long-term senior debt. The Refinancing Fund has an innovative feature by which part of the senior debt is the take-out financing for the equity committed by the Construction Equity Fund. This feature allows for the Construction Equity Fund to be replenished as successful projects reach completion, thus providing an asset-recycling mechanism that allows for the generation of additional pipeline funding. In addition, successful closing of the Refinancing Fund (expected to take place in the last quarter of 2021) will improve the chances of standardizing an asset class exclusively dedicated to renewable energy in EMDE countries through hard-currency senior debt.

Through the interaction of its three separate but intertwined funds, CI1 addresses key relevant challenges to IIM flows for sustainable infrastructure. With US$850 million, after two successful fundraising efforts in 2017 and 2019, CI1 established itself as one of the world's largest blended finance platforms for renewable energy in EMDEs.

This innovative approach is replicable to other types of infrastructure with similar sector payment arrangements (that is, in which energy is sold to an off-taker—public or private—under a long-term contract with a pricing adjustment formula). It is suitable for projects such as water treatment and solid waste services. The CI1 business model does still require the use of foreign exchange risk mitigation instruments for the senior debt fund (the take-out financing). Off-take contracts are expressed in US dollars, but for the most part end users pay in local currency. As seen in recent history, this foreign exchange risk is not totally transferable to the end user, leaving a residual risk that needs to be mitigated. The availability of wider political risk insurance coverage, such as the one provided by MIGA, and the availability of other types of foreign exchange risk management instruments will support the coverage of this residual risk.

In May 2019, an agreement between FMO, SNV Netherlands Development Organization (SNV), Worldwide Fund for Nature (WWF), and Climate Fund Managers (CFM), created Climate Investor Two (CI2) and was awarded by the Dutch government the management of the Dutch Fund for Climate and Development (DFCD) for €75 million. CI2 will develop, using the same business model as CI1 (whole-of-life financing solution), a fund to help build climate-resilient economies. CI2 will focus on the water, ocean, and sanitation sectors. In 2020, the Global Environment Facility committed US$145 million and the European Union (EU) committed €19.7 million to CI2.

37. The Nederlandse Waterschapsbank is a Dutch specialist financial institution that provides funding for water boards and local government organizations in the Netherlands. It is a local government funding agency owned by the Dutch water boards and provinces.
38. Atradius provides trade credit insurance, surety, and collections services worldwide through a presence in more than 50 countries around the globe. It is the credit insurance arm of a Spanish insurance group. Its affiliate, Atradius Dutch State Business, operates as the Dutch Export Credit Agency. It provides credit insurance, bonding, and collections products to help protect companies throughout the world from payment risks associated with selling products and services on trade credit. In 2019, the company had revenues of €2 billion. The company is rated "A, outlook stable" by AM Best and "A2, outlook stable" by Moody's.

A1.1.2 IFC, Malawi, Hydro Power Plant, IFC InfraVentures

In 2008, IFC launched an approach-based solution (InfraVentures) to assist EMDE countries in the development of bankable, sustainable infrastructure projects.[39] On May 15, 2019, InfraVentures signed a joint development agreement (JDA) with the government of Malawi that cleared the way to move forward with project development and a public tender process to engage a strategic investor for a hydro project. The example of the Mpatamanga 350-megawatt hydropower plant in Malawi clearly illustrates how the risk of designing, developing, constructing and operating a hydro project (which may sometimes lead to substantial cost overruns, time delays, and even project failure) can be mitigated from the inception phase by the project sponsors partnering with a development institution (IFC, in this case) with the necessary expertise, experience, and funding.

This 350-megawatt hydropower project on the Shire River is central to the government of Malawi's strategy for expanding the country's generation capacity and increasing energy access. The project is one of the largest developments in the country. Its construction will play an essential role in Malawi's social and economic development. Among other features, it includes a regulating dam 6 kilometers downstream to protect inflows into the river basin. As the government entered into negotiations with IFC, officials requested support from the Southern Africa Energy Program (SAEP, which is funded by the US Agency for International Development and supported by Power Africa) to provide transaction advisory services to help move the project toward financial closure. Financial support for the government's other technical and legal advisors was provided by the World Bank-administered Global Infrastructure Facility (GIF).

With SAEP's and GIF's support, the government and IFC negotiated and agreed on the commercial terms for the development phase of the engagement. IFC, which was working with SN Power as a specialist developer, completed the additional studies and due diligence reports (including on the project's environmental feasibility) required to make the project bankable. On October 31, 2019, the Malawi Ministry of Finance authorized the development of Mpatamanga as a PPP. Final design is close to completion, and a full environmental and social impact assessment (ESIA) study for the hydropower project was contracted during 2020. ESIA field activities commenced in August 2020 and will continue into 2021. A resettlement plan will be developed and disclosed to the project-affected persons before the project's implementation. IFC, together with the government of Malawi, acted as the project developer (or a "surrogate sponsor") during the process.

In the first quarter of 2021, 15 firms expressed interest during the prequalification phase, which included strict technical and financial criteria to ensure that the project's selected strategic sponsor would be fully qualified and capable of successfully executing this important project for Malawi. Firms were prequalified to present detailed proposals for the design and implementation of the project. Prequalified firms are of first-class international standing, including a consortium of SN Power Invest Netherlands B.V and Electricité De France SA. Detailed technical and financial bids are under evaluation by the government, and a final award for the project is expected in late 2021.

IFC acts as a codeveloper and trusted partner of the government of Malawi with shared responsibilities. IFC has contracted the independent technical capacity, using a specialist developer to carry out detailed technical studies and recommend the optimal project design. This includes procurement management of specialist advisers for the feasibility study and for the ESIA. Under the JDA, IFC and the government of Malawi have defined bankable project parameters, including indicative terms for the power purchase agreement and the implementation agreement. In exchange for its at-risk contribution of up to $3 million, IFC has the option of arranging the long-term debt financing for the project and an option to subscribe to up to 30 percent of the equity in the project company . The government of Malawi has also applied to the International Development Association (IDA) for funding that will be invested in the project through equity (by their subsidiary EGENCO) and directly into the project company as subordinated

39. Launched in 2008, IFC InfraVentures is a US$150 million global infrastructure project development fund that has been created as part of the World Bank Group's efforts to increase the pipeline of bankable projects in developing countries. Its unique offering, which combines early-stage risk capital and experienced project development support, is designed to address the key constraints to private investment in infrastructure projects in frontier markets. InfraVentures can fund up to US$8 million of a project's expenses at its early stages of development. This provides a significant part of the funding necessary to bring an infrastructure project from idea to financial closure. The types of activities and deliverables it can fund, support, execute, and supervise include (a) project and prototype feasibility studies; (b) economic, social, technical, and environmental studies; (c) the management of relationships with public and private stakeholders such as governments and civil society groups; (d) financial modeling; (e) the negotiation of the financial and legal terms of project documents; (f) the selection and supervision of project participants; and (g) the sourcing of project equity and debt financing. Project support through IFC InfraVentures is not grant funding. In return for its development funding and assistance, IFC may retain an option to subscribe to a minority stake in the equity of the project at financial closure, and will obtain the the right to arrange the long-term debt for the project, a part of which IFC may fund.

debt. With the use of IDA concessional funding, the government of Malawi expects to be able to lower the tariff to dramatically increase energy access and at the same time, ensure the financial sustainability of their electric utility.

The indicative financing structure currently under consideration consists of the following:

Senior Debt will come from two tranches: (a) senior lenders (including IFC) using US dollars and (b) local banks issuing debt in local currency. Private senior lenders will likely require political risk insurance coverage from MIGA.

Equity resources will come from three types of investors: (a) the government of Malawi through its power subsidiary EGENCO (up to 30 percent), (b) IFC or other private developers (up to 30 percent), and (c) a strategic sponsor with a controlling interest (between 40 and 70 percent).

Once Mpatamanga's peaking power becomes operational toward the end of 2024, it will offset expensive diesel generation and reduce the negative economic effects of load shedding during periods of undersupply. The project is already at the stage of request-for-proposal (RFP) completion. Without the co-development funding and support of an experienced institution such as IFC, it would have been difficult to bring a project as complex as a hydroelectricity generation plant to the stage of RFP preparation by a reputable developer only two years after signing the JDA. This approach-based solution addresses the three critical challenges that face efforts to mobilize private capital to fund sustainable infrastructure in EMDEs:

(a) the creation of bankable projects, (b) support to abate market failures, and (c) the mitigation of failed government actions. It is an approach-based solution that provides assistance to the successful completion of the overall project cycle.[40]

A1.2 Credit Enhancements from DFIs

This section presents innovative ways of using the traditional credit enhancement instruments used by MDBs so that institutional investors can participate in infrastructure transactions. In addition to case studies on EMDEs in different stages of development (Turkey, Côte d'Ivoire, and Benin), the case study of the EU Project Bond Credit Enhancement (PBCE) is presented. The latter was used in the EU, but relevant lessons could be applied to project bonds issues by EMDEs.

A1.2.1 DFIs Cooperation, Turkey Elazig Hospital

The financing of the PPP arrangements for the design-build-finance-maintain of a hospital complex in the city of Elazig, Turkey, showcases the advantages of blended finance by DFIs to mitigate a complex transaction structure and mobilize capital from institutional investors. The strong support by IFC, the European Bank for Reconstruction and Development (EBRD), the International Bank for Reconstruction and Development (IBRD), and Multilateral Investment Guarantee Agency (MIGA), plus the participation, as bondholders, of FMO and Proparco helped pierce the sovereign credit rating ceiling by two notches (Baa2 for the project bond versus Ba1 for Turkey, November 2016). The transaction represents a pioneer cooperation arrangement between DFIs in the social infrastructure sectors.

The project forms part of the government of Turkey's Health Transformation Programme put in place in 2003 to tackle inequality in access to health care services and is based on the Ministry of Health (MOH) standard public-private partnership documentation.

40. *Source*: IFC Infraventures and Malawi's PPP Commission, https://www.mpathydro.com/.

Social infrastructure PPP in areas such as health tend to have complex structures with several stakeholders (such as authority or grantor, contractor, facilities management, public health providers, financiers and guarantors, and so on) not always easy to coordinate and supervise.

The base contract for the PPP transaction was a long-term project agreement between the MOH, and ELZ Saglik Yatirim A.S. (the project company). The project agreement included the design and construction obligations as well as the facility maintenance obligations structured in three categories: (a) medical support services (laboratory, rehabilitation, imaging, and so on), (b) hard facility management (building and exterior maintenance, medical equipment maintenance, and so on), and (c) soft facility management (cleaning, waste management, parking, help desk, and so on). The revenues to the project company were based on availability payments by the MOH with deductions for unavailability and poor performance.

The project raised €288 million in debt financing through Turkey's first greenfield infrastructure finance bond (project bond) enhanced by a MIGA political risk guarantee and liquidity backing from EBRD. Financing was secured at an 80:20 debt-to-equity ratio, with the equity (€72 million) derived from the private party's stake in the project company, and the debt (€288 million) being issued through a project vehicle (ELZ) listed in Luxembourg in the form of a project bond with three tranches: (a) A1A bonds for €83 million maturing in 2034 (18-year tenor), (b) A1B bonds for €125 million maturing in 2036 (20-year tenor), and (c) A2 bonds for €80 million maturing in 2036 (20-year tenor). The A1A and A1B bonds (together the A1 bonds) for €208 million were credit enhanced by the political risk insurance provided by MIGA covering (a) currency inconvertibility and non-transferability, (b) expropriation, and (c) breach of contract (including arbitral award default and denial of recourse); and the subordinated liquidity facilities provided by EBRD during construction and operation.[41] The A2 bonds do not benefit any type of credit enhancement. IFC was the sole buyer of the A2 bonds as a means to support the transaction by complementing the market financing.

The MIGA political risk guarantee covered 95 percent of the on-loan derived from the 1A bonds to the project company, with the remaining 5 percent covered by drawdowns from the EBRD revenue support facility[42]. This feature increases the comfort of some the main investors as well as project sponsors, such as Meridien Infrastructure Eastern Europe Fund (MIEEF).

The credit-enhanced A1 bonds earned a Baa2 rating from Moody's, which is two grades higher than Turkey's sovereign global credit rating. This was achieved in large part because of the political risk guarantees from MIGA and the €89 million construction support and revenue support liquidity facilities provided by the EBRD. The A1 and A2 bonds were issued quarterly during the construction phase to provide for lower financing costs and consistent periodic funding, to the pool of private investors for the former, and IFC for the latter. The transaction pierced the sovereign credit rating ceiling by two notches, as reflected in the tighter pricing of the project bonds. This "piercing" is not common in international issuances based on PPP arrangements.[43] Although the transaction was able to pierce the sovereign credit rating ceiling, this credit rating improvement was not reflected in the final pricing of the transaction. Still, with an investment-grade rating, the project bond pricing was a little above the tenor equivalent of a Turkey Eurobond. The long tenor was critical for the project sponsors, and it was achieved successfully.

The project has received praise from the international development community for its innovative approach to credit enhancements. For future PPP projects in and outside Turkey, the dual approach credit enhancement solution is replicable. As multilaterals look toward private sector mobilization solutions that leverage their investments, credit enhancements are a powerful tool. Compared to

41. For this project, EBRD provided subordinated liquidity facilities for the construction and operation phases. These two separate phases of support were organized into the construction support facility and the revenue support facility, totalling €89 million. The CSF included letters of credit for liquidity support for the EPC contractor, mitigating the risk of the EPC contractor's being unable to meet its payment obligations to the special purpose vehicle. Drawdowns from the letter of credit cover payment breaches, including damages from construction delay, costs of replacing the EPC, and senior bond recovery should the EPC default.
42. The guarantee policy covers payouts linked too political risk insurance coverage. Sufficient effort must be shown by the bond issuer to resolve the triggers of the guarantee policy (that is, arbitration commenced in the case of breach of contract, or validated, failed attempts by the issuer to convert or transfer currency). If the policy is activated, MIGA is subrogated to the compensation claims from the offending party. MIGA's payment claim was structured in a way that could accommodate payment in a default event included in the coverage (such as convertibility and transfer, expropriation, and breach of contract) through a one-lump sum arrangement (deducting future interest payments).
43. "Moody's considerations to rate ELZ Finance S.A. above the off-taker (government of Turkey) were: rating of PPP projects is in most cases constrained by the off-taker's credit quality, because it is the sole source of the project's revenues. On this occasion, we determined the off-taker credit quality (that of the Turkish Ministry of Health) did not serve to constrain the rating of ELZ Finance S.A. in light of the MIGA and EBRD credit enhancements. Source: Moody's Pre-Sale Report, Elazig Hospital, November 11, 2016

IFC's €80 million direct investment, the €89 million EBRD liquidity facilities, and the MIGA guarantees were able to mobilize private investments of €208 million. These guarantees and liquidity facilities could be applied to other PPP projects in countries with a credit profile similar to Turkey's, where the bond issuance's rating could be uplifted to investment grade for institutional investors. Also of note is the fact that this strategy could be applied to brownfield projects as well, where the construction support facility would not be necessary, but the revenue support facility could be available for the operations stage.

To obtain the benefits of this transaction-based blended finance mechanism, aligning the participation of several "big league" DFIs was important for the financing of this social infrastructure. It is undoubtedly an innovation to tap into private capital markets to support infrastructure projects. Involving many stakeholders translated into relatively high transactions costs (through legal fees, financial advisory fees, and credit ratings) to structure the transaction in 2016, besides the indirect costs borne by the Ministry of Health to structure the PPP arrangements (partially mitigated by World Bank grant financing). It must be acknowledged that at such time, the Turkey country risk in the political insurance risk market had a very high demand which explains the relatively higher costs. The replicability of this type of structure for social infrastructure in other EMDE markets could be challenging.

A1.2.2 Project Bond Credit Enhancement Facility (PBCE), EU and EIB

Following the 2008 financial crisis, private investments in infrastructure projects declined significantly. Banks were confronted with growing constraints on their long-term bank lending capacity due to regulatory restrictions (namely, Basel III) and the need to de-leverage their balance sheets. Furthermore, debt capital market financing for greenfield infrastructure fell. Before the global financial crisis, institutional investors were primarily investing senior debt in the infrastructure market through instruments insured by monoline insurers.[44] To address this financial market failure, the EU together with the EIB launched the pilot test phase (November 1, 2012, to July 31, 2015) of a new facility to credit enhanced infrastructure project bonds and reinvigorate the European capital markets for this asset class. The facility was launched as the PBCE with a contribution from European Commission in the amount of €230 million to support the test pilot with an estimate of 5 to 10 transactions during the period.

