

Introductory Guide to Infrastructure Guarantee Products from Multilateral Development Banks

Pablo Pereira dos Santos

Office of Strategic Planning and
Development Effectiveness

TECHNICAL
NOTE Nº
IDB-TN-01611

Introductory Guide to Infrastructure Guarantee Products from Multilateral Development Banks

Pablo Pereira dos Santos

December 2018



Cataloging-in-Publication data provided by the
Inter-American Development Bank

Felipe Herrera Library

Pereira dos Santos, Pablo.

Introductory guide to infrastructure guarantee products from multilateral development
banks / Pablo Pereira dos Santos.

p. cm. — (IDB Technical Note ; 1611)

Includes bibliographic references.

1. Infrastructure (Economics)-Finance. 2. Development banks. 3. Financial risk
management. 4. Financial instruments. I. Inter-American Development Bank. Office of
Strategic Planning and Development Effectiveness. II. Title. III. Series.

IDB-TN-1611

<http://www.iadb.org>

Copyright © 2018 Inter-American Development Bank. This work is licensed under a Creative Commons IGO 3.0 Attribution-NonCommercial-NoDerivatives (CC-IGO BY-NC-ND 3.0 IGO) license (<http://creativecommons.org/licenses/by-nc-nd/3.0/igo/legalcode>) and may be reproduced with attribution to the IDB and for any non-commercial purpose. No derivative work is allowed.

Any dispute related to the use of the works of the IDB that cannot be settled amicably shall be submitted to arbitration pursuant to the UNCITRAL rules. The use of the IDB's name for any purpose other than for attribution, and the use of IDB's logo shall be subject to a separate written license agreement between the IDB and the user and is not authorized as part of this CC-IGO license.

Note that link provided above includes additional terms and conditions of the license.

The opinions expressed in this publication are those of the authors and do not necessarily reflect the views of the Inter-American Development Bank, its Board of Directors, or the countries they represent.



1300 New York Ave, NW Washington, DC 20577

Pablo Pereira dos Santos | pereira@iadb.org

Introductory Guide to Infrastructure Guarantee Products from Multilateral Development Banks

Pablo Pereira dos Santos

Abstract*

Guarantees are powerful tools to scale up private investment in infrastructure and enhance the catalytic role Multilateral Development Banks (MDBs) play in mobilizing private resources to bridge the global infrastructure gap. Nonetheless, their use has been relatively limited. This document is part of a long-term work plan devised by MDBs aiming at increasing the take up of guarantees provided by those institutions. It also aims to set the stage for further discussions on how to enhance MDB guarantee products and advance on the infrastructure as an asset class agenda. It builds on the work coordinated by the Inter-American Development Bank under the Standard Infrastructure MDB Approach (SIGMA), an MDB collaborative body which is working towards improving guarantee-related coordination, in collaboration with the Infrastructure Working Group of the G20 (IWG).

Keywords: Multilateral development banks, infrastructure, risk mitigation, credit enhancement, private financing, group of twenty (g20).

JEL codes: O16, G15, F33, F55, G15, H81

* Jointly prepared by Multilateral Development Banks (MDBs) as part of the Standard Infrastructure MDB Approach (SIGMA). Many people from the multilateral development world contributed to this work with constructive suggestions and comments. The author would like to thank the following: Luis Miguel Castilla, José Luis Guasch, Arturo Galindo, Alonso Segura, Joan Prats, Daniel Fonseca, Rafael Matas, Ángel Ferrero, Bart Raemaekers, Richard MacGeorge, Anthony Molle, Robert Schlotterer, Laura Alonso, Max Magor Ndiaye, Gonçalo Correa, Ewen Mcmillan, Heidi Flinkman, Fabio Batista, Bin Wang, Amar Bhattacharya and Christopher Humphrey. Erick Ramos and Matthew Kearney provided valuable assistance to the elaboration of the appendices and the general layout and revision of text. This note was developed under the IWG during the Argentinean presidency and submitted to the 2018 G20 Leader's Summit. A special thanks to Mathias Mondino, Argentinean delegate to the IWG, Marcello Estevão and Damien Dunn, co-chairs of the IWG, for their support. For questions contact: pereira@iadb.org

Contents

Abbreviations.....	iii
Background	1
Main Takeaways.....	4
Section I	8
Understanding Infrastructure Risks and MDBs' Risk Mitigation Instruments	8
Infrastructure Risks and their Financial Implications	8
MDBs Guarantee Products: Credit Rating Agencies' Perspective	13
The "Halo Effect"	14
Partial Guarantees versus Full Credit Substitution.....	17
Section II	23
MDBs' Guarantee Products: Taxonomy and Stocktaking.....	23
Taxonomy of MDBs' guarantee products.....	23
Bank-Type Guarantees	25
Types of Guarantees	26
Insurance-type products	29
Bibliography.....	31
Appendix 1: MDB Product Offerings	33
African Development Bank	33
Asian Development Bank	35
European Bank for Reconstruction and Development	37
European Investment Bank	39
Inter-American Development Bank Group	40
New Development Bank	42
World Bank Group	43
Appendix 2: Case studies	47

Abbreviations

ADB	Asian Development Bank
AfDB	African Development Bank
ADF	African Development Fund
AIIB	Asian Infrastructure Investment Bank
CRAs	Credit Rating Agencies
DSRA	Debt Service Reserve Account
EBRD	European Bank for Reconstruction and Development
EFSI	European Fund for Strategic Investments
EIB	European Investment Bank
EUR	Euros
EU	European Union
FCG	Full Credit Guarantee
FGI	Flexible Guarantee Instrument
GIH	Global Infrastructure Hub
G20	Group of Twenty
IBRD	International Bank for Reconstruction and Development
ICP	Infrastructure Collaboration Platform
IDA	International Development Association
IDI	Infrastructure Data Initiative
IDB	Inter-American Development Bank
IDBG	Inter-American Development Bank Group
IFC	International Finance Corporation
IOs	International Organizations
IsDB	Islamic Development Bank
IWG	Infrastructure Working Group of the G20
LAC	Latin America and the Caribbean

L/C	Letter of Credit
LGD	Loss Given Default
LICs	Low-income countries
MDB	Multilateral Development Bank
MIGA	Multilateral Investment Guarantee Agency
NDB	New Development Bank
NSG	Non-Sovereign Guaranteed
OECD	Organization for Economic Co-operation and Development
PBA	Performance Based Allocation
PBG	Policy-Based Guarantee
PCG	Partial Credit Guarantee
PD	Probability of Default
PPP	Public-Private Partnership
PPF	Project preparation facilities
PRG	Partial risk guarantee
PRI	Political risk insurance
RSF	Risk-sharing facility
SDG	Sustainable Development Goals
SG	Sovereign-guaranteed
S&P	Standard & Poor's
SIGMA	Standard Infrastructure MDB Guarantee Approach
SOE	State-owned enterprise
WAL	Weighted average life
WBG	World Bank Group
WEF	World Economic Forum

Background

This Introductory Guide is a technical document aimed at promoting better understanding of infrastructure risks and how guarantee products provided by Multilateral Development Banks (MDBs) are designed and used to mitigate these risks. It is targeted to private investors, government officials and MDBs themselves. The Guide is not intended to be comprehensive in scope, but rather to illustrate some of the key issues discussed in the framework of the dialogue undertaken during 2018 by the Standard Infrastructure MDB Guarantee Approach (SIGMA), under the coordination of the Inter-American Development Bank (IDB). Discussion of some relevant issues such as pricing and the development impact of guarantees (i.e. their social and economic benefits) is beyond the scope of this document. Additionally, this Guide covers only traditional guarantee products offered by MDBs¹. It is worth noting that these institutions also offer other credit-enhancement instruments, such as A/B loans, equity participation and investment vehicles, among others. These instruments, along with issues related to pricing and the development impact of guarantees, will be the object of future work under SIGMA.

In recent years there has been increasing awareness of the need to scale up investments in infrastructure. It is broadly recognized that most countries, developed and developing alike, have underinvested in infrastructure. Estimates of the infrastructure investment gap vary between US\$ 700 billion (GIH, 2017) to US\$ 800 billion (McKinsey, 2016) annually. These estimates reflect the additional annual amount of investment required to support current GDP growth trends and do not consider other investments necessary to meet the Sustainable Development Goals (SDGs) and those needed for low-carbon and climate-resilient infrastructure.² Other infrastructure gap studies focus on measurable targets on infrastructure sectors, such as access, quality and capacity. The numbers are similarly substantial.

Notwithstanding these gaps, financial resources are available to meet these investment needs. The McKinsey Global Institute estimates that there are US\$ 120 trillion of assets under management by banks and institutional investors (McKinsey, 2016). Despite growing interest by private investors in infrastructure, less than two percent of assets managed by pension funds are in infrastructure, according to an OECD survey (OECD, 2015a).

A critical challenge is to channel available financial resources to bridge the infrastructure gap, which far exceeds governments' and MDBs' capacity of financing.³ Recognizing this fact, the

¹ MDBs include the following institutions: ADB, AfDB, NDB, AIIB, IsDB, EBRD, EIB, IDBG (IDB and IDB Invest) and the WBG (IBRD, IDA and MIGA). Not all of these MDBs have participated in this exercise as indicated in the text.

² For example, Estache and Fay (2010) estimated that developing countries might need 6.5% of their GDP, on average, during 2005-2015 period. Of which 2.3% would have been needed just to maintain the existing infrastructure, whereas the remaining 3.2% would have been required for new infrastructure projects.

³ This limited financing capacity derives from fiscal restrictions, the so-called fiscal space. Developed and developing countries face budget limitations to scale up direct infrastructure financing, because of higher structural current expenditures, including those related to aging populations.

international community has called MDBs to take action to enhance their ability to mobilize private funds and coordinate efforts to scale up infrastructure investments. As part of this process, the G20 under the Argentinean Presidency has developed a "Roadmap to Infrastructure as an Asset Class." This Roadmap identifies key barriers to the development of infrastructure as an asset class and sets an agenda to crowd in private resources to finance long-term infrastructure investment.

Under the Roadmap, G20's Finance Ministers and Central Bank Governors asked MDBs to make progress on the workstreams of risk mitigation and credit enhancements, project preparation, data availability and contract and financial standardization. In parallel, and in support of G20 priorities, MDBs have created an Infrastructure Collaboration Platform (ICP).

The Roadmap identified the deficient use of instruments to adequately mitigate risks as one of the critical barriers to unlock additional private finance for infrastructure. By significantly increasing project costs, inadequate risk mitigation adversely affects bankability and the asset class nature of infrastructure. Adequate risk allocation and mitigation are even more relevant in the presence of capital market financing, where certain risks could be transferred and managed by a third party, significantly facilitating a project's financial structuring. This third party can be a private insurer, a public or private fund, a commercial bank or an MDB, depending on the nature of the risk to be mitigated. MDBs are better suited to deal with risks typically attributed to the public sector and not usually covered by the private sector, such as political and regulatory risks, including breach of contract by the government conceding party.

MDBs offer several credit-enhancement⁴ instruments to mitigate infrastructure risks. Among these instruments, guarantees are one of the most effective tools to mitigate risks and thus mobilize private resources. In bridging the infrastructure gap, guarantees tackle two essential issues: enhancing the mobilization capacity of MDBs and mitigating risks that, affects bankability of projects and prevents further private infrastructure finance.

Nonetheless, MDBs guarantees use has been relatively limited. In 2016, the value of outstanding guarantees represented only 4.5 percent of MDBs loans. A paper prepared by the IDB for the G20 Infrastructure Working Group (IWG) identified supply and demand constraints to the use of guarantees (Pereira dos Santos and Kearney, 2018). Supply-side restrictions are related to MDBs' business models that "require" a conservative accounting treatment of guarantees. These instruments are booked on a par with loans consuming as much capital, regardless of the probability of being called (reducing their demand in the case of Sovereigns). On the demand side, the general perception of private investors is that MDBs' guarantees are highly complex and heterogeneous, have limited risk coverage, lack on-demand payment, are bureaucratic and negotiations are time consuming. Moreover, in the case of Sovereign-Guaranteed (SG) operations, the treatment of guarantees on a one to one basis with loans in MDBs' country lending

⁴ See box 1 for a brief explanation of guarantees and credit enhancements.

envelope⁵ introduces disincentives towards their usage in certain cases⁶. Given the option, most countries will rather take a loan than a guarantee. Higher liquidity and simplicity of loans make them generally preferred by borrowers.

With the purpose of devising actions to overcome demand and supply constraints to the further use of guarantees, MDBs have created SIGMA (Standard Infrastructure MDB Guarantee Approach) under the umbrella of the broader MDB Infrastructure Collaboration Platform (ICP). SIGMA is a space of dialogue, exchange of views and experiences amongst MDBs and between MDBs and other relevant stakeholders, such as governments, infrastructure investors, credit rating agencies (CRAs), regulators and international organizations (IOs).

This Introductory Guide is the last deliverable under SIGMA's work program for the G20 Argentinean Presidency. It builds on previous work and activities developed under the Infrastructure Working Group (IWG) throughout the year and condenses what has been learned about MDBs guarantee products.⁷

The rest of this document is divided into two Sections and two Appendices. Section I describes the main infrastructure risks, ways to mitigate them, and how they impact a project's creditworthiness, highlighting the key role played by the existence of cash flows. An explanation of how MDBs' guarantee products operate and how they contribute to credit-enhancing infrastructure transactions follows, supported by some examples drawn from case studies, which are presented in more detail in Appendix 2. Section II is a revised version of the taxonomy and stocktaking report previously presented.⁸ Appendix 1 presents a detailed description of MDBs' guarantee products offerings, based on publicly available information, and how they relate to the proposed taxonomy.

⁵ MDBs limits resources available for lending yearly to each borrowing member in proportion to their relative sizes in MDBs' portfolios, among other criteria. These limits are known as "country lending envelope".

⁶ Some institutions have found ways to reduce disincentives to the provision of guarantees. For IDA, and on a case by case basis IBRD, only 25% of the guaranteed amount counts against the country's lending envelope.

⁷ One of the main inputs of this Report are the deliberations of the Expert Roundtable on MDB Infrastructure Guarantees, hosted by the IDB in its headquarters in Washington D.C. on October 1st, 2018. The roundtable gathered for the first-time practitioners in the field from MDBs, governments, the private sector and credit rating agencies (CRAs). In preparation to the roundtable, many participants sent presentations, reports and articles produced by them or their respective institutions as background documents. They are referenced throughout the text along with other relevant work on the subject produced by MDBs, IOs and the private sector.

⁸ A preliminary version of this report was submitted ahead of G20's Finance Ministers and Central Governors July meeting in Buenos Aires.

Main Takeaways

- There is no commonly agreed taxonomy of infrastructure risks. It is often the case that different definitions are applied to the same risk nomenclature. For that reason, it is advisable that all relevant stakeholders undertake efforts to standardize the taxonomy of risks. According to a taxonomy proposed by OECD (2015b), infrastructure risks can be grouped into three broad categories: political and regulatory, macroeconomic and business, and technical. They may affect an infrastructure asset cash flow in one or more of its four phases, namely: development, construction, operation and termination. MDBs are better suited to deal with risks typically allocated to the public sector, such as political and regulatory risks, including breach of contract, that affects horizontally all phases of an infrastructure project.
- Risks should be adequately identified and assessed in the development phase, when the feasibility studies are developed, and a project is being prepared. The identification, allocation and mitigation of all relevant risks are critical to produce bankable projects and for good project preparation. A credit enhancement structure will not be effective if a project is poorly prepared. Therefore, the upstream work of MDBs in supporting governments in planning and project preparation⁹ precedes and complements that of downstream interventions, such as the provision of credit enhancements.
- Any infrastructure project, regardless of its particular sector, can be represented by a risk-adjusted cash flow (Ketterer and Powell, 2018). Cash flows are negative during the development and construction phases, that typically last between two and four years. Subsequently, these flows turn positive during the operation phase, which may last between twenty to thirty years. The objective of a risk analysis is assessing the probability and impact of those risks, if they materialize, on a project's expected cash flows. Mitigating these risks implies improving a project's cash flows' predictability and stability, because ultimately that is what will determine a project's bankability, its capacity to deliver the services it was built for and to serve its debt obligations.
- In doing their creditworthiness analysis, credit rating agencies (CRAs) assess essentially the impact of a project's overall financial structure on the predictability and stability of its future cash flows. Infrastructure risks and their mitigation and allocation are not evaluated individually, but rather as a whole in terms of their estimated impact on two key parameters: Probability of Default (PD) and Loss Given Default (LGD).

⁹ In the context of the MDB Infrastructure Cooperation Platform's workstream on project preparation, MDBs have delivered a "Guidance for Project Preparation" focused on their activities in project preparation facilities (PPFs). To improve project preparation standards globally, among other objectives, MDBs have led and funded SOURCE, an online infrastructure project preparation and data management software.

- For infrastructure and project finance, the weight given to each factor varies across CRAs. For example, Standard and Poors' (S&P) opinion reflects the probability of default and the relative seniority of the loan in case of default, but not the loss given default (S&P, 2018). Fitch adopts a similar approach, considering only the probability of default in its rating assessments (Fitch, 2018). In turn, Moody's approach better considers risks typically covered in MDB guaranteed transactions, since it is the only one of the three major CRAs that take into account both PD and LGD. Its ratings reflect the relative likelihood of default combined with the expected financial loss in the event of default (Moody's, 2015).
- Investors and CRAs acknowledge that the involvement of MDBs may improve many nonfinancial aspects of an infrastructure project. Investors believe that such projects are of higher quality because they stem from better project selection and preparation processes, comply with higher governance standards, and go through more transparent procurement and bidding procedures. Well-structured and managed projects ultimately lead to more confidence on its bankability and sustainability. Also, investors may decide to participate in providing long term financing to a project based on the participation of an MDB (S&P, 2018). They perceive a benefit in having an MDB on their side, because of its negotiation leverage if a project goes through financial distress. MDBs presence might also discourage political opportunism by governments altering contracts for political gains.
- The intangible positive effect of having an MDB involved in an infrastructure transaction has been dubbed by S&P (2018) as the "halo effect". This effect is unique to MDBs and some other development financial institutions as it differentiates them from commercial institutions that provide credit enhancements. Moreover, it is a recognition of the positive spillovers of MDBs' upstream activities and of their reputation as trustworthy intermediaries. CRAs, however, argue that they do not have a structured framework to assess the halo effect. Better understanding of how MDBs add intangible but measurable value to infrastructure transactions would be instrumental in scaling up the use of guarantee instruments provided by MDBs. An assessment of the halo effect may be feasible through the MDB-led Infrastructure Data Initiative (IDI). Assuming the relevant data bases are incorporated to the initiative, the IDI could develop a statistical study to shed light on the claim that MDBs involvement in a project translates into lower probabilities of default and higher recovery rates.
- Generally, credit enhancements fall under two broad categories: partial risk guarantees and partial/full credit substitution.¹⁰ MDBs require partiality, either in terms of risk cover¹¹ or credit substitution. Some private investors may find MDBs' partial guarantees unattractive because of their limited risk coverage, complexity and long preparation periods, among other reasons (Pereira dos Santos and Kearney, 2018). However, MDBs are better positioned to mitigate

¹⁰ Some MDBs offer "total" or "full" credit guarantee products, but they are not a full credit substitution as understood by CRAs. They can however qualify for credit substitution to commercial banks.

