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# Sovereign ESG Bond Issuance

## A Guidance Note for Sovereign Debt Managers

Peter Lindner and Kay Chung

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**Sovereign ESG Bond Issuance:  
A Guidance Note for Sovereign Debt Managers**

**Prepared by Peter Lindner and Kay Chung**

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This paper aims to provide guidance to issuers of sovereign ESG bonds, with a focus on Emerging Market and Developing Economies (EMDEs). An overview of the ESG financing options available to sovereign issuers is followed by an analysis of the operational requirements and costs that the issuance of sovereign ESG bonds entails. While green bonds are the instruments used to describe the issuance process, the paper also covers alternative instruments, including social and sustainability-linked bonds to provide issuers and other stakeholders with a comprehensive view of the ESG bond marketplace.

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## WORKING PAPERS

# **Sovereign ESG Bond Issuance**

## A Guidance Note for Sovereign Debt Managers

Prepared by Peter Lindner and Kay Chung<sup>1</sup>

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<sup>1</sup> This note has greatly benefited from conversations with debt managers, second party opinion providers, underwriters, NGOs, and investors. The authors are grateful for helpful comments from Michael Papaioannou, Thordur Jonasson, Eriko Togo, David Grigorian, Guilherme Pedras, Patrick van der Wansem, Bill Northfield, Elvira Eurlings, Alexander Wiese, Thomas Laryea, Robert Andreoli, Jeroen Verleun, and Stephan Pouyat. Their contributions have proved invaluable for the completion of this Note, with any deficiencies and errors the responsibility of the authors.

# Contents

Glossary .....	4
Executive Summary .....	6
Introduction .....	8
II. ESG Debt and Sovereign Finance .....	8
A. ESG Debt: Definitions and Overview .....	8
B. ESG Bond Issuance and Public Debt Management .....	11
C. Integration of ESG Bonds with Climate and Fiscal Frameworks .....	13
D. Comparing Official Sector Climate Funding to Market Financing .....	14
E. The Investor Base for ESG Bonds .....	16
F. Refinancing Sovereign ESG Bonds .....	18
III. Preparing for a Sovereign Green Bond Issuance: Capacity and Operational Requirements .....	19
A. SGB Issuance and Public Financial Management .....	20
B. Operational Requirements .....	21
C. DMO Capacity .....	22
IV. Sovereign ESG Bond Issuance .....	23
A. The Green Bond Issuance Process .....	23
Pre-Issuance .....	25
Obtaining a Second-Party Opinion .....	27
Determining the Issuance Size .....	28
The Core Issuance Process .....	29
Post-Issuance .....	29
B. Issuance Cost and Time Requirements .....	31
C. Sovereign Green Versus Conventional Issuances: An Issuer Perspective .....	34
D. ESG Bond Issuance: Why, Where, and How .....	36
E. Conclusion and Areas for Capacity Development .....	38
Annexes .....	39
I. The Markets for ESG Debt .....	39
II. A Typology of ESG Debt .....	41
Social Bonds .....	41
Sustainability Bonds .....	42
Sustainability-Linked Bonds .....	42
Sovereign SDG Bonds .....	44
Sovereign ESG Sukuk .....	45
III. Greeniums .....	46
IV. Budget and Debt Market Fragmentation Risks .....	49
V. Sovereign ESG Bonds .....	52
VI. Financing ESG-Related Expenditures with Debt: A Comparison .....	54

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References.....	56
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**Boxes**

1. SGBFs and Second Party Opinions.....	27
2. Beyond Second Party Opinions.....	28
3. Case Study: Colombia—Domestic Green Bond Issuance through Auctions.....	37

**Figures**

1. Climate Funding: From AEs to EMDEs.....	15
2. SGB Issuance and PFM—PDM Coordination.....	21
3. Sovereign Green Bond Issuance.....	25
4. Indicative Timeline for First-time Sovereign Syndicated Green Bond Issuance.....	34

**Tables**

1. Topology of ESG Bonds.....	9
2. Cost of Issuance: ESG versus Conventional Bonds.....	32
3. Investor Yield and Issuer’s Bond Cost.....	33

## Glossary

ABP	Annual Borrowing Plan
AE	Advanced Economy Country
AUM	Assets under Management
BPS	basis points (one-hundredth of a percentage point, 1/10000)
CAU	Climate Accounting Unit
CBI	Climate Bonds Initiative
CD	Capacity Development
CIF	Climate Investment Funds
COP	Colombian Pesos
CU	Currency Unit
DMO	Debt Management Office
DSA	Debt Sustainability Analysis
DE	Developing Economy
EBRD	European Bank for Reconstruction and Development
EM	Emerging Markets
EMDEs	Emerging Market and Developing Economies
ESG	Environmental, Social, and Governance
EU	European Union
EUR	Euro currency
FX	Foreign Currency
GBF	Green Bond Framework
GBP	Green Bond Principles
GCF	Green Climate Fund
GEF	Global Environment Facility
GHG	Greenhouse Gas
ICMA	International Capital Market Association
IFC	International Finance Corporation
KPI	Key Performance Indicator
LCBM	Local Currency Bond Market
LIC	Low-Income Country
LMO	Liability-Management Operation
MDB	Multilateral Development Bank
MoF	Ministry of Finance
MTDS	Medium-Term Debt Management Strategy
NDC	Nationally Determined Contribution
OECD	Organization for Economic Co-operation and Development
PFM	Public Financial Management
RFP	Request for Proposal
SBF	Social Bond Framework
SBP	Social Bond Principles
SDG	Social Development Goal
SGB	Sovereign Green Bond
SGBF	Sovereign Green Bond Framework

SLB	Sustainability-Linked Bond
SLBP	Sustainability-Linked Bond Principles
SPO	Second Party Opinion
SPT	Sustainability Performance Target
SWF	Sovereign Wealth Fund
TA	Technical Assistance
UN	United Nations
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UoP	Use of Proceeds
USD	U.S. Dollar
WB	World Bank

## Executive Summary

**The issuance of sovereign debt to meet Environmental, Social, and Governance (ESG) objectives is opening new opportunities for sovereign borrowers but also presents new challenges to debt managers.** The market for sovereign ESG debt has rapidly expanded in recent years, providing greater financing choices to governments, and increasing the decision variables governments and especially sovereign debt management offices (DMOs) need to consider. A great majority of ESG debt is raised in the bond and loan markets, and the standard issuance preconditions relevant for first-time issuers apply.<sup>2</sup> However, additional requirements must be met when issuing ESG debt, in particular debt that aims to mitigate climate change and adapt to its effects (“climate debt”). Additional capacity requirements with regards to cross-agency cooperation and additional data collection within a government can be large, with DMOs facing the need to communicate on this new type of debt with often demanding ESG-focused investors.

**This paper provides guidance to issuers of sovereign ESG bonds, with a focus on Emerging Market and Developing Economies (EMDEs).** While many Advanced Economies (AEs) experience similar challenges as EMDEs when issuing ESG bonds, their institutional challenges are less prominent. At the same time, AEs can usually finance themselves in their local currencies and in their domestic markets, leading to a less challenging ESG bond issuance process than for EMDEs.

**The objective for ESG bond issuance should be well defined and integrated into a sovereign’s debt management strategy and issuance plans.** Commonly cited objectives for ESG debt issuance are: (i) Highlighting the issuer’s commitment to environmental and social goals and boosting the issuer’s profile in the global arena; (ii) leading the way in building markets for ESG debt inside a country; (iii) accessing cost-effective funding, especially for ESG-related projects; (iv) diversifying the investor base; and (v) catalyzing interagency cooperation within the government. When developing the debt management strategy, the costs and risks of introducing ESG debt to the debt portfolio should be assessed and include measures to mitigate any adverse effects. Issuance of innovative debt instruments that are not fungible with the existing outstanding debt instruments could hamper price discovery in primary markets and reduce secondary market liquidity by fragmenting the government bond market.

**Strong political support is a critical factor in the issuance of ESG bonds.** Political leadership is an important prerequisite for ESG bond issuance as a high degree of cooperation between different government agencies and line ministries is required. A cross-departmental working group dedicated to climate finance within the government can assemble needed information and make technical decisions. Within this context debt managers play a key role with regards to internal coordination as well as the central point of contact for external communication in the issuance of ESG bonds.

**Syndicated issuance constitutes the primary type of issuance method of sovereign ESG bonds.** This extends beyond international issuance to the domestic market issuances of some large AEs. Sovereign issuers may hire a sustainability structuring advisor, usually a bank or a specialized advisory firm who guides the government on the requirements related to the issuance and helps it to draft a credible bond framework. The sustainability structuring advisor will help to lay the preconditions to bring the issuance to market and align a country’s ESG bond issuance objectives with investor expectations. This guidance is particularly important for

<sup>2</sup> For an overview of factors to consider by first-time international bond issuers see Jonasson and Papaioannou (2018), pp. 81-85.



an inaugural ESG bond issuance. EMDEs could also consider technical assistance (TA) International financial Institutions, UNDP, or bilateral partners they plan to embark on a non-syndicated inaugural ESG bond issuance.

**Financing from official sector sources, often on concessional terms, can be available for projects that target environmental and social objectives.** Such debt is mainly provided by bilateral and multilateral sources, as well as specialized lenders. Before deciding on the issuance of market based ESG debt, sovereigns should evaluate which projects could qualify for external concessional financing. While the use of concessional financing usually means careful and long-term preparation, cost savings can be significant.

# Introduction

**This Working Paper provides guidance to sovereign debt managers and other public sector officials.**

Besides sovereign debt managers, members of governments outside the DMO who are considering issuance or have decided to issue ESG debt are the primary addressees of this paper, with a focus on first time issuers of ESG bonds in EMDEs. Stakeholders in the ESG issuance process—banks, debt advisers, members of non-for-profits and think tanks—might also find it useful.

**This paper is focused on the sovereign ESG debt issuance process and related topics.** The operational and strategic aspects of sovereign ESG bond issuance stand at the center of the paper, providing sovereign debt managers with practical guidance within a cost-benefit framework. It discusses (i) the fit of debt issued in support of ESG goals into a country's debt management strategy; (ii) the types of sovereign ESG bonds that are available and their relationship to the goals the sovereign wants to achieve and to the preconditions prevailing in the issuing country; (iii) the issuance processes for ESG bonds; and (iv) the operational demands on the DMO and the government in general.

**While the paper broadly covers all types of sovereign ESG debt, it focuses on *bonds*, with many examples presented using *ESG bonds* that target environmental goals.** This is especially the case when the capacity and operational requirements of an issuance are discussed in Section III, and when the issuance process is described in Section IV. There are four main reasons for this choice: (i) Bonds are the preferred funding instruments for sovereigns; (ii) the issuance procedures and capacity required for the issuance of an ESG bond—beyond what is needed to issue conventional debt—are similar for bonds and loans; (iii) climate and the environment are topics which attract much attention on a global scale, making them very relevant for many countries. The term “ESG debt” used when both bonds and loans are the topic of discussion.

**The paper is organized as follows:** Section II provides an overview of ESG bonds and how they fit into a country's debt management framework, as well as its fiscal and climate frameworks. Section III describes the capacity and operational requirements that accompany the issuance of ESG bonds, while Section IV follows up with a detailed description of the debt issuance process based on the stylized example of a green bond. Section V concludes.