The EU allocation of €230 million was used in the EIB PBCE as the subordinated tranche to support senior debt project bonds issued by a project company (as the first-loss structure). The PBCE support would be available until the scheduled final repayment date of the bonds (or earlier if preferred by investors). The subordinated tranche could be provided as either (a) subordinated debt (funded support) or (b) a letter of credit (unfunded support), which could be drawn if the project could not cover debt service payments or the cost of construction overruns.[45] The improved credit quality of the senior bonds was expected to facilitate their placement with long-term institutional investors and therefore widen financing options for infrastructure projects in terms of both margin and tenor. The maximum size of the PBCE was limited to 20 percent of the nominal credit enhanced senior bonds. The EU contribution served to partly cover first losses on the portfolio basis, allowing the EIB to engage in riskier transactions. Sectors included in the PBCE were defined as trans-European networks of transport (TEN-T) and energy (TEN-E), and broadband and information and communication technology (ICT). In addition, transactions in these sectors needed to meet EIB's normal eligibility criteria. The facility included transactions in all country members of the EU.

The EU defined sector eligibility criteria and provided the EIB with the capital contribution required to enable the bank to credit enhance project bonds. The EIB was tasked to (a) select and appraise the projects according to its normal standards, (b) structure and price the credit enhancement instrument, and (c) monitor and supervise the PBCE projects. During the pilot test period, seven transactions were financially closed between November 13, 2013, and July 15, 2015, for €2.065 million. The EIB underwrote the equivalent of €216 million. Of those seven transactions, five used the PBCE support for the equivalent of €343 million. The other two transactions were fully supported by the EIB (table 3.1).

44. The monoliners provided a full wrap, which improved the credit ratings of project bonds on the basis of their AAA ratings. During the crisis the monoline ratings plunged, and this type of credit enhancement no longer worked. A monoline insurance company is an insurance company that provides guarantees to debt issuers, often in the form of credit wraps that enhance the credit of the issuer.
45. The funded and the unfunded PBCEs have significant differences in how each affects default risk and improves recovery prospects for bondholders should a default occur. These differences are also reflected in the pricing of the PBCE support.

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Table A1.2.2: Transactions Supported during PBCE Pilot Test

Project	Bond size	EIB underwriting	PBCE support[a]	Closing date
	(euros, millions)	(euros, millions)	(euros, millions)	
A11	578	145	115	March 2014
A7	429	71	85	August 2014
Port of Calais	504	0	50	July 2015
Greater Gabbard	365	0	55	November 2013
Axione	189	0	38	July 2014
Total	**2.065**	**216**	**343**	

Source: Ernst & Young, PBCE Audit Report, December 3, 2015.
Note: EIB = European Investment Bank; PBCE = Project Bond Credit Enhancement.
a. The European Union committed its limit for the PBCE facility of €230 million. EIB additionally injected €113 million to the facility.

The PBCE attracted investors from continental Europe, the United Kingdom, Canada, and the United States. The investments in the beneficiary projects were made (a) directly by pension funds or insurance companies or (b) through fund managers. The fund managers brought a wider range of institutional investors to the projects. The fund manager market is concentrated among big bond investors (such as Aviva, Macquarie, and Alliance). In terms of the financial leverage ratio, the amount of joint support of the EU and the EIB (that is, budget support to the facility, EIB underwritings, and EIB contribution to PBCE) was about €559 million to raise a total of €2.065 million. Each euro of public support in the PBCE program raised an additional €3.7 from institutional investors in European capital markets.

Financial markets in Europe started a significant improvement after the pilot phase with low interest rates and large regional programs initiated to reactivate the economy. The PBCE lost some of its "additionality" and cost-competitiveness with the market improvements, although it is recognized that it played an important role reactivating this asset class during the pilot phase.[46]

A similar PBCE concept could be replicable in large EMDEs with more developed local financial markets (such as Mexico, Nigeria, and South Africa) through the allocation of subordinated debt by a DFI to a local development bank (AAA locally rated) to support local currency project bonds. The credit enhancement economics (a 20 percent limit) and the structuring will probably need to be strengthened to account for the difference between the underlying risks in EMDEs and European capital markets.[47]

A1.2.3 Benin, World Bank, Policy-Based Guarantee

In 2018, the World Bank structured an II Development Policy Credit that blended an IDA credit for €12.9 million (US$15 million equivalent) and IDA policy-based guarantee (PBG) for €154.9 million (US$180 million equivalent). The operation supported important government reform efforts in three critical areas: (a) strengthening fiscal management, (b) increasing agricultural productivity and the financial viability of the power sector, and (c) improving equitable access to education and health services.[48]

46. Ernst & Young, PBCE Audit Report, December 2015. Cyclical market developments, but also the professional development of investors in the infrastructure sector, led to a change in market needs that indicate that, while the product is well designed, it should be even more targeted toward specific areas to continuously improve its relevance. Therefore, we believe that the initiative was particularly relevant at its inception. During the pilot, changes in the macroeconomic environment reduced the market's need for the instrument; thus the project board initiative was less relevant for some of the projects. In the future, to remain highly relevant, the PBCE should be targeted even more toward specific types of projects—namely, projects located in geographical areas with market failure, projects with significant risk, or both. Overall, the EU added value and additionality in the program's pilot phase.
47. *Source*: EU and EIB, Project Bond Credit Enhancement, 2017.
48. The fiscal reform and growth development policy financing series aims to support the government's effort to implement its government action plan over the period 2016–21. The operation continues supporting the reforms started under the same two pillars of the first operation of this development policy financing series, with the inclusion of a third pillar on social services. The inclusion of a third pillar reflects the results of the Benin systematic country diagnostic approved in January 2018 and the renewed commitment of authorities in this area. The second change in the operation is that it will include both an IDA credit and an IDA policy-based guarantee. These two changes do not modify, and rather increase, the rationale for WBG support, which is to support the implementation of the government action pan and the program for growth and sustainable development (PC2D). The project is fully anchored in the World Bank Group's Maximizing Finance for Development approach. Source: World Bank, Benin Operation, 2019.

Benin has limited access to global capital markets (in both the bank and the bond markets). Access to these markets also carries very high transaction and financing costs for Benin at shorter tenors than needed for efficient fiscal management. In 2018, Benin had not accessed the global capital markets, although it was exploring ways to gain better access to different funding markets, diversify the sources, and mitigate the excessive dependence on domestic financial markets. Some consideration was being given to the issuance of Benin's first sovereign bond in global markets.

The IDA PBG for €154.9 million was used to tap into the euro loan markets.[49] The PBG for €154.9 million supported a euro loan operation of €387 million (equivalent at the time to US$450 million) structured through two commercial loans arranged by MUFG Bank (€260 million) and Credit Suisse (€127 million).[50] The MUFG loan was placed with institutional investors in Europe via the lead arranger. At the time of the analysis there was not information available as to the final distribution of the CS loan. Final terms of the euro loan placement were very favorable to Benin when compared to market conditions at the time, achieving a 4.5 percent all-in cost (including the cost of the PBG at 75 basis points for the 40 percent coverage) with a 12-year maturity.[51]

Additionally, African Trade Insurance (ATI) acted as second loss guarantor paying out to debt holders only after the IDA Guarantee was fully used. In this way, ATI will be covering the later years of the debt service repayment schedule. ATI additional coverage, together with the World Bank PBG, provided 100 percent of debt service risk coverage to institutional investors holding a Benin euro loan. ATI covered the initial eight years of the loan, with the World Bank 40 percent PBG staying for the rest of the maturity with its 40 percent limit[52]. It was a full-wrap issuance. ATI insurance was used only for the MUFG tranche. Credit Suisse did not use ATI to increase the debt service risk coverage.

The financial leverage of this transaction was 2.5 to 1. This ratio is calculated taking the limit of the coverage (40 percent of the euro loan operation, €154.8 million) and the loan size of the two syndicated operations by MUFG and Credit Suisse (€387.0 million). However, the most important "leverage" that this operation had was Benin's first time to gain access to a new segment of the investor's market, European institutional investors. This first euro loan operation, guaranteed by IDA/World Bank, opened the doors for Benin to gain access to global capital markets, providing a significant contribution for the debt strategy and fiscal management of the country. After the World Bank–supported euro loan issuance in the European institutional investors market, Benin successfully launched two more issuances in 2019 and 2021 without the World Bank support.[53]

The World Bank PBG in Benin is a transaction-based solution that proved successful in helping Benin tap the pool of European institutional investors for medium-term financing at adequate conditions. The financing was in hard currency. Mitigation of the foreign exchange risk was provided through the structural arrangements supporting the regional currency for the West African Economic and Monetary Union (WAEMU), the CFAF, for which the French Treasury Department guarantees free convertibility at a fixed parity between the euro and the CFAF. Given these arrangements between the French Treasury and the WAEMU, euro financing conversion into CFAF is considered a France credit rating risk (global AA by S&P, 2021). The Benin PBG structure has a replicability potential in other WAEMU countries.

A1.2.4 Côte d'Ivoire Energies, World Bank, Partial Credit Guarantees

The financial sustainability of the electricity sector is essential for Cote D'Ivoire to realize its growth prospects. Although Côte d'Ivoire is relatively rich in primary energy resources, with substantial hydroelectric and natural gas potential, access to modern

49. Policy-based guarantees are applied in the context of development policy operations where the World Bank supports a member country with their program of policy and institutional actions that promote growth and sustainable poverty reduction. This type of guarantee is intended to provide risk mitigation to commercial lenders with respect to debt service payment defaults by government, when the proceeds of the financing are applied to budgetary support in the context of development policy operations.
50. MUFG Bank, Ltd., is the largest bank in Japan. It was established on January 1, 2006, following the merger of the Bank of Tokyo-Mitsubishi, Ltd., and UFJ Bank Ltd. MUFG is one of the three so-called Japanese megabanks.
51. Effective PBG guarantee pricing in the overall transaction was 75 bps × 0.40 (40 percent) equivalent to 30 bps.
52. The second loss ATI credit insurance is only triggered if the entire IDA guarantee has been utilized. It terminates after 8 years if Benin hasn't defaulted, as at this point the IDA guarantee covers all remaining instalments. But it can also be triggered in the later years if Benin defaults in the early years and the IDA guarantee fully pays out over several years.
53. Benin raised €500 million (US$567 million) in its debut in the eurobond markets on March 26, 2019. Benin's amortizing eurobond, with a final maturity in 2026 and average life of six years, was priced at 5.8 percent. After the impact of COVID-19 pandemic, Benin was the first African country to successfully complete the issuance of €1 billion (or CFAF 656 billion) in the eurobond market on January 12, 2021.

energy is below the average of countries with similar GDP per capita.[54] Côte d'Ivoire Énergies (CI-Energies) is the state-owned enterprise at the center of the electricity sector in Côte d'Ivoire. It is the single buyer of electricity in the country. In 2018, following external shocks in the 2014–16 period, the US dollar appreciation versus the CFAF and an increase in oil prices, CI-Energies had fallen behind on its payments to IPPs and gas suppliers. The company had to resort to expensive short-term borrowing in the domestic market. As arrears to private parties in the energy sector kept piling up, much-needed new investments in the power sector were stalling. CI-Energies needed about €450 million to clear a large portion of its arrears and refinance its short-term debt. CI-Energies had to refinance its existing liabilities to reduce its arrears to the private sector and raise long-term financing. The objective was to restore its credit worthiness with the private sector to unlock new private sector investments in power generation. By 2018, CI-Energies was able to cover its operational costs, but not its full debt service. The World Bank worked with CI-Energies and the government of Côte d'Ivoire to ensure that the electricity sector would be on a financially sustainable path. In particular, the government committed to ensuring the long-term financial sustainability of the energy sector and to being fully transparent about the finances of the sector.

The World Bank developed a proposal to provide an IDA guarantee of up to €240 million (or CFAF equivalent) to enhance CI-Energies' credit quality. This type of support would enable the utility to raise an amount equivalent to up to €400 millions of new commercial debt with lower interest rates and longer tenor than the short-term and expensive financing available to it at the time. The operation was a first introduction of CI-Energies to international banking markets. This operation would pave the way for CI-Energies' future access to commercial long-term financing sources.

In April 2019, IDA supported CI-Energies with a €180 million partial credit guarantee to raise €300 million from an international commercial bank. The World Bank/IDA €180 million guarantee acted as a first-loss guarantee to the lenders. Following a competitive process, Deutsche Bank was selected as the syndication agent and the loan was disbursed in May 2019. The amount of the Partial Credit Guarantee (PCG) provided by IDA represented 60 percent of the amount raised[55]. The IDA PCG would guarantee the debt service payments owed to the lenders up to a maximum of €180 million. Additionally, the African Trade Insurance Agency (ATI) provided credit insurance in the form of a "second loss" guarantee, covering the remainder of the debt service payments after the IDA PCG would have been fully exhausted. ATI additional coverage, together with World Bank PCG, provided 100 percent of debt service risk coverage to the lenders. It was a full-wrap covered issuance. CI-Energies was also able to raise, without the IDA guarantee support, the equivalent of €145 million in CFAFs in the form of a seven-year loan through a local commercial bank, Société Générale.

The financial leverage of this transaction was 1.7 to 1. This ratio is calculated taking the amount of the IDA PCG (€180 million) and the size of the syndicated loan by Deutsche Bank (€300 million). The second seven-year loan operation raised by CI-Energies for CFAF 145 million was negotiated simultaneously with the IDA-guaranteed loan. Société Générale benefited from the work done by the World Bank team to ensure the long-term sustainability of CI-Energies. This was one of the associated benefits of the IDA operation.

The number one achievement of this operation, however, was signaling the electricity sector financial sustainability through the debt reprofiling of Côte d'Ivoire's largest public utility. The operation unlocked additional financing for the expansion of the sector. This materialized a few months later through the financial close of the expansion of the Azito 288 megawatt (MW) combined-cycle power plant, a private investment owned by ABB, Globeleq, and IPS. IFC arranged a US$345-million package funded by the five European development finance institutions and the West African Development Bank and provided US$125 million of its own funds.

54. Côte d'Ivoire's existing electrical system is the third largest in West Africa and is positioned to be one of the main hubs of electricity trading within the West African Power Pool. Côte d'Ivoire has installed generation capacity of 2,199 megawatts. Three IPPs provide gas-fired generation capacity.
55. Since the IDA guarantee also covers interest payments in this case, the full percentage of the debt coverage throughout the life of the loan came out to be less than 60% of the full amount.

A1.3 Platforms Bridging the Gap into Direct Investments

This section presents one of the most promising solutions to mobilize institutional investors into infrastructure: creating platforms that align with investors' investment profiles while developing infrastructure loans with risk profiles similar to those provided by banks. There is a growing trend of institutional investors investing in private-placement instruments or vehicles, particularly in the private equity and real state segments. The flexibility provided by unlisted instruments is well aligned with the cash-flow profiles of infrastructure assets. In this context, it is crucial to develop instruments that align with the fiduciary duty of institutional investors while also having the flexibility of bank loans.

A1.3.1 IFC, Managed Co-Lending Portfolio Program (MCPP)

The Managed Co-Lending Portfolio Program (MCPP), which was launched in 2013, is an innovative, approach-based solution to improve the syndication process among large institutional investors (Swiss Re, Munch Re, Allianz, AXA, Prudential, Liberty Mutual, and so on). The concept was to syndicate IFC loans to these types of investors in a format that would comply with their risk return profiles and regulatory demands. In a manner similar to an A/B long-term loan structure, the investor in the MCCP takes on final borrower risk, albeit with IFC as the lender of record. The MCPP is structured around a pool of IFC long-term assets in which investors benefit from one single due diligence process by adopting IFC origination, credit analysis, structuring, environmental regulation, loan administration, and decision-making practices as their own. As a new approach to the syndication loan process, the MCPP directly leverages IFC's capacities to mobilize capital from this investor class and improve its lending capabilities. The MCPP helps large institutional investors add structured emerging market risk into their balance sheets to provide an attractive risk return balance.