¹¹ For example, in the case of a partial risk guarantee, there may be full credit substitution, but only if certain pre-agreed risks materialize, such as "political force majeure".

risks related to government actions, which fall under the broad category of political risks. Due to moral hazard and information asymmetry concerns, MDBs generally do not provide full risk coverage.

- Moreover, partial risk coverage is not necessarily undesirable from the point of view of investors. A total de-risking of bonds issued to fund an infrastructure project might render them unattractive, since very little risk – and therefore yield - is left on the table. For some investors a low investment grade instrument in the triple-B range would be preferred to a double-A or triple-A rated instrument, because they offer a better risk-return combination. MDBs are also constrained by their capital accounting regulations. By those rules, a guarantee is provisioned as if it were a loan, regardless of the probability of being called.¹² This limits MDBs' capacity to further supply credit enhancements and creates internal disincentives to the provision of guarantees.
- Guarantees can be grouped into a few categories and their policies share some common features. Despite the impression that MDB guarantees are very heterogeneous, the underlying risks and instruments are based on a common set of principles and definitions. However, existing policies also give much flexibility for guarantees to be tailored on a case-by-case basis. This enables MDBs to provide the most effective coverage according to their clients' needs and the requirements of local and international capital market participants. For instance, some products may be structured to provide on-demand payment and guarantee facilities can be designed to expedite preparation and payment processes.
- In the first part of the Introductory Guide much attention is given to MDBs' infrastructure guarantees financial benefits to those parties directly involved in a project. For sponsors, benefits come in the form of lower borrowing costs, larger volumes and longer tenors, as well as in higher credit ratings; for investors, they come in a better risk-return equation. For the government, sponsors and investors, the involvement of an MDB represents the realization of an investment that would have not been viable otherwise. Finally, for the users, the benefits may include lower prices and expedite the provision of services.
- The mobilization of private resources is part of the mission of an MDB, although not as a stand-alone objective. Some important benefits from MDBs credit enhancements are the lowering of the price of the service to users. This is often the case with projects with MDB

¹² These accounting rules do not apply to MIGA, which has a business structure more akin to that of an insurance company. MIGA adopts a financial model that allows it to substantially leverage its capital base. As of June 30, 2018 it reported a subscribed capital of USD 1.9 billion (1.5 billion callable and 0.4 billion paid-in) that supported USD 21.2 billion of gross guarantee exposure. Such high leverage has been aided by reinsurance of 63% of its gross exposure (MIGA, 2018). Another consequence of the insurance model is pricing. In the case of MIGA, it is based on the probability of a loss derived from country and project risks; in the case of bank-type guarantees provided by MDBs, it is a mirror of the cost of a loan, because of the loan-guarantee capital equivalence (see Section II). MIGA alone is responsible for about half of the guarantees to infrastructure provided by all MDBs (Pereira dos Santos and Kearney, 2018).

support. For example, a credit-enhanced bond issuance to finance a windfarm lowers electricity tariffs to consumers because of a reduction in the cost of capital. There are other benefits such as having projects on budget and on time, local capital market development and attracting international investors that would normally not operate in a particular country. These are not mentioned in the case studies presented in the Appendix. Follow-up work should investigate further the indirect economic benefits of MDBs' guarantees.

- The second part of the Investment Guide brings a common taxonomy for describing the shared characteristics of MDB guarantee products. It also presents a stocktaking exercise, consisting of a list of guarantee instruments with names, definitions and coverage as described in MDBs' publicly available documents.

Section I

Understanding Infrastructure Risks and MDBs' Risk Mitigation Instruments

Infrastructure Risks and their Financial Implications

Infrastructure Risks

There is no commonly agreed taxonomy of infrastructure risks. Different institutions use different nomenclatures and definitions for similar events that may adversely affect a project development. For instance, construction risk is commonly understood as the risk of delays in construction or/and cost overruns, but in the insurance industry, it is generally treated as defects in construction that affect the performance of a built asset. According to a taxonomy proposed by OECD (2015b), infrastructure risks can be grouped in three broad categories:

- *Political and regulatory risks.* Encompasses those risks related to government actions that negatively affect an infrastructure project's development.
- *Macroeconomic and business risks.* Relates to variations in macroeconomic variables such as inflation, interest rate and exchange rate, and to fluctuations in demand and financial liquidity associated to business cycles.
- *Technical risks.* Arise from technical features of the project, such as governance, management, complexity, bankability, engineering, geology, technology and archeological risks, among other factors.

A project cycle can be divided into four phases: development, construction, operation and termination (OECD, 2015b). Each phase has certain risks specific to it and other risks pertain to all phases. Table 1 below summarizes the types of risks under the above-mentioned three categories throughout the different phases of the project cycle.

Risks should be adequately identified and assessed in the development phase, when the feasibility studies are conducted, and the project is prepared. For example, for a project bidding to be initiated, it is highly desirable to have a comprehensive feasibility study and, where relevant, the required land expropriation and permits¹³. Similarly, social and environmental consultation processes and users' payment capacity should be carried out in advance to avoid future conflicts

¹³ The best practice is to have one hundred percent of the land expropriated for focalized projects (hospital, ports, etc.) and at least thirty percent for linear projects (roads, railroad etc.) before starting the bidding process.

and negative externalities. These actions, if well conducted, diminish considerably the prospect of a project running into difficulties in the future. Put differently, they increase the quality and the sustainability of the project in all its dimensions (economic, social, environmental and financial) throughout the project's life cycle. A project is said to be well-prepared if all relevant risks are identified, allocated and mitigated.

TABLE 1: RISKS ASSOCIATED TO INFRASTRUCTURE ASSETS*

Risk Categories	Development Phase	Construction Phase	Operation Phase	Termination Phase
Political and regulatory ¹⁴	Environmental review	Cancellation of permits	Change in tariff regulation	Contract duration
	Rise in pre-construction costs (longer permitting process)	Contract renegotiation		Decommission
				Asset transfer
	Currency convertibility			
	Change in taxation			
	Social acceptance			
	Change in regulatory or legal environment			
	Enforceability of contracts, collateral and security			
Macroeconomic and business	Prefunding	Default of counterparty		
	Financing availability	Refinancing risk		
		Liquidity		
		Volatility of demand/market risk		
	Inflation			
	Real interest rates			
	Exchange rate fluctuation			
Technical	Governance and management of the project			Termination value different from expected
	Environmental			
	Project feasibility	Construction delays and cost overruns	Qualitative deficit of physical structure	
	Archaeological			
	Technology and obsolescence			
Force majeure				

Source: OECD (2015b).

* See Annex of OECD (2015b) for a full description of the risks listed.

The critical role of project preparation and generating a pipeline of bankable projects has been highlighted by the private sector through informal consultations with the private sector led by the Infrastructure Working Group of the G20. S&P (2018), contends that guarantees may “enhance the quality of senior debt, but it cannot ensure the bankability of a poorly planned or prepared project”.

The general rule of risk allocation is: a risk must be borne by the party that can better manage it. Many projects fail because excessive risk allocation to the private party leads to either unsuccessful bids, a renegotiation of contracts in later stages of project development, or, in the worst cases, project insolvency. Excessive risk allocation on the public side usually generate substantial fiscal contingent liabilities if these risks are not adequately mitigated. Striking the right

¹⁴ There are other risks that are not explicit in the table such as land expropriations and right-of-way delays which are particularly relevant for greenfield projects in developing countries.

risk balance between the parties is key for a project's quality, its social, economic and environmental sustainability, and its financial bankability.

A prerequisite for an effective guarantee is a well-prepared project that leads to an overall sound financial structure. A guarantee provided by an MDB may cover residuals risks, that is, those risks that have not been mitigated through contractual provisions and available commercial instruments such as insurance. Once risks are allocated, they must be mitigated by the respective party. Inadequate risk mitigation adversely affects a project's future cash flows and its financial viability.

Box 1: What are guarantees and what are their benefits?

A guarantee is a promise by one person to take responsibility for another person's obligations if the latter defaults or fails to perform on her obligations, e.g. a failure to meet loan repayments or to redeem bonds, or expropriation of an equity stake. That is, a guarantee backstop payments, while insurance products are solely intended to compensate for loss. Guarantees typically cover political and/or commercial (e.g. credit, regulatory/contractual) risks that investors are unwilling or unable to bear (Halvorson-Quevedo and Mirabile, 2014). Guarantee instruments provided by MDBs referred to in this document cover debt-related obligations (loans or bonds) and government payments.

The benefit of guarantees depends on the nature of the covered obligation and on the speed and conditions required for its payment, when triggered. A benefit that is often mentioned is credit enhancement. Such enhancement is the consequence of effectively mitigating risks, which increases the likelihood of a project being able to serve its debt obligations. The use of a guarantee does not necessarily imply a credit quality improvement in the form of a rating uplift. However, it typically results in lower borrowing costs and longer tenors. This latter benefit is often overlooked.

Although there are indirect benefits to the use of guarantees (e.g. lower infrastructure financing costs turning into lower user tariffs) it is important to distinguish the direct beneficiaries. In this document, the reference to beneficiary denotes the party that receives a payment when the guarantee is called. In some cases, those payments are made directly to the lender, while in others payments are made to the obligors (debt issuers) with the purpose of helping them meet their financial obligations.

Risk allocation and mitigation become more important in the presence of capital market financing. In the traditional banking financing, an event that leads to delays or cost overruns may be dealt with by re-discussing lending terms or providing the necessary supplementary funds with the corresponding additional collateral. This is possible because there are no more than a handful of banks involved in the operation. Infrastructure has been increasingly financed by capital markets, where investors are many and diffuse. A third party to whom risks could be transferred and managed facilitates considerably the financial structuring. This third party can be a private insurer, a public or private fund, a commercial bank or an MDBs, depending on the nature of the risk to be mitigated.

MDBs are better suited to deal with risks typically allocated to the public sector, such as political and regulatory risks, or more generally breach of contract risks. As illustrated in table 1, risks change over a project's life cycle. Different actors have different comparative advantages in risk bearing and mitigation. According to Ketterer and Powell (2018), MDBs are well positioned to bear risks that are systemic and endogenous, such as government counter-party risk. In those cases, an outside entity, ideally with some leverage over the government, such as an MDB, would be better suited to provide a guarantee.

MDBs can and should, therefore, provide coverage to those risks, particularly in countries where government policies in general are unpredictable and often adversely affect a project's capacity to meet its financial obligations. This point is further elaborated in the next section.

The impact of infrastructure risks on cash flows

Infrastructure investments are characterized by significant upfront costs (sunk costs), which are made during the development and construction phases. These costs are usually recovered by future revenues generated during the operation phase. Cost-recovery includes remunerating the invested capital (equity and debt), as well as paying for costs associated with the physical investments, maintenance and operational costs.

Costs incurred during the development and construction phases are recovered by revenues generated by the services provided by the project. Revenues may be funded, for example, by user tariffs, shadow tolls¹⁵, availability-type payments¹⁶, subsidies, minimum revenues schemes, or some combination of them¹⁷.

Any infrastructure project, regardless of its particular sector, can be represented by a risk-adjusted cash flow (Ketterer and Powell, 2018). Cash flows are usually negative during the development and construction phases that last between two and four years, depending on the complexity of the asset, and then turn positive during the operation phase, which may last between twenty to thirty years (Figure 1). A critical role of a risk analysis is assessing the impact and probability of risks, if they materialize, on a project's expected cash flows. Mitigating them implies improving the predictability and stability of a project's cash flows.

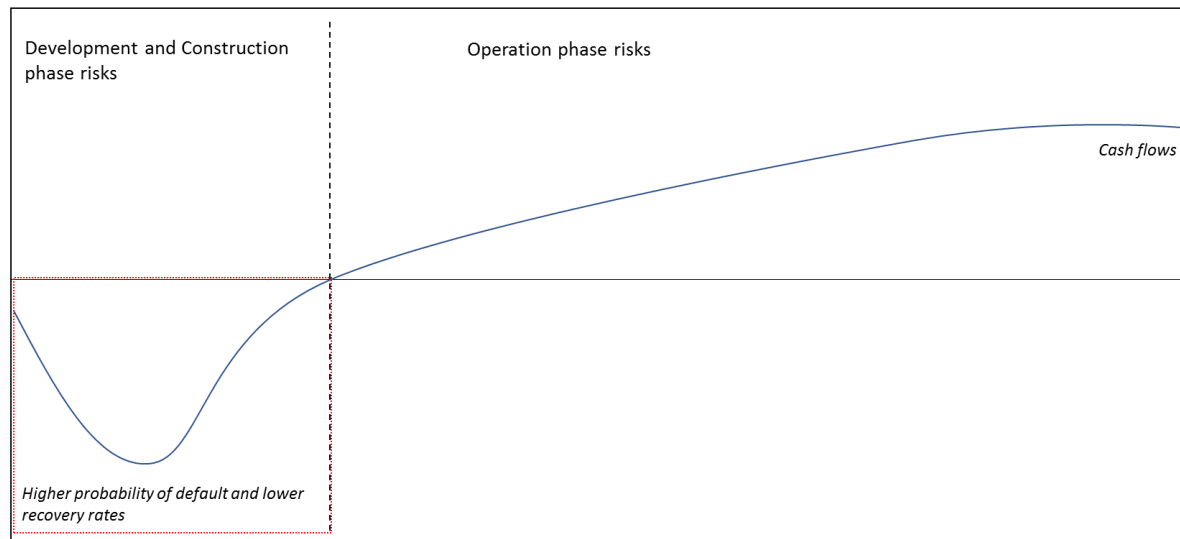
¹⁵ A shadow toll is a contractual payment made by a government to a private concessionaire per vehicle using a road.

¹⁶ These are periodic payments to a concessionaire from the government based on the availability of a facility at the specified performance level.

¹⁷ A fifth source of revenues is land value capture. However, this source of funding is rarely explored.

FIGURE 1: INFRASTRUCTURE RISKS AND CASH FLOWS

Horizontal Risks: Macroeconomic, political, regulatory and force majeure



Source: Authors' elaboration.

The highest risks are concentrated during the construction phase, when recovery rates are lower, and the probability of default is higher in relation to the operation phase (Moody's, 2017). Cost overruns and delays in construction, contract renegotiations, cancelation of permits, difficulties in land acquisition, among other factors, may significantly increase estimated costs, delay the start of operations and, consequently, the generation of positive cash flows.

During the operation phase the main risks are related to the predictability and stability of cash flows, which can be affected by overly optimistic demand forecasts or government actions. In the case of user tariff funding, the predictability of revenues relies on the government's regulatory policies and on the accuracy of demand estimates; in the case of shadow tolls, minimum revenues guarantee and availability payments, a project's revenues depend mainly on the ability and wiliness of the government to commit funds to the project in the long term, as well as on the accuracy of demand estimates.

Therefore, projects' cash flows are considerably vulnerable in all phases to government actions. Not surprisingly, government-induced policy risk, along with breach of contract by the government, has been ranked as a major constraint on investment decisions (WEF, 2015 and IDB, 2017). These are risks that the private sector is unable to manage, cannot be adequately mitigated by contractual provisions or by commercial risk mitigation instruments such as insurance. MDBs have an array of instruments to mitigate infrastructure risks, particularly those linked to government actions (see Section II). As noted above, MDBs are well suited to work in the government-induced risk mitigation space. How MDBs' guarantee products effectively operate and are assessed from the perspective of Credit Rating Agencies (CRAs) is discussed in the following subsection.

Infrastructure Guarantees: Credit Rating Agencies' Perspective

Infrastructure projects are vulnerable to different risks throughout their life-cycles. These risks determine the financial soundness of a project to the extent that they affect the predictability and stability of cash flows. The capacity of a project to generate enough cash flows to remunerate its creditors under the previously established terms is the key variable that CRAs assess in emitting an opinion about the creditworthiness of an infrastructure project's senior debt. CRAs' analysis considers two factors:

1. *Probability of default (PD).*
2. *Loss given default (LGD).*

The combination of PD with LGD will give a lender's exposure to default (EAD), the expected loss amount of a loan.

For infrastructure and project finance, the weight given to each factor varies from one CRA to the other. S&P's opinion reflects the probability of default and the relative seniority of the loan in case of default, but not loss given default (S&P, 2018). That is because S&P perceives timely payment as a crucial trait for private project finance investors, who give more value to long-term stable cash flows over recovery potential. Fitch adopts a similar approach, considering only the probability of default in its rating assessments (Fitch, 2018a). Moody's methodology better considers risks typically covered in MDB guaranteed transactions, since it is the only one of the three major CRAs to take into account both PD and LGD. Its ratings reflect the relative likelihood of default combined with the expected financial loss in the event of default (Moody's, 2015). A harmonization of rating methodologies by CRAs would facilitate comparability and understanding of risks by investors and contribute to the standardization of MDB guarantee instruments.

Understanding the difference in criteria used by each CRA is important for both investors and MDBs, as they dictate how much credit-enhancement, or rating uplift, a guarantee structure is able to provide. To effectively credit-enhance a loan, a guarantee must considerably reduce or postpone the likelihood of a default, which is the main factor considered by all three CRAs. This is achieved by structures that improve the predictability and stability of a project's cash flows¹⁸. Table 2 below brings a typology of credit enhancements proposed by S&P (2018).

¹⁸ In assessing the robustness of the guarantee structure, CRAs also evaluate the amount of liquid assets being held by MDBs, which should cover any potential calls on guarantees over the short term. AfDB, for example, always holds enough liquid assets to cover net cash flows requirements for one year.