## II. ESG Debt and Sovereign Finance

### A. ESG Debt: Definitions and Overview

**The issuance of debt in support of ESG goals has expanded fast since 2016, increasingly attracting sovereign issuers.**<sup>3</sup> While the corporate sector, multilateral organizations, and subnational entities were the first to issue ESG debt, sovereigns have become active issuers in this sector (Annex 1).

**ESG bonds issues fall into five distinct types which differ by the type of expenditures targeted and the way in which ESG goals are achieved (Annex 2):** (i) green bonds, where the funds raised are exclusively applied to environmental projects; (ii) social bonds, where the funds raised are exclusively spent on projects

<sup>3</sup> On the interest of sovereign issuers in the ESG space, see The World Bank (2022).

advancing social objectives;<sup>4</sup> (iii) sustainability bonds, which fund both environmental and social projects; (iv) Sustainable Development Goal (SDG) bonds, which are similar to sustainability bonds in that they can reference both environmental and social objectives, but are linked more closely to the achievement of the UN's SDGs; (v) sustainability-linked bonds (SLBs), where the funds raised can be spend on general corporate or budgetary purposes benefiting the issuer, but debt servicing terms change if the issuer does not achieve specific ESG milestones within a set timeframe;<sup>5</sup> and (vi) transition bonds, which, for instance, may finance projects that lock in GHG emissions, and are therefore not able to be issued under existing ESG bond frameworks.<sup>6</sup>

**Other terms are used by market participants, analysts, and stakeholders to describe ESG bonds (Table 1).** The term *sustainable bonds* is sometimes used in lieu of ESG bonds. Green, social, sustainability, and transition bonds are issued in a *use-of-proceeds (UoP) format*, where the issuance proceeds are dedicated to spending on specific projects. For the purposes of this note, *climate bond* refers to bonds where the funds raised or the debt service are related to the achievement of environmental objectives, whether through UoP mechanisms or other means. So-called *unlabeled bonds* are also being issued, usually by corporates whose operations are deemed by many investors to be supporting the climate transition.

ESG Bond by Type			Environment	Social	Governance	
Thematic	ESG	Green	X			
	=	Social		X		
	Sustainable	Use-of-Proceeds	Sustainability	X	X	
			SDG	X	X	
	=	Transition	X			
Labeled	KPI-based	Sustainability-linked	X	X	X	
Unlabeled	Issuer or issuance is deemed fully ESG compliant by some investors		X	X	X	

Source: IMF staff

**The different formats in which ESG bonds are issued accommodate differences in issuers' objectives and circumstances, as well as investors' preferences (Annex 2).** Historically, new types of ESG bonds have first been issued by multilateral organizations and corporates, with sovereigns following.<sup>7</sup> ESG bonds are

<sup>4</sup> Examples of those are support payments during the COVID pandemic, funding of microloan schemes, or support of women-led small enterprises.

<sup>5</sup> In most cases SLBs promise a higher coupon is certain objectives have not been achieved by a certain date. Coupon reductions in case the objective are met, or a combination of coupon step-ups and reductions can also be offered.

<sup>6</sup> While the projects to be financed with the proceeds from a transition bond issuance will usually have clear climate or other environmental benefits, many ESG investors would exclude green bonds listing such projects from their portfolios. Key reasons for this are that the issuer's overall activities are not deemed sufficiently green, or the projects pursued are, for instance, associated with fossil fuel usage (Shirmali (2021); Energymonitor (2021)).

<sup>7</sup> For instance, the first green bond was issued by the European Investment Bank in 2007, while the first SGB was issued In December 2016 by Poland. The first sustainability-linked bond was issued by the Italian energy group Enel in September 2019, while Chile issued the first sovereign sustainability-linked bond in March 2022.

also known as “thematic,” “labeled,” or “sustainable” bonds.<sup>8</sup> Green, social, and sustainability bonds have been issued by each of the five main issuer categories: sovereigns, corporates, multilateral organizations, subnational entities, and government agencies (Annex 2).<sup>9</sup> SLBs that are targeting environmental Sustainability Performance Targets (SPTs) related to Key Performance Indicators (KPIs) have been issued by sovereigns and corporates as of mid-2022, with SLBs that reference social or governance-related KPIs having only been issued by corporates. Transition bonds have only been issued by corporates and the European Bank for Reconstruction and Development (EBRD), with only 17 bonds issued between 2017 and June 2021.<sup>10</sup> ESG bond issuance by sovereigns began with green bonds, followed by sovereign social, sustainability, and sustainability-linked bonds. As of late 2022, no sovereign had issued governance-related or transition bonds.<sup>11</sup>

**Alignment with the International Capital Market Association’s (ICMA’s) Principles for the issuance of different types of ESG bonds has effectively become a precondition for sovereign issuances.** The ICMA has formulated sets of guidelines for the issuance of different types of ESG bonds—for instance, the Green Bond Principles and the Social Bond Principles, amongst others (see ICMA (2021a) and (2021b), respectively). For UoP bonds, the principles list project types that the receipts of an issuance can be spent on. The principles also note that the refinancing of existing projects falls under eligible expenditures. Importantly, they also provide the core components that an issuance needs to address to be aligned with the ICMA principles for the particular security type. For instance, in the case of UoP bonds, those core components are (i) use of proceeds; (ii) process for project evaluation and selection; (iii) management of proceeds; and (iv) reporting.<sup>12</sup> While several additional measures proposed by the ICMA to bolster the efficacy and credibility of ESG bonds are voluntary, they have become de facto market standards for the issuance of ESG bonds. Bond issuance frameworks and post-issuance reporting have become common for ESG bonds, especially when sovereigns are concerned.

**Publication of a framework describing the adherence of a planned bond issuance with the ICMA Principles has become a standard.** Such a framework usually covers a particular bond type—e.g., green or social bonds—and are often utilized for several issuances that take place over a period of a few years. Most frameworks go beyond what the ICMA Principles suggest and provide information on the alignment of the planned issuances with a country’s budget, its climate framework in the case of green bonds, and its Nationally Determined Contribution (NDCs) towards the achievement of the Paris Agreement and the UN’s SDGs. A thorough framework provides potential investors with a comprehensive view of the country’s climate ambitions and the contributions of the planned issuances. Bond frameworks usually undergo a review, the so-called Second Party Opinion (SPO), which is provided by an independent entity, the so-called Second Party Opinion provider. This review can bolster investor confidence in the framework and the issuances based on it.<sup>13</sup>

**Ex post reporting on the use of proceeds from a bond issuance and the environmental impact of the projects that were funded has become the standard, especially for sovereign ESG bonds.** In the case of

<sup>8</sup> “Thematic” usually refers to investing along specific topics or long-term trends.

<sup>9</sup> Green project bonds or green securitizations (bonds for which interest or principal payments depend on the value of specific assets or on cash flows derived from projects or portfolios of underlying assets—like loans—are not separately broken out in this Note.

<sup>10</sup> By mid-2022 transition bonds had only been issued with reference to environmental objectives. Given transition bonds’ close alignment with environmental objectives led us to exclude social and governance objectives for these bonds in Table 1.

<sup>11</sup> Japan’s government was exploring the use of sovereign transition bonds (Reuters (2022)).

<sup>12</sup> For details and further guidance on UoP bonds, see ICMA (2021a), ICMA (2021b), and ICMA (2021c).

<sup>13</sup> For further details and other approaches that are used to validate ESG bond issuances and frameworks, see Boxes 1 and 2.

UoP bonds, many investors want to know that expenditures were conducted in line with the respective framework. Ex post impact reporting, whether for climate-related or social expenditures will support a country's credibility with ESG-focused investors and ease the way for future ESG bond issuances.

**ESG bonds are issued *pari passu* with an issuer's conventional bonds, meaning that ESG bonds and conventional bonds carry identical credit risk.** Most international ESG bonds and conventional bonds issued by a sovereign are labelled senior unsecured and will have the same claims as other debt with the same status in case of a sovereign default. This feature allows investors to focus on the ESG properties of a sovereign ESG bond once the issuer's credit risk has been ascertained. ESG-focused investors can then focus on the ESG benefits of the issuance.

**ESG bonds are often issued at yields below what the issuer would have had to pay on an equivalent conventional bond, resulting in lower interest costs for the issuer, the so-called "greenium."**<sup>14</sup> This Note follows much of the literature by applying the term "Greenium" to the yield discount of an ESG bond compared to a similar conventional bond, especially a non-green bond.<sup>15</sup> With greeniums often positive, issuing ESG bonds results in interest savings to the issuers. These savings can be significant when issuances are large (Annex 3).<sup>16</sup> Greeniums have been found to be larger for bonds that are issued with high spreads, mainly by EMDE issuers. However, the greater complexity of ESG bond issuance can offset some of those cost savings. However, it should be noted that the evidence in favor positive Greeniums is not clear, with the conclusions of empirical studies depending on the set of issuers constituting the sample, the sample period, and the methodology used (Annex III).

**The terms "green," "climate" and "environmental" are used interchangeably for the purposes of this note.** While an obvious hierarchy between the three terms would consider "environmental" as the all-encompassing term, with "climate" comprising all climate-related environmental issues, and "green" representing many issues that can be climate-related but could have other aspects considered beneficial for humans and animals without beyond having a climate impact. However, we have seen other hierarchies, and in ESG finance the proceeds from green bond issuances can go to projects that mitigate climate change, finance adaptation to climate change, bolster biodiversity, and can also finance marine and ocean-based projects with positive environmental effects (blue bonds). On the other hand, other types of bonds that aim to have positive environmental impact or aim to mitigate climate change may be sustainability-linked bonds or transition bonds. Given the variety of usage of these terms, we decided to take the easy route of interchangeability, reducing conflicts when using these terms in the and the capital market terminology.

## B. ESG Bond Issuance and Public Debt Management

**The main objective of public debt management is to ensure that the government's financing needs and its payment obligations are met at the lowest possible cost over the medium to long run,** consistent with a prudent degree of risk (IMF/World Bank (2014)). Prudent risk management to avoid risky debt structures and

<sup>14</sup> Formally, the greenium is the difference in the yield of a conventional bond minus the yield of a green bond, with the conventional bond being identical to a green bond in all respects other than it being not green.

<sup>15</sup> By only considering primary market spreads, the definition used here also differs from other definitions that look at secondary market spreads (Meyer and Henide (2020)). We will refer to the "secondary market greenium" when discussing the secondary market yield discount of an ESG bond (Annex 3).

<sup>16</sup> With much of the additional issuance costs of an ESG bond above the cost to issue a conventional bond being fixed in nature, even a few basis points in annual interest savings can exceed the tangible issuance costs of an ESG bond. This excludes the cost of any additional capacity on the sovereign's side that ESG bond issuance may require (see Tables 2 and 3 below).

strategies (including monetary financing of the government's debt) is crucial. Managing cost and risk therefore involves a trade-off. Judgments will have to be made based on the risk tolerance of the government, keeping in view other policy objectives and policy buffers.