The MCPP acts as an umbrella program that develops independent facilities to cater to different investor needs: (a) trust funds for public sector investors (managed accounts segregating investor funds from IFC funds), (b) B loan funds for private institutional investors in which third-party asset managers establish investment vehicles and sign facility participation agreements outlining the syndication arrangements, and (c) credit insurance facilities in which insurance companies use unfunded structures to provide IFC with credit coverage (insurance) on individual loans. MCPP members benefit from access to IFC's proprietary pipeline, which is diversified among 95 EMDE countries using a cross-sectoral loan book.

The MCCP has mobilized US$10 billion from institutional investors since 2013. A recent analysis (2021) of a US$6.3 billion component of the MCCP portfolio indicated diversification among 173 projects, 54 countries with almost similar weights in three IFC business sectors (infrastructure and natural resources, financial institutions, and manufacturing and agribusiness), but this diversification happened within a similar and consistent asset class, the IFC loan.

The MCCP has expanded IFC's investor reach, but more importantly, it has proved that there is still a larger potential that such structures could leverage by enticing other types of investors into the EMDE markets. Critical factors for the success of the MCCP have been the homogeneity of the assets class (an IFC loan as opposed to a project bond) and the flexibility to adapt each facility to each investor characteristic. As the MCCP strives to attract more investors in the near future, it needs to overcome such challenges as the diversification of the underlying asset class, the lack of a secondary market for providing liquidity, regulatory hurdles (IFC as a fund manager, and Solvency II penalization in a securitization vehicle), and keeping overall transaction costs under control. IFC will continue exploring options to expand these novel approaches to increase investor participation in new types of assets (poorer countries, climate finance, local currency loans).[56]

56. *Source*: IFC, MCPP, Global Reach, 2021.

A1.3.2 Singapore, Bayfront Infrastructure Capital (BIC), Clifford Capital Holding

Bayfront Infrastructure Capital Pte. LTD (BIPCL, the trust fund issuing the notes) is a project finance CLO cash-flow securitization backed by a US$458 million portfolio of bank-syndicated senior project finance and infrastructure loans to projects in Asia Pacific and the Middle East. The issuer entered into purchase and sale agreements and master participation agreements to acquire or to participate in the loans, from five different commercial banks (DBS, HSBC, MUFG, SMBC, and Standard Chartered), which form the US$458 million initial portfolio. Clifford Capital Pte. Ltd. (Clifford Capital) manages this CLO.[57]

The CLO is backed by an initial portfolio of 37 bank-syndicated senior project finance and infrastructure loans to 30 infrastructure projects in various countries in Asia Pacific and the Middle East. The collateral manager selected the initial portfolio for an amount equal to US$458 million, the target initial amount of the portfolio.

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Table A1.2.2: Transactions Supported during PBCE Pilot Test

Country	Country rating (foreign currency)	% of pool assets	% covered[a]	% uncovered
Australia	Aaa	19.5	5.2	14.3
Hong Kong, SAR China	Aaa	2.2	0.0	2.2
Singapore	Aaa	3.7	0.0	3.7
Kuwait	Aa2	4.4	0.0	4.4
Malaysia	A1	2.5	0.0	2.5
Saudi Arabia	A1	3.3	0.0	3.3
Thailand	A2	0.5	0.0	0.5
Indonesia	A3	14.2	2.5	11.7
India	Baa1	3.3	0.0	3.3
Oman	Baa2	10.7	0.0	10.7
Jordan	Ba1	4.4	4.1	0.3
Bangladesh	Ba2	2.2	0.0	2.2
Vietnam	Ba2	14.0	13.7	0.3
Sri Lanka	Ba2	2.2	2.1	0.1
Papua New Guinea	B1	5.5	0.0	5.5
Mongolia	B1	7.5	2.7	4.8
Total		**100.0**	**30.4**	**69.6**

Source: Moody's Credit Report, July 31, 2018.
a. Covered pool of assets refers to collateral obligations based on loans supported by export credit agencies, multilateral development banks and sponsor via guarantees and insurance.

57. Clifford Capital is a public-private partnership with 40 percent of shares held by a state-owned investment company (Temasek, Singapore Sovereign Wealth Fund). Other investors include DBS, Manulife (John Hancock), Standard Chartered Bank, SMBC (10 percent each), and Prudential (20 percent). It has an independent board of directors and operates with no interference from government. Management is recruited and compensated on market terms. The institution was funded by debt issuances with Singapore government guarantees and provides instruments ranging from senior secured term loans to senior bonds. Both ADB and the Government of Japan (via LEAP, Leading Asia Private Infrastructure Group) have recently invested (2020) in Clifford Capital (US$ 95 million). Source: Clifford Capital, Financial Statements 2017; World Bank, Jordan Schwartz, Infra Council Presentation, Asian Development Bank, Press Release, September 2020.

The TOF approach presents a significant opportunity for institutional investors, who have historically had limited access to high-quality infrastructure debt, to invest in a new asset class through the capital markets in the Asia Pacific and the Middle East regions. The TOF was designed with a view to providing investors with exposure to a diversified portfolio of project and infrastructure loans across multiple geographies and sectors. The proposed offering is part of a broader, longer-term model to take out, warehouse, and distribute project and infrastructure loans to institutional investors, which consist of three main components: (a) a take-out eligibility framework, which outlines the key investment principles for the TOF, including investment criteria, due diligence principles, and loan performance criteria; (b) a warehousing facility, to facilitate future loan take-out in a timely manner; and (c) a distribution platform, for issuance of securities to investors.[58]

The BIPCL collateralized loan obligation was launched on July 31, 2018, through four tranches. Citibank and Standard Chartered acted as joint global coordinators. Citi, HSBC, DBS, SMBC, and Standard Chartered acted as lead managers; MUFG acted as co-manager.

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Table A1.3.3: BIPCL Financial Structure

Class	Amount Issued (US$ million)	Share of the structure (%)	Credit ratings (Moody's)	Spread	Maturity
A Notes	320.60	70.00	Aaa (sf)	6m Libor + 145 bps	January 11, 2038
B Notes	72.60	15.85	Aa3 (sf)	6m Libor + 195 bps	January 11, 2038
C Notes	19.00	4.15	Baa3 (sf)	6m Libor + 315 bps	January 11, 2038
Subordinated	45.80	10.00	Not rated	N.A.	January 11, 2038
Total	**458.00**	**100.00**			

Source: Moody's Credit Report based on Joint Global Coordinators information, July 30, 2018.
Note: bps = basis points; N.A. = not applicable; (sf) = structured finance security; 6m Libor = 6-month interbank lending rate.

The Class B notes are fully subordinated to the Class A notes, and the Class C notes are fully subordinated to the Class A notes and the Class B notes. The subordinated notes are fully subordinated to the rated notes A, B and C. The subordinated tranche was bought by Clifford Capital Holdings and acts as a first-loss credit enhancement to the structure. The Class A and B notes have an overcollaterization ratio of 111.5 percent, and the Class C notes have an overcollaterization ratio of 106.6 percent. The required interest coverage ratio is 110 percent for the A and B notes and 105 percent for the C notes.

The assets in the CLO (that is, the bank loans) are not expected to be actively traded during the transaction life. The weighted average life of the assets in the pool is 5.4 years. The collateral manager may direct the issuer (BIPCL) to sell certain credit-impaired assets as long as the overcollaterization and interest coverage are satisfied for the rated notes. There is a two-year reinvestment period in this transaction, during which the collateral manager may direct the issuer to purchase new assets.[59]

Similar to other approach-based solutions within the project finance loans asset class, the 10 percent first-loss structure via the subordinated notes underwritten by Clifford Capital was sufficient to provide an investment-grade standing for the BIPCL transaction (besides other structural features such as the overcollaterization). Each US dollar of credit support by Clifford Capital

58. In developing the TOF structure, Clifford Capital sought to fulfill several strategic objectives, including (a) addressing the Asia Pacific's infrastructure financing gap by mobilizing a new pool of institutional capital, (b) unlocking additional capital for Asia Pacific infrastructure financing through facilitating capital recycling by banks, (c) creating a new asset class for institutional investors to access project and infrastructure loans in the Asia Pacific and the Middle East regions in a credit-enhanced structure, and (d) addressing existing market friction that prevents large-scale mobilization of institutional capital for infrastructure financing, thereby facilitating institutional participation in the project finance asset class in a readily accessible manner. Source: Clifford Capital and AIIB press release, November 28, 2019.
59. There is a two-year reinvestment period in this transaction, which begins on the closing date. During the reinvestment period, the collateral manager may direct the issuer to use unscheduled principal collections and proceeds from the sale of assets to purchase new assets, provided (a) no event of default is happening, (b) all coverage tests are satisfied, and (c) the proposed asset purchase does not result in a reduction or withdrawal of the then-outstanding rating of each class of rated notes. All new purchased assets must have a credit estimate assigned by the rating agency. Source: BIPCL Prospectus, July 2018.

was able to recycle for the commercial bank's assets US$9 to finance new infrastructure projects. Tranching the securities -- included in the BIPCL structure -- also allowed appealing to a broader base of investors with risk/return profiles.

The BIPCL transaction created a homogeneous asset class with a consistent risk structure and risk mitigation approach that allowed a portfolio of 37 project finance loans from 16 countries and eight different infrastructure sectors to be offered to institutional investors as a single asset. Lack of homogeneity would prevent institutional investors to participate in project finance markets, limiting the development of infrastructure finance to the commercial bank market and MDBs.[60] Clifford denominated its notes in US dollars and tied its interest rate to Libor; denominating securities in a commonly used currency, and tying interest rates to a well-known benchmark can help mitigate currency or interest-rate risk created by the difference between the securitized notes and the underlying loans. The common US dollar denomination for the collateralized loan and the new asset class mitigated a sizeable portion of the cross-border risk. This formula optimizes access to the large pool of liquidity owned by institutional investors.

The approach has a strong replicability via CLOs in a take-out facility in selected EMDE countries with bank loans denominated in US dollars. However, structuring a similar transaction with loans denominated in several EMDEs' currencies would be a challenging exercise. The homogeneity of a single hard-currency CLO note (with an underlying pool of assets in different currencies) would require complex structuring and credit enhancements that could trigger higher transaction costs due to the currency mismatch (project finance loans) and the CLO notes. Replicating the structure in single EMDE countries with relatively deeper financial markets (that is, in middle-income countries) in their local currency would be easier to structure and to mitigate. The limitation is that it would not become a global asset class, tapping only into their respective local capital markets.

A1.3.3 Amundi Planet Emerging Green One (AP EGO), a Joint Amundi-IFC Facility Supporting Green Bonds Development.

In 2017, IFC developed the concept of the Green Cornerstone Bond Program, a fixed-income fund dedicated to investing in green bonds in emerging markets.[61] Following a competitive international tender offer, Amundi was selected by IFC as its partner to implement an innovative solution that consists of a fund (the Amundi Planet Emerging Green One; AP EGO) fund with additional support from IFC's Green Bond Technical Assistance Program (GB-TAP, or the TA Program).The fund is listed on the Luxembourg Stock Exchange and was launched in March 2018 to buy green bonds issued by commercial banks in emerging markets.

At closing in March 2018, the fund had raised US$1.42 billion, which included US$256 million in investments by IFC Financial Institutions Group and the rest by institutional investors that included DFIs, such as the EBRD, the European Investment Bank (EIB), and Proparco (the largest investor in the mezzanine tranche).[62] AP EGO is a layered debt fund with a credit enhancement mechanism provided by subordinated tranches partially funded by DFIs. The fund and its fund manager are both regulated by Commission de Surveillance du Secteur Financier, the Luxembourg securities market regulator. The fund operates under strict investment guidelines and eligibility criteria that regulate green bond issuers, country exposure, credit ratings, and environmental standards. The fund has committed to making investments to acquire the green bonds in a seven-year period from March 2018 forward. The fund buys bonds on both primary and secondary markets. On the primary market, the fund buys bonds that are publicly or privately placed.

60. The institutional bond market can help to refinance banks, as banks may be more suited to finance the construction stage of projects. In a G20 white paper on sustainable infrastructure securitization, private sector participants indicated the importance of having appropriate collateralization and securitization platforms. Such platforms help establish a market for infrastructure securitization in specific CLOs. The CLOs would allow for an efficient structure of liability and asset seniority to cater to investors of varying risk appetites. The findings suggest that the bond market alone would provide US$1 trillion–$1.5 trillion annually of additional private capital for infrastructure projects. Source: Infrastructure Asia and G20 white paper.
61. This section is based on IFC and Amundi, *Emerging Market Green Bond Report 2020, 2021*; Amundi, *Annual Impact Repor*t; IFC, Green Bond Quarterly Meeting, April 2021; Imperial College, *Case Study on AP EGO*; and Amundi, Fund Prospectus, March 2020.
62. The committed investor base consists of capital raised from leading pension funds (Alecta, AP3, AP4, APK Pensionkasse, APK Vorsorgekasse AG, ERAFP, MP Pension), insurance companies (Crédit Agricole Assurances, LocalTapiola General Mutual Insurance Company, LocalTapiola Mutual Life Insurance Company), asset managers, international development banks, and other institutions. Source: Amundi, March 2018 press release.

The fund is structured into three different tranches: (a) a junior tranche making up 6.25 percent of the fund to be structured as a first-loss credit enhancement, (b) a mezzanine tranche making up 3.75 percent of the fund to be structured as a second-loss credit enhancement, and (c) a senior tranche for 90 percent of the fund supported by the other two tranches and targeting European institutional investors.[63] The DFIs' partial support in the first two tranches helped mobilize the other 90 percent of the fund for a strong leverage ratio (besides the fund's capital leverage, there is a leverage of the fund's investments that is not captured in this report). The fund invests in listed debt securities on regulated markets with a credit rating from a recognized agency. Investment guidelines allow for a maximum exposure of 30 percent of the fund portfolio to credit ratings below BB− (lower benchmarks are set at CCC+) and a maximum of 100 percent between BBB− and BB−, or an average credit rating of BB+. Investment in sovereign green bonds is capped at 30 percent.

The share listing of the fund on the Luxembourg Stock Exchange added an interesting feature that offers investors liquidity despite the fund's being structured as a closed-end fund. The closed-end structure allows the pursuit of a "total return" investment strategy without the risk of investors' redeeming their investment. It allowed the fund to buy emerging markets bonds with low liquidity. Both junior and mezzanine shares are listed to allow investors to sell their positions.

The IFC-managed TA Program provides a beneficial complement to the objectives of the fund by supporting a new asset class. Funded initially by a US$7.5 million grant from the Swiss Secretariat for Economic Affairs and later supplemented by US$6 million from the Swedish International Development Cooperation Agency and €1 million from the Ministry of Finance of Luxembourg, it supports the creation of new markets for climate finance by developing green bond policies, providing training programs for bankers, and facilitating the adoption of the Green Bond Principles and international best practices in emerging markets. The TA Program and the fund complement each other as an approach for the simultaneous stimulation of supply and demand to create a market. Supply-side incentives are provided by the TA Program and the demand side is provided by the fund.

As of March 2021, the performance of both the fund and the TA Program has been robust and has exceeded expectations. The fund has already invested 51 percent of its proceeds in the acquisition of green bonds, above the 25 percent target for the end of year 3. Since May 2018, the fund has acquired green bonds from 25 different issuers representing 10 different countries (Brazil, Chile, China, Costa Rica, India, Mexico, the Philippines, Qatar, Turkey, and the United Arab Emirates). Of these issuers, 17 were first-time issuers (including three that handled hard-currency issuances). According to Amundi's *2020 Annual Impact Report*, avoided greenhouse gas emissions represented by the fund's portfolio in 2019 totaled 308,727[16] tCO_2e (tonnes carbon dioxide equivalent).

This approach-based solution to developing and establishing a new asset class has also been successful in mobilizing private capital from European institutional investors for use in developing sustainable infrastructure in emerging markets, as the target customers are defined in the fund. Both IFC and Amundi's Emerging Markets Team have developed a creative mechanism to support the development of an important new debt market (the green bond market) that would mobilize large amounts of capital for sustainable infrastructure in the future.[64] These types of mechanisms have a strong replicability potential in other types of asset class and debt markets.