TABLE 2: TYPES OF CREDIT ENHANCEMENTS

Type	Definition	Impact on rating
Cash flow stabilization	Instruments preventing or delaying a potential distress or default.	May result in a rating uplift.
Recovery enhancement	Instruments enhancing recovery prospects and reducing loss given default.	Does not directly affect ratings in the case of S&P and Fitch. Moody's factors in improved recovery prospects.
Combined instruments	Structures combining instruments delaying a potential default with instruments enhancing recovery to address specific risks.	May result in a higher project rating.
Credit substitution	Guarantees aimed at fully transferring the risk of timely payment of debt from the project finance issuer to the guarantee provider.	May result in the rating being equalized with that of the guarantor.

Source: Author's elaboration based on S&P (2018).

The “Halo Effect”

In assessing the creditworthiness of a transaction, CRAs first investigate the overall financial soundness of an infrastructure project, which includes its business profile, its exposure to risks, its legal and financial structure, the quality of its sponsors, among other factors. They then evaluate the potential benefits of a guarantee structure on enhancing the capacity of a project to meet its senior debt obligations. This credit-enhancing capacity is closely related to the ability of these instruments to improve the stability and predictability of the cash flows. In the case of Moody's, it also depends on how a guarantee scheme improves the prospect of loss recovering in case of default.

When an MDB is involved, CRAs also consider an additional factor: the intangible positive effect of having a multilateral institution involved in the transaction¹⁹. This effect was dubbed by S&P (2018) the “halo effect”. It relates to three key roles played by MDBs as credible “independent brokers”, not directly related to their financial role as credit enhancement providers:

- MDBs are a trusted and independent third party that provides a “seal of quality” to projects;
- During all phases, MDBs intermediate the relationship between relevant stakeholders and local authorities.

¹⁹ This importance of this effect was highlighted by Fitch, Moody's and S&P during the G20/SIGMA Roundtable on MDBs' Infrastructure Guarantees that took place on October 1st, 2018, at IDB headquarters in Washington, D.C.

- MDBs are influential entities in negotiations when projects run into problems.

Investors and CRAs acknowledge that the involvement of MDBs may improve many nonfinancial aspects of an infrastructure project. Investors believe that such projects are of higher quality because they go through better project selection and preparation processes, comply with higher governance standards and go through transparent procurement and bidding procedures. Well-structured and managed projects lead to more confidence on their bankability and sustainability. Also, investors may decide to provide long term financing to a project based mainly on the fact that an MDB is involved (S&P, 2018). They perceive a benefit in having an MDB on their side, because of MDBs' negotiation leverage if a project goes through financial distress, and their preferred creditor status. In some transactions, cross-default provisions provide additional comfort to investors.

The halo effect is unique to MDBs and some other development financial institutions. It differentiates them from commercial institutions that provide credit enhancements. It is a recognition of the positive spillovers of MDBs' upstream activities and of their reputation as trustworthy intermediaries. CRAs, however, argue that they do not have a structured framework to assess the halo effect. They factor it in rather informally, if at all, on a case-by-case basis. The effect is, therefore, not evident in their creditworthiness analysis.

Assessing the halo effect in a systematic way requires statistical and historical evidence of the intangible positive effects MDBs exert on infrastructure projects. MDBs already produce data that can be used to support the halo effect. These data yet needs to be organized and publicized in a way that facilitates studies to support the halo effect. Better understanding how MDBs add intangible but measurable value to infrastructure transactions would be instrumental in scaling up private resource mobilization activities and increasing the take up of MDBs' guarantee instruments.

In this regard, one recent study by Serebrisky, Suarez-Aleman & Pastor (2018) supports the claim that projects financed by MDBs are of higher quality, better selected and prepared. The study finds that projects financed by MDBs in Latin America and the Caribbean (LAC) have lower cost overruns than other projects. On average, cost overruns account for 48% of the costs of project investments in LAC, while infrastructure projects financed by the IDB presented an average cost overrun of 22% (Serebrisky et al., 2018). The study also analyzed cost overruns of World Bank-financed projects in LAC. It found that they were, on average, 17% of the total costs of the projects²⁰. The working assumption is that such projects "have higher quality standards for

²⁰ The sample includes 231 infrastructure projects financed in Latin America and the Caribbean by the IDB (83 projects) and the World Bank (148 projects) between 1985 and 2012. It includes 142 transport projects (road construction, maintenance, and rehabilitation); 73 water and sanitation projects (treatment plants, improvement and expansion of distribution networks); and 16 energy projects (generation and transmission).

preparation and implementation, usually reflected in strict conditions regarding feasibility, procurement, and supervision, than do national systems.” (Serebrisky et al., 2018, pp. 152-152).

Cost overruns are the norm, rather than the exception in infrastructure finance. Flyvbjerg (2017) argues with statistical evidence that only 1-2 out of 10 projects are on budget²¹. Therefore, the fact that MDB-financed projects present cost overruns that are less than half the global average is a rather strong indication of higher project quality and standards. Other dimensions should be further investigated, such as how MDBs involvement contribute to deliver projects on time and with the planned economic benefits. In future studies, the sample should be expanded to all MDBs.

Notwithstanding evidence that MDB-supported projects are of higher quality, they are not very useful to creditworthiness analysis if they do not translate into lower probability of default (PD) and loss given default (LGD). CRAs in their regular assessments relies on historical data to derive estimates of these two parameters. One of the limitations CRAs face is that there are not enough cases of MDBs guaranteed projects for a statistically significant sample.

A possible way around the scarce historical data is to use MDBs’ portfolio information. In this regard, The European Investment Bank (EIB) and the International Finance Corporation (IFC) jointly established in 2009 the Global Emerging Markets Risk Database (GEMs). GEMs is a Consortium that currently has 20 members²². It has compiled 8,969 counterparts, 1,890 defaults and 2,588 recovery rates of MDBs and other DFIs financed transactions in emerging markets from 1988 to 2017. A study comparing infrastructure projects’ PD and LGD from GEMs database to those obtained from commercial datasets could provide further evidence of the halo effect.

There are many avenues that can be explored to improve data availability for risk analysis in transactions with MDBs guarantees. The growing number of transactions benefiting from MDB

²¹ Serebrisky et al. (2018) contend that cost overruns usually arise because of incomplete information, lack of competition and transparency in bidding processes, weak project supervision, and an optimistic bias that underestimates costs. They are not always the result of inexperience, ineptitude, or corruption. Investment in infrastructure are large and involve high construction risks, mostly driven by the impossibility of anticipating contingencies. Complex geology, archeological remains, natural disasters, and physical and social constraints (for instance, resettlement processes that might trigger legal disputes) are among some of the variables that cause unavoidable cost overruns. For a discussion on the reasons why costs overruns are so recurrent see Flyvbjerg (2017) and Serebrisky et al. (2018).

²² European Investment Bank (EIB), International Finance Corporation (IFC), African Development Bank (AfDB), Overseas Private Investment Corporation (OPIC), European Bank for Reconstruction and Development (EBRD), Asian Development Bank (ADB), Inter-American Development Bank (IDB), Entrepreneurial Development Bank (FMO), Black Sea Trade & Development Bank, Islamic Development Bank (IsDB), Agence Française de Développement (AFD), International Development Bank, IDB Invest, Asian Infrastructure Investment Bank (AIIB), GuarantCo, Council of Europe Development Bank (CEB), Banque Ouest Africaine de Développement (BOAD), CDC, KFW and World Bank.

credit enhancements per se is providing valuable information and will facilitate the analysis of future transactions (Moody's, 2017)²³.

Partial Guarantees versus Full Credit Substitution

Partial guarantees: how they work and what is their credit-enhancing impact

MDBs offer essentially two bank-type unfunded guarantee products: i) Partial Risk Guarantee (PRG), also called Political Risk Guarantee, and ii) a Partial Credit Guarantee (PCG). The main difference between them is that a risk guarantee covers an obligation triggered by a specific event, generally an act of government (political risk), while a credit guarantee may be called once credit obligations (e.g. interest and principal) have stopped to be paid, regardless of the underlying event that gave cause to the default (see Section II for more details). The majority of MDB bank-type guarantee instruments fall under these two categories. Nomenclature may vary from one institution to the other²⁴ and structures may be tailor-made to specific client and project needs. Nonetheless, the underlying risk coverage and rationale are relatively similar. Efforts to standardize products and labels of MDBs' guarantees would facilitate the decision of governments and investors to use these instruments.

Partial Risk Guarantee (PRG)

PRGs are generally issued to protect investors (lenders or sponsors) against a government obligation and paid, if triggered, to the relevant investors in the infrastructure project.

For instance, to address the payment risk inherent to many infrastructure projects relying on Government offtake obligations, the World Bank has developed and refined a letter of credit backed guarantee structure²⁵. A key risk to project financed infrastructure projects is not just payment, but timely payment, of amounts owed. Under this structure, a letter of credit issued by a commercial bank can be drawn by the sponsors to settle unpaid invoices, which in turn allows it to service its debt and other costs and allowing continued unfettered operations. The amount so drawn is converted into a World Bank guaranteed loan between the Government and the L/C issuing bank with a one-year term. If the Government does not reimburse such within one year, then the L/C issuing bank can call on the World Bank guarantee. This structure reduces

²³ SIGMA could coordinate with the IDI and CRAs initiatives aimed at better understanding the value added by MDBs in mitigating infrastructure risks through the halo effect discussed in this section.

²⁴ The ADB and AfDB have kept the PRG and PCG nomenclature in their policies; the IDB has folded its PRG and PCG products into the Flexible Guarantee Instrument (FGI); the World Bank offers partial risk and credit guarantees under their Loan Guarantee and Payment Guarantee products; the EIB offers partial credit guarantees through its Project Bond Initiative; EBRD may provide partial credit guarantees by establishing liquidity facilities; the IFC offers partial and full credit guarantees. ADB and IFC offer a risk-sharing facility product; and the IDB Invest has partial credit guarantee instruments and a Total Credit Guarantee (TCG) product, which, in spite of its name, is viewed by CRAs as a partial risk coverage instrument.

²⁵ For example, the Naftogaz Gas project in Ukraine; the Azura Power Project in Nigeria; the Sankofa Gas Project in Ghana; and more recently the Nachtigal Hydropower Project in Cameroon.

uncertainty around the project's cash flows whilst also providing a runway for the project participants to fix (with the assistance of the World Bank) the underlying cause of the delayed or outstanding payments (see Appendix 2 for an example of a World Bank guaranteed project).

Another example of a similar structure has been adopted by AfDB, in 2013, where it structured a PRG to the Lake Turkana Windfarm project in Kenya (see AfDB case in Appendix 2). The main risk to the project was a failure of the Kenyan government to meet its obligations, particularly the delivery of a 428 km transmission line that would connect Lake Turkana Windfarm to the national grid. If the transmission line was not completed on time, the windfarm would not be able to sell its electricity. In case of delay in the construction of the transmission line the sponsors could draw on a letter of credit issued by a commercial bank to service its debts and other operational costs. If the government does not reimburse the letter of credit in one year, the commercial bank can then call AfDB's PRG. This structure reduced uncertainty around the project's cash flows and crowded in EUR 625.1 million of investments, facilitating a syndicated 15-year loan by commercial banks. The PRG indirectly credit-enhanced the operation, since the lenders were not its direct beneficiary.

Partial Credit Guarantee (PCG)

In the case of PCGs, the beneficiaries are the lenders, including but not limited to bondholders (see Box 1). Two transactions structured by the EIB and the EBRD help to illustrate this point. In 2016, the EIB provided a partial credit guarantee through their project bond enhancement product to a green field toll road project in Ireland called the New Ross Bypass (see EIB case in Appendix 2). A contingent credit facility covered any shortfalls in scheduled debt service of a EUR 145 million bond emission. The debt service coverage was limited to 15% of the value of issued bonds during the construction phase, being lowered to 10% during the operation phase. This structure allowed for a rating uplift by Moody's of two notches, from Baa1 to Baa3.

The EBRD develops financial structures that credit-enhance bond emissions by providing partial credit coverage. In the Elazig Hospital transaction in Turkey, EBRD established two subordinated liquidity facilities in the form of an irrevocable, on-demand letter of credit to cover around four years of debt service during the construction and operation phases (see EBRD case in Appendix 2). The two facilities are sequenced and cover 15% of the engineering, procurement and construction contract, which increases resilience to delays and cost overruns, and 25% of nominal bonds' value during the operation phase. In this transaction, EBRD has complemented MIGA's political risk insurance²⁶ by providing liquidity to secure debt payments during the operation phase

²⁶ The political risk product provided by MIGA is classified under the taxonomy proposed by this report as an insurance-type product (see section on taxonomy). Bank-type products may also cover similar risks, as illustrated by the Lake Turkana Windfarm project described above. The main difference lies in the procedures for payment. The waiting period and arbitration is typically an insurance requirement. That is why to make it an effective cash flow stabilizer MIGA's political risk was supplemented by a liquidity facility provided by the EBRD. In the case of bank-type partial risk and credit guarantees provided by MDBs no such waiting period is required. Payments are made once the conditions to trigger the guarantee are

in case of currency inconvertibility and non-transferability, expropriation, or breach of contract. Payment for each insured event is subject under MIGA's procedures to a waiting period before payment, and an arbitral decision in the case of breach of contract by the Turkish government. The combination of the two products credit-enhanced a total bond issuance of EUR 208 million, reflected in a rating uplift from Ba to Baa2, two notches above the sovereign credit rating at the time of issuance (currently four notches above Turkey's sovereign rating).

MDBs work mostly with partial guarantee structures due to moral hazard and information asymmetry concerns. Most MDBs also believe that their triple A rating provides enough comfort to investors, rendering full coverage unnecessary in most instances. Incentives are better aligned when the counterparty has "skin in the game", when the beneficiary will have incentives to manage events that might affect its interests, instead of trying to transfer all risks to the guarantor, who has less information about the project being guaranteed. Not surprisingly, some MDBs' policies prohibit full coverage²⁷. On the one hand, partial coverage has the advantage of better aligning incentives, on the other hand, it limits credit rating uplift. This implies restricting the economic benefit of the guarantee, since the smaller the credit rating uplift the higher the cost of financing.

The rating uplift is much related to the structure and proportion of the cash flow at risk being covered. The definition of partial is broad. Any coverage that is more than 0% and less than 100% qualifies as partial credit. MDBs may structure guarantees that are close to full, which allow for higher rating uplift. Also, guarantees may be provided in local currency, whereas MDBs' loans are almost exclusively provided in hard currency.

This was the case of the BRL 105 million (USD 28.4 million) local market bond issuance of Santa Vitoria do Palmar 207 MW windfarm project in Brazil. To guarantee interest and principal payments throughout the 13-year term of the bonds, IDB Invest issued a BRL 125 million (USD 33.8 million) guarantee (see Appendix 2). The bonds are indexed to a consumer price index. For that reason, IDB Invest provided an additional cushion to cover any unexpected increase in inflation. Fitch rated this transaction as A+ in its international scale (investment grade), whereas it would have received a BB- rating without the guarantee (speculative grade), an eight-notch uplift. The rating far exceeded that of the sovereign (BB- at the time of the issuance) but fell short of IDB Invest's rating (AA+), the guarantor of the operation. Fitch (2018b) argued that, although comprehensive, the guarantee does not cover the full payment of principal and interest in all possible macro and operational scenarios, since the guarantee value was capped to a fixed amount.

Table 3 below summarizes the financial benefits of selected infrastructure project transactions which were guaranteed by MDBs.

fulfilled. MDBs' guarantee policies are relatively flexible and allow for establishing in specific documentation expedite payments. Such is the case of the bank-type guarantee examples mentioned in this section.

²⁷ ADB and the IBRD/IDA, have explicit restrictions to providing 100 percent coverage. In the case of AfDB and IDB, operational policies allow them to provide full coverage under certain circumstances. See Section II for further details.

TABLE 3: CASES OF PARTIAL GUARANTEES AND THEIR FINANCIAL BENEFITS

Institution	Project/Country/Year	Instrument	Financial Benefit
World Bank	Naftogaz Gas Ukraine, 2014	PRG in the form of a EUR 478.3 million Payment Guarantee covering short-term working capital facility.	Lower cost of financing from 11% APR to around 3% APR; EUR 1.4 billion mobilized.
AfDB	Lake Turkana Wind Farm Kenya, 2013	PRG covered against the non-compliance of government obligations.	Facilitated a syndicated 15-year loan by commercial banks; EUR 625.1 million mobilized.
ADB	Wind and Solar Independent Power Producers India, 2015	PCG provided a first-loss guarantee for project bonds issued in local currency covering 26% to 37% of principal payments.	Rating uplift from BBB+/A- to AA-; USD 87 million mobilized.
EBRD and MIGA	Elazig Hospital Turkey, 2016	EBRD provided a PCG in the form of a liquidity facility covering around four years of debt service during the construction and operation phases. MIGA provided a political risk insurance for the entire project tenor.	Rating uplift from Ba to Baa2 (Moody's); EUR 208 million mobilized.
EIB	New Ross Bypass Toll Road Ireland, 2016	PCG through a project bond credit enhancement covering 15% of issued bonds during construction and 10% during operation.	Rating uplift from Baa1 to Baa3 (Moody's). EUR 170 million mobilized.
IDB Invest	Santa Vitoria do Palmar Wind Farm Brazil, 2018	PCG in the form of a total credit guarantee covering interest and principal payments throughout the 13-year term of bonds issued in local currency.	Rating uplift from BB- to A+ (Fitch); USD 358.5 million mobilized.

Source: Author's elaboration based on Appendix 2.

PRG: Partial Risk Guarantee; PCG: Partial Credit Guarantee; APR: annual percentage rate.

Full credit substitution

The only circumstance in which CRAs equals a guaranteed bond issuance rating to that of the guarantor is when the credit enhancement is done in the form of a full credit substitution (see table 2)²⁸. A full credit substitution has certain requirements, such as:

- Fully and effective insulation of the investor from the issuer's credit risk.
- Interest and principal payments are fully covered throughout the issuance term.

²⁸ Commercial banks and other lenders may take a different approach from CRAs on credit substitution. For them, PCGs may lead to credit substitution for the covered portion.

- Total control of payments by the guarantor, with proactive surveillance and remediation.
- No acceleration of debt payments allowed²⁹.
- High standardization of the guarantee.

This type of guarantee is not offered by MDBs and were successfully provided by monolines until the 2008 crisis, after when the monoline business practically disappeared. A monoline is a specialized company dedicated to financial guarantees. By regulation, no diversification into property, casualty or life insurance is allowed. Most monolines went bankrupt because of their guarantees on sub-prime collateralized debt obligation (CDOs) in the United States. However, their emerging market infrastructure guarantee business was largely successful. Monolines backed 208 deals in emerging markets worth over USD 200 billion with only a 7 basis points loss in 22 years (Cappon & Stevens, 2018). Low losses were in a part a result of the high geographic diversification of their portfolios. Monolines were instrumental in the financing of infrastructure in developing countries. Their demise has left a market gap that governments, DFIs and MDBs have been trying to fill.