**Many countries operationalize their debt management objectives via a debt management strategy.** Such a strategy is a “plan that the government intends to implement over the medium term (typically 3-5 years) in order to achieve a desired composition of the government debt portfolio, which captures the government's preferences with regard to the cost-risk tradeoff” (IMF/World Bank (2014)). In this context, “cost” is the cost of servicing the debt, usually expressed as a ratio to GDP; and “risk” is the volatility of debt servicing costs. The basic methodology explores how different issuance strategies perform against a range of macro-economic scenarios. Conceptually the task is to identify efficient issuance mixes where ESG bonds can be analyzed.

**While relatively new, ESG bonds are one type of debt that the public sector has relied on to fund ESG-linked expenditures.** This type of funding has historically come from four main sources: Multilateral development banks, official bilateral governments, other regional and specialized organizations, and aid agencies. The large-scale funding need of the climate transition is leading to appeals for greater reliance on blended financing, where public and private capital providers cooperate and share risks. On the side of the sovereign, integration of ESG funding into a country's medium-term debt management strategy (MTDS) and its borrowing plan will provide direction to investors and other stakeholders, bolster the country's credibility with ESG-focused investors and provide non-ESG investors with information that may cause them to buy often lower-yielding ESG bonds to reach their desired level of country exposure.

**The tradeoffs related to ESG funding should be included in the issuer's MTDS.** The debt management strategy formulation should include factors that impact domestic and external ESG bond issuance. Multiple dimensions affect this decision including the demand for ESG debt in different markets, the state of local market development and the value of international recognition, and potential foreign currency needs.

**The integration of a country's plans for domestic ESG bond is especially important for issuance in the LCBM.** If the LCBM is in an incipient stage, the issuance of ESG bonds in the local market could lead to market fragmentation (see Annex 4). The investor base for locally issued government bond should have clarity about the objectives of an ESG bond issuance program. The DMO should ascertain that its base of ESG investors is sufficiently large to absorb the ESG bonds that may be offered. In addition, the DMO should ensure that its own resources stay focused on its existing tasks in addition to the ESG bond issuance and be prepared to act if the ESG bond issuance has an adverse liquidity impact. To ensure secondary market liquidity the DMO may consider special primary dealer incentives for ESG bonds. Innovative approaches like Germany's Twin Bond structure can also be considered.<sup>17</sup>

<sup>17</sup> In a twin bond structure an SGB is issued alongside an otherwise identical conventional bond. The SGB investor has the option to exchange his bonds for the conventional twin. Such an exchange would be profitable if the twin trades at a higher price prior to a sale. Denmark and Colombia have also adopted twin bond structures.

## C. Integration of ESG Bonds with Climate and Fiscal Frameworks<sup>18</sup>

**Climate finance constitutes an important subset of the ESG bond markets and should be integrated into governments' climate and fiscal frameworks where applicable.**<sup>19</sup> Such integration will help ensure the efficacy of the related expenditures and bolster the credentials of the debt raised. Governments are increasingly adopting formal intermediate and final targets that guide their climate transition. The resulting transition paths are then incorporated in climate frameworks that will then guide the countries' fiscal frameworks to the degree that revenue and expenditure measures are impacting the achievement of the climate goals. A country's climate framework should reference its nationally determined contributions (NDCs) and the UN's SDGs.<sup>20,21</sup> A country can display its commitments in various ways, with some countries giving their climate transition plans legal force.<sup>22</sup>

**Relating the planned issuance of ESG bonds focused specifically to on the mitigation of and adaptation to a country's climate transition targets ("climate bonds") helps bolster the issuer's climate commitments.** Outlining how the funds raised by issuing climate bonds are used enables ESG investors to commit their capital over the long-term. This is important because many ESG investors are looking at an issuer's climate framework when they consider a new issuance for purchase. A green bond or an SLB framework provides this connection.

**Green budgeting can further support the issuance of climate bonds.** Green budgeting is a form of outcome-based budgeting that evaluates the impact of expenditures, tax expenditures, and tax measures on climate and on the environment (EU, IMF, and OECD (2021)). Green budgeting increases the effectiveness of fiscal measures that are designed to assist with climate change mitigation or adaptation. As part of green budgeting, both the annual budget as well as the country's Medium-Term Fiscal Framework should include measures of the environmental impact of all fiscal and budgetary measures. Green budgeting enables all stakeholders in the budget process to have full visibility on the environmental impact of current and planned fiscal measures. However, while beneficial for the issuances of climate-related bonds, green budgeting is not a necessary condition for issuance.

**The data and capacity requirements of green budgeting are extensive—reducing its value for the issuance of climate-related bonds.** The associated data requirements and its reliance on effective fiscal workflows makes it challenging even for countries with considerable capacity. Most countries therefore will

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<sup>18</sup> Given the importance of the climate transition as it relates to ESG bond issuance, this sub-section explores issues at the intersection of these two topics.

<sup>19</sup> We consider climate finance as the provision of capital in equity or debt format towards projects that lead to a reduction of GHG emissions, promote mitigation of climate change, adaptation to climate change, and foster biodiversity—a goal that is subsumed under the ICMA's Green Bond Principles—and includes transition finance as defined by the Sustainable Working Group (2022).

<sup>20</sup> A country's NDCs summarize its commitments towards achieving the objectives of the 2015 Paris Climate Agreement. NDCs are updated every five years and submitted to the United Nations Framework Convention on Climate Change (UNFCCC) secretariat.

<sup>21</sup> Of the 17 SDGs, SDG 13 "Climate action" is most directly related to climate change. SDG 6 ("Clean water and sanitation"), 7 "Affordable and clean energy", 11 "Sustainable cities and communities", 12 "Responsible consumption and production", 14 "Life below water", and 15 "Life on land" are climate-relevant and impacted by a country's climate action (or non-action).

<sup>22</sup> For example, the United Kingdom enacted one of the first climate laws in 2008 (Grantham Research Institute on Climate Change and the Environment (2018)). Germany revised its 2019 Climate Action Law in 2021 (Clean Energy Wire (2021) and Energywire (2021)), and Denmark enacted its Climate Act in 2020. Chile provides an example of a country where the citizens' right to live in an environment free of pollution is enshrined in the constitution, with implementation and enforcement measures included in specific laws, regulations, and entrusted to various government institutions (Carrasco et al. (2022)).

have to introduce green budgeting over time in line with progress in the development of their government's capacity. Currently, climate-related bonds are issued through the close cooperation of governments, their sustainability structuring advisers, the lead managers of an issuance, as well as technical assistance from multilateral organizations and others (see Section IV).

**While Sovereign UoP bonds could potentially lead to fiscal fragmentation, they have so far not imposed notable constraints on sovereigns' borrowing or issuance planning.** Many Sovereign Green Bonds (SGBs) have so far been issued opportunistically. If the sovereign decides to issue an SGB in the immediate future, the issuance can be subtracted from the envisioned conventional bond issuance that was previously planned and had been included in the country's MTDS, its ABP, and its DSA. However, such changes to the borrowing plan can reduce the predictability of the issuance program of the conventional bonds. With most projects already included in the regular budget envelope, or having been implemented in the past, UoP bond issuance has not imposed notable budgetary constraints. Annex 4 discusses this issue in greater depth. If such issues might become prominent, issuance could be shifted from UoP bonds to SLBs. Legal restrictions on budgetary earmarking can also lead to a country preferring the issuance of SLBs to SGB, sovereign social bond, or sustainability bond issuance (see page 23).

## D. Comparing Official Sector Climate Funding to Market Financing

**Official sector financing, including grants, has historically been a major source of project finance in EMDEs.** "Hard" infrastructure projects, focused on the construction of railway lines, roads, water, and sewer systems have traditionally been financed by bilateral and multilateral lenders and donors that are able to lend in long maturities, including on concessional terms.<sup>23</sup> Since "hard" infrastructure projects remain central to the transition towards a green economy, there is potential for official sector-financed projects to play a role in financing the climate transition.

**Official sector financing comes with built-in advantages but also has some drawbacks.** For some countries, besides it being cheaper than market-sourced debt—even when including a greenium—the projects financed by it can benefit from the lenders' expertise regarding project planning and execution and may help to crowd-in private sector investments. However, the projects and distribution of funds are subject to oversight by the lenders, and bilateral funding can be subject to purchasing conditions (for example, sourcing equipment from companies located in donor countries). Project planning and execution can be time intensive.

**Greater focus on environmental aspects of development finance has led to the establishment of new green-focused lenders.** Prominent examples are the (i) Green Climate Fund (GCF) which was established within the framework of the United Nations Framework Convention on Climate Change (UNFCCC) and has received funding from 43 AEs and EMs; (ii) Climate Investment Funds (CIF) which works with six Multilateral Development Banks (MDBs) as implementing partners and has received funding from 15 AEs. The Global Environment Facility (GEF), founded in 1992, has received funding from about 40 donor countries.<sup>24</sup> The three

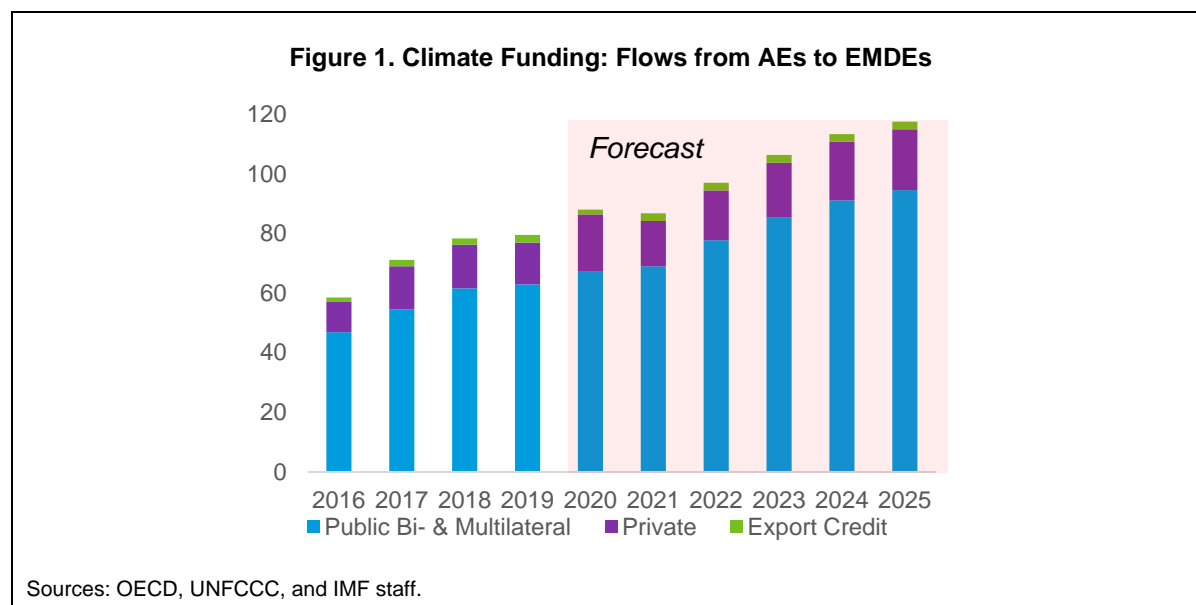
<sup>23</sup> While projects financed on concessional terms have been traditionally mostly comprised of "hard" infrastructure projects, projects not focused on such "hard" projects—for instance, training of personnel, strengthening of emergency procedures, bolstering of government operations—had been financed on concessional terms, too.