63. The 10 percent debt protection to the senior tranche was calculated as a function of the credit default rates of the spectrum on rated bonds (BB− to BBB−) included in the investment guidelines.
64. Despite the unprecedented challenges to the global economy and financial markets in 2020, the global green bond market proved resilient, achieving the key milestone of US$1 trillion in cumulative issuance since 2007, with issuance of US$280 billion in 2020. Since 2012, 43 emerging market economies have issued green bonds, registering cumulative issuances worth US$226 billion. In terms of sectoral trends, robust issuance by nonfinancial corporates demonstrates the increasing diversification of issuers. Financial institutions make up 50 percent of cumulative green bond issuance by volume in emerging markets. Source: IFC and Amundi, Emerging Market Green Bond Report 2020.

BOX A1.3.3: ENEL, SUSTAINABILITY DSG LINKED BOND

Enel S.p.A. is a privatized Italian electricity utility company that operates in over 30 countries throughout Europe, the Americas, Asia, and Africa. Enel is the world's largest private energy company by revenue (approximately €77 billion in 2019) and maintains a significant presence in the clean energy industry. It produces power using both renewables (wind, solar, geothermal, and hydroelectric) and nuclear power, but it also produces energy from conventional oil and gas plants as well. In the interest of pursuing its commitment to the United Nations Global Compact and the fulfillment of Sustainability Development Goals (SDGs), Enel embarked on a series of efforts, particularly in the latter half of the 2010s, to decarbonize and increase its installed capacity for renewable energy generation.

To fund this effort, ENEL had issued three green bonds in the European market between 2017 and 2019 worth a total of €3.5 billion.

In 2019, Enel shifted its strategy from issuing green bonds to issuing SDG-linked bonds. Since its first issuance, Enel has successfully launched these new bonds in the US, UK, and European markets in amounts totaling US$1.5 billion, £500 billion, and €2.5 billion, respectively. These SDG-linked bonds are unique in that the proceeds are marked for general corporate purposes, thereby making them significantly more flexible in application.[/1] The difference between SDG-linked bonds and conventional bonds lies in the related pledge to reach predetermined SDG-focused key performance indicators: failure to meet them results in a step-up margin of 25 basis points over the life of the bond.

The first issuance of US$1.5 billion in general-purpose SDG-linked bonds on September 9, 2019, consisted of one single tranche, was oversubscribed three times, and was placed among European institutional investors. Bonds were investment grade–rated Baa2/BBB+/A− (Moody's, S&P, and Fitch). The bonds were linked to SDGs no. 7, 9, 11, and 13 with the following structure: (a) Goal No. 7 ("affordable and clean energy"). Investing in over 11.6 gigawatts of additional capacity, (b) Goal No. 9 ("industry innovation and infrastructure"). Installation of over 46.9 million smart meters and a €5.4 billion investment in digitalization, (c) Goal No. 11 ("sustainable cities and communities"). Installation of 9.9 gigawatts of demand response capacity and 455,000 charging points for electrical mobility, and (d) Goal No. 13 ("climate action"). Commitment to reduce CO2 emissions to below 0.35 kilograms per kilowatt hour equivalent in 2020 and full decarbonization by 2050.

The first issuance was for a five-year tenor (maturing in September 10, 2024) and priced at 2.65 percent in US dollars with the goal of reaching 55 percent installed renewable generation capacity by the end of 2021. Although Enel is projected to meet this goal, the coupon is set to increase by 25 basis points, should it fail.

Though Enel is on track to meet its SDG key performance indicators for the SDG-linked bonds, it is unclear if the proceeds from the bond issuances are being used specifically for ESG purposes. The strict reporting and auditing standards of green bonds are generally not applied for SDG-linked bonds. Instruments such as the SDG-linked bond are therefore likely to continue to perform successfully regardless of the accountability issue unless regulators institute stricter guidelines and frameworks for what qualifies as an ESG investment.

[/1]Sustainability-linked bonds (SLBs) are performance-based non-earmarked bonds whose financial or structural characteristics (for example, coupon rate) are adjusted depending on achievement of predefined sustainability objectives. The objectives are measured through key performance indicators and assessed against sustainability performance targets. In June 2020, ICMA published the Sustainability-Linked Bond Principles, providing guidelines that recommend structuring features, disclosure, and reporting.

A1.3.4 Philippine Investment Alliance for Infrastructure (PINAI), ADB and Macquarie

The Philippine Investment Alliance for Infrastructure (PINAI) is a US$625 million 10-year closed-end private equity–type fund. It has been a successful model of an approach-based, blended finance mechanism that combines private sector and institutional investor funding as a means of addressing one of the key challenges to mobilizing private capital for developing sustainable infrastructure: access to equity financing. The PINAI Fund specializes in equity and quasi-equity products (mezzanine) to acquire and develop infrastructure assets in the Philippines.

The PINAI Fund was established in 2012 after the Philippine government asked the ADB to develop financing solutions to help meet its infrastructure gap. With ADB's support, PINAI was built on previous legislative and fiscal reforms. The fund's main partners include the Government Service Insurance System (GSIS), the social security entity for public employees in the Philippines that has a US$400 million stake (64 percent); Europe's largest pension fund, the Algemene Pensioen Groep in the Netherlands, which has significant experience in infrastructure investment and a 24 percent ownership stake; the Asian Development Bank (ADB) with a 4 percent stake; and Macquarie Infrastructure and Real Assets (MIRA Funds), the world's largest infrastructure fund manager with an 8 percent ownership stake. The fund is managed by MIRA Funds. The fund manager policy objectives include (a) attracting top-tier international partners to infrastructure investments in the Philippines, (b) fostering competition in domestic infrastructure finance, and (c) establishing a secondary market for well-performing infrastructure assets. It manages PINAI and is responsible for all major investment, divestment, and management decisions within the fund's overall mandate.

The fund makes equity and equity-linked investments in core infrastructure assets in the Philippines that exhibit all of the following characteristics: (a) they provide an essential service to the community, (b) they benefit from barriers to competition or other strategic competitive advantages, (c) they have a long economic life, (d) substantially all of their revenues are secured through long-term contracts, and (e) they may also generate sustainable and predictable cash flows as a result of stable usage and demand because of quasi-monopolistic market strength or limited availability and alternatives, possibly with capital growth potential.

PINAI has already invested the larger share of its funding in the Philippine infrastructure in sectors (both greenfield and brownfield) such as renewable energy, light rail transport, oil and gas storage facilities, and power plants. Its main shareholder (GSIS) has expressed an interest in doubling its investment in infrastructure projects in the Philippines to US$800 million, because of the excellent returns and risk diversification offered by PINAI.[65] Through PINAI, GSIS has diversified its income sources and has achieved greater returns, thus enabling it to enhance its products and services for its stakeholders. GSIS officials say they believe that the fund will benefit its 1.7 million members and pensioners of the government pension system.

Private equity funds are relatively new in the Philippines, and the country sees limited investment activity in this asset class. The fund's management team is based locally and provides the market with a clear example of effective financial intermediation (through private equity) and the mobilization of new institutional capital and expertise into a sector where such features of investing are in high demand.

Because it is a 10-year closed-end fund maturing in July 2022, PINAI has been very active lately recycling some of its acquired assets through partial and total divestitures. In November 2019, PINAI sold its stake in the 81-megawatt wind farm facility in Pagudpud, Ilocos Norte (North Luzon Renewables Energy Corporation) to AC Energy Philippines. AC Energy (formerly Michigan Power Inc.) is the investment arm of the Ayala Corporation in the power sector, and it engages primarily in greenfield or brownfield projects, renewable energy, and conventional technologies. In February 2021, PINAI sold the Philippine's largest petroleum

65. Interview with GSIS president Robert Vergara, *Philippine Star*, February 7, 2016.

storage facility for US$267 million (€220 million) to Keppel Infrastructure Fund (Singapore) and the Metro Pacific Investments Corporation (the Philippines).

MIRA Funds, the manager of PINAI, has indicated that the fund will be closing on its 10th anniversary, and may opt to establish a new infrastructure fund with new and existing shareholders. The IIM Global Review team did not have access to the amount of assets recycled (sold) and the financials of PINAI because of its confidential nature. It is, however, safe to assume that PINAI was a successful, blended finance vehicle for making equity investments in developing vital Philippine infrastructure. PINAI attracted local and European institutional investors into its capital structure. Management by MIRA was a key component of the fund structuring and success.[66]

A1.3.5 African Development Bank (AfDB), Synthetic Securitization, Room2Run, 2018

The African Development Bank (AfDB) recently tested an alternative approach to mobilize private capital from institutional investors. In 2018, the AfDB was facing a complex challenge to increase its lending capacity without a new capital increase. The AfDB structured a synthetic securitization to transfer the credit risk of a portion of its portfolio of existing loans through a securitization, labeled Room2Run. This was a first for any multilateral development bank.[67]

Structured as a synthetic credit risk transfer (CRT) securitization by Mizuho International, Room2Run transfers the mezzanine credit risk on a $1 billion portfolio of approximately fifty loans from among the AfDB's non-sovereign lending book to private sector investors, Africa50, and the European Commission's European Fund for Sustainable Development (EFSD).[68]

The $1 billion Reference Portfolio consists of seasoned, pan-African loans from 16 African countries in renewable energy, transport, finance, and commercial sector (50% project finance loans and 50% loans to financial institutions, including DFIs). The loans are all from the non-sovereign window which bears a higher pricing, and better options at having a competitive market pricing for the CRT. One of the advantages of these types of synthetic securitizations (CRTs) is that they keep the control issues of project financing with the original issuer (AfDB in this case). Institutional investors are "passive" when it comes to project control issues, that they are not really suited to manage (i.e., responding to project sponsors requests for waivers and consents among others). The transaction took four years in the making spearheaded by Mariner (USA based investor representing public and private pension funds) and its International Infrastructure Finance Fund (IIFII), to take advantage of some bank deleveraging opportunities presented by Basle III from tighter global bank capital and liquidity standards.

Structure

The transaction entails the securitization of US$ 1 billion worth of private sector loans (with an average underlying credit rating of single B+ equivalent according to AfDB's internal credit scale). The portfolio does not include projects that are in the construction phase, non-performing loans, equity, or loans on a "negative watch" for potential default. The securitization includes four different tranches:

a. A junior tranche of US$ 20 million (i.e., first-loss of 2%) that remains in the books of AfDB.
b. A junior mezzanine tranche of US$ 152.5 million (second loss of 15.25%) with US$ 122.5 million of cash collateral by Mariner and US$ 30 million of cash collateral by Africa50[69]. This junior mezzanine protects the rest of the other two more senior tranches

66. *Source*: ADB project report, 2012, 2015; Halland et al., Strategic Investment Funds, Opportunities and Challenges, 2016.
67. Overseas Development Institute (2018) "African Development Bank's landmark deal opens door to scaling up multilateral lending". Available at https://www.odi.org/blogs/10694-african-development-banks-landmark-deal-opens-door-scaling-multilateral-lending
68. The EU's External Investment Plan has a dedicated window under the European Fund for Sustainable Development on sustainable energy and connectivity, which provided a guarantee of up to €87 million to support Room2Run. See https://www.afdb.org/en/news-and-events/african-development-bank-mariner-investment-group-and-africa50-price-landmark-1-billion-impact-securitization-18494
69. Infrastructure fund created by AfDB with the participation of 30 African countries as shareholders.

from credit defaults by the underlying portfolio. Protection to investors in the more senior tranches is documented through Risk Participation Agreement (RPA). The Premium on this credit protection to Mariner and Africa50 is 10.625% per annum.

c. A senior mezzanine tranche for US$ 100 million (next 10% of loss) bought by the European Commission (EC) via the European Fund for Sustainable Development (EFSD). AfDB will pay a fee to the EFSD for the unfunded guarantee of US$ 100 million.
d. A senior tranche of US$ 727.5 million (final excess loss of 72.75% was bought by institutional investors. AfDB will retain residual exposure to any losses on the senior tranche.

The capital weighting assigned to AfDB for its exposure to the senior tranche of the Room2Run structure was estimated to be equivalent to a portfolio of single-A rated assets. This allowed AfDB to free up to US$ 650 million in headroom for new lending (out of a US$ 1 billion portfolio), given reduced risk capital that the Bank must hold for the overall securitized portfolio.

Results

The authors did not have complete access to the transaction costs and final pricing but judging by the premium costs of the mezzanine tranche and the additional head room created for new lending of 65% on the overall securitization, this type of CRT would appear as a high-cost solution for a MDB capital increase. However, it must be recognized that AfDB -- *which is not subject to regulatory oversight by Basle guidelines* --, relied on the rating agency assessment (S&P) for the capital relief benefits, which were probably constraining its lending capacity at the time. These types of synthetic transactions (CRTs) with the sovereign portfolio of a DFI which bears a cooperative type of pricing will be challenging given that the underlying interest rate margins would probably make them commercially unattractive. However, CRT securitizations are increasingly being used for credit relief for commercial bonds, and in some cases the new lending capacity is being used to finance green or sustainable development transactions.[70]

A1.4 Asset Recycling Mechanisms via Local Capital Markets

This section presents two successful cases of asset recycling in EMDEs using securitization structures that resulted in tradable bonds denominated in local currency. These instruments are ideal for domestic pension funds because (a) they are backed by relatively certain cash flows from assets in the operation phase, (b) they are structured as standardized tradable bonds; and (c) they are rated by credit rating agencies.

A1.4.1 Fondo Nacional de Infraestructura (FONADIN), Mexico, Asset Recycling Mechanism

The National Infrastructure Fund (Fondo Nacional de Infraestructura; FONADIN) was established in 2008 to accelerate private participation in Mexico's infrastructure. FONADIN has been instrumental in providing high-quality project preparatory assistance and financing for infrastructure. FONADIN's principal objectives are to (a) support the implementation of the National Infrastructure Program; (b) foster private capital flows to infrastructure projects; (c) encourage the participation of the public, private, and social sectors in infrastructure development; (d) assume risks that the market is not willing to take; (e) create bankable projects with social or low economic profitability; and (f) provide long-term financing with competitive conditions.

From 1989 to 1994 Mexico implemented an ambitious road concession program that has been widely regarded as a failure. In just five years, Mexico awarded 52 concessions totaling over 5,300 kilometers of toll roads. Nonetheless, as early as 1993 many of

70. Examples are Premium Green, a $3 billion risk transfer with Crédit Agricole CIB, focused on the bank's structured lending portfolio. It included a redeployment requirement, whereby CACIB agreed to invest all of the released capital into new green lending. See Also Jupiter, a $3.4 billion risk transfer with Société Générale that introduced innovative features to redeploy capital for impact, focusing on both green and social re-investment and including a pricing incentive for increased socially positive reinvestment.

the concessions had to be renegotiated and in 1997 the government was forced to take over 23 of them at an immediate financial cost of billions of dollars. As a result of this rescue by the government, toll road assets were placed under a trust mechanism that in 2008 were used to create FONADIN. As result, FONADIN became the concessionaire of a network of more than 50 toll highways (more than 4,300 kilometers of brownfield assets), whose revenue allows it to recycle these assets to finance the development of new infrastructure.

Currently, toll road assets are the main source of funds for infrastructure investment. Since 2008, FONADIN has released some highways from its main concession title with the purpose of raising funds to finance infrastructure development in the country, thus recycling its assets. This process of recycling assets once they have passed the riskier phases of the project is called asset harvesting by the Mexican authorities. The commonality with an asset recycling program is that there is a sale of brownfield assets to private investors and the proceeds of the sale are earmarked for further infrastructure investment However in this model there is no matching of funds by the federal government.[71]

In May 2019, FONADIN raised Mex$6,163 billion (approximately US$326 million based on May 31, 2019 exchange rates) through the second securitization of the Mexico–Puebla Highway, to which FONADIN held the concession rights. This issuance—together with the previous asset-backed securitization for the same toll road on March 26, 2018—is the biggest highway securitization in Mexican market history. The proceeds will be used to support the fund's infrastructure investment program. The FONADIN example illustrates both the approach-based mechanism of having a dedicated institution manage asset recycling in selected sectors and also the transaction-based mechanism that reflects the largest asset securitization in Mexico's institutional investor markets.[72]

HSBC Mexico structured the transaction, and the two underwriters and placement agents were BBVA Mexico and HSBC Mexico. The asset-backed securitization (monetization of future toll roads) was arranged through a private trust administered by CI Banco S.A., a Mexican private institution. The assets-backed securities (certificados bursatiles) were placed among institutional investors in the Mexican Capital Markets. The transaction was structured in two tranches. The first tranche, MXPUCB 18U, was denominated in Unidades de Inversión (UDIs), an index unit of funds launched in the aftermath of the 1995 financial crisis to protect mortgage assets.[73] This tranche was approximately equivalent to US$204 million, with a 20-year maturity and a 4.67 percent yield. The second tranche, MXPUCB 18, was denominated in Mexican pesos. This tranche was approximately equivalent to US$122 million, with a 20-year maturity and a 9.11 percent yield. The overall issuance size of the Mexico–Puebla asset-backed securities was about US$1.1 billion (2018–19).