Full credit substitution is viewed as a preferred kind of guarantee to partial guarantee. Private investors find MDBs guarantees unattractive because of their limited risk coverage, pricing, complexity of products and long preparation periods, among other reasons (Pereira dos Santos & Kearney, 2018). Full credit substitution instruments have the advantage of full risk coverage, standardization and simplicity. However, MDBs may not be well suited to offer this type of instrument. The private sector once developed a credit substitution business (monolines), possibly because it was in a better position to deal with risks associated with it. As argued before, MDBs are better suited to mitigate risks related to government actions, which fall in the broad category of political risks.

Additionally, limited risk coverage is not necessarily be undesirable from the point of view of investors. A total de-risking of projects might be unattractive to some investors, because very little risk – and therefore yield - is left on the table. For some investors a low investment grade instrument would be preferred to a double A or triple AAA rated instrument, because they offer a better risk-return balance, informally known as the “sweet spot”. In addition to moral hazard and information asymmetry concerns, MDBs are constrained by their capital accounting regulations. By those rules, a guarantee is provisioned as if it were a loan, regardless of the probability of being called. This limits MDBs’ capacity to further supply credit enhancements and creates internal disincentives to the provision of guarantees³⁰.

²⁹ Acceleration clauses require the borrower to advance payment of the full balance owed in case some of the terms of the loan are breached. This generally happens when the project faces financial distress and is triggered to protect the borrowers from a loss. MDB guarantees generally allow for debt payment acceleration.

³⁰ This conservative capital accounting treatment of guarantees derives from MDBs business model, which limits their ability to take on risks in the form of contingent liabilities. As explained before, it does not apply to MIGA. For a detailed discussion about supply and demand constraints to MDBs’ guarantees products and a proposal to overcome them see Pereira dos Santos & Kearney (2018).

The scarcity of private instruments to mitigate infrastructure risks after the 2008 financial crisis was the driving force of many governmental and MDB initiatives to provide guarantees to infrastructure in developed and developing countries alike. It is also one of the reasons behind the call by governments and the private sector for MDBs to simplify, standardize and increase the uptake of their risk mitigation instruments. MDBs will not be able to increase the take up of their guarantee instruments unless this fundamental capital accounting restriction is overcome.

Section II

MDBs' Guarantee Products: Taxonomy and Stocktaking

Taxonomy of MDBs' guarantee products

MDB guarantees can be grouped under two broad categories: those which provide a financial guarantee, or bank-type guarantees, and those which more closely resemble an insurance guarantee, or insurance-type guarantees.³¹ Diagram 1 depicts in a stylized manner how guarantee instruments are organized under each type. Bank-type guarantees are provided by MDBs that are organized as banks. This encompasses most institutions, but MIGA, the only specialized guarantee agency that is part of the MDBs system as an affiliate of the World Bank Group (see table 1). Banks are organized in two financial windows: Sovereign Guaranteed (SG), where the ultimate responsibility for the loan or guarantee is a sovereign obligation of the national government, and Non-Sovereign Guaranteed (NSG), which typically lends to the private sector and carries no such sovereign obligation.³²

MDBs provide both Partial Credit Guarantees (PCG) and Partial Risk Guarantees (PRG)³³ through both their SG and NSG lending windows. Some institutions offer a single instrument covering both PCGs and PRGs: The IDB offers a single Flexible Guarantee Instrument covering both types, while the IBRD and IDA offer the Loan Guarantee product which may also cover both types of risks. In addition, IBRD and IDA offer a payment guarantee which protects from payment defaults of non-loan-related government payment obligations (World Bank Group, 2016). In the case of MIGA a sovereign counter-guarantee is not required, and their products are grouped under two categories: political risk insurance and credit enhancements.

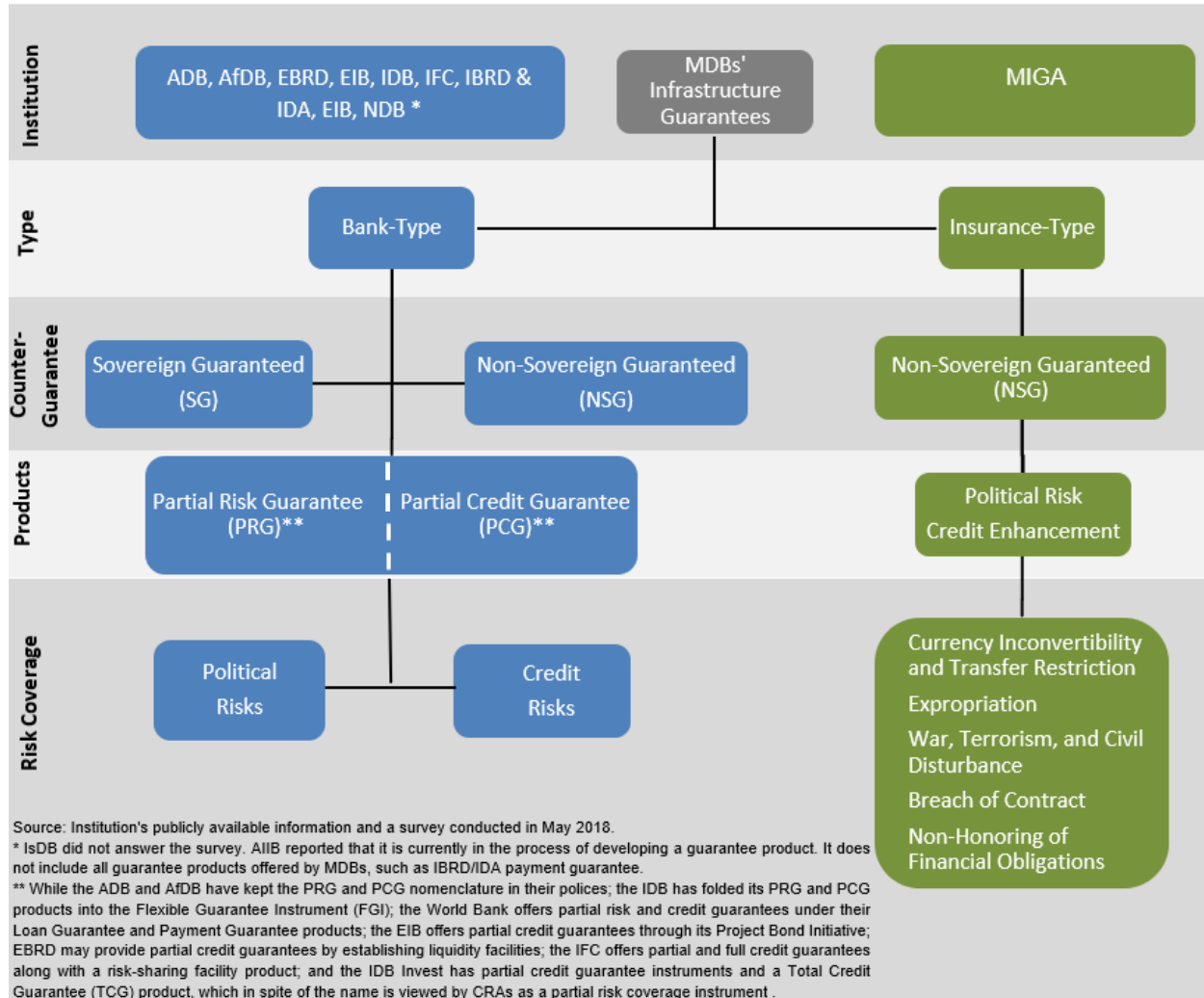
The difference between a partial risk guarantee and a partial credit guarantee is the type of event that may give cause to a claim. A partial risk guarantee covers all or part of an obligation that stopped being paid due to a specific event, generally that was given cause by an act of government (political risk), such as expropriation, breach of contract, or currency transferability restrictions. A partial credit guarantee may be called regardless of the event that gave cause to a default. A failure to pay a financial obligation such as interest or principal is enough to call a credit guarantee. Institutions offering a single product covering both types of risks may offer guarantees that combine facets of a partial credit and partial risk guarantee.

³¹ The characteristics of each type are defined in more detail in the following pages.

³² While most NSG lending is to private entities, some MDBs engage in NSG transactions with public sector entities (e.g. a loan or guarantee to a subnational government or to a state-owned enterprises) without a sovereign guarantee from the national government.

³³ Also known as political risk guarantee.

FIGURE 2.
MDBs' Infrastructure Guarantee Products



The next sections will further define the categories of guarantee products highlighting their key characteristics and differences.

TABLE 4. MDBS' INFRASTRUCTURE GUARANTEE PRODUCTS BY INSTITUTION*

	Sovereign Guaranteed (SG)			Non-Sovereign Guaranteed (NSG)		
	PRG	PCG	Other	PRG	PCG	Other
Banks						
ADB	x	x	x ^b	x	x	
NDB	x ^a	x ^a	x	x	x	
AfDB	x	x	x ^b	x	x	
EBRD						x ^h
EIB		x ^f	x ^g		x ^f	
IDB	x	x ^a	x ^b			
IDB Invest				x	x ^a	
IBRD & IDA	x	x	x ^c			
IFC					x	x ^d
Guarantee Agency						
MIGA						x ^e

Source: Institution's publicly available information and a survey conducted on May 2018.

Notes:

*IsDB did not answer the survey. AIIB reported that it is currently in the process of developing a guarantee product. It does not include all guarantee products offered by MDBs.

a. May be tailored to cover up to 100 percent of projects' costs.

b. Policy-based guarantee.

c. Payment guarantees and policy-based guarantees.

d. Full credit guarantee (FCG) and risk-sharing facility.

e. Political risk and credit enhancement.

f. Credit enhancement to eligible infrastructure projects through Project Bond Credit Enhancement (PBCE) guaranteed by the European Commission (e.g. European Fund for Strategic Investments - EFSI) or by a security package provided by the project promoters.

g. African Energy Guarantee Facility.

h. Policies do not single out specific instruments. EBRD may develop tailor-made products, such as liquidity facilities.

Bank-Type Guarantees

Sovereign Guaranteed (SG)

Most MDBs offer guarantees with a sovereign counter-guarantee (also called a sovereign counter indemnity) through their public-sector lending windows. A sovereign counter-guarantee is an agreement between the MDB providing the guarantee and the sovereign that, in the event there is a call on the guarantee, the sovereign will be obligated to repay the amount disbursed to fill the call to the MDBs. This means that no matter what gives cause to a guarantee payment, the sovereign is ultimately responsible for covering its financial costs. In case the sovereign does not honor its obligation under the sovereign counter-indemnity, the MDB can call cross default to the sovereign loan portfolio.

An SG guarantee (including PCG, PRG, or others) is typically initiated by the national government to provide credit support for an infrastructure project or transaction with private sector financing. In general, it reduces risks for the private financiers or sponsors a government's contractual or performance obligations. The private sector therefore benefits from the overall mitigation of risks, particularly those related to government actions known as political risk, by providing a credit

enhancement provided by the MDB's rating thereby allowing commercial banks to reduce the amount of risk capital they provision, thus lowering financing costs. The types of risks that can be covered are detailed below.

Policies vary by institution, however in many cases the national government is also responsible for the guarantee fee in an SG guarantee operation. Once issued, the guarantee may be first demand, unconditional, and irrevocable; even in the case the government falls behind in its payment obligations, calls on the guarantee will be filled by the MDB.

SG guarantees are well suited to cover risks that are better managed by the government, or that are endogenous to government actions that are broadly defined as political risks. This may encompass contractual and regulatory changes that negatively impact availability payments, revenues from user tariffs or demand, and administrative decisions that delay construction or affect a project's performance.

Non-Sovereign Guaranteed (NSG)

MDBs also offer guarantees through their NSG windows. The difference in relation to an SG guarantee is that it does not require a sovereign counter-guarantee, however NSG guarantees may require either a no-objection or an approval from the host government before being issued. In most cases an NSG guarantee is provided directly to the private sector (borrower or lender) who is responsible for paying the corresponding fees, which are set on a commercial basis. NSG guarantees may also be provided to governmental entities such as state-owned enterprises and subnational governments if they are eligible as a borrower under the MDBs' private sector window.

Types of Guarantees³⁴

Partial Risk Guarantees (PRG)

PRGs cover the risk of non-performance by the sovereign or a government-owned entity of certain contractual or performance obligations³⁵ undertaken in relation to a private party, which could ultimately trigger a debt payment default to creditors. PRGs may also cover a range of risks including but not limited to currency convertibility and transferability, political violence, breach of contract or expropriation. As such, PRGs could attract private financing in project finance transactions, particularly in sectors such as infrastructure, in which project success typically depends on certain government actions. PRGs have two additional characteristics. One, they tend to cover specifically identified risks, but not all risks.

³⁴ From an internal policy perspective and in order to build in flexibility, the World Bank has moved away from the PRG or PCG nomenclature and now uses the generic term "guarantee" instead. The IDB has also folded their PRG and PCG products into one single instrument called "flexible guarantee". That said, the principles set out in this section relating to PCGs and PRGs are still applicable to World Bank's and IDB's guarantees.

³⁵ Some political risks may be considered force majeure and therefore may not necessarily be a breaching of contractual obligations.

Partial Credit Guarantees (PCG)

Partial credit guarantees (PCGs) cover private lenders against default on a specific portion of debt regardless of the cause of default. Guarantee structure and coverage can be determined flexibly on a case-by-case basis at the level required by a specific debt instrument and the market. For example, PCGs often cover the back end of a loan to extend the tenor beyond what the commercial market would otherwise finance, but other structures are also possible.³⁶ PCGs allow the government and private-sector borrowers to achieve extended maturities, lower their interest rate costs, access higher amounts of commercial debt, and/or access to different markets. In most cases, PCGs (like PRGs) may be offered along with an MDB loan to the same borrower for the same project, or on a stand-alone basis.

PCGs credit-enhance all or a portion of the funding provided by private financiers, such as the repayment of loans, bonds or other debt financing instruments (scheduled or bullet).³⁷ As such, PCGs could support mobilization of private funds for project finance, financial intermediation, government borrowing from commercial lenders or government bond issues to finance public investment projects by improving financial terms & conditions, such as a longer maturity, more favorable pricing, or improved market access. PCGs can also be used to cover nonpayment risk under derivatives contracts like cross currency swaps that can be structured to hedge currency risk of eligible borrowers.

Flexible Guarantee

The IDB offer a single guarantee instrument which may cover credit risk, political risk, or some combination including policy-based guarantees. In the case of the IDB it is called “Flexible Guarantee Instrument”.

Policy-Based Guarantee

A sovereign guarantee can be issued as a counter-guarantee to a PRG or PCG that has been provide in support to a specific investment in a project or as a result of compliance by a sovereign with agreed policy reforms. In the latter case, it is called a policy-based guarantee, whereas the above-mentioned guarantees may also be referred to as project-based guarantees (World Bank Group, 2016). Most institutions offering SG credit guarantees (including the AfDB, ADB, IBRD/IDA, and IDB) offer a policy-based guarantee as a subset of either their overall loan guarantee policy or their PCG product because a policy-based guarantee covers a stream of payments.

Full Credit Guarantee (FCG)

ADB and IFC offer PCGs and full credit guarantees (FCGs) as a credit enhancement mechanism for debt instruments (bonds and loans) issued mainly by its private sector clients (World Bank

³⁶ The structure of this type of coverage may vary. Some guarantees offer a lumpsum guarantee coverage that does not reduce with the outstanding balance of the loan. Others reduce proportionally with the outstanding balance of the loan.

³⁷ Given this flexibility, PCGs cover any category of risk, including financing risk, construction risk, operation risk, fuel supply risk, hydrologic risk and other project risks, but with the trigger being specifically linked to a non-payment event.

Group, 2016). Both products provide an irrevocable promise by IFC and ADB to pay all shortfalls of principal and/or interest up to a pre-determined amount.

Payment Guarantees

Under its previous policy framework, the World Bank could only guarantee commercial loans. To meet the needs of infrastructure projects where bankability is constrained by the credit risk of project counterparties, such as offtakers or, in the case of termination payments, local utilities and host governments, guarantees can now run in favor of the direct beneficiaries of a sovereign undertaking, such as the project company, rather than just being in favor of lenders. The scope of World Bank's guarantees has been expanded to cover payment defaults in non-loan-related government payment obligations. The payment guarantees will help facilitate investment and serve clear development objectives under the same policy conditions that apply to World Bank's loans. The guaranteed obligation is a direct payment obligation of a government or a state-owned entity and would be subject to an adequate dispute resolution framework so as to avoid entangling the World Bank in the substance of a contractual dispute. Such guarantees can now be issued not only in favor of private entities, but also in favor of foreign public entities in an effort to promote cross-border, public-to-public operations.

Other Traits of Bank-Type Guarantees

In some institutions, although the credit and risk guarantees are called "partial", they may be tailored to cover up to 100 percent of total project costs irrespective of the events that gave cause to the default. This is the case of IDB's PCG. Other institutions, including the ADB, the AfDB and the IBRD/IDA, have explicit restrictions to providing 100 percent coverage. In the case of AfDB, policy revisions may take place in the near future to provide 100 percent guarantee coverage under certain circumstances.

Bank-type guarantees can be provided in local currency, a desirable trait for infrastructure projects that generally have revenues in local currency. They provide coverage for debt-related obligations, so equity and other investment risks are not covered. In SG operations, additional risk coverage for the MDB is provided by an indemnity agreement (i.e., a sovereign counter-guarantee), which makes the beneficiary government responsible for paying any debt incurred by the MDB in the event of claim. Regarding pricing, MDBs price guarantees regardless of country and project conditions, provided there is a sovereign counter-guarantee. The premium is the same for all types of projects and countries.

In sum, bank-type guarantees can be grouped in a relatively limited set of categories, but, at the same time, they can be considerably flexible and adaptable to different challenges and circumstances that may be dictated by the economic, social and political characteristics of their client countries, or by the bespoke nature of infrastructure projects that require tailor-made credit enhancement solutions. Therefore, when it comes to specific cases, MDBs may approach differently risk mitigation under a common set of products and definitions, according to their respective mandates and clients' needs. This may give the impression that MDB products are complex and heterogenous. However, the underlying risks and instruments are based on a common set of principles and definitions. Policies also give much flexibility for guarantees to be

tailored on a case-by-case basis. This enables MDBs to provide the most effective coverage according to their clients' needs³⁸.