<sup>24</sup> Data as of 2019.



lenders provide loans, equity, and guarantees and aim to incentivize additional private sector project funding.<sup>25</sup> Recently, some AEs have started to provide funding through new bilateral concessional climate-focused programs. For instance, such programs were started by Finland, Norway, Canada, United Kingdom, and France. Some of these programs work in conjunction with MDBs or related institutions to catalyze private sector funding.<sup>26</sup> The process of sourcing appropriate projects can be time- and resource-intensive. Some programs ask countries to apply via a Request for Proposal (RFP) process, putting low-capacity countries at a disadvantage. The generally long timelines associated with project application, planning, and implementation means that these projects would only help alleviate climate change with delays.

**While the funding flowing from AEs to EMDEs directed at financing the climate transition is projected to increase over the medium term, it is far below what some observers believe will be needed.**<sup>27</sup> Though these funding flows are projected to double from 2016 through 2025 (Figure 1), total concessional climate funding provided—exclusive from multilaterals—it is far below the commitments that AEs had made at the 2015 Paris Conference. Even including private sector funding, the climate funding provided to EMDEs is projected to come in at U.S. Dollar (USD) 97 billion in 2022, while AEs had promised to direct at least USD 100 billion per year to EMDEs from 2020 on. However, to achieve net zero greenhouse gas (GHG) emissions by 2050 would necessitate green investments amounting to about USD 1 trillion annually between 2022 and 2030 in EMDEs alone (BlackRock Institute (2021)) and the sources cited therein). The resulting gap can only be filled by private sector capital, with much of this coming from AEs. Sovereign ESG bonds can bolster public sector funding for the climate transition. Since these bonds have to be issued within the bounds of a country’s debt sustainability limits, they cannot provide significant additional funding. However, they can be cheaper at times, commit the issuer to the promised expenditures, and elevate the issuer’s international standing.<sup>28</sup>



<sup>25</sup> The World Bank serves as the interim trustee, the secretariat, or as the fund administrator for the GCF, the CIF, or the GEF, respectively.

<sup>26</sup> An example of this is the Canada-IFC Blended Climate Finance Program (IFC (2022)).

<sup>27</sup> IMF (2022) and Songwe, Stern, and Bhattacharya (2022) provide an overview of these issues.

<sup>28</sup> However, EMDEs may face challenges with regards to project execution and can confront high credit risk premia. This may necessitate innovative financing solutions at a large scale (BlackRock Institute (2021)).

## E. The Investor Base for ESG Bonds

**The growth in ESG investing is buoyed by multifaceted investor demand.** The growth of ESG bond issuance has been driven by the end-investors' demand, with pension funds and individual investors in the vanguard (Boffo and Patalano (2020)). In turn, this demand has caused the institutional investors who invest on their behalf to align their product offerings and investment processes. Besides the demand from end investors for ESG-investments, these portfolio managers refer to their own concerns about climate change, regulatory pressures, and reputational concerns as major reasons for the integration of ESG into their investment methodologies (Ground (2022)).

**The integration of ESG into investment decisions can be based on a range of approaches.** The manner in which ESG is integrated into an investment approach depends on the investor's intent. Some investors use ESG as an input to minimize ESG-specific risks to their portfolios, while others are concerned with the impact that the funding they are providing will have. The former—usually risk-minimizing investor—are also known as ESG-inclusive investors, while the investors that are concerned about the effects of their investments are known as impact investors. The ESG-inclusive investment approach encompasses the consideration of certain ESG factors as inputs into the portfolio management process, while impact investors aim to attain tangible gains driven by their investments. ESG inclusion is sometimes limited to the Governance factor, which has been part of many traditional total return-focused investment approaches.<sup>29</sup>

**ESG investing results in a need for more intensive investor communications on the part of the issuer.** ESG-inclusive investing can simply mean the exclusion of undesirable securities, while impact investing can be associated with active securities selection and intense communications with issuers.<sup>30</sup> Some ESG investors simply exclude an issuer if that issuer does not meet certain minimum criteria; other investors look at individual issuances on a case-by-case basis. Passive ESG funds may use ESG scores provided by ESG analysis firms and data providers, effectively using an issuer or securities exclusion approach. Some may benchmark their performance to ESG indices, which also could lead to an investment universe restricted to admissible issuers and securities. Impact investors focus on the tangible impact that their investments will have, for instance on the social fabric of a country or the climate transition. This can mean the purchase of a bond issued by an issuer with a low ESG score, but where the funds raised can be expected to lead to a noticeable decrease in GHG emissions or noticeable improvement in the lives of disadvantaged parts of a population. Before making an investment decision, such investors require significant information about the ambition and the realism of the projects to be financed. It should be noted that most portfolio managers, including impact investors, will only acquire a security if it meets their minimum credit risk requirements.

**The size of the ESG investor base, while large, is hard to determine.** While it is uncontroversial that the Assets under Management (AUM) with an ESG focus have grown fast since the mid-2010s, estimates of the

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<sup>29</sup> "Governance has traditionally been regarded as the most material ESG factor for sovereign debt and has been extensively incorporated into credit rating models and valuations. Investors can seek measures of a country's political stability, government and regulatory effectiveness, institutional strength, levels of corruption and the rule of law." See Principles for Responsible Investment (2019).

<sup>30</sup> The range of ESG approaches is often associated with ESG as an input—that is environmental, social, or governance criteria are part of investment processes whose objective is return maximization—to impact investors for whom the expected ESG outputs of their investments are a central plank of their portfolio construction process and investment analysis.

AUM vary greatly.<sup>31</sup> An estimate based on funds whose mandates include ESG-related objectives arrived at an AUM of USD 7.2 trillion as of end-2020 (J.P. Morgan Research (2020)), while GSIA (2020) reports an AUM of USD 35.3 trillion as of early 2020. The latter number is based on survey responses and could therefore include many investors who use ESG criteria only sparsely, or for whom governance factors are the main ESG factor used. While the overall size of the fund universe that focuses on ESG bonds is large,<sup>32</sup> issuers have to consider which type of ESG investor they want to approach.

**Issuers should take investor expectations into account when issuing ESG bonds.** To successfully issue an ESG bond means to know which types of investors to attract—for instance, impact investors often have stricter requirements with regards to a green bond's projects than other ESG investors. For example, some investors are not attracted to certain structures, like SLBs.

**The ambition related to an ESG bond, project additionality, and the potential for greenwashing shape investors' ESG bond assessments.** Ambition broadly refers to the extent to which the projects to be financed by an UoP bond or the KPIs and SPTs referenced in an SLB will make a meaningful difference compared to some baseline. Ambition with regards to an UoP bond is closely related to project additionality, that is whether the projects that will be financed by an UoP bond issuance would not be financed in its absence. Many investors consider additionality an important positive factor when evaluating a bond. While a Second Party Opinion (SPO) provides an important level of assurance to investors that the bond they are considering buying has fulfilled basic requirements, more focused ESG investors will often perform their own proprietary analysis of an ESG bond's effectiveness. It therefore benefits the issuer to develop bond frameworks that are broadly reflective of investor demands.<sup>33</sup> Projects might be poorly designed or badly executed, leading to limited tangible improvements on the ESG front. An issuer should ensure that projects are of high quality and that no greenwashing occurs.<sup>34</sup> An instance of greenwashing could make it hard, if not impossible, for a sovereign to issue additional ESG bonds, and impair its ability to issue conventional bonds easily. The latter could be due to investors questioning the country's governance, dependability, and capacity to execute.

**Issuers need to communicate with investors and lead managers throughout the drafting of their ESG frameworks as well as post-issuance.** This will ensure that the frameworks will attract the largest pool of investors possible and reduce the potential for adverse publicity. Discussions after an issuance can lead to revisions in a bond framework or the inclusion of conditions in the next issuance that lead to greater alignment with investors' expectations going forward.<sup>35</sup>

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<sup>31</sup> One reason for this is that most of ESG-related investment mandates are institutional, and it is hard to find definite numbers on these.

<sup>32</sup> The above numbers include equity, fixed income, and other funds. In the early 2020s about two-thirds of the ESG-oriented AUM was invested in equities, with the rest largely in fixed income.

<sup>33</sup> For example, a lower share of transportation projects in envisaged allocation of proceeds can constitute a positive, since many investors do not consider transportation expenditures as high-quality in terms of environmental outcomes.

<sup>34</sup> Greenwashing takes place if the issuer of an SGB does not implement projects with a material environmental benefit. This could be due to the issuer focusing on the public relations aspects of the green issuance and not executing the promised projects appropriately, a lack of capacity during project execution, or outright fraud (i.e., the promised projects had little or no environmental benefit to start with).

<sup>35</sup> The communications related to ESG-bonds should be part of the communications with all bond investors. See Knight and Northfield (2020) for a description of the latter.

**Sustainable finance taxonomies are playing a greater role in sovereign ESG bond issuance.** A taxonomy is a “classification system for sustainable economic activities,” linking investments to their environmental impact (European Commission (2022a)). Taxonomies may be designed by a variety of stakeholders, separately or jointly are provided by the public sector, non-profit entities} or private sector entities) and allow investors to gauge the environmental or broader sustainability benefits of individual investments, companies, as well as of whole portfolios.<sup>36,37</sup> While the International Capital Market Association’s (ICMA’s) green bond principles (GBPs) do not require the adoption of a taxonomy, some investors are adopting them, either because the use of a specific taxonomy helps them assess the environmental impact of their investments more easily and with greater consistency, or because regulations constrain them to provide specific disclosures on the alignment with a taxonomy (such as the taxonomy provided in European Commission (2022b)). Some SPO providers offer the issuer the option to formally align the SPO to a specific taxonomy, or they assess the environmental impact of the investments proposed in the Green Bond Framework (GBF) based on their proprietary approaches. Either approach will result in a reduced rating of the GBF if the mix of projects listed does not score well. With taxonomy alignment bolstering the credibility of SPOs in the eyes of investors, the likelihood is high that investors will consider them as a positive factor or even require them when investing.

## F. Refinancing Sovereign ESG Bonds

**ESG bonds that are about to mature could add additional complexities to the refinancing process.** To retain the benefits from SGB issuance, SGBs should be refinanced with newly issued SGBs as long as the projects that were financed are still in operation. While it appears that currently some SGB issuance takes place opportunistically, the refinancing of ESG bonds may involve more careful preparation, for instance with regards to investor targeting. Projects that are not eligible for green financing, or which are not considered as providing noticeable environmental benefits anymore by investors may make it impractical to issue an SGB for the sole purpose of refinancing. Instead, a newly issued SGB can contain funding for refinancing existing projects and new projects (ICMA (2021a)). In an environment where the demand for green sovereign bonds exceeds supply, the issuer should be able to conduct rollovers and generic liability management operations.

**The refinancing of maturing ESG debt may require careful attention.** One potential risk is that the demand-supply imbalance for the type of ESG bond that needs to be refinanced may deteriorate, with the greenium turning negative. While this would likely constitute a limited risk,<sup>38</sup> issuing ESG bonds at a premium to conventional bonds would contradict the DMO’s mandate to minimize long-term cost subject to risks. Efforts to contain negative greenium should be made, including limiting the supply of ESG bonds.