These two asset-backed securities were both rated AAA local by Fitch. None of the two issuances had any external credit enhancement (by the government, DFIs, or credit insurance agencies). The strength of the traffic history (brownfield asset), its geographical location, the availability of a maintenance and upgrade pluriannual public sector budget, and the trust structure capturing all toll revenues was sufficient to have a AAA local-rated asset placed among local institutional investors. FONADIN has been a pioneer in public sector asset recycling in Latin America and the Caribbean, developing both approach-based and transaction-based solutions to tap into the institutional investors markets in Mexico.

71. Funding Infrastructure in APEC Economies, Report on Selected Effective Approaches, APEC Survey, October 2019.
72. Faced with the task of financing the Mexico-Puebla toll road, FONADIN managed to achieve extremely tight pricing through the sale of a one-of-a-kind asset-backed security—an accomplishment made even more impressive given the market backdrop and tense NAFTA negotiations ongoing at the time. The deal team was able to market the transaction at benchmark size, a first in the local market, and the structure—heavily influenced by those seen in the US-structured securities markets—enabled FONADIN to attract a broad range of investors, culminating in the largest transaction of its kind in Mexico and Latin America and the tightest pricing for a toll-road to date in Mexico. Source: Bonds and Loans, September 2019.
73. The Mexican Unidad de Inversión (UDI, ISO 4217 code MXV) is an index unit of funds used in Mexico. It can be traded in many currency markets because its value changes with respect to currencies. Unlike currencies, it is designed to retain its purchasing power and not be subject to inflation. The Mexican credit system (especially mortgages) uses the UDI rather than the peso because of its stability.

BOX A1.4.1: CKD INFRASTRUCTURE MEXICO: A CO-INVESTMENT PLATFORM BETWEEN A GLOBAL INVESTOR, DOMESTIC PENSION FUNDS, AND A DOMESTIC INFRASTRUCTURE FUND (FONADIN) IN LOCAL CURRENCY

CKD Infraestructura México, SA de CV is a recent and innovative example of how co-investment platforms between international and domestic institutional investors can leverage each other to invest in scale in in infrastructure. This investment platform was launched in late 2015. Caisse de Dépôt et Placement du Québec (CDPQ), a global institutional investor, joined a consortium of five Mexican investors, including FONADIN (National Infrastructure Fund), the public pension fund (Pensionisste), and the three largest private pension funds—to investing in the platform. CDPQ holds a 51 percent interest in the co-investment vehicle and is the controlling manager. The domestic pension funds and Fonadin holds 49 percent of the platform through CKD IM, whose shares are listed on the Mexican Stock Exchange. CDPQ is a Canadian long-term asset manager for Canadian pension funds and insurance companies with around Can$366 billion AUM invested globally, of which Can$31.7 billion are invested in infrastructure in 15 different countries.

A specific investment team was appointed to manage the Mexican investment platform, but it also draws from the expertise of infrastructure investment teams from CDPQ. This platform has allowed the Mexican investors to benefit and learn from CDPQ's infrastructure investing expertise. In exchange CDPQ has gained local intelligence, deal access and, probably, some political risk protection. The platform has invested more than US$1.65 billion (83% of US$2bn raised capital) in road, telecommunication and renewable energy projects and has an investment horizon of 50 years. Investments have taken place in equity in brownfield projects with stable cash flows in local currency. This reflects CDPQ's willingness to assume exchange rate risks and manage these on a portfolio basis, which is facilitated by three factors: (1) the indexation to inflation of the projects revenues; (2) the long-term horizon of investments; and (3) the diversification of the portfolio at a global level.

Investments have been made mainly through joint ventures with infrastructure operators that have "skin-in-the-game" and are responsible for managing the infrastructure assets. The first transport investment was made through an SPV managing four mature toll roads, in partnership with the Mexican construction company ICA (see diagram). Other investments include a 12% participation in the capital of a US$2.3bn greenfield telecom network available to 92.2% of the Mexican population, as well as the acquisition from Enel Green Power, under a "Build, Sell and Operate" ("BSO") model, of 80% of the share capital (totaling US$1.35bn) of eight special purpose vehicles ("SPVs") that own renewable plants (wind and solar) in operation and under construction. This co-investment solution addresses several obstacles that long-term institutional investors in Mexico are facing: (1) knowledge transfer from a highly specialized international assets manager and (2) a vehicle with a partner with aligned interests regarding fees and investment horizon; and (3) scale as it duplicates the investment made by the domestic pension funds.

Source: CPDQ Annual Report, 2020

A1.4.2 Corporación Vial del Uruguay (CVU), Toll Road Asset Backed Securities

Corporación Vial del Uruguay (CVU) is an approach-based solution to recycle toll road assets through the issuance of project bonds in local capital markets to finance new transport infrastructure. It has played an important role by establishing a new asset class among institutional investors in Uruguay in both local index currency and US dollars. During 2017 and 2019, it placed asset-backed securities in the local capital markets for the equivalent to US$450 million. The toll road securitization, as in the case of

FONADIN, Mexico, is also the largest public sector asset recycling mechanism in Uruguay to fund new investments in the transport sector.

The CVU is the concessionaire of Uruguay's primary road network and points of entry. Roads operated by the CVU connect the capital city, Montevideo, with the rest of the country and international points of entry. The CVU also operates the Interbalnearia (coastal beaches) road, which connects with main tourist destinations such as Punta del Este. The CVU benefits from the demand of both commercial and commuter passengers and occasional leisure users. Because of the limited geographic scale of Uruguay, private sector competition is not expected in the medium term. Traffic shows significant seasonality—with higher traffic in the summer (December through March) when the coastal beaches road is mostly used by tourists (mainly from Brazil and Argentina) traveling from Montevideo to Punta del Este and surrounding leisure areas.[74]

The structure of the concession is relatively complex, given the coexistence of various sources of revenue (tolls and subsidies) and expenses (for operation and maintenance and the investment and construction plan). The toll road average levels (local currency based) do not provide a full cost recovery of CVU cost structure, including both operational costs and investment costs. Given the CVU's mandate to maintain and expand the road network in Uruguay—estimated at US$3.490 million for the period 2016–35—its revenue base needs to be complemented by direct government transfers (from the Ministry of Transport and Public Works of Uruguay) and debt support (from MDBs and from asset recycling via local capital markets). During the period 2016–35 net government transfers (subsidies) are estimated to be US$1.664 million, roughly 48 percent of the capital investment program.[75]

The approved debt issuance of the equivalent of US$450 million has been issued in different series between April 2017 and October 2020. Given local capital market regulations, institutional investors can hold assets in both local currency and US dollar instruments. The authorization for the US$450 million was segmented as follows: (a) up to US$180 million in US dollar instruments and (b) up to the adjusted local currency equivalent (Uruguayan pesos adjusted by an inflation index) of US$315 million (UI), and (c) up to re-adjustable local currency equivalent (Uruguayan pesos adjusted by a salary index) to US$225 million (UP).[76] The sum of all issuances, in the three types of asset class, cannot exceed the authorized amount of US$450 million. The toll road asset-backed securities have a currency structure (50 percent UI, 20 percent US dollar, and 30 percent UP) that resembles the mechanics to calculate the toll road fee structure.

The six series were structured as any other project bond with the standard coverage protection by debt service reserve accounts and debt service coverage ratios. None of the six series had any external credit enhancement (such as first-loss subordinated debt or credit insurance). Similarly, none of the six series had any government guarantee, other that the linkage between CVU, National Development Corporation, and the government of Uruguay. This was an asset-backed securitization that included 100 percent of government-related assets but without any additional public support (that is, additional to the subsidy structure in place for approximately 48 percent of the road network capital costs). The relevant leverage of the transaction was the incorporation of the institutional investor markets in Uruguay, and to a lesser extent the retail market in the US dollar-denominated series to an asset recycling mechanism that raised additional funding for sustainable infrastructure.

Base traffic in Uruguay is not likely to experience significant increases due to population growth dynamics. Seasonal tourist traffic is different and would increase with regional growth improvements. The CVU business model is highly dependent on public budget support (subsidies). This is the counterbalance of the CVU's having full investment responsibility to maintain, rehabilitate, and expand the national network. Looking at the future—and assuming the roads were not under the control of the CVU—the government of Uruguay will need to reassess the toll tariff public policy and consider migrating from the almost 50 percent end-user and 50 percent subsidy formula to a heavier weighting of the end-user responsibility.

74. *Source*: Moody, Credit Rating Report, May 3, 2018.
75. *Source*: Concession Contract Annex, December 15, 2015, and Moody's Credit Report, October 21, 2020.
76. On August 1, 2003, the Central Bank created the Unidad Indexada (UI or index unit) in an attempt to mitigate the inflation impact of the asset value of capital market instruments and other transactions.

For a corporation with the traffic history and dominant position of the CUV, the normal step when considering new funding options is to access equity markets both local and global. Equity financing will put some pressure on the overall average capital cost of the corporation but might ease the migration to full-cost-recovery tariffs. The underlying challenge for the CVU would be how to manage the political sensitivities of a partial privatization via public offering. Both, the CVU and FONADIN cases illustrates the relevance of an exit strategy from the original project debt via mobilization of institutional investors' capital.

A1.5 Domestic DFIs with Catalytic Responsibilities

This section presents three domestic DFIs that have played a key role in infrastructure finance by crowding in institutional investors and commercial banks in both local and hard currency. Their original role was to provide guarantees or liquidity facilities to lower the credit risk of projects. In the case of Financiera de Desarrollo Nacional (FDN), it had an expanded catalytic role of including the support of new investment vehicles for mobilizing institutional investors.

A1.5.1 Colombia, Financiera de Desarrollo Nacional (FDN)

Financiera Desarrollo Nacional is a strategic investment fund focused on infrastructure with mixed ownership between the government of Colombia and international financial institutions (IFIs). With a private type of corporate governance, the fund has played a critical role mobilizing private capital into the development of the mega toll road concession project, 4G.

Financiera de Desarrollo Nacional (FDN) is one of the local development financial institutions that have found creative ways to use their balance sheet to leverage private capital. The case study illustrates an approach-based solution for global asset managers to create infrastructure debt funds registered in the Colombian capital markets (Superintendency of Finance) to invest in peso-denominated debt for long-term project loans. These funds have mobilized local private investors in the Colombian peso equivalent of US$1 billion of debt supporting the financing of the 4G toll road concession program.

Colombia's national development bank, FDN is full-fledged financial institution with capacities to lend, invest, and take deposits from the public (a service that today FDN does not perform). Today it acts as a specialized financial institution with a range of lending, advising, and investing activities that places it somewhere between a strategic investment fund and a development bank (focusing on infrastructure). FDN is incorporated as a commercial bank with special licenses and is supervised by the competent regulatory authorities in Colombia (Superintendencia Financiera de Colombia; SFC). It was created in 2011 through the conversion of another financial institution, the Financiera Enérgetica Nacional (FEN), which had promoted the development of energy infrastructure since the 1980s.[77]

By 2015, FDN had become a mixed state-owned financial institution with ownership distributed between the Ministry of Finance (MOF), with 66 percent of the shareholdings, and three IFIs—IFC, the Development Bank of Latin America (CAF), and Sumitomo Bank—with 34 percent of the shareholdings.[78] It is a decentralized institution, with financial autonomy, and with a profitability target established by the IFIs' ownership as a given percent return on equity. The shareholders' agreement and bylaws provide the institution with robust corporate governance, which is reinforced by the presence of IFIs in the ownership structure.

FDN is also a successful case of public sector asset recycling because the government of Colombia decided to further fund it by using the proceeds of the privatization of ISAGEN (the state-owned energy enterprise for power generation). A total of COP$5.8

77. Colombia had an important energy crisis in the 1980s that prompted the creation of FEN as the government-owned financial institution to support generation and transmission investments.
78. The ownership also includes other minority shareholders (less than 1 percent). A new capitalization of the institution was completed in January 2018 and changed the shareholding structure. The government increased its participation to 73 percent, reducing IFIs' participation to 26.4 percent.

billion (equivalent to US$2 billion) was invested in the bank through debt and equity (COP$5.1 billion in senior and subordinated bonds and Col$0.7 billion in equity).[79]

Under the guidance of the FDN, and with its participation as a minor Limited Partner (ranging from 3 to 7.5 percent), three different debt funds to invest in infrastructure-related debt (long-term project loans) were launched in Colombia in 2016. The bulk of the transactions from the three debt funds were closed in the period 2016–18. Table 3.4 lists the debt funds' operations.

FDN support to these three funds seeks to facilitate the channeling of resources from institutional investors to the country's infrastructure through senior debt instruments. Colombia has significant challenges to providing long-term local-currency financing for infrastructure development. The creation of the three funds was designed as an approach-based solution to correct a market failure (the absence of conditions for institutional investors to buy this asset class and the need to deepen Colombia's capital markets). The structure allowed local institutional investors to participate by acquiring part of long-term project loans in support of the 4G toll road program. These project loans also benefited from a risk mitigation product—liquidity lines—developed by the development bank. The bank's liquidity line supports events of default by the contracting authority (Agencia Nacional de Infraestructura; ANI) in 4G concession contracts. The liquidity line is de facto a partial risk guarantee covering contractual risk in the toll road concessions.

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Table A1.5.1: Debt Project Funds Operations

Fund	Toll road project	Completion	Fund commitment (US$ millions equivalent)	Fund asset value (US$ millions equivalent)	% committed
Ashmore-CAF	Eastern Perimeter Bogota	2016	43		
	Cartagena–Barranquilla	2016	41		
	Antioquia –Bolivar	2017	83		
	Transversal de Sisga	2018	62		
	ALMA (refinancing)	2020	104		
Total			**333**	**415**	**80**
Black Rock	Transversal del Sisga	2018	27		
	Bucaramanga - Yondo	2018	59		
	Autopista Mar 1	2019	54		
	ALMA (Refinancing)	2020	58		
Total			**198**	**236**	**84**
SUAM-CCorp	Pacifico 3	2016	86		
	Bogota–Villavicencio	2018	114		
	Neiva–Girardot	2016	57		
	Bucaramanga–Yondo	2018	108		
Total			**365**	**397.0**	**92%**

Source: FDN, March 31, 2021.
Notes: The total value of the funds was slightly above US$1 billion. As of March 31, 2021, an average of 86 percent of the funds have been committed.

79. One billion in Colombia is equivalent (idiomatically) to one trillion in the United States.

The average FDN equity commitment in the three debt funds was 5 percent, which meant a financial leverage ratio of almost 20 to 1 in the overall size of the three funds (US$1 billion). The additional impact of the creation of the three funds during 2015–17 was the deepening of the local capital markets and the development of a new asset class for institutional investors in Colombia. In addition, the FDN had a successful experience mobilizing private capital to the 4G projects from the 144A markets in the United States.[80] Using FDN risk mitigation instruments and taking a lead role in the underwriting of these private placements, US institutional investors invested about US$800 million in the 4G infrastructure development.

The long-term project loans supporting the toll road transactions listed in table 3.4 were mostly placed by the three funds with pension funds, insurance companies, investment funds, and other investors participating in the Colombia peso market. The share of asset allocation to alternative assets, where project loans are placed, went from 1 percent in 2009 to 8 percent in 2016.[81]

The FDN fulfilled a key "investment banker" role in the set-up of these three debt securities funds. Not only did it make equity commitments to support the structure, but more importantly it provided active lobbying of the Superintendence of Finance in 2016 to allow these global and regional asset managers to create debt funds in Colombia to fund infrastructure. Changes in tax legislation during 2015 (lowering the withholding tax from 30 percent to 14 percent) also played a role in the decision.