Insurance-type products

MIGA offers insurance-type products (political risk insurance and credit enhancements for non-honoring of financial obligations). Insurance-type products are similar to MDB bank-type guarantees and may cover the same risks eligible for coverage under PRGs and PCGs. Many of the characteristics of MIGA's Insurance-type products are shared by NSG PRGs. Generally, there are some significant differences as compared to bank-type products:

- First, insurance is typically a direct agreement between the claim beneficiary and the insurer to cover potential losses. Bank-type guarantees, by contrast, are typically an agreement by the guarantor and a government or private entity to cover their debts or obligations to a third party (most often private investors or commercial lenders³⁹).

In other words, insurance is something a private investor would purchase to cover specific types of losses on their own portfolio. A bank-type guarantee is something a government or private entity would purchase to provide an enhanced credit profile (of a rated issuance to finance an infrastructure project, for example) to attract lenders/investors.

- Second, as a direct result of the first difference, the pricing is different. In the case of insurance, the underlying risk for insurer (guarantor) is a loss event which results in the payout of a claim, therefore pricing is based on the probability of loss.⁴⁰ MIGA, for example, bases the pricing of its guarantee premiums on "country and project risk".⁴¹ The insurer may also purchase re-insurance based on that probability of loss. In the case of a bank-type guarantee the underlying risk is typically the credit risk associated with the obligor which is why, for example, guarantees with a sovereign counter-guarantee carry loan-equivalent pricing..

Political Risk Insurance

Political risk insurance is an insurance-type financial product issued to investors, including lenders and holders of various types of agreements, based in a country to provide coverage for one or more specific political risks associated with investments⁴² in a foreign country. The Convention

³⁸ MDBs are discussing ways to improve understanding of MDB guarantee products and increasing its uptake under SIGMA. A similar exercise is being carried out by the AfDB and the ADB through the Initiative for Risk Mitigation in Africa. The initiative includes capacity building on the use of risk mitigation and credit enhancement products directed at government and the private sector and it is not limited to the guarantee instruments provided by one MDB. It encompasses the full range of instruments available in the market.

³⁹ This is not true for most of ADB's PCGs and PRGs.

⁴⁰ This is not the case for some bank-type NSG guarantees, which are not necessarily secured or counter-indemnified and may be structured and priced similarly to insurance-type guarantees.

⁴¹ Source: <https://www.miga.org/investment-guarantees/overview/terms-and-conditions>.

⁴² Forms of eligible investments include equity interests, shareholder and non-shareholder loans, loan guarantees, as well as certain types of transactions in which the remuneration of the investor largely

establishing MIGA,⁴³ the only MDB presently providing this insurance-type political risk coverage, establishes four classes of political risk eligible for coverage: (1) currency transfer, (2) expropriation or similar measures, (3) breach of contract, and (4) war and civil disturbance. The terms and conditions for each type of loss are specified in the contract.

Credit Enhancement

In addition to coverage of political risk, insurance-type policies may cover the non-honoring of financial obligations of a government entity (sovereign or subnational) or a state-owned enterprise in order to provide a protection against non-payment. Because the coverage generally does not require an arbitral decision for compensation, it may also be used by commercial banks as a credit enhancement to lower amounts of risk capital that have to be provisioned. This insurance-type product is similar to a partial credit guarantee.

Unique Characteristics of MIGA

Over half of the gross value of guarantees issued by MDBs over 2012–2016 were issued by the MIGA. The MIGA is an organization with a unique structure and it offers unique financial products compared to the other MDB entities.

Unique aspects of the MIGA structure and coverage:

- Focuses exclusively on issuing guarantees, not on structuring projects
- Focus on foreign direct investment (only cross-border investments are eligible for coverage)
- May cover equity and debt, as well as other types of eligible investments, while other MDBs are restricted to debt instruments.

depends on the revenues or production of the investment project (e.g., technical assistance contracts, management contracts, operating leases, profit sharing contracts, and franchising agreements).

⁴³ Convention establishing the Multilateral Investment Guarantee Agency.

Bibliography

Convention establishing the Multilateral Investment Guarantee Agency, 11 October 1985, 1508 UNTS 99 (I-26012). Available at:

<https://treaties.un.org/Pages/showDetails.aspx?objid=08000002800c7c17>.

Cappon, A. and Stevens, D. 2018. "The Monolines are Dead! Long Live the Monolines! Reconsidering the Record – and the Promise -- of this 'Failed' Business Model". Presentation made during the Expert Roundtable on MDB Infrastructure Guarantees. October. Washington, D.C.

Inter-American Development Bank (IDB). 2016. "Proposed Policy for a Flexible Guarantee Instrument for Sovereign Guaranteed Operations." Available at: <https://www.iadb.org/en/idb-finance/guarantees>

Estache, A. and Fay, M. 2010. "Current Debates on Infrastructure Policy," Policy Research Working Paper No. 57748, World Bank, Washington, DC.

FitchRatings (Fitch). 2018a. "Rating Criteria for Infrastructure and Project Finance". Global Infrastructure & Project Finance. July 27.

FitchRatings (Fitch). 2018b. "Rating Approach to IDB & IDB Invest TCG for Renewable Projects in Brazil". Presentation made during the Expert Roundtable on MDB Infrastructure Guarantees. October. Washington, D.C.

Flyvbjerg, B. 2017. "The Iron Law of Megaproject Management". In B. Flyvbjerg, ed., *The Oxford Handbook of Megaproject Management*. Oxford: Oxford University Press.

Global Infrastructure Hub (GIH). 2017. "Global Infrastructure Needs to 2040". Available at <https://outlook.gihub.org>.

Halvorson-Quevedo, R. and Mirabile, M. 2014. "Guarantees for Development". External Finance for Development. March. Organization for Economic Co-operation and Development Available at: <https://www.oecd.org/dac/financing-sustainable-development/GURANTEES%20report%20FOUR%20PAGER%20Final%2010%20Mar%2014.pdf>

Humphrey, C and A. Prizzon. 2014. *Guarantees for Development: A Review of Multilateral Development Bank Operations*. London: Overseas Development Institute.

Inter-American Development Bank (IDB). 2017. "Mobilizing Capital for Infrastructure: Lessons for Governments." Washington, D.C.

Ketterer, J. and Powel, A. 2018. "Financing Infrastructure: On the Quest for an Asset Class." September. Discussion Paper No IDB-DP-622. Inter-American Development Bank, Washington, DC.

McKinsey Global Institute. 2016. "Bridging Global Infrastructure Gaps." <http://www.mckinsey.com/industries/capital-projects-and-infrastructure/our-insights/bridging-global-infrastructure-gaps>

Moody's Investors Service. 2017. "Default and Recovery Rates for Project Finance Bank Loans, 1983-2015." March 6. Available at: <https://www.globalinfrastructure.org/sites/gif/files/Moody%27s-Project%20Finance%20Default%20Study%20%281983-2015%29.pdf>.

Organization for Economic Co-operation and Development (OECD). 2014. "Guarantees for Development" Annual Survey of Large Pension Funds and Public Pension Reserve Funds: Report on Pension Funds' Long-Term Investment". OECD, Paris.

Organization for Economic Co-operation and Development (OECD). 2015a. "Annual Survey of Large Pension Funds and Public Pension Reserve Funds: Report on Pension Funds' Long-Term Investment". OECD, Paris.

Organization for Economic Co-operation and Development (OECD). 2015b. "Mapping of Instruments and Incentives for Infrastructure Financing: A Taxonomy." OECD, Paris.

Multilateral Investment Guarantee Agency (MIGA). 2018. "Management's Discussion & Analysis and Financial Statement." June 30.

Pereira dos Santos, P. and Kearney, M. 2018. *Multilateral Development Banks' Risk Mitigation Instruments for Infrastructure Investment*. Washington, DC: Inter-American Development Bank.

Serebrisky, T., Suarez-Alemán, A. & Pastor, C. 2018. "Public Infrastructure: Less Waste for Better Building". In A. Izquierdo, C. Pessino, & G. Vuletin, eds., *Better Spending for Better Lives: How Latin America and the Caribbean Can Do More with Less*. Development in the Americas. Washington, D.C.: Inter-American Development Bank. Available at: <https://flagships.iadb.org/en/DIA2018/Better-Spending-for-Better-Lives>.

Standard & Poor's (S&P). 2018. "It's Time for a Change: The Role of Credit Enhancement in Mobilizing Private Investment in Infrastructure." Global Ratings. September 28.

World Economic Forum (WEF). 2015. "Strategic Infrastructure Mitigation of Political & Regulatory Risk in Infrastructure Projects".

World Economic Forum WEF. 2016. "Risk Mitigation Instruments in Infrastructure Gap Assessment."

World Bank Group. 2016. "World Bank Group Guarantee Products Guidance Note." Available at: <https://ppp.worldbank.org/public-private-partnership/library/world-bank-group-guarantee-products-guidance-note>.

Appendix 1: MDB Product Offerings

African Development Bank

Product Mapping

African Development Bank Product Mapping

Counter-Guarantee	SIGMA Taxonomy Classification	Institution's Financial Products
SG	Partial Risk Guarantee Partial Credit Guarantee	Partial Risk Guarantee Partial Credit Guarantee
NSG	Partial Risk Guarantee Partial Credit Guarantee	Partial Risk Guarantee* Partial Credit Guarantee*

*Offered through African Development Fund

Additional Information from AfDB

SG Products

(Source: <https://www.afdb.org/en/projects-and-operations/financial-products/african-development-bank/guarantees/>)

Through its guarantee product, the Bank seeks to leverage its preferred creditor status to help eligible borrowers to obtain financing from third party lenders, including the capital markets. Guarantees also enable borrowers to obtain financing in their local currency where the Bank is not able to provide such financing directly from its own resources. The Bank's guarantees are classified into two categories:

Partial Credit Guarantees (PCGs); and

Partial Risk Guarantees (PRGs).

PCGs cover a portion of scheduled repayments of private sector loans or bonds against all risks. The PCG can be utilized to support mobilization of private funds for project finance, financial intermediation and policy-based finance. PRGs on the other hand, cover private lenders against the risk of a government, or a government-owned agency, failing to perform its obligations vis-à-vis a private sector project. Such risks could include political force majeure, currency inconvertibility or unavailability, regulatory risks (adverse changes in law), and various forms of breach of contract. AfDB's breach of contract does not require an arbitration award for compensation. All PRGs and PCGs to sovereign entities require a sovereign counter-indemnity whereby a host country agrees to reimburse the appropriate Bank Group entity issuing the guarantee for any amount paid under the guarantee following a default.

NSG Products

(Source: <https://www.afdb.org/en/projects-and-operations/financial-products/african-development-fund/guarantees/>)

African Development Fund Partial Risk Guarantee

As a means of stimulating additional private sector investments in low income countries, the African Development Fund (ADF) introduced the Partial Risk Guarantee (ADF-PRG) instrument as part of the Twelfth General Replenishment of the ADF (ADF-12) to do two things. First, to leverage resources from the private sector and other co-financiers for ADF countries, including fragile states. Second, to incentivize governments to undertake policy and fiscal reforms necessary to mitigate performance-related risks. The ADF-PRG insulates private lenders against well-defined political risks related to the failure of a government or a government-related entity to honor certain specified commitments. Such risks could include political force majeure, currency inconvertibility, regulatory risks (adverse changes in law), and various forms of breach of contract. It is a leveraged instrument that consumes only a fraction of the country's Performance Based Allocation (PBA) but requires a counter-indemnity from the beneficiary member country, in which the country agrees to reimburse the Fund for any amount paid under the guarantee.

African Development Fund Partial Credit Guarantee

Starting with ADF-13, Partial Credit Guarantees (PCGs) have been added to the suite of ADF instruments. The ADF PCG is an instrument designed to address the challenges faced by ADF countries that are performing well economically and state-owned Enterprises in their quest to mobilize both domestic and external commercial financing for developmental purposes. The product serves to partially guarantee debt service obligations of low-income countries (LICs) and well performing State Owned Enterprises in LICs. Similarly, to the ADF PRG, the ADF PCG is leveraged four times (4x) and therefore allows well performing LICs and SOEs to catalyze more financing at more attractive terms to finance their development needs. ADF countries are eligible for PCGs only if they are classified as countries with low risk of debt distress (green light countries based on the World Bank / IMF Debt Sustainability Framework traffic light country classification) and deemed to have adequate debt management capacity. Subject to meeting some defined stringent eligibility criteria, the ADF PCG will also be available to SOEs in ADF countries with low to moderate risk of debt distress (green and yellow light countries, respectively, based on the World Bank / IMF Debt Sustainability Framework traffic light country classification). The ADF PCG also requires a counter-indemnity from the beneficiary member country in which the country agrees to reimburse the Fund for any amount paid under the guarantee.

Asian Development Bank Product Mapping

Asian Development Bank Product Mapping

Counter-Guarantee	SIGMA Taxonomy Classification	Institution's Financial Products
SG	Partial Risk Guarantee	Political Risk Guarantee
	Partial Credit Guarantee	Partial Credit Guarantee
NSG	Partial Risk Guarantee	Political Risk Guarantee
	Partial Credit Guarantee	Partial Credit Guarantee

Additional information from ADB

SG and NSG Products

(Source: <https://www.adb.org/site/private-sector-financing/commercial-cofinancing/guarantees>)

To catalyze capital flows into and within its developing member countries for eligible projects, ADB extends guarantees for eligible projects which enable financing partners to transfer certain risks that they cannot easily absorb or manage on their own to ADB.

ADB's guarantees support infrastructure projects, financial institutions, capital market investors and trade financiers, and cover a wide variety of debt instruments. Guarantees may provide either comprehensive (financial risk) or limited coverage, including political risk.

Guarantees can be provided when ADB has a direct or indirect participation in a project or related sector, through a loan, equity investment or technical assistance.

ADB offers two primary guarantee products—a partial risk guarantee and a partial credit guarantee—both designed to mitigate risk exposure of financing partners. When issued under the Sovereign window, such products benefit from a sovereign guarantee/counter-indemnity.

Partial risk guarantee

Guarantees covering political risk are designed to facilitate cofinancing by providing financing partners with coverage against specifically defined political (or sovereign) risks.

ADB's partial risk guarantee (PRG) is primarily designed to facilitate private sector development, either through public or private sector projects. PRGs are well suited where commercial lenders are prepared to accept commercial (or credit) risks of a project, but not the political risks.

Risks covered include transfer restriction, expropriation, political violence, contract disputes, and non-honoring of a sovereign obligation or guarantee.

Partial credit guarantee

ADB provides partial credit guarantees (PCGs) to lenders of most forms of debt. These include commercial bank loans, loans made by shareholders, loans guaranteed by shareholders or third parties, capital market debt instruments, bonds, financial leases, letters of credit, promissory notes, and bills of exchange.

PCG covers nonpayment by the borrower or issuer (for any reason) on the guaranteed portion of the principal and interest due. This guarantee product is principally applied to financial services and capital markets (e.g., banking, leasing, insurance, and funds); and infrastructure (e.g., power, transportation, water supply and waste treatment, and telecommunications). ADB may consider other sectors on a case-by-case basis.

Partial credit guarantees can be applied to loans or other debt instruments issued by private and public-sector projects (limited recourse financings), public–private partnerships, corporates, as well as (sub) sovereign entities.

European Bank for Reconstruction and Development

Product Mapping

EBRD Product Mapping

Counter-Guarantee	SIGMA Taxonomy Classification	Institution's Financial Products
SG	Partial Risk Guarantee Partial Credit Guarantee	
NSG	Partial Risk Guarantee Partial Credit Guarantee	Case-by-case: policy does not identify specific instruments

Additional information from EBRD

<https://www.ebrd.com/downloads/research/factsheets/guidetofinancing.pdf>

The EBRD provides various types of guarantees. These range from all-risk guarantees, whereby the Bank covers lenders against default regardless of the cause, to partial risk-specific contingent guarantees covering default arising from specified events.

In all cases the maximum exposure must be known and measurable and the credit risk must be acceptable. Precise legal definitions of the events guaranteed and pricing are handled on a case-by-case basis.

EBRD policy does not identify specific guarantee instruments (like PCGs and PRGs) for infrastructure projects. The guarantee definition is open-ended permitting the creation of a wide range of instruments which normally are considered for approval on a case by case basis.

Some examples are:

- The two facilities created under Elazig Hospital PPP.
 - Construction Support Facility – unfunded credit facility (similar to a standby letter of credit) to provide liquidity and backstop EPC contractor default on its obligations.
 - Revenue Support facility – subordinated unfunded credit facility in a form similar to a DSRA, ensuring timely debt service in case of grantor/offtaker default on its payment obligations. To be used jointly with political risk insurance providers.
- Indirectly, EBRD also provides guarantees to commercial banks financing infra projects.
 - Unfunded risk sharing facilities on commercial banks' loans (up to EUR 20m and up to 10 years) where EBRD bear 50% of risk of loss.
 - EBRD is also currently working on a proposal to provide guarantees (jointly with EU under a fund structure) to commercial banks with respect to loans provided to water operators (under approval process)

In addition, EBRD also provides trade finance guarantee facilities (e.g. letters of credit) issued to a partner bank to cover exports /imports in the EBRD's countries of operation. The guarantee covers 100% of underlying trade finance instruments – covering payment, political and currency risks and with a maximum tenor of 2 years.

European Investment Bank

Product Mapping

EIB Product Mapping

Counter-Guarantee	SIGMA Taxonomy Classification	Institution's Financial Products
SG	Partial Credit Guarantee Other	Project Bond Initiative* African Energy Guarantee Fund**
NSG	Partial Credit Guarantee	Project Bond Initiative

* And similar products under the European Fund for Strategic Investments (EFSI)

** First Sovereign Guarantee by Investment Facility under the Cotonou Agreement to provide risk mitigation and credit enhancement solutions for investment insurance exposure in renewable energy projects financed by the private sector in African countries.

Additional information from EIB

<http://www.eib.org/products/blending/guarantees/index.htm>

The EIB guarantee products for infrastructure projects can benefit from a direct guarantee from sovereigns (i.e. EU Member States) or from a direct guarantee from non-sovereigns via security packages provided by project promoters. Depending on the resources used, in some cases the project may benefit from both security packages and sovereign guarantees provided by the European Commission, e.g. through the European Fund for Strategic Investments (EFSI).

In general, EIB guarantees for infrastructure projects to my knowledge are mainly in EU Member States (including some emerging countries from EU13) and usually they are covered via security packages covering potential losses. However, the projects may be also backed by the EC and therefore be fully or partially protected by sovereign guarantees.