**Sovereigns must be aware that the market for ESG bonds is constantly evolving.** Since late 2016, standards and market practices have emerged which make it easy to sell ESG bonds to many investors who place emphasis on owning such securities. However, issuers need to follow changes in market practices and the standards applied to “investable” ESG bonds. For instance, in the current environment the concept of “additionality” of projects—meaning projects that are new and therefore would lead to a net reduction in GHG

<sup>36</sup> The determination of an investment’s environmental benefits can be complex. While many investments are “green,” their environmental benefits may differ, or they have distinct side effects. For instance, a hydropower project will ultimately contribute to a reduction in GHG emissions, but it can have substantial adverse social effects by displacing populations.

<sup>37</sup> There can be a political connotation to a taxonomy. For instance, the EU’s recently enacted green taxonomy leaves room for gas-fired and nuclear power plants under certain conditions during a transition phase.

<sup>38</sup> Investors who do not espouse an ESG tilt in their investment decisions may purchase ESG bonds if those provide them with a yield pickup, thereby limiting the size of such yield pickups.

emissions—is often not on the forefront of investors’ concerns, with sometimes more than 50 percent of funding raised going to already completed projects. Similarly, the types of projects excluded from green bond financing might increase. An issuer that abided by standards that were acceptable by many investors in 2022 may not be abiding by the standard acceptable to investors in 2027. This could make rolling over an issue or issuing new green debt harder than anticipated.<sup>39</sup> Increasing call outs of greenwashing might also tighten the standards and reporting requirements.

**More complex refinancing operations involving ESG bonds could give rise to greater challenges.** For instance, if a sovereign offers investors the opportunity to exchange a variety of existing bonds for new bonds with different maturities and coupons, perhaps incorporating changes to the bonds’ indentures, it may have to offer ESG and non-ESG bonds to accommodate the demand from the two investor types. The DMO in conjunction with its advisers and the lead manager of such an exchange would have to address the concerns of those different investor types and may have to offer the holders of ESG bonds new bonds which are different from what the holders of conventional bonds are offered. This question could become more critical during a sovereign debt restructuring, when time can be of the essence and the existence of green and other labeled bonds means that more diverse preferences of the more fragmented investor base must be considered when designing the exchange, with the time required for the restructuring possibly extending. If the holders of an SLB anticipate an increase in the coupon due to the sovereign’s failure to perform on the SPTs, they might be less inclined to participate in a liability management operation (LMO) involving this SLB.

**Debt managers should therefore evaluate market conditions for ESG bonds continuously and well in advance of any rollover.** This will provide them with a good handle on changes in demand and market conditions and being able to select the most appropriate securities for LMOs and exchange offers.

### III. Preparing for a Sovereign Green Bond Issuance: Capacity and Operational Requirements

**ESG debt entails changes to the Public Financial Management (PFM) process, with the discussion in this section focused on sovereign green bonds (SGBs).** With green bonds representing the type of ESG debt most frequently issued by sovereigns, this section provides considerations for the integration of SGB issuance into the PFM process.<sup>40</sup> Sovereign social bonds follow the same issuance procedures as SGBs but can be expected to require less preparation pre-issuance and lower monitoring costs post-issuance.<sup>41</sup>

<sup>39</sup> For example, the war between Russia and Ukraine that began in February 2022 has led some investors and investment consultants to reconsider their exclusion of the defense sector from ESG-funds (Investment Monitor (2022)). Both issuers and investors have to consider that the definition of the “E”, “S”, or the “G” factors can change over time, or that the weights applied to the “E”, “S”, and “G” factors or their subcomponents can change, affecting demand for newly issued ESG bonds.

<sup>40</sup> Loan issuance follows a similar process but will be easier to conduct due to lower transparency requirements.

<sup>41</sup> For instance, emergency payments made during the Covid-19 pandemic, or the provision of subsidies to disadvantaged parts of the population.

## A. SGB Issuance and Public Financial Management<sup>42</sup>

**Proper assessment of the environmental benefits of climate-related expenditures provides significant support to the SGB issuance process.** When PFM shifts to a framework that not only measures and records a fiscal project's impact, but also its environmental effects, PFM's complexity increases (Gonguet et al. (2021)).<sup>43</sup> If a country's PFM process can comprehensively capture these environmental benefits, it could be very supportive to the green bond issuance process. Ex-ante projections of the environmental benefits of the expenditures that fall under a green bond framework will lead to more impactful expenditures and increase the credibility of the framework and the subsequent bond issuances. It would also help with the post-issuance reporting on the environmental benefits of the relevant project expenditures.

**PFM can provide critical support for SGB issuance through the provision of data on the financial flows that are associated with SGB-financed projects.** An accounting of all project-related financial flows is strongly encouraged by the ICMA's Green Bond Principles (ICMA (2021a)) and has effectively become a market standard. If the MoF can provide the required data to the DMO, reporting and investor communications would be significantly simplified. DMO staff could then focus on the investor communications that the country's SGB issuance entails.<sup>44</sup>

**The issuance of SGBs requires significant cooperation across ministries and agencies, making political leadership paramount to the issuance process.** The depth and scope of the required interagency cooperation might come as a surprise to many governments. It crosses different ministries—often involving the ministries of finance, economy, environment, industry, energy, housing, infrastructure—and can involve the central bank and security and banking regulators. Guidance by the prospective issuer's political leadership—President, Prime Minister, and others—have proven to be of great help in bolstering cooperation between different ministries. Generally, a country that is preparing for an SGB issuance will convene an interagency committee that drafts a SGBF and guides the issuance (see Figure 2). Consultants, TA providers, the Sustainability Structuring Advisor, the SPO provider selected by the country, and at some point, the lead manager of an issuance can assist the sovereign with the drafting of a Sovereign Green Bond Framework (SGBF) and with project selection.<sup>45</sup>

**A key factor impacting the choice between issuing an SGB or a sovereign SLB can be legal requirements with regards to the earmarking of the issuance proceeds.** The budget frameworks of many countries put significant restrictions on the earmarking of proceeds or prohibit earmarking completely. While most investors are accepting proceeds tracking of green expenditures, in cases where proceeds tracking is not possible, SLBs may provide the only avenue for ESG bond issuance short of changes to the country's legal framework.

<sup>42</sup> For more detail on the relationship between the green transition path pursued by governments and the budget process, see EU, IMF, OECD (2021).

<sup>43</sup> Project in the context of this Note refers to any type of expenditure that falls into the project categories listed in ICMA (2021a). These expenditures encompass traditional "hard" infrastructure projects—electrifying a railway line or building a sewage treatment plant—designing and implementing a recycling initiative, or subsidies towards the purchase of electric vehicles. See page <sup>10</sup> for details.

<sup>44</sup> ESG-focused investors require more resources since they often request detailed updates on the performance of the SGB-financed projects.

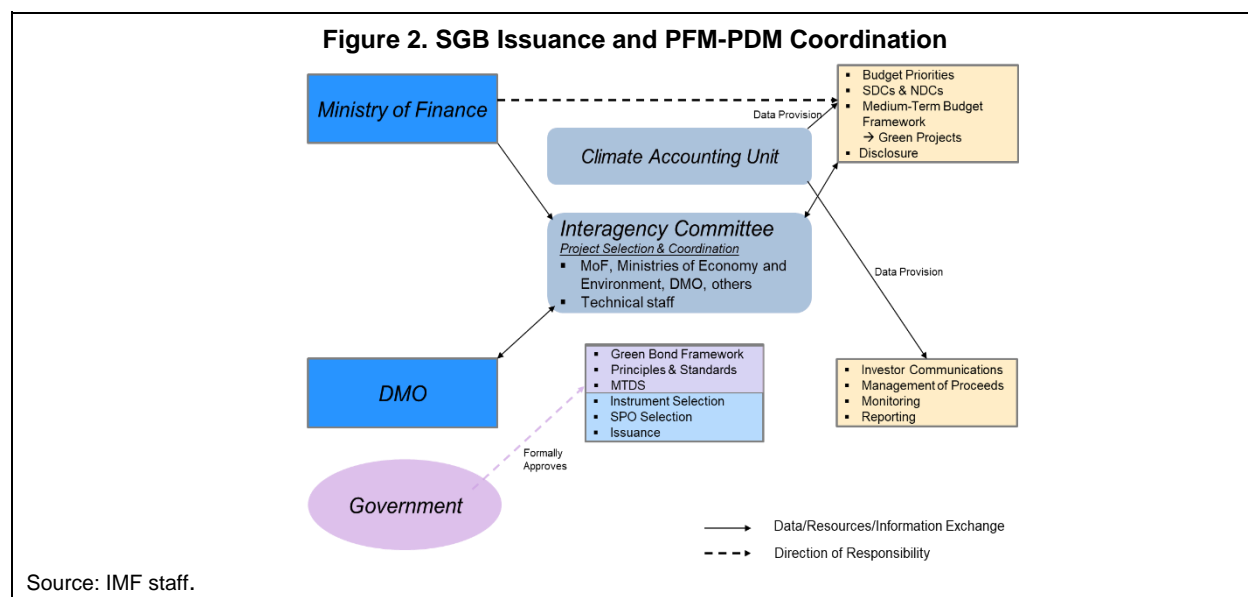
<sup>45</sup> An SGBF outlines a country's plans for the financing raised in the markets, its alignment with the ICMA's GBPs, and the UN's SDGs.

## B. Operational Requirements

**Sovereigns have to be conscious of the operational and market requirements associated with SGB issuance.** The issuer may need to improve the collection of information necessary to fulfill its obligations stemming from SGB issuances and promote the flow of information across government departments.

**Government entities involved in PFM and the DMO will have to cooperate more closely through the lifecycle of an SGB, compared to a conventional bond.** To enable recurring issuances of SGBs that finance impactful projects in an efficient manner, the DMO and the relevant fiscal units will have to appropriately cooperate and coordinate their activities related to SGB issuances. This can involve the addition of staff with suitable technical skills and potentially even adding new units to accommodate the tasks and workstreams associated with SGB issuance.

**The more SGB issuance can rely on an appropriate PFM and on other units of the government, the easier the DMO's work will be.** Figure 2 provides a schematic describing the relationship between PFM and the DMO with regards to SGB issuance. Central to the government's efforts in the environmental and the wider ESG space is good data collection and analysis. The field labelled "Climate Accounting Unit" (CAU) in Figure 2 describes this government function, which is central to the budgetary efforts in the environmental area. Organizationally, the CAU could be part of the Ministry of Finance, the Ministry of the Environment, or it can be operating as a cross-agency entity that as combines the capabilities of different government agencies related to the environment. In practice, the CAU will be established within a country's administrative structure, operate within the sovereign's climate and fiscal frameworks, and its responsibilities should be clearly described.



**An Interagency Committee should be set up to facilitate collaboration between the DMO, the relevant units in the MoF and other line ministries whose inputs are required for SGB issuance.** Formalizing the collaboration through the establishment of an Interagency Committee strengthens the governance of the

process of selecting and evaluating the projects that could receive SGB financing and provides a venue to discuss other issues related to SGB issuance.<sup>46</sup>

**The SGB-relevant outputs are shown on the right side of Figure 2.** The budget framework is central to this process since it provides the envelope for the projects that will be financed by the SGB issuance. The Interagency Committee can have an impact on the budget framework, for instance if it helps to increase the funding envelope for green projects.