The Colombian government, via ANI, implemented an organized and consistent approach to develop the national toll road program. The government invested in project preparation capacities, searched for technical assistance from global development financial institutions, standardized contracts and financing structures for the different projects, and more. This type of programmatic approach in the execution of different transactions was a major factor in the success of FDN mobilizing the private capital in support of the 4G program.

Recently, FDN, via the Equity Infrastructure Colombia (Fondo de Capital Colombia; FDC) and the Caisse de Depot et Placement du Quebec (CDPQ) Canadian pension fund, have agreed to develop a joint capital risk investment platform to invest in equity via strategic alliances for infrastructure projects.[82] Equity financing is another of the key infrastructure finance challenges in EMDE countries. The fund will have an initial size of the equivalent in Colombian pesos to US$1 billion. On November 27, 2018, FDC invested the equivalent of US$490 million (49 percent), together with US$510 million by CDPQ investments (51 percent), to create a joint equity investment platform managed by INFRAMCO (a wholly owned asset manager subsidiary of FDN). The minimum investment by the joint equity platform is established at the equivalent of US$50 million. It is a closed-end fund with a duration of 30 years. As of the first quarter of 2021, the joint equity investment platform has been performing due diligence on several projects. It has not yet made its first equity commitment.

A1.5.2 Indonesia Infrastructure Guarantee Fund (IIGF)

The Indonesia Infrastructure Guarantee Fund (IIFG)[83] is one of several financing approaches implemented by the government of Indonesia to support PPP infrastructure projects as a way to mobilize private capital for infrastructure. IIGF focuses exclusively on providing credit derivatives (guarantees) to improve the risk profile of projects and ease mobilization of private capital to finance such projects. IIGF guarantees are partial risk guarantees that cover exclusively the payment and political risks arising from the commitments of contracting agencies (state-owned enterprises, sector ministries, public sector agencies, and subnational governments) in a PPP structure in the local markets.[84] As part of this program, IIGF fulfills an important role in improving the credit rating of a PPP structure, supporting off-take contract payments (such as energy sales) and other important commitments (including termination payments and rights-of-way) from contracting agencies. IIGF is in its 11th year of operation since its creation

80. Rule 144 is a regulation enforced by the US Securities and Exchange Commission that sets the conditions under which restricted, unregistered, and controled securities can be sold or resold. The rule 144A amendment provides a safe harbor from the registration requirements of the Securities Act of 1933 for certain private resales of restricted securities to qualified institutional investors.
81. World Bank, and Bruno Benizzi and Jennifer Churchill, "How Pension Funds Shaped Financialization in Peru and Colombia," December 2020.
82. FDN (20%) together with local pension funds Colfondos, Old Mutual, Porvenir, and Proteccion (80%) created FDC in June 14, 2018, as a risk capital fund.
83. IIGF is also known as PT Penjaminan Infrastruktur Indonesia (Persero).
84. A contracting agency is the government's representative or partner in the PPP. It can be a ministry, government institution, local government, state-owned enterprise, or local government-owned enterprise that is responsible for providing infrastructure in accordance with the law.

in 2010. On August 11, 2020, Fitch Ratings reaffirmed a BBB rating in foreign currency and a AAA rating in local currency for IIGF, with a stable outlook.

In 2018–19, IIGF began to also offer partial credit guarantees to cover debt service payment risk on loans by IFIs to SOEs and government agencies. These guarantees are expressed in local currency but index to the hard currency of the loan.

As of December 31, 2020, IIGF had appraised 45 projects and signed 30 guarantee agreements for a project value of Rp 315 trillion (i.e., debt and equity for the equivalent of US$ 22.3 billion) and guarantee coverage of Indonesian rupiahs (INR) Rp 66.4 trillion (equivalent to US$4.7 billion). IIGF had signed 25 PPP guarantees and five credit guarantees. The PPP guarantees, which support payment risk from contractual agencies (including availability payment, power purchase agreements, and other contractual obligations), represent a total exposure of Rp 61.2 trillion or 92 percent of the total (equivalent to US$4.3 billion at the December 31, 2020, exchange rate).[85] The PPP guarantees are in local currency and support long-term financing from both the domestic banks and IFIs. Some of the PPP guarantees are payable in local currency but index to the hard currency base of a foreign bank loan, as is the case of the Central Java Power Plant and the Multifunctional Satellite.

The credit guarantees supporting partial debt service payment of hard-currency loans from international financial institutions represent a total exposure of Rp 5.2 trillion or 8 percent of the total (equivalent to US$368 million). These two types of guarantees supported infrastructure projects worth Rp 315 trillion in investments (equivalent to US$22.3 billion). IIGF government support via guarantees has had a leverage impact of almost 5 to 1 (in terms of total investment—debt plus equity—mobilized for infrastructure investments in Indonesia). IIGF continues to have its underlying risk concentrated in the energy and toll roads sectors. IIGF is making efforts to diversify into other areas, such as telecommunications, water and sewage, and tourism.

Capital markets are still underdeveloped in Indonesia. Most of the financing mobilized by IIGF has come from the commercial bank markets, which include an important participation of state-owned banks. After 11 years of operation in the Indonesian financial markets, IIGF has reached an early stage of development as a government-owned financial institution that specializes in the provision of partial risk guarantees. The 2020 contingent exposure to contracting agencies' risk in PPP transactions and in IFI loans to SOEs is Rp 66.4 trillion (equivalent to US$4.7 billion). IIGF has an asset value of approximately US$787 million, with an equity value of approximately US$777 million (2019) with an underutilized leverage value (for future guarantees).[86] In June 2017, the Ministry of Finance approved, via a ministerial decree, an increase in IIGF's limit to take risk exposures up to a maximum of 10 times its capital (equivalent in 2017 to approximately US$6.7 billion). With each guarantee leveraging four to five times the amount in private capital, on average, the impact of IIGF in infrastructure development in Indonesia still has room for growth. IIGF has a very strong liquid assets position at US$771 million, and long-term contingent liabilities, linked to the financial performance of SOEs in infrastructure sectors in Indonesia for US$4.7 billion.

As a provider of guarantees to cover the payment risk of contracting agencies, IIGF plays a singular role in improving the chances of originating bankable infrastructure projects. IIGF's knowledge arm, the IIGF Institute, plays an important role building necessary institutional capacity in the contracting agencies. Lack of institutional capacity is a common challenge in developing countries in need of dynamic PPP programs. IIGF is a specialized institution that has no completely similar counterpart in other developing countries (some public infrastructure funds in other countries provide similar products, but none does so with the specialized focus of IIGF). The IIGF experience does offer strong replicability to other EMDE countries where SOEs play a fundamental role in infrastructure development. The challenge is how to design the institution in a way that mitigates SOEs' crowding out private sector demand for public support for infrastructure projects.

85. Exchange rate on December 31, 2020, of 14,120.57 Indonesian rupiah (IDR) per US dollar (exchange rates.org – UK).
86. *Source*: IIGF, Audited Financial Statements of 2019. Average exchange rate in 2019 was equal to 13,901 Indonesian rupiah per US dollar (Statista, exchanges rates. org–UK).

BOX A1.5.2: LOCAL CREDIT GUARANTEE FACILITY, INDIA, ADB AND IIFCL

On September 20, 2012, the Asian Development Bank (ADB) approved a partial-credit guarantee (PCG) facility for infrastructure financing in India under the Credit Enhancement of Project Bonds project. The facility was a PCG capitalized at Rs7.168 million (US$128 million) to support the first-loss default guarantee exposure of participating financial institutions in local currency bonds issued by special purpose vehicles. In response to a need for significantly improving private capital mobilization to fund sustainable infrastructure, India's government set a goal in its Twelfth Five-Year Plan for fiscal years 2012 to 2016 to mobilize at least 48 percent of investment needs (US$1 trillion) from private capital sources. In the plan, the government also laid out its expectations that the India Infrastructure Finance Company Limited (IIFCL) would expand its operations to include credit enhancement.

This is an approach-based solution designed to mobilize private capital from local institutional investors. The goal of the PCG facility was to expand the debt market for infrastructure finance and products in India beyond bank loans. The facility would demonstrate that a commercially viable credit enhancement product for infrastructure project bonds could be established in India's financial market. It was expected to mobilize private sector funds, including those of insurers and pension funds, with limited appetite for less creditworthy instruments, through an enhancement of domestic project bond ratings to at least AA. Through selective pilot transactions, it was hoped that the facility would demonstrate the effects of credit enhancements on developing project bond markets among institutional investors in India. IIFCL was chosen by the government of India as the financial institution to support through the ADB PCG facility for project bond issuance in Indian capital markets. Once tested, ADB would then gradually disengage from participating in future transactions.

ADB and IIFCL developed a participating first-loss credit default guarantee to backstop the credit enhancement arrangement provided by IIFCL to local institutional investors. It was designed to cover 50 percent of the loss on IIFCL's exposure to the bond in the event of default. Between 2012 and 2018, two pilot projects in renewable energy were approved for debt refinancing purposes. The first of these is Wind Farm ReNew Wind Energy (Jath), Ltd. (ReNew Jath). ADB approved US$10.7 million exposure toward credit enhancing from BBB to AA credit rating of a project bond with 17.5-year tenor and first-loss credit default guarantee by IIFCL. PCG was terminated in 2017 once it achieved ADB's development objective. The second pilot project is Solar Park Porbandar Solar Power, Ltd. ADB approved maximum coverage for credit guarantee of US$3.4 million for 10-year bonds. The bond issuer decided to prepay their bond in 2017 so that they could sell the Porbandar project and use the proceeds to fund new projects.

ADB's PCG facility faced an important restriction in the Indian capital markets. The central bank limits the guarantee fees payable to international financial institution at a cap of 200 basis points. Investment profitability for the facility was rated less than satisfactory. The significant amount of operational overhead by ADB required to close two transactions on the facility—notwithstanding being a good example of transfer of knowledge—should also be considered. ADB staff spent an estimated 4,173 hours to sign on two project bonds. By the time the PCG facility had terminated in December 2017, IIFCL had successfully issued guarantees for three transactions that reached a financial close, including the two under the ADB PCG facility for ReNew (Jath) and Hindustan (Porbandar). ADB's support enhanced IIFCL's technical capacity to continue its own efforts on credit-enhanced products in the Indian financial system, as evidenced by IIFCL's successful co-guarantee with the Indian Renewable Energy Development Agency, Ltd. of ReNew Power's Rs7.6 billion (US$114 million) issue of credit-enhanced nonconvertible debentures in September 2017 with no counter-guarantee from ADB. ADB has replicated this model in Bangladesh with Infrastructure Development Company, Ltd.

There was a strong rational for establishing the ADB PCG facility in support of creating a new asset class for local institutional investors with local currency. Given the available information, it is difficult to assess the development impact on a local capital market the size of India of a facility that has piloted two transactions with a direct exposure to the IIFCL transactions worth US$11.1 million. The approach-based solution—supporting the risk exposure of local financial institutions to a new asset class (project bonds)—has a strong rationale and should be tested in other markets.

Source: ADB, Project Review, 2018; ADB, "Renew Wind Jash Project, 2017—ADB as a Responsible Partner: The IIFCL Case," June 2018.

A1.5.3 Nigeria, InfraCredit–GuarantCo

The Infrastructure Credit Guarantee Company Limited (InfraCredit) is a private company established in 2017 by GuarantCo and the Nigeria Sovereign Investment Agency[87] to provide credit enhancements for Nigerian local-currency debt instruments for infrastructure financing. Through these instruments, InfraCredit addresses the lack of long-term local-currency bank financing by enticing institutional investors (such as pension funds and insurance companies) to buy infrastructure long-term assets (bonds). These credit enhancements (guarantees) are irrevocable and unconditional. InfraCredit guarantee obligations are secured by (a) the right to reimbursement of any amount paid against the issuer under a recourse agreement between InfraCredit and the issuer, (b) a first lien on specific properties or assets of the issuer, and (c) a first floating charge over the rest of the issuer's assets under a security deed.

The business focus of InfraCredit is on reducing the risk associated with local-currency corporate and project bonds, with the purpose of mobilizing investments from Nigerian institutional investors and pension funds and deepening the domestic debt capital markets. InfraCredit maintains a local AAA credit rating from both Augusto & Co (Nigeria) and GCR (South Africa). According to both credit agencies, under current conditions the amount of the financially sustainable credit guarantees portfolio with InfraCredit's capital base (from global investment grade investors) is about 5 to 1. With a capital base of US$178 million, the potential amount of credit guarantees in Nairas for the local currency capital market is the equivalent of US$890 million.

As of December 31st, 2021, eight projects had reached financial completion for the equivalent of N 60.3 billion (equivalent to US$ 159.4 million). Credit guarantees provided by InfraCredit are structured as full-wrap instruments covering 100 percent of debt service payments. Based on its available capital (i.e., core capital, callable capital and subordinated debt) InfraCredit, par-to-capital ratio was 0.5 x at the end of March 2021.

To address market barriers constraining its deal flow in Nigeria, InfraCredit is working on creating strategic partnerships with donors and other DFIs that could unlock new sources of early-stage capital and promote well-structured, bankable infrastructure projects. The goal is to bring the projects to market, which will then expand the market for good-quality operating infrastructure projects for institutions like InfraCredit. The effort to create a facility that is complemented by the structuring of new financing products to support early-stage infrastructure investments such as contingent refinancing guarantee products (to refinance construction equity and loans in local currency) and a PPP guarantee product supporting off-take payments by a government agency or SOE (similar to IIGF in Indonesia). The interaction of the proposed facility and the new financing products will provide financial support across the full project cycle of the project and accelerate deal flow that will help scale up InfraCredit's guarantee portfolio.

GuarantCo and InfraCo Asia are replicating the InfraCredit experience in Pakistan. In November 2020 GuarantCo launched a private credit guarantee institution (InfraZamin) to provide credit enhancements to tap into local currency pools of liquidity held by institutional investors in Pakistan. Shareholders (InfraCo Asia and Karandaaz) are providing a US$25 million equity contribution complemented by a contingent capital line provided by GuarantCo in the amount of US$50 million. Leverage of these resources could be close to 5 to 1 in the first five years, supporting an issuance amount of project and corporate bonds in local currency equivalent to US$375 million.

87. GuarantCo is the credit guarantee vehicle of the Private Infrastructure Development Group (PIDG), a donor-driven initiative established in 2002 to mobilize private capital through blended finance approaches to poor countries in Sub-Saharan Africa and Southeast Asia. PIDG is sponsored by the governments of United Kingdom, Sweden, the Netherlands, Germany, Switzerland, and Australia, and by IFC. In the past, Guarantco has selectively used its global A credit rating to provide full financial guarantees (wraps), for project bonds in EMDEs (e.g., Kenya, Lot # project).

BOX A1.5.3: GUARANTCO GUARANTEE FOR KACIFIC BROADBAND SATELLITE'S LAUNCH

Kacific Broadband Satellites International (Ltd.) (Kacific) provides broadband internet access through spot beam coverage across Asia and the Pacific Island Region. Given the incredible cost and difficulty of laying hardline internet connections among the Pacific Islands and select mainland Asian countries (for example, the mountainous regions of Nepal), Kacific's services use "direct to premises," low-cost satellite transmissions to provide high-speed internet access. Kacific 1 will have a high impact on development within the region bringing benefits to un- and under-served communities in Asia and the Pacific, particularly in rural and remote areas of small island nations in the Pacific, and larger island nations like Indonesia and the Philippines. Kacific Broadband Satellites Group is a satellite operator providing high-speed broadband for remote and rural markets. Kacific broadband fosters greater internet usage and fuels economic growth and improvements in service delivery across covered regions. Its high-power satellites use the latest multi-beam space communications and ground technology. Kacific's first satellite, Kacific1, focuses on the Pacific and South East Asia. Kacific's headquarters are in Singapore with operations out of Vanuatu. This a high development impact GuarantCo projects given the cross sectoral nature of broadband access in many economic and social infrastructure sectors. [1]

On December 6, 2019, as it readied for its first satellite, Kacific Broadband Satellites Group (Kacific) announced the closing of credit facilities totalling US$ 120 million with a group of financial institutions including the Asian Development Bank (ADB) and GuarantCo. Total project costs were US$ 160 million. The financing was structured as follows: US$ 60 million from ADB comprises a loan from ADB together with Leading Asia's Private Infrastructure Fund (LEAP), which is administered by ADB. GuarantCo, a member of the Private Infrastructure Development Group (PIDG), provide it a US$ 50 million partial credit guarantee (PCG) to enhance the credit quality of a US$ 60 million private placement to Munich-Re (leading underwriter in satellite insurance). The PCG was structured as a pari-passu coverage for the US$ 60 million Munich-Re facility (i.e., every 1 US $ of debt service payment exposure is 83 cents covered by GuarantCo). Since the loan facilities were privately placed, a credit rating for the transaction was not required.