In EU countries, the EIB does not provide PRG for infrastructure projects. Outside the EU, the [Africa Energy Guarantee Facility](#) is the first-of-a-kind product offering risk mitigation and credit enhancement on a portfolio of insurances to renewable energy projects.

Credit guarantees for infrastructure projects are offered inside EU under the [Project Bond Initiative](#) in both its funded and unfunded versions. Similar products can be used under EFSI. The Bank does not offer PCG to specific infrastructure projects outside EU where it mainly provides direct loans or equity investments in infrastructure funds to provide financing to infrastructure projects.

Inter-American Development Bank Group

Product Mapping

IDB Group Product Mapping

Counter-Guarantee	SIGMA Taxonomy Classification	Institution's Financial Products
SG	Partial Risk Guarantee	Flexible Guarantee Instrument
	Partial Credit Guarantee	Flexible Guarantee Instrument
	Other*	Flexible Guarantee Instrument
NSG	Partial Risk Guarantee [†]	Risk-sharing Guarantees
	Partial Credit	
	Guarantee [†]	Credit Guarantees

*Policy based guarantee.

[†]Offered through IDB Invest

Additional Information on IDB Group Products

SG Products (Offered through the IDB)

(Source: <https://www.iadb.org/en/idb-finance/guarantees>)

The IDB offers guarantees to enhance financing of sovereign with sovereign counter-guarantees. IDB guarantees improve financial terms in project financing and capital market instruments and help promote investment in Latin America and the Caribbean.

General aspects of guarantees:

Types of guarantees: partial credit guarantees or political risk guarantees.

Uses of guarantees: enhancement of bond issues, project finance, asset-backed securities, securities backed by future flows, structured trade transactions.

Amounts: calibrated to optimize impact on the underlying instrument's rating.

Tenor: maximum guarantee tenor of up to 20-years for policy-based interventions with a maximum weighted average life (WAL) of 12.75 years, and up to 25 years for investment operations with a maximum WAL of 15.75 years.

Fees: pricing neutrality applies between guarantees and loans.

Sovereign Counter-Guaranteed (SCG) Guarantees

The Flexible Guarantee Instrument (FGI) is the IDB's guarantee policy for sovereign guaranteed operations. The FGI is a single platform that allows borrowing member countries, subnationals,

and local governments to structure partial credit guarantees and partial risk guarantees, both for investment projects and policy-based interventions.

For more information, see [Flexible Guarantee Instrument for Sovereign Guaranteed Operations](#) and [Flexible Guarantee Instrument for Concessional Sovereign Guaranteed Operations](#).

NSG Products (Offered through IDB Invest)

(Source : <http://www.iic.org/en/what-we-offer/guarantees-0#.WzVgl6QvyUk>)

IDB Invest partners with the private sector across Latin America and the Caribbean to promote growth and competitiveness, while providing diverse financing options. Depending on a client's profile, it may benefit from either a partial credit guarantee or risk-sharing guarantee.

Credit Guarantees

IDB Invest offer credit guarantees, or credit enhancements, that improve the credit profile of debt instruments, such as bonds and loans, to enable our clients to diversify their funding sources, extend maturities, reduce risks and obtain financing from third parties in their local currency or in U.S. dollars. They can range from \$5 million to \$200 million and can go up to 20 years.

Risk-sharing Guarantees

IDB Invest offers risk-sharing guarantees, or loss-sharing arrangements with a private lending institution, which allows its clients to expand their portfolio and reduce risks while offering new products and services. IDB Invest shares second-loss tranche with our clients. Amounts can range from \$5 million to \$100 million and can go up to 4-10 years.

New Development Bank

Product Mapping

New Development Bank

Counter-Guarantee	SIGMA Taxonomy Classification	Institution's Financial Products
SG	Partial Risk Guarantee Partial Credit Guarantee	Partial Risk Guarantee Partial Credit Guarantee
NSG	Partial Risk Guarantee Partial Credit Guarantee	Partial Risk Guarantee Partial Credit Guarantee

Additional information from NDB

SG Products

A guarantee issued for a sovereign borrower will be treated as a sovereign-backed guarantee. The treatment of a sovereign-backed guarantee would be consistent with that of an equivalent sovereign loan offered by NDB.

Partial risk guarantee

PRGs offer political risk coverage to private lenders providing debt financing to an eligible borrower as defined in NDB's Policy on Guarantees. Public institutions operating on a commercial basis may also avail PRGs from NDB. The commercial risks under PRGs are fully borne by the lender. Political risks include contractual payment obligations to the borrower by a government, its agencies or a public entity, availability and convertibility of foreign exchange, changes in law, expropriation or nationalization, and against loss of investment in the event of war or civil disturbance.

Partial credit guarantee

PCGs offer full or partial risk coverage to the lender against all risks of the borrower.

World Bank Group

Product Mapping

World Bank Group Product Mapping

Counter-Guarantee	SIGMA Taxonomy Classification	Institution's Financial Products
SG	Partial Risk Guarantee	Loan guarantee
	Partial Credit Guarantee	Loan guarantee*
	Other	Payment guarantee
NSG	Partial Risk Guarantee [†]	n.a.
	Partial Credit Guarantee [†]	Partial Credit Guarantee and Full Credit Guarantee
	Other [†]	Risk-Sharing Facility
	Other [#]	Political Risk Insurance
	Other [#]	Credit Enhancement

*Including, Policy based guarantee.

[†]Offered through IFC.

[#]Offered through MIGA.

Additional Information on World Bank Group Products

(Source : <https://ppp.worldbank.org/public-private-partnership/library/world-bank-group-guarantee-products-guidance-note>)

Public sector instruments (IBRD and IDA)

An IBRD or IDA guarantee is specifically tailored to either the circumstances of the project and borrowing transaction being guaranteed (project-based guarantees), or the particular borrowing transaction of a government to meet fiscal needs (policy-based guarantees).

Policy-based guarantees provide risk mitigation to commercial lenders with respect to debt service payment defaults by a government, when the proceeds of the financing are applied to budgetary support in the context of development policy operations.

Project-based guarantees are provided in the context of specific investment projects where governments wish to attract private financing (equity and/or debt). They are designed to provide risk mitigation with respect to key risks that are essential for the viability of the investment. Project-based guarantees can be granted to public sector or private sector projects. World Bank guarantees for public sector projects typically cover the risk of non-payment by a public sector (government-owned and/or controlled) entity to a private or foreign commercially acting entity under a commercial or financing contract. World Bank guarantees for private sector projects generally cover government-related risks, which are risks within the control of the government and public entities.

There are two main types of project-based guarantees:

- **Loan guarantees** cover defaults of debt service payments and could be granted for public sector or private sector projects as follows:
 - Loan guarantees for public sector projects could cover defaults of debt service payment, usually by a public sector borrower, regardless of the cause of the debt service default. This type of guarantee was previously known as partial credit guarantee (PCG).
 - Loan guarantees for private sector projects could protect commercial lenders financing a private sector project from debt services defaults caused by government actions or inactions. This type of guarantee was previously known as a partial risk guarantee (PRG).
- **Payment guarantees** cover payment defaults of non-loan-related government payment obligations (e.g., recurring off-taker payments under a power purchase agreement or early termination payments under a concession agreement), to private entities or a foreign public entity where such payment obligations (arising from contract, law, or regulation) require credit enhancement. Payment obligations include agreed compensations to private entities or a foreign public entity for losses caused by non-performance of the government or public entities under commercial contracts as stipulated in the respective guarantee agreement.

IFC non-sovereign guaranteed instruments

Typical IFC guarantee products include but are not limited to the following:

In terms of guarantees relevant to PPPs, IFC offers partial credit guarantees (PCGs) and full credit guarantees (FCGs) as a credit enhancement mechanisms for debt instruments (bonds and loans) issued by its mostly private sector clients. Both products provide an irrevocable promise by IFC to pay all shortfalls of principal and/or interest up to a pre-determined amount. Typically, the IFC guarantee, whether full or partial, covers creditors irrespective of the cause of default.

In the case of PCGs, the guarantee is structured to cover a portion of the guaranteed instrument's total debt service payment, subject to a maximum cumulative payout equal to the guarantee amount. The guarantee amount may be expressed as a percentage of principal and amortizes in proportion to the bond or loan. In specific circumstances, this percentage can increase or decrease in the later years of the debt obligation, depending upon the needs of the borrower or creditors.

IFC's PCG can be denominated in either local currency (for domestic transactions) or foreign currency (for cross-border transactions). Local currency partial guarantees are most advantageous for a company or project that has local currency revenues but lacks access to local currency financing of the desired tenor. A PCG can help avoid an undesirable foreign exchange mismatch on its balance sheet by allowing it to obtain local currency financing. Cross-border partial guarantees are best for a client company that cannot access international markets on its own because of the high-risk premium associated with the country in which it is domiciled. By mitigating this country risk, an IFC PCG may allow a client to gain access to international markets.

IFC may offer local currency FCGs in countries for which IFC does not currently have the ability to provide local currency financing through the use of swap markets or other means. The full guarantee acts as a synthetic borrowing and on-lending for IFC, providing the domestic lender with a AAA quality credit coverage for their guaranteed loan, and the borrower with term financing in local currency.

In addition to the guarantee products described above, IFC also offers a portfolio credit management product called a risk-sharing facility (RSF). RSFs are typically most useful for client financial institutions that wish to begin, or increase, their lending to certain specific sectors (such as SMEs, education, or energy efficiency projects) that IFC believes to be highly developmental. Through provision of an RSF, IFC shares the credit risk of the targeted portfolio of loans, which remain on the lender's balance sheet. Should losses on the guaranteed loan portfolio exceed a certain percentage of the portfolio (the "first loss" amount), IFC will reimburse the lender for the stipulated portion of any additional incurred losses.

Although not a separate product category, IFC also provides credit enhancement to capital markets securitizations through use of its guarantee products. Typically, IFC guarantees a portion of the senior debt tranche in a securitization structure, thereby creating a synthetic mezzanine tranche that boosts the credit quality (and rating) of the senior debt tranche.

MIGA non-sovereign guaranteed instruments⁴⁴

To this end MIGA offers political risk insurance (PRI) to facilitate and encourage the flow of funds from developed to developing member countries and among developing countries. MIGA supports foreign private and public sector investors that operate on a commercial basis in cross-border investments. In exceptional circumstances, upon the joint application of the investor and the host country, MIGA may also offer coverage to local investors, provided that the assets invested are transferred from outside the host country.

In general, the main differences between the IBRD/IDA guarantee products and the MIGA guarantees are that (i) the IBRD/IDA guarantees require a counter-guarantee of the host government, creating a direct contractual link with the host country relating to the project, while MIGA requires host country approval before issuing a guarantee, (ii) MIGA pricing is tailored to the specific transaction, and (iii) MIGA may reinsure, while the World Bank does not sell down or syndicate its guarantee. Also, the IBRD/IDA guarantees only directly cover debt instruments, while MIGA covers equity as well as debt instruments. There are also specific differences relating to the forms and types of risks covered.

MIGA provides coverage against the traditional four political risks specifically described in its Convention:

1. currency inconvertibility and transfer restrictions,
2. expropriation and similar measures,

⁴⁴ For more details on insurance-type products offered by MIGA, see subsection on insurance-type products.

3. war and civil disturbance, and

4. breach of contract.

In addition, MIGA provides credit enhancement solutions by covering the risks of non-honoring of sovereign financial obligations by a host government (NHSFO) and non-honoring of financial obligations by state-owned enterprises (SOEs) or public authorities of the host country (NH-SOE).

MIGA's pricing of its guarantees is a function of country and project risks and administrative costs associated with the guarantee.

The types of investments that can be insured by MIGA include:

a. equity investments,

b. shareholder loans,

c. non-shareholder loans and other forms of debt,

d. loan guarantees provided by holders of equity in the relevant enterprise, and

e. non-equity direct investments, such as management contracts, engineering, procurement and construction contracts, turn-key contracts and related performance bonds and franchising and licensing agreements.

A MIGA guarantee may cover any such investment types for one or more of the risks mentioned above, depending on the structure of the project and the investor's needs. In addition, all loans, loan guarantees, and other forms of debt instruments, including those issued by shareholders of the project, must have a minimum maturity of more than one year.

Appendix 2: Case studies

The following cases were presented at the Expert Roundtable on MDB Infrastructure Guarantees, hosted by the IDB in its headquarters in Washington D.C. on October 1st. This appendix summarizes the presentations made and the main aspects of the transactions. To provide a general framework on the risks involved, the definitions of risks used were those proposed by the OECD.

OECD (2015) provides the following classification of risks in infrastructure:

Risks linked to investment in infrastructure projects can be differentiated by their source. Three broad categories can be identified, namely:

1. Political and regulatory risks: Arise from governmental actions, including changes in policies or regulations that adversely impact infrastructure investments. Such actions may be broad in nature (like convertibility risk) or linked to specific industries or PPP contracts. In some cases, this risk may emerge from the behavior of government contracting authorities. Political risks can be highly subjective, difficult to quantify, and therefore difficult to price into infrastructure finance.
2. Macroeconomic and business risks: Arise from the possibility that the industry and/or economic environment is subject to variation. These include macroeconomic variables like inflation, real interest rates and exchange rate fluctuations. An asset's exposure to the business cycle, namely, shifts in demand is a principle business risk of the asset. Finance risks (such as borrowing rate fluctuations) are also a major part of business risk.
3. Technical risks: Determined by the skill of the operators, managers and related to technical features of the project such as construction complexity and technology.

The risks associated with a specific infrastructure project generally arise from the nature of the underlying asset itself, contracts with the public sector, and its exposure to the environment in which it operates. The magnitude of a risk varies depending on the country (and its underlying investment climate), sector (and its institutional maturity) and project (and its complexity).

Risks also vary across the life-cycle of the project, which can be divided into project development phase (before submission of the bid and financial close), construction phase, operational phase and termination phase. Certain risks may only be present at certain stages of project finance, while others may be present at all stages. Some investors perceive a higher risk in the first phases of the project, i.e. bidding process and construction. These considerations affect the optimum risk allocation. Certain political and regulatory risks, though material in the event of occurrence, are closer to the realm of subjective risks. For instance, the risk of a new government coming to power and changing relevant PPP legislation creates uncertainty and it is difficult to price. A distinction between sovereign risk – the general risk that market conditions and creditworthiness change at

the national or municipal level – and political risk at the project level should be made. Government bond yields or credit default swaps on traded government issued debts are efficient means to price sovereign risks into infrastructure finance. Other political and regulatory risks that are more specific to infrastructure finance are more difficult to correctly price and would not be completely captured by sovereign spreads. Table 1 in the document contains those political risks that are most associated with infrastructure finance.

For further information on the cases or specifics of guarantee instruments at each institution please contact:

Institution	Name	E-mail
Asian Development Bank	Bart Raemaekers	braemaekers@adb.org
African Development Bank	Max Magor Ndiaye	m.m.ndiaye@afdb.org
European Bank for Reconstruction and Development	Gonçalo Correia	correiaG@ebrd.com
European Investment Bank	Carlota Cenalmor	c.cenalmor@eib.org
Inter-American Development Bank	Daniel Fonseca	danielfo@iadb.org
Inter-American Investment Corporation (IDB Invest)	Rafael Matas Trillo	rafaelma@iadb.org
World Bank	Richard MacGeorge or Anthony Molle	rmacgeorge@worldbank.org amolle@worldbank.org

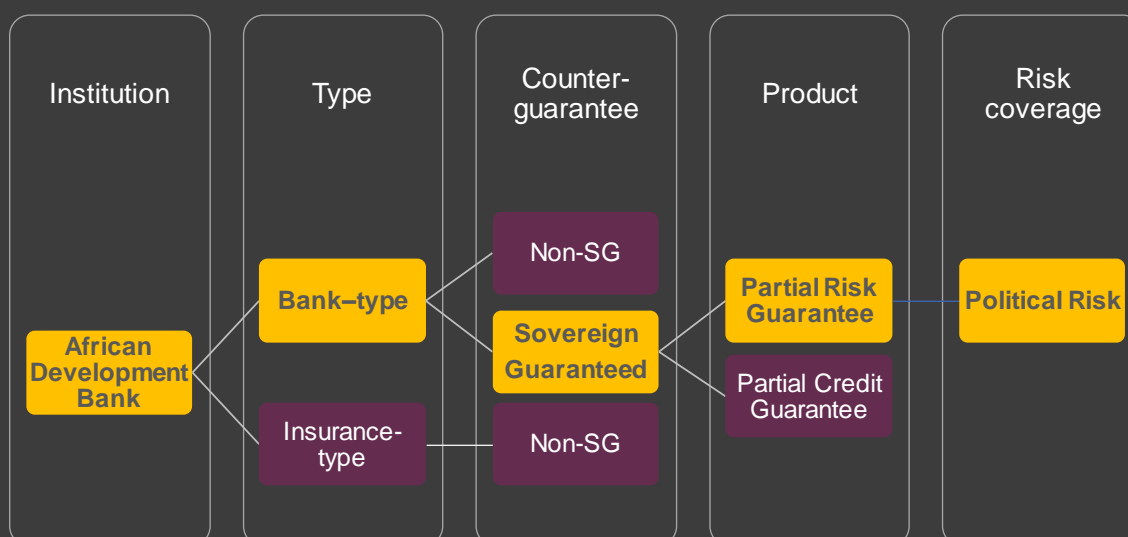
Project	Lake Turkana Windfarm, 2014
Country	Kenya
Institution	African Development Bank

A. WHAT WAS THE PROBLEM?

- The Lake Turkana Wind Power Project involved the construction and operation of a 310 Mega Watt wind farm, located in northern Kenya, near Lake Turkana.
- The project cost was estimated around EUR625.1 million, including EUR149.6 million equity and preference shares. The African Development Bank acted as Mandated Lead Arranger to syndicate EUR435.5 million senior debt and EUR40 million subordinated debt.
- The Government of Kenya had several obligations vis-à-vis the Turkana project articulated in a letter of support, including the delivery of a 428 km transmission line to be connected to the national grid.
- A delay in the line would implicate that required revenues for debt servicing would not be available, despite the generation of power by the Turkana project.