**The Interagency Committee decides on the projects that are eligible for SGB funding, with the DMO receiving the relevant information and then executing the bond issuance.** Investor communications should remain firmly under the aegis of the DMO and may need strengthening (Knight and Northfield (2020)). To fulfill its role related to SGB issuance, the DMO will need comprehensive data on proceeds management and the environmental and social impact of the projects funded by SGB issuances.<sup>47</sup>

**The ultimate operational structure used to issue SGBs, provide financial and impact reports, and collect data will depend on country's administrative structure and the credibility of institutions.** The administrative structure espoused in Figure 2 has data collection and other climate-related data compilation and analysis concentrated at the CAU. Since climate-related data are not only needed for bond issuances and debt management, but also for budgetary and economic planning purposes, a central unit that can support all these aims and employs appropriately skilled staff would likely provide significant efficiencies compared to other organizational structures. The DMO would utilize data and analysis from provided by the CAU for its own purposes, especially in investor communications and the preparation of an MTDS document, for instance. However, a country where changes to government operations can be hard to institute or where it is hard to staff a CAU appropriately, the DMO can play a larger role in data collection, storage, and analysis. The quality and credibility of the data that the DMO relies upon may also cause it to perform a larger share of those tasks in-house.

## C. DMO Capacity

**ESG bond issuance, especially most climate bond issuance, entails the need for additional capacity at the sovereign's DMO.** The areas within the DMO that will need strengthening comprise: (i) bond issuance; (ii) market monitoring; (iii) investor communications; (iv) reporting; and possibly (v) the addition of environmental expertise. Other than (v), the above will generally require augmenting already existing capacity. However, the DMO management should make allowance for the additional capacity needs, which could mean adding full-time staff.

**SGB issuance is more capacity intensive than issuance of conventional bonds.** The vast majority of green bonds are issued in alignment with the ICMA's Green Bond Principles (GBPs). The GBPs strongly recommend the use of an external review of the issuer's green bond framework—in most cases a second party opinion is used for this—and a certification or audit of the post-issuance reporting. While these review, certifications, and audits are performed by third parties, additional work remains to be done by DMO staff: the

<sup>46</sup> The presence of such a committee is considered a standard market practice by SPO providers, for instance (Sustainalytics (2018)). Such committees can carry different names, for instance green bond working group.

<sup>47</sup> With regards to proceeds management and monitoring the DMO might have to rely heavily on the assistance provided by the CAU, the Treasury, and the central bank.



SPO provider and other service providers have to be selected, the SPO provider needs to be familiarized with the country's fiscal and debt management procedures and its environmental framework, and changes to the SGBF may have to be discussed. Attention should be paid to the continuously changing ESG bond market, resulting in added market monitoring efforts. Some of those will consist of data collection and interpretation, but they should be augmented by ongoing communications with banks, SPO providers, NGOs, and other stakeholders.

**Communications with ESG-focused investors will add to the incremental capacity requirements necessary to issue SGBs.** Those will include the provision of information on the projects financed by SGB issuances and will occur pre- and post-issuance. The exact add-ons to capacity that are needed will depend on the capacity on the fiscal side that is supporting the DMO's work. If a well-resourced Climate Accounting Unit exists, technical requests for information by investors and possibly other stakeholders can be answered by this unit, reducing the need for additional ESG bond-related capacity at the DMO. Countries whose fiscal capacity is in the process of adjusting to the needs of green budgeting may only be able to provide relatively basic support to their DMOs. In such cases, the DMO will have to build some technical environmental capacity, at least temporarily.<sup>48</sup> Reporting requirements—for instance, the project impact report—will have to be fulfilled by the DMO. Again, the scope of necessary capacity additions will depend on the existing fiscal processes and the available resources that are focused on environmental issues.

## IV. Sovereign ESG Bond Issuance

### A. The Green Bond Issuance Process

**This section describes the unique aspects of the issuance process of a SGB compared to conventional bond issuance.** The issuance process for other ESG bonds broadly follows similar templates. Elements of the issuance process for sovereign sustainable bonds that differ markedly from the process for SGBs are described later in this Section. Some of the steps needed when issuing for the first time can be accelerated or skipped in the case of a repeat issuances.<sup>49</sup>

**SGBs require additional steps compared to the issuance of conventional bonds.** Investors in SGBs generally want to see the funding they provided earmarked towards the types of projects outlines in the issuer's SGBF and in the documentation accompanying an issuance.<sup>50</sup> When SGBs were first issued the funds raised were sometimes ringfenced from general funds so that the funds are not used to pay for goods or activities considered off-limits by investors.<sup>51</sup> However, ringfencing is not consistent with many fiscal practices, and in the case of external bonds, could subject an issuer to negative carry. Ringfencing is therefore not used anymore when issuing sovereign UoP bonds. Similarly, the budget frameworks of many countries do not allow for the earmarking of revenues or receipts from debt sales.<sup>52</sup> Investors have adjusted to this inability of many

<sup>48</sup> The incremental capacity needs from ESG bond issuance can come in unexpected ways. For instance, the head of a DMO described how some members of its staff visited waste-water treatment plants and other projects funded by an SGB issuance to enable them to answer investors' questions.

<sup>49</sup> For instance, setting up the institutional structure for the issuance or drafting the GBF.

<sup>50</sup> Earmarking of budgetary resources is discouraged by many public finance standard setters (for instance, Potter and Diamond (1999)).

<sup>51</sup> For instance, many ESG investors do not want to fund military expenditures, or nuclear or coal-related power generation.

<sup>52</sup> These requirements are often embedded in countries' laws, and sometimes even in their constitution.

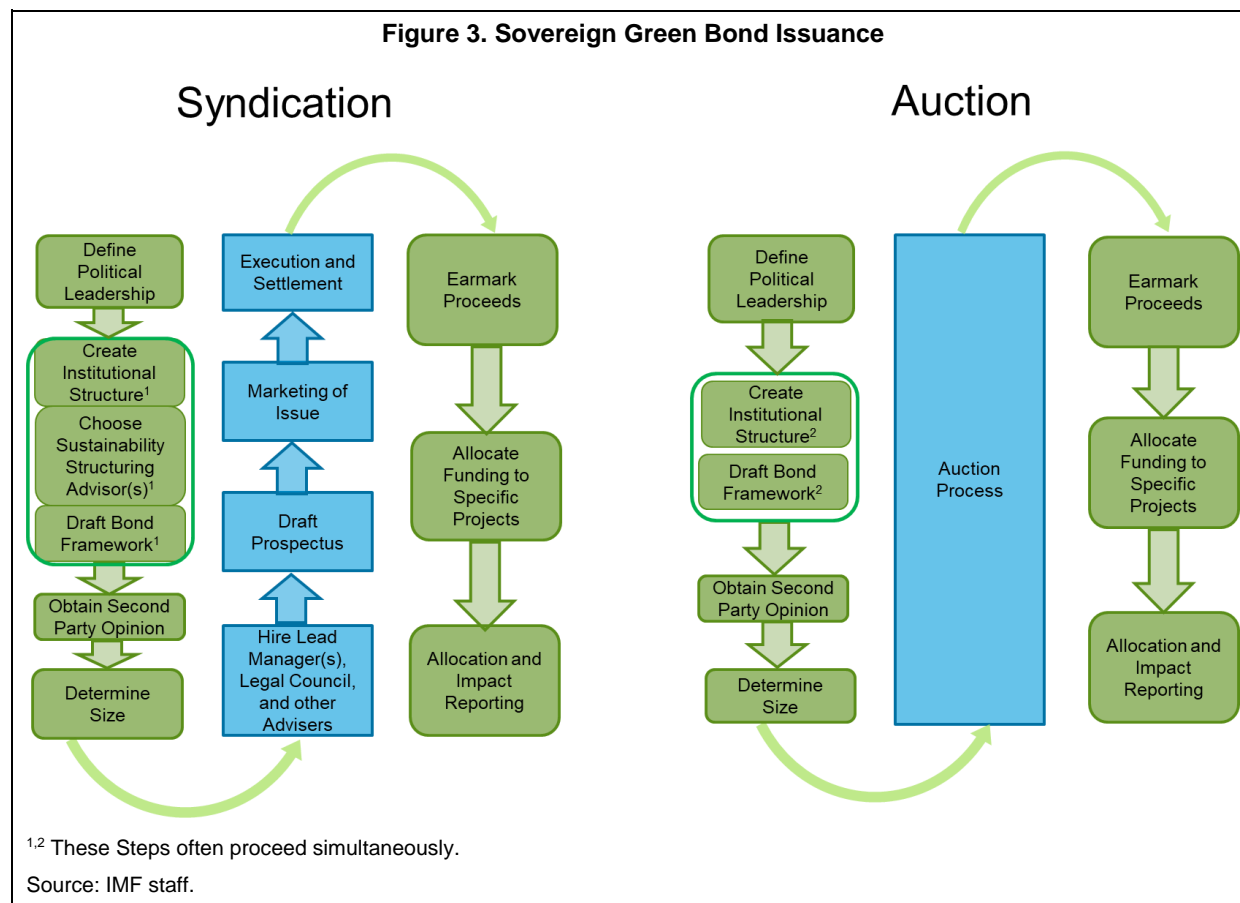
sovereign issuers to earmark issuance receipts towards specific expenditures, and only expect equivalence between the expenditures described in the bond issuance framework or the prospectus and the issuance proceeds. Therefore, to be credible, SGB issuance requires the tracking of all relevant expenditures as well as determining their environmental impact. Until all the funds raised from an SGB issuance have been spent, the progress on the spending should be closely tracked by the government, and periodic reports should be published that shows which projects have received funding so far. Also, the environmental impact from the projects funded by green bonds should be tracked and made public in the form of a periodic impact report.<sup>53</sup>

**This means that the issuance of SGBs requires steps beyond what is necessary to issue conventional bonds.** For the issuance of a syndicated SGB, eight additional steps can be identified, five of which take place pre-issuance, and three post-issuance (Figure 3). SGB issuances are supported by a Sustainability Structuring Advisor, who plays important role when a SGBF is drafted. The sustainability structuring advisor provides advice on how the issuer should organize its internal processes, what type of projects can be eligible, and helps with communications with potential investors and the SPO provider. This advisor can be a bank—which sometimes becomes the lead manager—or an independent advisory firm.

**The in-depth description below follows the issuance of an SGB from the time the decision to issue has been made.** There exist many variations in those practices to accommodate issuer-specific conditions or investor requirements. Some of those variations are described below if there has been market take-up or they can be replicated.

**The steps at the center of conventional sovereign bond issuance are also at the center of the issuance of green bonds.** In case of a syndicated bond, this includes four steps—from hiring legal counsel and advisors, drafting the prospectus, and marketing the issue, through execution and settlement. If the bond is sold via auction, the same auction process as used for conventional bonds can be employed. See the four blue boxes in the center of the left side of Figure 3 that illustrates the syndication process, or the blue box on the right side of Figure 3 which depicts the auction process.

<sup>53</sup> The allocation and the impact report can be published together. Publication at an annual frequency is common.