These credit facilities secure long-term financing that enables Kacific to repay short term facilities used to fund the construction of the Kacific1 payload and the associated infrastructure and launch costs. The financing is underpinned by the large number of customers, in 25 nations, who have already signed up to Kacific's service in anticipation of the Kacific1 satellite commencing operation in early 2020. In addition, GuarantCo through PIDG provided US$ 500,000 of grant financing to support the development and execution of Kacific broadband operations.

Source: https://guarantco.com/news/guarantco-and-pidg-technical-assistance-support-investees-kacific-broadband-satellites-group-and-acorn-holdigs-limited-to-respond-to-the-covid-19-crisis-in-asia-pacific-and-kenya/

[1] "The support from GuarantCo, ADB, and private investors will be pivotal in providing the long-term certainty that will allow Kacific to transition seamlessly into operational mode, following the launch of Kacific1", says Kacific Founder and CEO, Christian Patouraux. "Their commitment will lead to life-changing outcomes for millions living in remote communities, bringing them fast, affordable internet services that will transform education, healthcare, economic development and social inclusion

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ANNEX NO. 2: MAIN CHALLENGES TO CLOSE THE INFRASTRUCTURE FINANCE GAP

For purposes of this report, the authors have characterized the challenges impeding optimization of IIM flows to EMDE countries as fitting into three categories:

- **Inventory of Bankable Projects.** This is a constraint that includes current institutional and funding restrictions that impede EMDE countries from preparing solid bankable projects. Restrictions include activities that involve the basics of project preparation (including feasibility analysis, engineering and technical studies, environmental assessments, and so on) through legal and financial structuring, regulatory adjustments, and financial closing.

- **Government Action Failure.** A government intervention (or lack thereof) leading to a negative impact on the expected financial returns of an infrastructure project. This category includes all the standard definitions of regulatory risks, contractual risks (such as breach of contract), political risks (such as convertibility, transferability, expropriation, and so on), and any other government action hindering the project.

- **Financial Market Failure.** All the conditions leading to failure of the market to offer suitable financial products for long-term financing of infrastructure under adequate conditions (such as lack of long-term local-currency financing, limited availability of foreign exchange risk management instruments, limited knowledge of the infrastructure asset class, and so on).

This report recognizes that there is a strong degree of correlation between the three types of challenge categories. Weak capacity to prepare bankable projects could be interpreted as a government action failure, or a financial market failure could also be interpreted as limited capacity to have a solid pipeline of bankable projects. The report uses these categories as a way to organize and present the reader with the different solutions developed by DFIs at large.

During the review of the 18 IIM solution cases, most of the main challenges hindering optimization of private capital flows into infrastructure development for EMDE countries will be addressed and analyzed. This Annex will analyze them within the proposed categorization in a way that is consistent with the available options to mitigate them and increase the likelihood of success.

A2.1 Affordability (Cost-Recovery Tariffs)

Looming over the three categories of infrastructure finance challenges (lack of bankable projects, government action failure, and financial market failure) is the general issue of affordability in EMDE countries. The lack of disposable income to pay full-cost tariff recovery for the provision of public services creates challenges in all three categories.[88] A low level of disposable income reduces the availability of bankable infrastructure projects to only sectors catering to commercial clients or high-income end users, and to projects where public budget support is available through pluriannual commitments. The lack of income also increases the contractual risk that under tight fiscal space conditions, state-owned enterprises (SOEs) and government agencies will not be able to fully honor a transfer subsidy—to a PPP arrangement—to maintain a lower and affordable tariff. Low affordability levels limit the capacity to transfer foreign exchange risk to the end user through tariff adjustments restricting hard-currency long-term financing.

88. Disposable income, also known as disposable personal income (DPI), is the amount of money that an individual or household has to spend or save after income taxes have been deducted (per the definition in *Encyclopedia Britannica Encyclopedia*). In most EMDE countries, where low-income segments pay relatively low taxes, DPI is equivalent to net income.

Average disposable personal income (DPI) is a function of a country's economic growth and job creation. In EMDE countries, growth bears a strong correlation to economic and social infrastructure investments. These investments need to be adequately funded (through long-term tenors, local currency, and suitable terms and conditions). Relatively low levels of DPI reduce the ability for customers to pay cost-recovery tariffs, restricting access to long-term financing and reducing the amount of investments going into infrastructure development. This situation constrains economic growth and job creation and creates an adverse cycle that could perpetuate the low levels of affordability.

BOX A2.1: FINANCING INFRASTRUCTURE DEVELOPMENT

Governments can fund infrastructure at the national, regional, or local level through public procurement or private procurement (public-private partnerships and private provision of public services). In each case, financial flows to support infrastructure investments will be originated through two different mechanisms: (a) end-user fees and (b) public support, including all available options (such as subsidies, government transfers, tax incentives, and support from development finance institutions). In emerging market and developing economy countries, infrastructure is primarily funded through a blend of these two sources. For a project to be bankable, the revenues resulting from the sum of the two sources has to be able to cover the operating expenses of providing the public service, including its maintenance and rehabilitation, as well as the remuneration to long-term financing (both debt and equity). More recently, these revenues should also cover negative externalities such as the impacts of climate change.

End-user fees. Charging end users a levy for the public services they receive is a mechanism for financing infrastructure projects that share the characteristics of a private good. For example, users can easily be identified and asked to pay a price proportional to the benefits they receive. Several public services meet these characteristics, including transport, electricity, water supply, and solid waste management. User charges accomplish several positive outcomes that make levies attractive beyond simply representing an important source of revenue. Fees set on an efficient pricing basis affect the demand for services, which minimizes the inefficiency risk of overconsumption. For instance, underpricing water supply leads to overuse, as price signals lead to the rationalization of water consumption.[a] Charges also help internalize the spillovers generated by the provision of the service, such as the impacts of water distribution in greenhouse gas emissions and its contribution to climate change.[b] Despite the importance of efficient pricing for user charges, in practice levies on infrastructure services in emerging economies are rarely sufficient to cover capital, operating, and maintenance costs, let alone any negative externalities.

However, distorted pricing schemes work against this—and often result in a vicious circle. Prices are set below cost-recovery levels, a situation that leads to cuts in operations and maintenance. This ultimately deteriorates services and deters the propensity of end users to pay, progressively increasing the gap to achieve full recovery costs and the dependence on subsidies, making private sector participation in service provision unattractive impairing public finances. Governments facing this situation have two options: to increase tariffs to cost-recovery levels or to establish transparent and efficient subsidy mechanisms. With the exception of the telecommunications sector (mostly in private hands in emerging economies), ports and airports (given that their users are mostly high-middle-income consumers or corporations), and some areas of the energy sector (commercial electricity distribution and transmission), the rest of the sectors have their average tariffs and fees usually set below cost-recovery levels in emerging economies. For the Latin American and the Caribbean region alone, the pricing gap estimates (tariffs as a percentage of full cost recovery) has been estimated around 50 percent for public transportation, water and sanitation, and solid waste.[c]

Public support. Intergovernmental transfers can help governments increase infrastructure investments, especially in jurisdictions or sectors with budgetary constraints. However, depending on how transfer programs are structured, they can lead to different levels of infrastructure spending. Better-designed programs reduce the volatility of public sector budgets and provide credible risk guarantees that attract private capital into infrastructure finance. Nevertheless, with few exceptions, existing intergovernmental transfer programs in emerging economies do not meet these criteria. Included in the subsidy mechanism (government transfers) are different payments that governments commit to provide to private sector sponsors for the provision of public services. These are earmarked government transfers (current, future, and contingent) to support private investments in the provision of public infrastructure services. From availability payments to complement end-user tariffs set below cost-recovery levels, to contingency payments in the event regulatory changes limit project cash flows (partial risk guarantees), these are earmarked government transfers to make infrastructure provision by private providers financially possible. Government transfers come directly from budgetary sources and are based on current tax revenues and other government sources.

Fiscal management of these earmarked government transfers is key to the fiscal sustainability of an infrastructure development program. Managing the contingent liabilities that arise from these types of government support (future transfers and guarantees) is critical to successful government-led infrastructure development strategies. When infrastructure is financed via subsidies (government transfers), it is done against public sector resources of that budget year (or years). In this case, taxpayers' current resources are being used to fund infrastructure today. Alternatively, governments can issue public debt. In that case, taxpayers' future resources are being used, with a set of implications for the future fiscal sustainability of the country. Public debt is generally less expensive than corporate or project financing debt.

Source: World Bank, Public Review of Public Infrastructure Funds, June 2020.
a. IMF 2015.
b. Frontier Economics 2011.
c. Ellis J. Juan, "Financing Urban Infrastructure in LAC." Emerging and Sustainable Cities Initiative, Inter-America Development Bank, Concept note presented at UNHabitat III, in Quito, Ecuador, October 2016.

This report does not attempt to review mitigation of this affordability risk, nor does it attempt to demonstrate how to solve it in the long term. The report treats this risk as a precondition of the economic situation in EMDE countries and assumes that to satisfy the necessary requirements for a bankable project, the portion of the revenues not covered by the end-user tariffs will have to be met by public support transfers (as described in box 2.1). For example, several countries have experienced mitigating this affordability risk by creating viability gap funds (VGFs) (box 2.2). These are public sector institutions that provide transfer subsidies to private infrastructure projects for the provision of a public service in an affordable manner. The subsidies contribute to make a project that is already economically feasible a bankable project (that is, one that provides adequate financial returns). Given the operational complexities of managing a subsidy transferred periodically throughout the length of a PPP arrangement, this type of subsidy is usually given upfront in the form of a capital subsidy to reduce the total investment costs. Lower net investment costs (original costs minus capital subsidies) require lower cost-recovery tariffs and thus improve affordability. FONADIN in Mexico, cited in the next chapter, has used part of the funding it recycles from the toll road sector to offer private sector grant financing that lowers the investment costs of economically feasible infrastructure projects.

BOX A2.2: VIABILITY GAP FUNDS: THE EXPERIENCE IN INDIA

Not all potential projects that governments identify as providing value for money may be financially viable in and of themselves. When a proposed project is seen to provide a net social and economic benefit despite the nonbankable financing and funding costs, it may be worthwhile for the procuring authority to consider viability gap funds (VGFs). The viability gap is the difference between the total financial cost of the project and the expected, lower, projected revenue from user fees. VGFs are the government's funds for providing subsidies for the financing of the project to bridge this gap. These viability gap payments (VGPs) from the government can take many forms, including upfront construction grants, shadow tolls (where the government pays for the number of users for the service provided), or availability payments.

In India, the Viability Gap Funding Scheme (VGFS), begun in 2004, was implemented by the public-private partnership (PPP) Cell within the federal Ministry of Finance. The VGFS provides VGPs in the form of upfront construction grants for economically beneficial PPP projects that would otherwise be financially unfeasible. The funds for the VGFS are appropriated within the national annual budget, with a cap on project approvals set at 10 times the appropriated amount. For grant disbursements, the VGFS uses a revolving fund which itself is funded by the Ministry of Finance. Approved construction grants are capped at 20 percent of the funded project's overall value, and their payment is contingent on the private party's commitment of its equity contribution for the PPP. The implementation of the VGFS resulted in magnitudes of increased investments in PPPs. Before the 2008 Global Financial Crisis, India saw 23 projects that were funded in part by 20 percent project value capped VGPs, totaling about US$3.5 billion.

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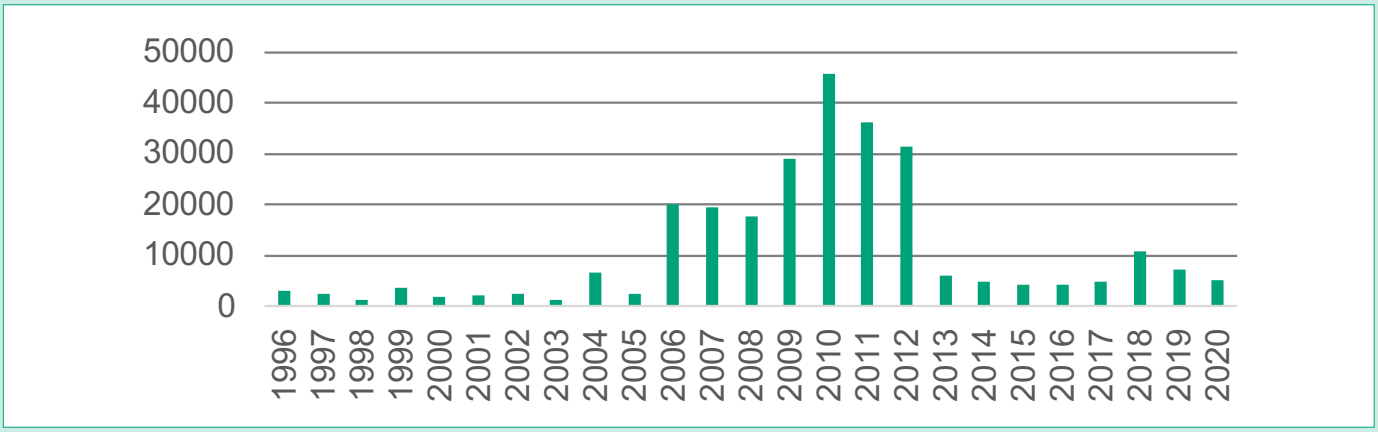
PPI, India (Millions of USD), 1996-2020



Source: India Ministry of Finance 2020.

Other types of public procurement options include contracting with the private sector to provide selected public services under a specific set of performance criteria. These performance-based contracts are very common in sectors such as toll road maintenance, provision of social infrastructure services (such as health and education), and even in more complex social sectors such as citizen security and justice (such as prisons and crime prevention). As in the case of VGFs, these types of mechanisms are funded by the directly from the public sector budget or sometimes financed through DFI support, , or both.

Experience seems to indicate that these IIM solutions are not universally applicable. To create bankable projects and mitigate the risks, these solutions need to have a credible source of revenues (such as pluriannual budget commitments from an investment-grade public sector institution). This type of solution has worked in the past in large middle-income countries (such as India, Indonesia, and Mexico) that have more robust fiscal macroeconomic conditions than average EMDE countries.

A2.2 Inventory of Bankable Projects

A project is only bankable if it can demonstrate that its returns will pay the remuneration of capital (both debt and equity) after all related expenses in a satisfactory and timely way. For financial returns to materialize, a whole range of activities need to take place so that the infrastructure asset can be developed and put into operation to start generating revenues. In cases in which the financiers are institutional investors, project preparation (or pre-investment) activities have an added layer of preparation and complexity given the need to satisfy capital market regulations.

With some exceptions in middle-income countries, EMDEs are, for the most part, ill prepared to develop bankable projects. They lack both the institutional capacity and the funding sources to be able to adequately build a strong pipeline of projects ready to be taken to financial markets for closing. To complicate matters, well-developed infrastructure projects have a project preparation cycle that usually exceeds the democratic election period of a given government (either national or local). As experience has demonstrated on more than a few occasions, a new government will seriously reevaluate continuing with early-stage projects of the previous administration. A project cycle of four or five years (often the length of an election period) could prove very short for infrastructure projects in sectors such as hydro-energy, urban transport, toll roads, airports and ports, water distribution systems, and others. These types of projects have complex contractual arrangements where some LICs are not just prepared to manage. Capacity building is also needed to strengthen contract management.