B. WHAT WAS THE SOLUTION?

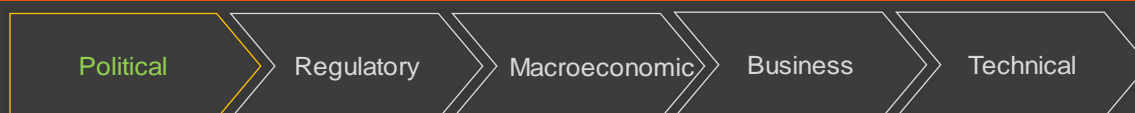
- To mitigate risks associated with potential delays in the construction of the publicly-owned and managed transmission line and to facilitate the participation of investors and lenders, the African Development Bank approved in 2013 a Partial Risk Guarantee in support of the Turkana project.
- The Partial Risk Guarantee had a Government counter-indemnity and was signed in December 2014. It was backed by a standby letter of credit opened by a commercial bank at the request of the Government to the benefit of LTWP. The Partial Risk Guarantee was provided in case there was a delay in the construction of the T-Line and the Government did not honor the delay payments. Turkana can draw on the letters of credit to service its debts and other operational costs. If the letter of credit is drawn, the Government has one year to reimburse the letter of credit and if the Government fails to do so, the letter of credit can Bank call the African Development Bank Partial Risk Guarantee.
- The Partial Risk Guarantee covers up to EUR20 million, the equivalent of four months' worth of payment obligations for up to five years maturity.



C. IMPACTS – HOW DID IT AFFECT THE COST, TENOR OF THE TRANSACTION AND THE AMOUNTS MOBILIZED?

- The main impact of the guarantee was to crowd-in investors and lenders in the largest greenfield wind power public-private partnership (PPP) project in Africa for an investment of EUR625.1 million.
- The guarantee facilitated the syndication of a long tenor (15 years) of senior and subordinated debt for the project.
- It also allowed the Government to get a 5-year commitment period and an interest rate that considers the guarantee from the African Development Bank.

D. WHICH RISKS DID IT ADDRESS?

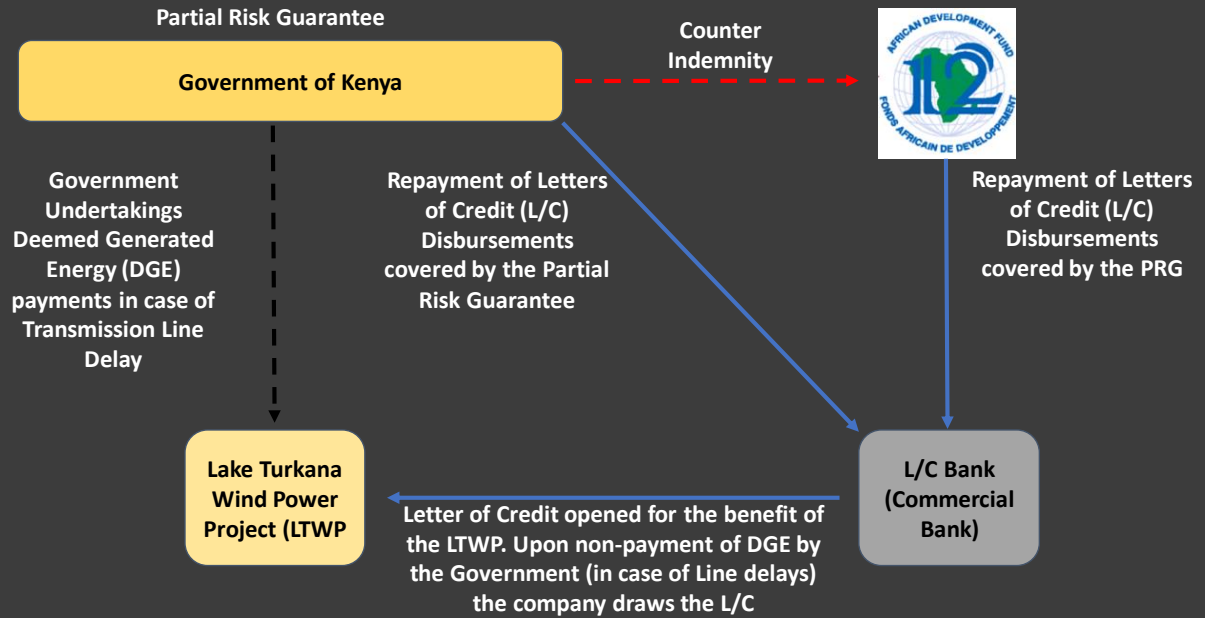


E. WHO BENEFITED AND HOW?

Investors	Lenders	African Development Bank	Government
<ul style="list-style-type: none"> • Mitigation of political risk • Increased financing resources • Better financing terms 	<ul style="list-style-type: none"> • Mitigation of political risk • Lower payment risks • African Development Bank safeguard standards 	<ul style="list-style-type: none"> • Development of clean-energy • Catalytic effect • Private sector participation 	<ul style="list-style-type: none"> • Increased supply of renewable electricity • Less CO2 emissions • Job creation

F. WHAT WAS THE FLOW OF THE OPERATION?

Indicative structure of the Lake Turkana Wind Power
Partial Risk Guarantee



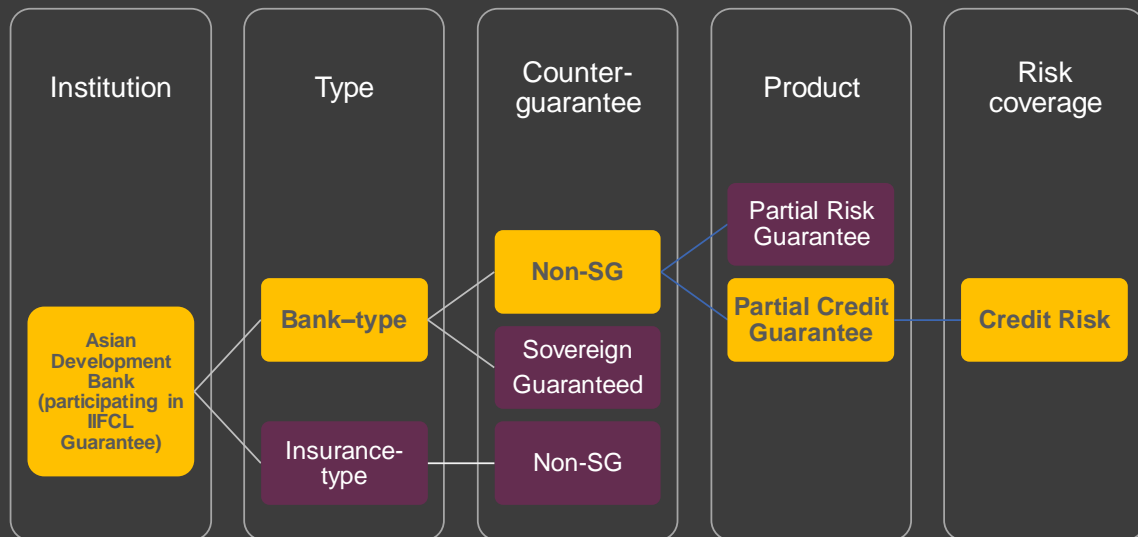
Project	Wind and Solar Independent Power Producers, 2015.
Country	India
Institution	Asian Development Bank

A. WHAT WAS THE PROBLEM?

- There was a need to substitute bank funding with capital market funding because of the difficulty from banks whose liabilities were predominantly short term, to fund long-term projects.
- High infrastructure financing demands surpassed bank financing, but project bond markets were underdeveloped.
- The projects were typically rated BBB, but bond investors required AA-.

B. WHAT WAS THE SOLUTION?

- Project Bond Credit Enhancement via:
 - India Infrastructure Finance Company (IIFCL), a state-owned enterprise issued first-loss guarantees (26-37% of principal).
 - The Asian Development Bank structured the first-loss guarantees and participated in 50% of the risk of the IIFCL guarantee.
- It was designed as a program to support individual projects.
- The first-loss guarantees were set-up to bring bond ratings to AA-
- The operations were carried out in local currency.



C. IMPACTS – HOW DID IT AFFECT THE COST, TENOR OF THE TRANSACTION AND THE AMOUNTS MOBILIZED?

- The rating uplift was from BBB+/A- to AA-.
- The total amount mobilized was the Indian Rupee equivalent of USD 87 million.

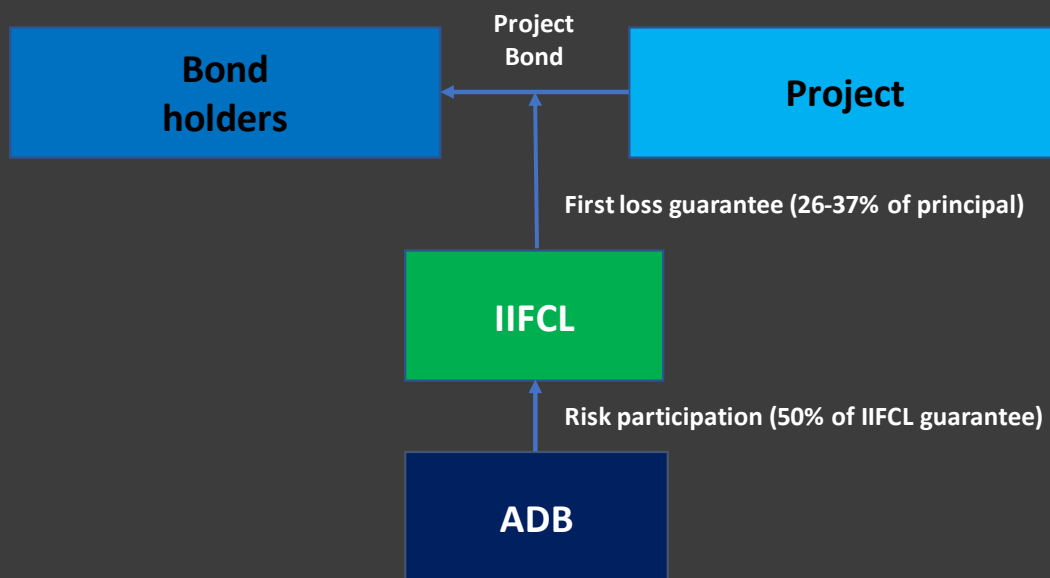
D. WHICH RISKS DID IT ADDRESS?



E. WHO BENEFITED AND HOW?

Issuer			
Projects	(Government)	Asian Development Bank	Commercial Banks
<ul style="list-style-type: none"> Improved ratings Lower cost of financing 	<ul style="list-style-type: none"> Capacity building (learning to issue guarantees) Improved risk profile Financial markets development 	<ul style="list-style-type: none"> Catalytic effect in market with complexity issues Knowledge transfer to a local entity (how to credit enhance) 	<ul style="list-style-type: none"> Capital freed up

F. WHAT WAS THE FLOW OF THE OPERATION?



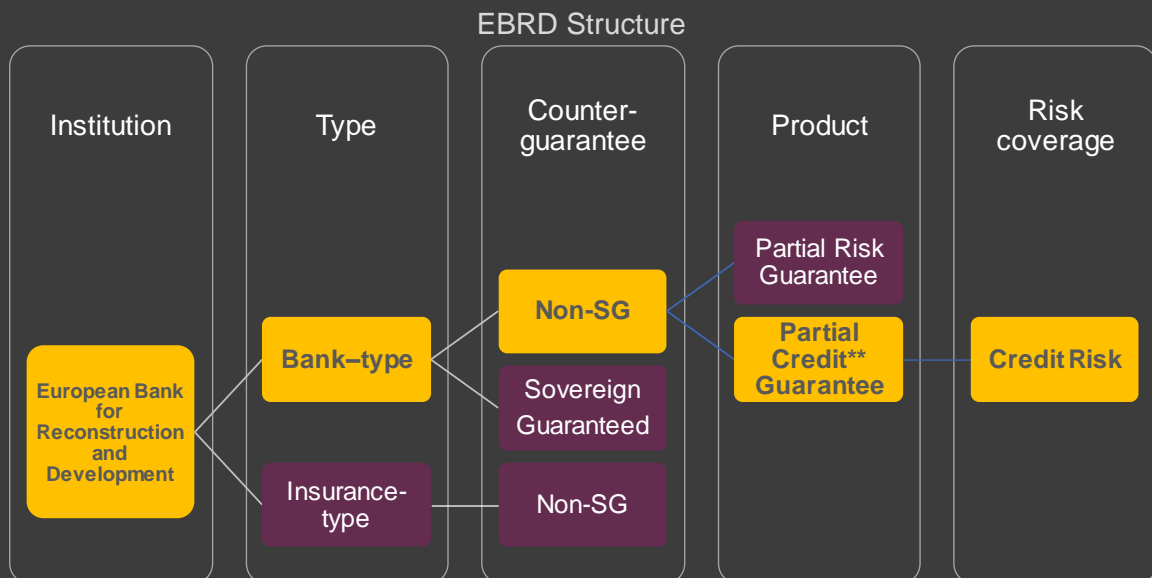
Project	Elazig Integrated Hospital Campus, 2016.
Country	Turkey
Institution	European Bank for Reconstruction and Development and MIGA

A. WHAT WAS THE PROBLEM?

- Construction of greenfield PPP hospital with the following needs:
 - Diversification of investor base (bond holders)
 - Longer tenors
 - Lower cost of financing
- Bondholders required a minimum investment grade but...
 - Turkey (at the time) rated at the lowest investment grade
 - Construction risk was present
 - Political risk was a concern (breach of contract)

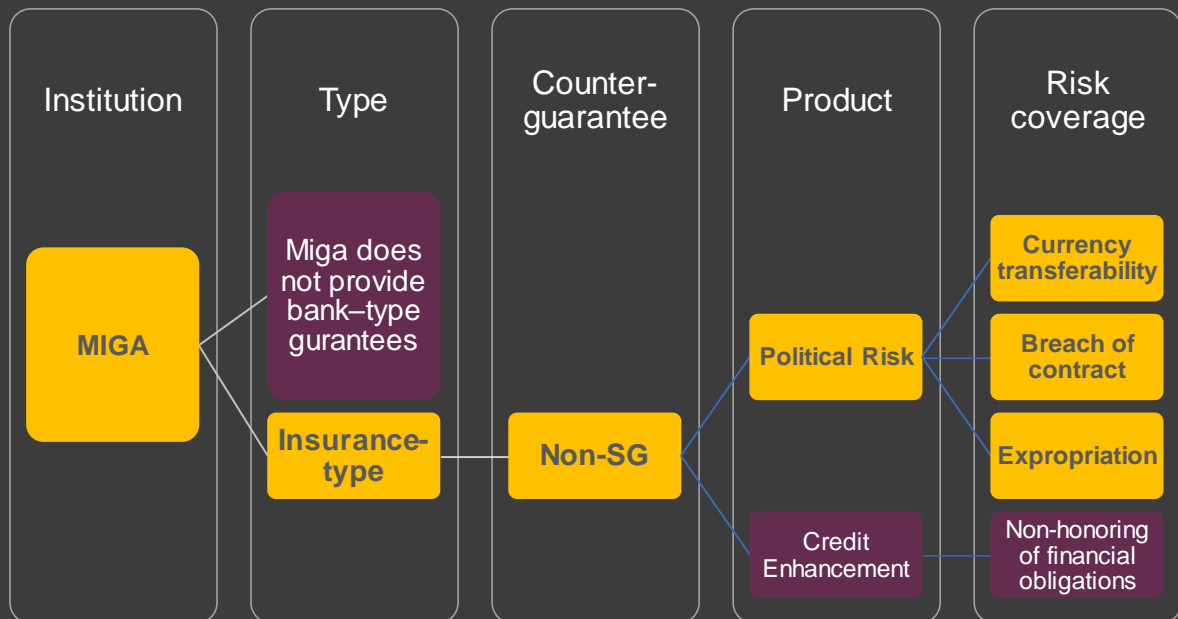
B. WHAT WAS THE SOLUTION?

- Project bond enhancement via a tailored solution utilizing 2 institutions, MIGA and EBRD
- EBRD guarantees were sequenced: 1) for construction period, 2) for revenue support during operations (availability payments or termination proceeds).
- MIGA guarantee (entire project life).
- EBRD to complement MIGA by servicing debt payments until an arbitration process is completed after which MIGA honors its payment obligations.
- For construction, it covers 15% of Engineering, Procurement and Construction Contract (EUR36.5m), for operation 25% (EUR52.5m) of nominal bonds.



****The graphic above does not necessarily reflect the official names of products or facilities, but the general level and type of risk transferred. The name of the EBRD facility for the construction period in this case is “Construction Support Facility” and it is an unfunded credit facility designed to provide timely liquidity in the Construction Period. For the operations period the facility is called “Revenue Support Facility”, which is a subordinated unfunded credit facility designed to credit-enhance grantor risk during the Operations Period of the Project. Both, each and separately are partial credit guarantees since they do not cover all the risks or the project amounts in their entirety.**

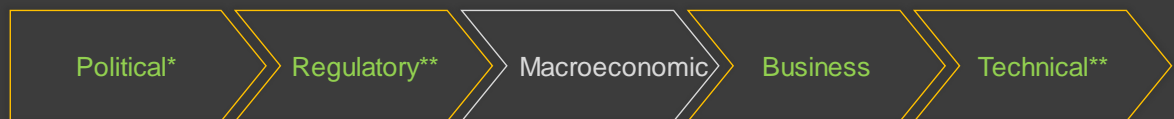
MIGA Structure



C. IMPACTS – HOW DID IT AFFECT THE COST, TENOR OF THE TRANSACTION AND THE AMOUNTS MOBILIZED?

- EUR288 million euro-denominated long-term project bond with two tranches: a EUR208 million enhanced and rated tranche supported by the EBRD and MIGA and an EUR80 million unenhanced and unrated tranche subscribed by International Finance Corporation.
- Rating uplift from Ba level to Baa2 two notches above sovereign credit rating (SCR) at the time of issuance (currently 4 notches above Turkey's SCR).
- Turkey's first greenfield project bond and first PPP financing with a 20-year maturity.