## Pre-Issuance

### Establishment of Political Leadership

**Political leadership is central to the SGB issuance process.** The initiative for SGB issuance should come from the governmental leaders or the issuance should have received their endorsement. Many stakeholders in the issuance process view political leadership and guidance as a core element in the issuance process. Cross-agency cooperation will have to be established, ministries will have to identify projects for execution under the SGBF, and debt managers will have to identify the appropriate security type and establish the appropriate issuance modalities. A strong political leadership can help to break down bureaucratic barriers and foster cooperation across ministries, agencies, and government departments.

### Creation of the Institutional Structure, Selecting the Sustainability Structuring Advisor/Lead Manager, and Drafting the Green Bond Framework

**We outline a three-pronged process that first-time issuers of SGBs can follow to complete the issuance in a timely fashion.** Central to the issuance is the drafting of the SGBF, which provides investors with the requisite information on the ESG properties of the bond. This framework will have to include definite guidance as to the types of projects to be financed, and the share of issuance proceeds that can be allocated to pre-issuance projects.

**A SGBF describes how the funding raised will contribute to the mitigation of and adaptation to climate change and other environmental goals and help advance social goals.** The topics covered include the: (i) description of the types of projects that are targeted for funding by the bond issuance and the timing of expenditures; (ii) specification of the alignment of the projects with the country's NDCs, the UN's SDGs, and its national climate policies; (iii) provision of information on the alignment with ICMA's Green Bond Principles and reliance on any sustainable finance taxonomies; and (iv) the provision of information about legal and operational matters related to the issuance (ICMA (2020a) and (2021b)).

**The first step is the appointment of a sustainability structuring advisor who assists in the drafting of the SGBF and provides other advice.** Based on analysis of prior years' budgets, a country's budget framework, and its execution abilities, an experienced sustainability structuring advisor can help draft an SGBF that is realistic and appeals to investors. The advisor's experience drafting green bond frameworks can catalyze the drafting process. An experienced advisor will have good insights into investor demand and can provide guidance to the issuer regarding the types of projects to select, expenditure exclusions, the lookback period through which proceeds can be applied to past expenditures, and the period by which the funds raised will have to be spent by.

**Additional factors impact the appointment of a sustainability structuring advisor.** The advisor can assist in communicating with the SPO provider and investors on the direction the country's SGBF is taking.<sup>54</sup> In case of a syndicated issuance, the sustainability structuring advisor is frequently a bank and can be the eventual lead manager of the first issuance under the SGBF being drafted. The advisor should be selected via an RFP process prior to the drafting of the SGBF. The other lead managers, which are usually selected later, are often called "active joint bookrunners." Combining the roles of the sustainability structuring advisor and the lead manager of the eventual syndicate allows the remuneration due to the sustainability structuring advisory to be folded into the issuance fee.<sup>55</sup> Similar to the role of lead manager being shared amongst two or more banks, a sustainability structuring advisory mandate can be shared amongst a few advisors.

**Clear lines of responsibilities and cooperation need to be established within the government to advance the bond issuance.** Senior officials should oversee the process leading up to an issuance, with one senior person from the DMO or the MoF serving as a single point of contact for communications with lead managers, investors, and SPOs. A Climate Accounting Unit and an Interagency Committee that is focused on the issuance and the formulation of the SGBF should be established within the government (Figure 2). Many SGB issuers have at least one staff dedicated to ESG bonds in the DMO and have set up a cross-cutting Climate Accounting Unit or similar entity to contain dedicated staff like climate scientists and climate economists, house data, and potentially conduct applied research.

**A SGBF is not limited to a specific issuance but can be used for a few years.** An SPO constitutes a point-in-time assessment of the SGBF. However, an issuer can use it repeatedly for taps as well as for new lines of SGBs that are issued. Care must be taken that repeat issuances under an existing framework abide by the project types and other conditions outlined in the SGBF.

<sup>54</sup> Some market participants noted that with the SGB market having become more standardized, such communications have become less relevant.

<sup>55</sup> Indicative fees for such mandates have hovered around US\$200,000. The exact fee for a specific mandate is subject to negotiations and competitive pressures and can deviate substantially from this number.

## Obtaining a Second-Party Opinion

### **A review of the SGBF by an external third parties has become the standard in green bond issuance.**

The most-often used type of review are the so-called Second-Party Opinions (SPOs), which are conducted by (usually commercial) entities called SPO providers. An SPO provider reviews the draft SGBF and, in the case of sovereign issuers, often engages with country authorities to receive clarifications and to discuss changes to the draft framework. An SPO assesses an SGBF's adherence to the Green Bond Principles and the frameworks' overall credibility. Many investors look for a positive SPO assessment prior to purchasing a green bond. While SPOs have to a degree become a market standard, other types of assessments and reviews can be used in lieu or in addition to SPOs (Boxes 1 and 2). Many investors conduct their institution-specific analysis of GB issuers and any issuances that are being marketed, with a positive SPO assessment constituting only a necessary condition that has to be fulfilled before further analysis of the issuance takes place. SPO providers can also update a previously existing GBF.

### **Box 1. SGBFs and Second Party Opinions**

SPOs have become a tool used by issuers and expected by investors. SPOs are provided by entities that offer advisory services to ESG debt issuers. While SPOs constitute only one of several types of opinions and review services that is provided in relation to green bond issuances,<sup>1</sup> they are the most frequently used type of assessment in the ESG bond space. Key reasons underlying this development are:

- **The SPO's focus on the issuer's SGBF and its alignment with the ICMA's GBPs.** The ICMA's GBPs are comprehensive and easy to understand. Currently, all issuers of green bonds are referencing their alignment with the four pillars of the GBPs. The country's objectives with regards to climate change mitigation and adaptation and regarding its environmental track record also impact the SPO's result.
- **SPOs can be completed relatively quickly.** It can take only 10 days from the time of the signing of the contract for an SPO to the receipt of the assessment, although it usually takes a few weeks to receive the assessment. One SPO provider estimates the median time across all SPOs to be two weeks, with another one providing a range of 8-12 weeks for a sovereign SPO. Major factors affecting this period are the complexity of the SPO and the ease of communications with the authorities.
- **Once assessed, the SGBF can be used for a few years.** An SPO provides a point-in-time assessment of the issuer's GBF; it is therefore not forward-looking by design. However, an issuer can decide to use it for future issuances or in support to follow-on offerings of outstanding issues. The key here is that investors believe in the applicability of the SPO's conclusions, even if the SPO took place some time ago.
- **The sustainability structuring advisors involved in a planned issuance can provide significant support to the issuer in drafting its SGBF.** This is in the case of a country that has no experience with green bond issuance. The SPO provider will then direct most of its questions or comments on the GBF to the lead manager rather than the country authorities. This process helps accelerate the review process but is also one reason why many GBFs are quite similar.
- **Market dynamics can play an important role.** Once a large share of market participants has converged on a particular way of doing business with each other, they will face strong incentives to continue along this established way. For instance, issuers, banks, and investors expect that the other parties to an issuance expect a SGBF and an SPO that assesses the credibility of the SGBF and may also provide a rating. This leads to standardization and promotes economies of scale, leading to faster and cheaper issuances. An example for this is the above-mentioned participation of lead managers in the drafting of a SGBF.
- **The issuance of non-green ESG bonds is based on other customized frameworks.** These are social bond frameworks, sustainability bond frameworks, and sustainability-linked frameworks. Given their distinct characteristics, the frameworks underlying the issuance of SLBs are separate from SGBFs and should be slightly more expensive and time-intensive to perform. Some SPO providers are also considering offering "hybrid Frameworks," which would cover the issuance of both SGBs and sovereign SLBs. Chile received an SPO for a combined sustainable bond framework in November 2020, which covers its future green, social, and sustainability bond issuances.

If an SPO provider sees significant deficiencies in the country's sustainable bond framework it will often point those out to the issuer. This gives the sovereign the opportunity to address the deficiencies via a modification of the SGBF. If those shortcomings cannot be addressed in time, the process of SPO provision might end without an opinion.<sup>2</sup>

While every issuer is very much wants to see its SGBF approved so that issuances under it can commence, most SPO providers graduate their reviews to provide investors with a better impression of the framework's strength.<sup>3</sup>

<sup>1</sup> Review services that can help increase the credibility of ESG issuances are, for instance, Corporate Sustainability Assessments, ESG Evaluations, ESG Ratings, Green Transaction Opinions, and ESG Scoring, amongst others (see Box 3). Some of those have effectively been replaced by SPOs.

<sup>2</sup> Such cases are usually not made public.

<sup>3</sup> One SPO provider uses the qualifiers "aligned," "stronger," or "better aligned." Another SPO provider uses the terms "Shades of Green" in its name, indicating that graduated assessment is integral to its SPOs. Graduated assessments will be of importance to investors with a strong ESG focus.

### Box 2. Beyond Second Party Opinions

While SPOs have become the market standard for the provision of sovereign ESG bond framework assessments, the broader market for these types of evaluations includes a large variety of alternative services. There exist single transaction evaluations, which only cover the environmental or social benefits of an individual transaction. Those have become less popular over time, with only Ecuador having made use of one of those amongst sovereign issuers. Other types of review services or assessments that can help increase the credibility of ESG issuances include Corporate Sustainability Assessments, ESG Evaluations, ESG Ratings, and ESG Scoring, amongst others. Some of those have effectively been replaced by SPOs. ESG Evaluations, ESG Ratings, and ESG Scoring assess the ESG performance of an issuer, separate from SPOs or other more issuance-related assessments.<sup>1</sup>

Only four SPO providers have been active in the market for sovereign SPOs and related services, with V.E (a Moody's subsidiary) and Sustainalytics (an MSCI subsidiary) having the largest market shares as of mid-2022, followed by ISS ESG and CICERO Shades of Green. These firms are also offering integrated services, for instance SPOs that cover frameworks spanning different types of issuances (for instance, green plus social plus sustainability bonds), or green and bonds and SLBs). They also provide review services to verify the internal tracking and funds allocation from ESG bond issuances. Integrated offerings that combine SPOs post-issuance review services are also offered now.

More demanding is the process that verifies that a bond issuance conforms to the Climate Bonds Initiative's (CBI's) Standard.<sup>2</sup> For instance, Moody's (now V.E) provided a bond assessment of "excellent" to Nigeria's domestic issue of December 2017, while another third party (DNV GL) assessed the alignment of the issuance with the CBI's Standard. This issuance constituted the first CBI-certified sovereign bond. While many investors appreciate if an issuance follows the CBI Standards, the additional reviews involved add complexity and costs to the issuance process. It should be noted that on the cases of some developing economy countries donors have subsidized the cost of the SPO or the CBI certification.

<sup>1</sup> For instance, S&P provides an "S&P Global Ratings ESG Evaluation," which it describes as "... the ideal tool for investors in that it provides a forward-looking, long-term opinion of readiness for disruptive ESG risks and opportunities" (S&P Global Ratings (2021)). These scores were not available for sovereigns as of June 2022 (S&P Global Ratings (2022)).

<sup>2</sup> The Standard provides criteria that show the alignment of an issuance with the goal to achieve a maximum of 1.5 degrees Celsius warming over pre-industrial temperatures.