This type of risk has lately increased in complexity with the added components of sustainability and climate-change resilience. After the December 2015 Paris Agreement, the donor and DFI community reacted swiftly and created multiple soft financing and grant windows to support green investments in EMDE countries. Most of these windows (including the Global Environmental Facility, Green Climate Fund, Special Climate Change Fund, and Adaptation Fund) have procurement and project technical requirements that demand solid project preparation techniques for projects to be considered for financing. EMDEs with weak institutional capacities have a tough time accessing these windows, which are critical to complement project financing for sustainable infrastructure. This is a critical area in which DFIs' experience in project preparation could play a significant role.

A2.3 Risks of Government Action Failure

As previously mentioned, risks involving government action are more challenging to mitigate given the nature of their origin (that is, EMDEs' long-term government commitments in a fast-changing political and economic climate). These are also risks that DFIs

are very familiar with. The day-to-day activities of DFIs focus on upstream work to assist member countries in improving their institutional and regulatory frameworks that affect economic growth and the attainment of the SDGs. From economic and social infrastructure to governance and institutional capacities, to job markets and fiscal sustainability, and many other challenging activities, DFIs have supported EMDE countries in improvements to mitigate government action failures. DFIs have developed a robust toolkit of risk mitigation products that address failures, as described in some of the case studies in the next chapter. For example, policy-based guarantees helped in the case of the Benin euro loan, partial credit guarantees helped in the case of a Côte d'Ivoire public utility, and political risk insurance contributed in the case of the Elazig Hospital in Turkey. The cases analyzed indicate that what seems to best cover the full risk of a government's defaulting on its contractual commitments is the blended finance mechanisms that combine several financial products to provide full protection of the debt service payments to lenders and institutional investors.

An IIM approach-based solution worth analyzing more—in the context of these government action failures—is the experience of the Indonesia Infrastructure Guarantee Fund (IIGF), which has used public money through a ring-fenced vehicle, 100 percent owned by the government, to leverage the mobilization of private capital into local infrastructure. IIGF has focused on the use of partial risk guarantees to cover the contractual risk that SOEs and government agencies will not honor their commitments in a PPP transaction. Public money used to capitalize IIGF (equivalent to approximately US$800 million) has mobilized US$4.7 billion of private capital (mostly from commercial banks). This 5 to 1 leverage ratio could improve as IIGF navigates through its own project cycle and enhances its business model, perhaps reaching 10 to 1, as seen in other more capital-market-driven case studies (such as Bayfront Infrastructure Capital and the AP-EGO joint IFC-Amundi facility). With financial leverage of 10 to 1, use of partial risk guarantees in local currency could add some extra mileage to limited fiscal space in EMDE countries.

A2.4 Financial Market Failure

Risks in this category are essentially linked to two types of constraints: (a) availability of long-term local-currency financing at adequate terms and conditions and (b) availability of long-term hard-currency financing within transferable and/or bearable cross-border risk levels. All the other elements of financial market failure (such as underdeveloped local capital markets, weak currencies, lack of hedging instruments, fragile institutions, and regulatory frameworks,) are components of these two constraints.

Availability of long-term local-currency financing mitigates a great portion of the cross-border risk (that is, foreign exchange risk), because it matches the revenue currency with the debt service currency.[89] Long-term local-currency financing is critical for the development of subnational infrastructure. This is the urban infrastructure needed for the provision of local services administered by local agencies (in municipalities, states, regions, and so on). Most of the infrastructure involved in the fulfillment of the SDGs is linked to the provision of a local service (such as energy access, water and sewage, solid waste, urban transport, and health and education).

Choice of borrowing currency should be based on the revenue requirements of the underlying project (i.e., matching revenue generation with debt service payments). Still, due to a lack of local currency long-term funding, many projects in EMDEs (i.e., toll roads), still borrow mainly in hard currency. The Report also recognizes that in some cases -- *particularly some LDCs* -- can only get hard currency financing for the capital component of the underlying, most of the times via export credit agencies (ECAs). These are restrictions to be considered when designing how best to mitigate this type of cross-border risk.

SDG number 11 directly addresses the challenges of making cities and communities sustainable. In regions such as Latin America and the Caribbean, 80 percent of the people live in cities, making urban infrastructure the category in which the gap is the largest.

89. Still, with local-currency financing there is an element of cross-border risk linked to imports of capital goods and other operational costs based in hard currency required to provide the infrastructure service.

Additionally, for fiscal reasons, most legislation in EMDE countries heavily regulates the independent access of subnational entities to hard-currency financing, leaving long-term local-currency financing as the only available option to local and regional governments. Selected large middle-income countries have relatively successfully developed a local-currency municipal bond market (for example, Colombia, India, Mexico, and South Africa). However, for the most part, EMDE countries lack a developed municipal bond market. The affordability risk described previously takes a high toll on urban infrastructure. The provision of urban infrastructure services at below cost-recovery tariffs hinders fiscal sustainability at the city level and thus increases cities' dependence on central government transfers, lowers their creditworthiness, and hampers their access to local-currency financing.

Long-term hard-currency financing in EMDE countries creates a mismatch between revenues and debt service currencies. Few EMDEs (middle-income countries) provide a set of foreign exchange risk mitigation instruments (such as swaps, futures, and hedging instruments) that could make this risk transferable, bearable, or both. The affordability risk constraint also affects access to long-term hard-currency financing—the largest pool of available liquidity—because the foreign exchange risk (currency fluctuations) cannot be directly transferred to the end user. This situation, as seen in many cases with independent power producers (IPP) with off-take contracts based in US dollars, generates a large contingent liability for the entity assuming such risk. In the energy sector, these entities are usually a private utility or an SOE (backed by the respective Ministry of Finance). Several countries have experienced situations in which the off-take contracts had to be based in US dollars for the IPP to be able to raise the long-term US dollar financing. Indonesia, after the Asian Financial Crisis in the mid-1990s, had to renegotiate several power purchase agreements to face the consequences of this type of cross-border risk.[90]

Mitigating this type of foreign exchange risks has a high reward for EMDE countries because it would enable them to tap into larger and deeper global financial markets for their infrastructure investment needs. Combination solutions via blended finance structures (such as by combining first-loss structures with MIGA political risk insurance and other credit enhancements) have proved efficient at creating a hard-currency asset (that is, a project loan or bond) that can be placed among global institutional investors, as illustrated in chapter 3 of this report. Applying blended finance techniques on a project-by-project basis has a strong demonstration impact and provides comfort to global institutional investors that channel private capital into EMDEs' infrastructure projects. However, with a project-by-project approach transaction costs are likely to be high, the replicability of the structure is likely to be lower, and the completion of large-scale IIM flows more challenging.

When defining foreign exchange risk, the Report recognizes that this type of risk, once it has been created (i.e., a project that only generates local currency revenues in an EMDE location has contracted a loan that needs to service in hard currency), can only be transferred (via adequate instruments such as swaps and forwards if available). It cannot be mitigated. However, presence of robust local currency markets at adequate conditions does mitigate the risk of contracting a hard currency loan when the underlying project only generates local currency revenues.

Under the objective of optimizing IIM flows to EMDE countries' infrastructure, it would seem that the best use for DFIs' limited resources is to target such resources into the two most relevant market failures: (a) availability of long-term hard-currency financing with transferable and/or bearable foreign exchange risk levels and (b) availability of long-term local-currency financing. In the medium term, as the cycle between infrastructure investments, growth and job creation, and inequality reduction takes place, one would expect a shift in the weight between global capital markets and local-currency capital markets in favor of the latter.

90. "It was argued that IPP would not only relieve the governments from the financial burden of capacity expansion in power sector, but also lead to more competition, higher efficiency, and ultimately, lower electricity rate for consumers. This bubble was busted abruptly during the Asian financial crisis. All of a sudden, the state-owned electricity companies in these countries found themselves in deep financial troubles in honoring the IPP contracts, mostly with the take-or-pay clause under which they have to pay for the electricity no longer in need due to the contraction of the economy. To make things worse, the payment for many of these IPPs was denominated in US dollar while the revenues for the electricity companies were in local currencies, resulting in skyrocketing financial debts for the electricity companies due to the depreciation of local currencies." Xun Wu and Priyambudi Sulistiyanto, "The Independent Power Producer (IPP) Debacle in Indonesia and the Philippines: Path Dependence and Spillover Effects," 2006.

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ANNEX 3: DEFINITIONS OF TERMS USED IN THIS REPORT

Some of the terms and definitions used in the overall theme of institutional investor mobilization could be subject to different interpretations and might have different meanings among different audiences. This report does not attempt to "define" these terms. To have a common understanding of selected terms and definitions that will be used frequently throughout the report, we will use the following characterizations:

- **Sustainable infrastructure.** There are multiple definitions of sustainable infrastructure. For purposes of the report, sustainable infrastructure is "the structural components—design, build, operate, and maintain—of the public provision of economic and social services in a way that does not compromise the ability of future generations to receive such services." Sustainable infrastructure, in this report, includes the resiliency and climate change investment component. It also includes the provision of economic infrastructure (such as energy, transport, water and sewage, and so on), as well as the provision of social infrastructure (such as health and education). The references to simply "infrastructure" are to be interpreted as "sustainable infrastructure" throughout the report.

- **Institutional investors.** For purposes of the report, the definition will include the full range of entities demanding long-term assets (such as, pension funds, insurance companies, asset managers, sovereign wealth funds, private wealth funds, and so on). The definition will include global institutional investors (which have the capacity to invest equity and/or debt in hard currency–based assets) and local institutional investors (which have the capacity to invest equity and/or debt in local currency–based assets). The universe of institutional investors is not a single group and includes – *subject to risk tolerance and objectives* -- investors that specializes in debt, equity or derivatives underlying securities. Some investors, such as asset managers and investment funds, are increasingly buying several different types of securities under the same umbrella with different risk profiles and returns. In the report, the bulk of the reference in the case studies is mostly to institutional investors specializing in debt securities.

- **Development finance institutions (DFIs).** For ease of drafting the report, DFIs includes all publicly funded institutions that support economic and social development in EMDE countries. We will include in this definition: (a) multilateral development banks (MDBs); (b) bilateral development institutions and donors; (c) donor-funded development institutions, such as the Private Infrastructure Development Group (PIDG), Green Climate Fund, and others; (d) regional and national development banks; and (e) all other institutional forms funded with public money in support of development.

- **Private Sector DFIs.** In the Report, this term will refer to DFIs (and/or arms of such DFIs) that support exclusively private sector projects such as IFC, BID Invest, etc.

- **DFI lending capacities.** The combined annual lending capacities of the DFIs will be used in the report to define the base of available resources that need to be leveraged to optimize the mobilization of private capital into development. For purposes of the report, the combined lending capacity of all MDBs, regional development banks, and bilateral institutions was calculated using their most recent annual reports. The following DFIs were included: the International Bank for Reconstruction and Development (IBRD), the International Development Association (IDA), IFC, European Investment Bank (EIB), European Bank for Reconstruction and Development (EBRD), FMO (the Netherlands), KFW (Germany), DEG (Germany), AFD (France), Proparco (France), CDC (the United Kingdom), Inter-American Development Bank (IDB), Islamic

Development Bank (IsDB), African Development Bank (AfDB), CAF (Latin America), Asian Development Bank (ADB), New Development Bank (NDB), and Asian Infrastructure Investment Bank (AIIB).

- **Blended finance.** For purposes of this report, blended finance is considered as the strategic structuring of public funding from DFIs and other non-profit oriented institutions to mobilize additional private capital and increase private investment.

- **Financial leverage.** For purposes of this report, financial leverage is considered as the capacity to mobilize private capital per unit of capital allocated by a DFI or donor in an approach-based solution, a transaction-based solution being considered, or both.

- **Global Capital Markets.** Nonbank financial intermediation, composed of all financial institutions that are not central banks, banks or public financial, institutions represent US$ 227 trillion (FSB 2021)[91]. From the same source, Assets Under Management (AUM) held by insurance companies were US$ 39 trillion, by pension funds US$ 42 trillion, and by investment funds (other than money market funds and hedge funds) were 58 trillion, for a total of US$ 140 trillion of AUM held by those institutions. The Securities Industry and Financial Markets Association (SIFMA), estimates the size of the global capital markets (hard currency denomination) to be equivalent to US$ 119 trillion. An IFC report on global capital markets valued the size of the hard-currency global bond market at US$106.8 trillion (as of December 2018)[92]. The current report of mobilization of institutional investors capital for sustainable infrastructure will use FSB at the estimate for the size of the global capital markets.

- **Local Capital Markets.** The authors could not find a reference as to the weight of infrastructure bonds in the local currency capital markets. The closest available reference was to the local currency securities markets in an IMF and World Bank staff note to the G20 which place the size of this markets at US$ 25.9 trillion (January 27th, 2020). For purposes of this report, the authors have assumed that the size of the local currency bond markets is roughly equivalent to 20% of the size of the global capital markets[93].

- **Public-private partnerships (PPPs).** The World Bank (PPP Knowledge Lab) defines a PPP as "a long-term contract between a private party and a government entity, for providing a public asset or service, in which the private party bears significant risk and management responsibility, and remuneration is linked to performance." PPPs typically do not include service contracts or turnkey construction contracts, which are categorized as public procurement projects, or the privatization of utilities where there is a limited ongoing role for the public sector.

  For purposes of the report, the term PPP will be used to define any provision of public service and/or public asset procurement, financing, development, and operations & maintenance over a contract period with the private sector. PPPs are useful mechanisms to mobilize private capital, but they can be complex and need an ecosystems approach to mobilize competitive financing and deliver value for money for the users, particularly in less developed economies. However, there are other ways of mobilizing commercial financing, such as for infrastructure SOEs and/or through investments in Domestic DFIs.

- **Infrastructure finance.** The report considers PPP arrangements as one of the useful mechanisms to mobilize IIM. However, institutional investors can also finance public infrastructure outside the PPP procurement space. The report will emphasize mechanisms and approaches that optimize institutional investors capital flows (debt and/or equity) into infrastructure development in EMDE countries. As a non-PPP example, a sovereign bond issuance by a developing country placed among European institutional investors with DFIs' financial support, or with proceeds funding a state-owned infrastructure utility, will be considered as mobilization of institutional investors for infrastructure.

91. The Financial Stability Board (FSB) is an international body that monitors and makes recommendations about the global financial system. It was established after the G20 London summit in April 2009 as a successor to the Financial Stability Forum (FSF).
92. IFC, "Emerging Markets: Assessment of Hard Currency Bond Market—An Analysis of Emerging-Market Hard-Currency Bonds Issued by Financial Institutions (IFC, Washington, DC, June 24, 2020).
93. IMF/ World Bank, Staff Note for the G20 International Financial Architecture Working Group (IFAWG), recent developments on local currency bond markets in emerging economies, January 31, 2020

- **Infrastructure finance gap.** There are numerous accounts of the US-dollar equivalent amount defining the infrastructure finance gap in EMDE countries. This report mentions some of them in chapter 1. The report does not attempt to be a reference for such definition. The report does acknowledge that "from the billions to the trillions," a definition coined in the 2015 Development Report served the purpose of a strong graphic illustration of the dimension of the gap linked to the fulfillment of the SDGs. However, in the best-case scenario for optimization of IIM flows, there is an institutional capacity limitation in EMDE countries that would restrict effective use of large amounts of IIM.[94] For purposes of this report, infrastructure finance gap is broadly considered as the equivalent of the difference between the (executable) infrastructure investment needs and the amount of available and committed financing (that is, financially closed transactions) within a given period for a specific EMDE country. Infrastructure investments required by EMDEs to reach the Sustainable Development Goals by 2030 have been calculated at the equivalent of 4.5 percent of GDP annually, corresponding approximately to US$ 1.5 trillion per year[95].

94. The Development Committee 2015 document, "From Billions to Trillions: Transforming Development Finance," highlighted the need to shift focus from "billions" in official development assistance to "trillions" in various investments to achieve the SDGs. The document advocated using concessional funds strategically to crowd in other sources of finance. The document further noted that the largest supply of development resources remains domestic public spending, while the greatest potential for expansion lies with private finance and the engagement of private business in the development process. World Bank Group, *Global Review of Public Infrastructure Funds* (Washington, DC: World Bank Group, June 2020).
95. Julie Rozenberg and Marianne Fay, eds. *Beyond the Gap: How Countries Can Afford the Infrastructure They Need While Protecting the Planet* (Sustainable Infrastructure Series, World Bank, Washington DC, April 2019)


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