D. WHICH RISKS DID IT ADDRESS?

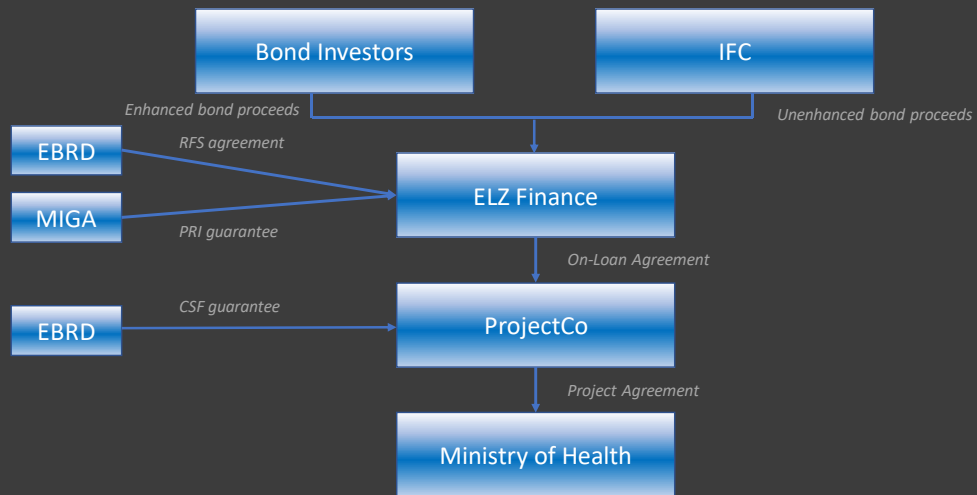


- *MIGA covered: breach of contract, expropriation risk and transfer and convertibility risk – summarized as Political Risk.
- **Although the regulatory and technology risks were not directly covered by the facilities, both were implicitly mitigated through the combination of (i) a comprehensive termination regime for any event of default built in the project agreement; and (ii) EBRD and MIGA bridging grantor's termination obligations in case of its failure to pay the compensation proceeds.

E. WHO BENEFITED AND HOW?

Borrowers	Lenders	EBRD and MIGA
<ul style="list-style-type: none">• Lower cost of financing• Longer tenors• Diversified pool of investors	<ul style="list-style-type: none">• Lower cashflow risk• Higher recovery payment	<ul style="list-style-type: none">• Fostering of project bonds• Demonstration effects• Lowering health costs• Successful combination of solutions

F. WHAT WAS THE FLOW OF THE OPERATION?



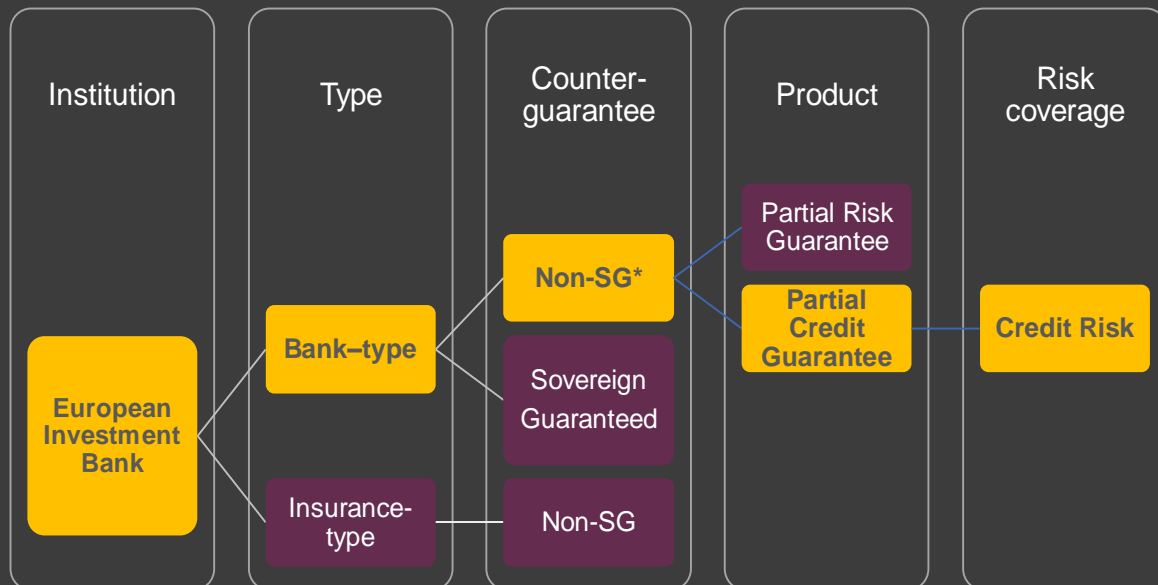
Project New Ross Bypass, 2016.
Country Ireland
Institution European Investment Bank (EIB)

A. WHAT WAS THE PROBLEM?

- Major bottleneck on one of Ireland's main roads: N25, part of the E30 European route and a shorter section part of the proposed Atlantic Corridor route aimed at linking the country's South-East with its North-West.
- Construction of greenfield PPP project of the new road with availability payments.
- Low rated country investment grade.
- Under-developed bond market for project financing

B. WHAT WAS THE SOLUTION?

- Bank-type, Non-Sovereign Guaranteed*, Partial Credit Guarantee (unfunded).
- Project Bond Credit Enhancement
- During construction it covered 15% (EUR22 million) of issued bonds. Then during operation, the coverage goes down to 10% of outstanding bonds.

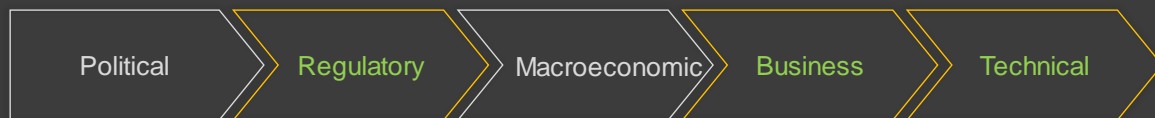


*The graphic above does not necessarily reflect the official names of products or facilities. but the general principles behind the operation. In this case there was a counter-guarantee issued by the European Union (a supranational institution) but not by the Irish government (referred to here as sovereign).

C. IMPACTS – HOW DID IT AFFECT THE COST, TENOR OF THE TRANSACTION AND THE AMOUNTS MOBILIZED?

- EUR 145m of senior bonds, amortizing over 23 years during operation.
 - Rating uplift, from Baa3 to Baa1 (constrained by the Irish sovereign rating)
 - Lower cost of financing
- Total amount mobilized: EUR170 million (EUR145 million in debt, EUR25 million in equity).

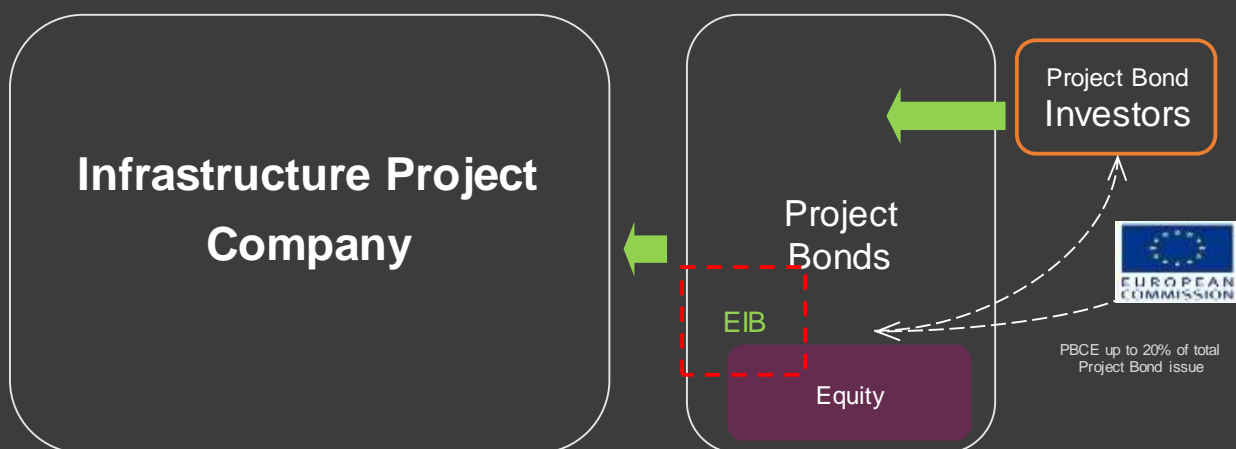
D. WHICH RISKS DID IT ADDRESS?



E. WHO BENEFITED AND HOW?

Concessionaire	Investors	EIB	Government
<ul style="list-style-type: none"> • Lower cost of finance • Higher access 	<ul style="list-style-type: none"> • Lower cashflow risk • Higher recovery payment 	<ul style="list-style-type: none"> • Higher investment mobilization • Development outcome: lower user tariffs 	<ul style="list-style-type: none"> • Lower tariffs

F. WHAT WAS THE FLOW OF THE OPERATION?



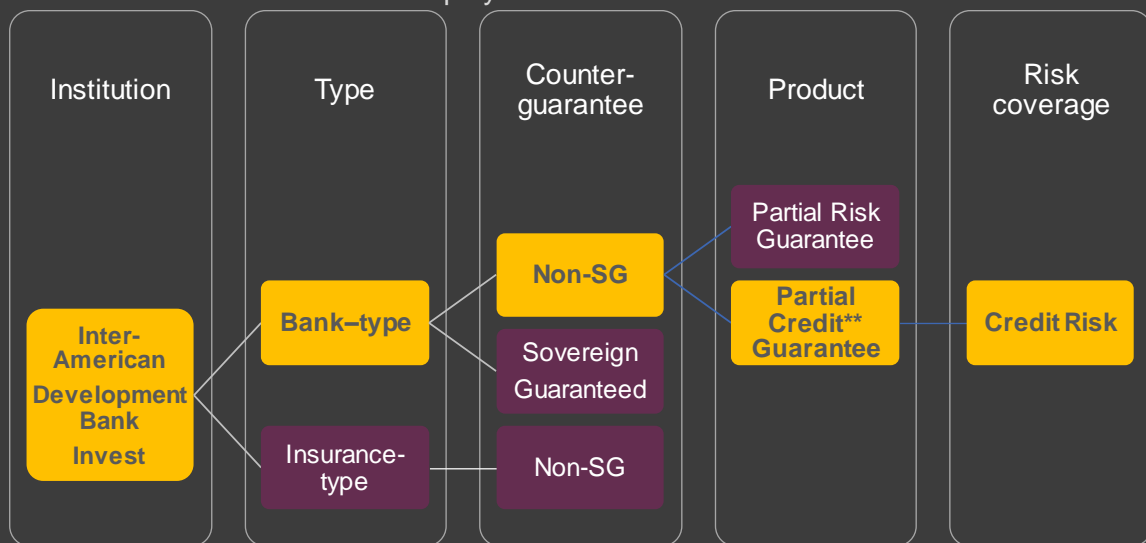
Project	Santa Vitoria Do Palmar, Wind Farm, 2018.
Country	Brazil
Institution	Inter-American Investment Corporation (IDB Invest)

A. WHAT WAS THE PROBLEM?

- Brazil needed to reduce its reliance on hydroelectric power generation and decrease its greenhouse emissions.
- There markets were incomplete:
 - No prior guarantee had been issued in local currency for a renewable energy project.
 - There were no long-term guarantee precedents.

B. WHAT WAS THE SOLUTION?

- Bank type, Non-Sovereign Guaranteed Total Credit Guarantee** (payments and principal + a level of inflation protection)
- The guarantee was part of a Project Bond Credit Enhancement.
- This was a tailored instrument employed for the first time for infrastructure in Brazil.

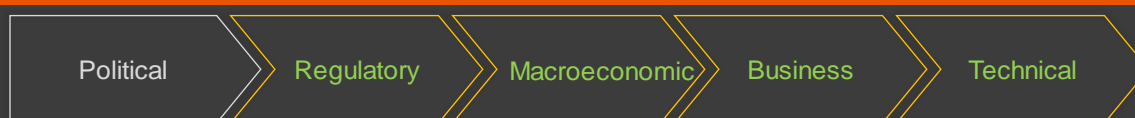


**The graphic does not necessarily reflect the official names of products or facilities, but the general level and type of risk transferred. The name of the instrument is “Total Credit Guarantee”. While it covers 100% of the principal plus interests and a link to inflation it is considered a partial guarantee since there was a fixed inflation gap and there is no full credit substitution. See Section I for further reference.

C. IMPACTS – HOW DID IT AFFECT THE COST, TENOR OF THE TRANSACTION AND THE AMOUNTS MOBILIZED?

- Longer tenor. USD 32m of bonds, amortizing over 13.5 years.
- Rating uplift to A+ (sovereign BB-) and only 60 basis points above the local currency denominated sovereign bond.
- Total amount mobilized: USD 358.5million and bond oversubscription of five times.

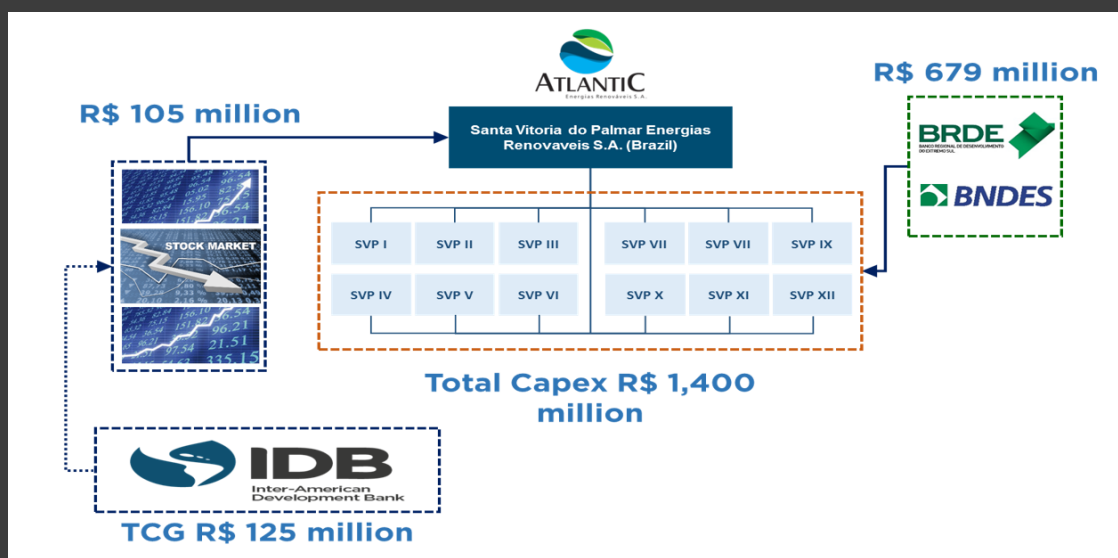
D. WHICH RISKS DID IT ADDRESS?



E. WHO BENEFITED AND HOW?

Bond issuer	Investors	IDB Invest
<ul style="list-style-type: none"> • Lower cost of financing • Low issuance price • Longer tenor 	<ul style="list-style-type: none"> • Lower cashflow risk • Higher recovery rate 	<ul style="list-style-type: none"> • Development of capital markets to cover financing gap in renewable energy sector • Catalytic effect in the market • High replicability

F. WHAT WAS THE FLOW OF THE OPERATION?



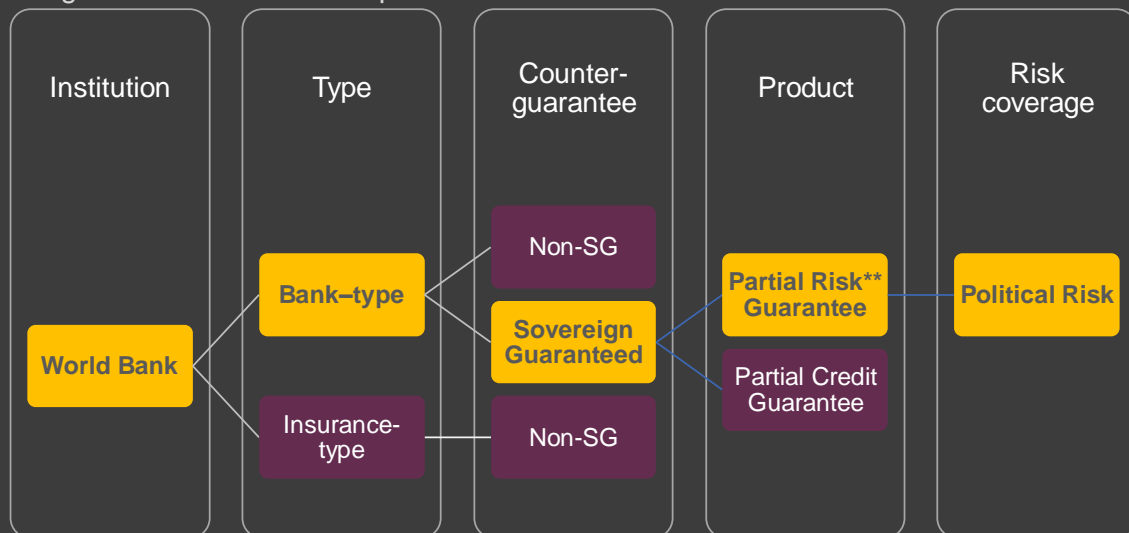
Project	Naftogaz Gas shipping payments, 2014.
Country	Ukraine
Institution	World Bank and European Investment Bank

A. WHAT WAS THE PROBLEM?

- Economic and geopolitical turmoil between the Russia and Ukraine gas supply impacting Ukraine.
- Credit problem: Ukraine sought to increase imports from Europe, but suppliers would not take risk on it or Naftogaz (gas company).
- Cash flow problem: Smaller gas pipelines from Europe meant that gas had to be pumped during the summer, creating working capital issues.
- Funding problem: Existing domestic bank credit lines were full and international financing was not available.
- Instrument vs. appetite problem: World Bank up to exposure limits in Ukraine, EIB did not have instruments for gas trading.

B. WHAT WAS THE SOLUTION?

- First there was an exposure buydown, EIB guaranteed World Bank's Ukraine portfolio to free capital, then WBG issued EUR478.3 million Payment Guarantee with sovereign counter-indemnity.
- This was a short-term revolving working capital facility – guaranteed letters of credit designed to be drawn and repaid 3X over.



******The graphic does not necessarily reflect the official names of products or facilities, but the general level and type of risk transferred. The name of the instrument is “Payment Guarantee” and is designed to be a revolving facility. Although it is a first-of-kind instrument that reflects the flexibility of guarantees, just like others, it is considered a partial guarantee since there is not debtor substitution. See Section I for further reference.

C. IMPACTS – HOW DID IT AFFECT THE COST, TENOR OF THE TRANSACTION AND THE AMOUNTS MOBILIZED?

- Lower cost of financing from 11% annual percentage rate to around 3%.
- Total amount mobilized: EUR1,400 million.

D. WHICH RISKS DID IT ADDRESS?



E. WHO BENEFITED AND HOW?

Naftogaz/Ukraine	Lenders (Commercial Banks)	World Bank/EIB
<ul style="list-style-type: none">• Improved procurement: contracting went from pre-paid to post-paid terms• More suppliers• Lower cost of financing	<ul style="list-style-type: none">• Lower cashflow risk	<ul style="list-style-type: none">• Development: lower gas costs• Successful combination of solutions• Demonstration effect

F. WHAT WAS THE FLOW OF THE OPERATION