## Determining the Issuance Size

**The factors impacting the issuance size of an SGB go beyond the factors relevant for a conventional bond issuance.** The size of a conventional bond issuance is established by the budgetary needs of the country, market conditions, and additional factors like index inclusion criteria. In addition to these factors, other factors in the issuance of a green bond are the eligible projects that the bond aims to finance,<sup>56</sup> the lookback

<sup>56</sup> As noted earlier, eligible projects comprise subsidies that support the green transition and refinancings of existing green projects.

period for the refinancing of existing projects and the time limit by which all funds must be spent. A country's ability to track its project expenditures and to reliably assess the environmental impact of the projects post-issuance can also limit the number and types of green projects that green bonds can finance. Expenditure volatility arising from poor project planning or implementation capacity, as well as from the expenditures' dependence on the actions of households and corporations (especially for tax expenditures) should be considered. These factors, in combination with investor expectations, help to determine the issuance size.

### **The Core Issuance Process<sup>57</sup>**

**The four steps at the center of the syndicated bond issuance process are almost identical to the steps required for the issuance of a conventional syndicated bond (Figure 3).** The selection of the lead manager and an issuance advisor are central to the process, with the selection of at least one credit rating agency for a credit rating review also important. The legal advisor will be selected in conjunction with the issuance advisor and the lead manager(s). While the issuance of a conventional international bond by itself can take up to 18 weeks, a repeat issuance can proceed much faster than that. The capacity of the DMO will play a role in this process, too.

**With the sustainability structuring adviser and possibly the lead manager selected at the start of the issuance process, parts of the core issuance process can proceed in parallel with the ESG pre-issuance steps.** This helps to reduce the overall time requirements.

### **Post-Issuance**

#### **Separation of Proceeds**

**The funds raised should be separately tracked from the line items in the government accounts that finance general budgetary expenditures.<sup>58</sup>** Most green bond investors want to ensure that the green bond funding they provide is not used for purposes they find objectionable. Sovereigns have adopted different approaches to fulfill their investors' expectations in this regard which range from complete segregation of the receipts to less stringent procedures. Investors have become aware that segregation of proceeds is not consistent with sound fiscal practices, and the market has therefore gravitated towards proceeds tracking. Below we present the three most commonly methods of segregating green bond proceeds (The World Bank (2018)), although in practice sovereigns can choose approaches similar to the ones described here and adopt them to their circumstances as well as to investor demands:

- *Proceeds tracking:* This has become the market standard for sovereigns by 2022. The funds raised are deposited in the general treasury account(s), with the green funding identified and the corresponding expenditures tracked. The issuer ensures proper tracking and promises that the green funds will not support excluded expenditures. Generally, proceeds tracking does not constitute a legal obligation under an issuing sovereign's laws, and thus does not violate any laws that constrain or prohibit earmarking. Rather, proceeds tracking allows the debt manager to show the bond investors that the promised projects were executed in line with the promises made to them.

<sup>57</sup> "Core Issuance Process" describes the steps necessary to issue a conventional sovereign bond. For details on the issuance process see van der Wansem, et.al (2019) and Practical Law Capital Markets (2022).

<sup>58</sup> Depending on the issuer's account setup, this could be a single general treasury account, or all of the government's accounts.

- *Sub-account approach:* While part of the general treasury account(s), the proceeds are tracked in a sub-account from which green project expenditures are deducted when they occur. The sub-account can contain the receipts from sequential green bond issuances.
- *Full segregation:* The bond proceeds are kept in an account that is fully separated from other government accounts. The funds can only be released to pay for the planned green projects. Full segregation corresponds to the ringfencing of the funds, which means that the affected funds can only be spent on the projects described in the SGBF, with the funds not usable for any other purpose (even temporarily). This approach can be modified to allow for keeping the receipts from sequential green bond issuances in the same account.<sup>59</sup>

If the issuer's legal framework equates proceeds tracking with earmarking, and its budget laws do not allow for the earmarking of proceeds, the issuance of an SGB could require legal changes; alternatively, the issuer might consider the issuance of an SLB.

### Allocation of Proceeds

**This part of the post-issuance process is central to the impact of the SGB and its credibility.** While the SGBF provides ranges for expenditure categories that the issuer vows to undertake, allocations to specific expenditure items have to be only made post-issuance.<sup>60</sup> The planned expenditures have to also fit into the pre-and post-issuance timeframes that limit the allocation of expenditure towards projects that existed pre-issuance. With regards to projects that are not finalized and are slated to receive funding, it should be ascertained that they can be finished on time. Only projects for which financial flows and environmental impacts can be reliably tracked should be funded.

### Allocation and Impact Reporting

**The issuer of a SGB provides reports on the expenditures as well as on the projects' environmental impact.** The ESG-focused green bond investors want certainty that the funding they provided has been directed towards the promised projects within the indicated timeframes, and they want to know what the environmental effects of the projects financed have been. Therefore, an expenditure report should be published until all funds are spent, usually by the end of year two after issuance. It should contain an accounting of the cash flows in and out of the account that holds the cash balances from the issuance in question. The report should contain a list of the projects financed, including what share of a project received financing and how the financing was provided over time. The impact report should describe the nature of projects and their environmental impact in depth. Ideally, the impact statement should include quantitative metrics like reduction in GHG emissions, number of EVs purchased with the subsidies paid using the SGB proceeds, or the number of passengers that use a subway system that received funding from an SGB issuance. Some issuers are also employing third parties to conduct reviews or audits of their post-issuance reporting to increase the credibility of their processes and reports.<sup>61</sup> Market practice is to publish reports on an annual basis, although investors with

<sup>59</sup> Full segregation would require EMDEs that issue international green bonds to invest part their bond proceeds until they are fully spent at yields below their funding costs, exposing them to negative cost of carry. This approach was used more frequently when the first SGBs were issued (e.g., Poland's 2016 issuance).

<sup>60</sup> Of course, the allocation of funds to projects that were already underway at the time of issuance, while known in advance, can be disclosed later on. Governments are therefore provided with significant flexibility in the project selection.

<sup>61</sup> For instance, France has its green expenditures audited by an accounting firm.



a strong environmental focus may ask more frequently for detailed updates than available via reports.<sup>62</sup> While currently only recommended by ICMA, both types of reports have become a market standard. Issuers often combine the allocation report and the environmental impact report into one publication. With market practices evolving, some issuers have received ex-post SGB assessments for some of their issuances, which provide a summary assessment on an issuance with regards to the operational aspects of the issuances, the use of proceeds, and reporting (for example, see Moody's (2019)).

## B. Issuance Cost and Time Requirements

**ESG bond issuance involves greater effort and imposes additional transparency obligations compared to a conventional bond issuance.** This means that time is needed for the preparation of an issuance and the fulfillment of the post-issuance transparency requirements. In case of a UoP bond the reporting, requirements may not cease until its maturity. Therefore, a notable investment in government operations is often needed to issue ESG bonds efficiently and successfully. And there are direct tangible costs related to SPOs and potentially other services required for issuance and reporting.

**The sovereign issuer has to keep in mind the four cost components that are associated with sovereign ESG bond issuance:** (i) The direct costs of obtaining an SPO and related services; (ii) the government's work on the issuance, including changes to government operations; (iii) reputational costs if the government does not fulfill its ESG-related commitments; and (iv) any explicit penalties that may have to be paid for instance when SLB commitments are not fulfilled.

**The tangible costs of ESG bond issuances are more easily described and costed.** These costs are largely fixed in nature, and for larger issuances do not represent an onerous burden when added to the cost of issuance of a conventional bond. The costs associated with the core issuance process, which are similar to the costs of a conventional bond issuance, remain the same.<sup>63</sup>

**Estimated issuance costs of an inaugural green or social bond, an SLB, and a conventional bond are provided below (Table 2).** It should be noted that all numbers provided below are indicative, and the costs actually incurred in any specific issuance can differ markedly. The fees charged by banks, advisors, and other intermediaries depend on a country's specific situation—for instance, budgetary and project complexities, or the competitive situation amongst providers of the same service—and can depend on the outcome of negotiations between the issuer and the service providers. The cost estimate for a conventional USD 750 million international syndicated bond is compared to an otherwise identical SGB and a sovereign SLB and is based on the analysis in van der Wansem et.al (2019).<sup>64</sup> The main additional cost is represented by the cost of the services of the Sustainability Structuring Advisor, which may be the bank that receives the lead manager mandate. In addition to this fee, the issuer has to pay for the SPO and the ex-post financial reviews. A fee of USD 30,000 is assumed for the SPO of the SGBF, with the cost of the SPO of a sovereign SLB framework somewhat higher at USD 35,000. While the ex-post- third-party reviews have not been established as a market standard as of mid-2022, they are becoming more common. With most SBG issuances committing to spending

<sup>62</sup> Financial reviews are only required until the funds raised by the issuance have been spent. Environmental impact reviews would be ideally conducted until the bond's maturity.

<sup>63</sup> Syndicate fees for ESG bond issuances, which are a significant part of total issuance costs, have remained the same compared to the cost of conventional issuances.

<sup>64</sup> Market contacts confirmed that these numbers still broadly apply as of mid-2022. More bespoke issuances may require a higher fee, while occasionally a sovereign might be able to negotiate a lower fee.

the funds raised within two years after issuance, two annual post-issuance external financial reviews are assumed, at a cost of USD 5,500 for each review.

**Table 2. Hypothetical Cost of Issuance: ESG versus Conventional Bonds<sup>1</sup>**

	Conventional Bond		Green/Social Bond		SLB	
	Percent of Par	USD	Percent of Par	USD	Percent of Par	USD
Face Amount		750,000,000		750,000,000		750,000,000
Funds Raised <sup>2</sup>	99.67	747,509,043	99.96	749,722,716	99.96	749,722,716
<b>Fees and Expenses</b>						
Sustainability Structuring Fee <sup>3</sup>			0.03	225,000	0.03	225,000
SPO <sup>4</sup>			0.00	30,000	0.00	35,000
Independent Advisor	0.02	150,000	0.02	150,000	0.02	150,000
Syndicate Fees	0.150	1,125,000	0.15	1,125,000	0.15	1,125,000
Legal	0.03	250,000	0.03	250,000	0.03	250,000
Ratings <sup>5</sup>	0.10	750,000	0.10	750,000	0.10	750,000
Rating Advisory	0.01	40,000	0.01	40,000	0.01	40,000
Listing	0.00	35,000	0.00	35,000	0.00	35,000
<b>Total Fees and Expenses</b>	<b>0.31</b>	<b>2,350,000</b>	<b>0.35</b>	<b>2,605,000</b>	<b>0.35</b>	<b>2,610,000</b>
<b>Issuer Proceeds (before reviews)</b>	<b>99.35</b>	<b>745,159,043</b>	<b>99.62</b>	<b>747,117,716</b>	<b>99.62</b>	<b>747,112,716</b>
Reviews <sup>6</sup>			0.00	11,000	0.00	11,000
<b>Total Fees and Expenses</b>	<b>0.31</b>	<b>2,350,000</b>	<b>0.35</b>	<b>2,616,000</b>	<b>0.35</b>	<b>2,621,000</b>
<b>Issuer Proceeds</b>	<b>99.35</b>	<b>745,159,043</b>	<b>99.61</b>	<b>747,106,716</b>	<b>99.61</b>	<b>747,101,716</b>

Sources: World Bank, market contacts, and IMF staff.  
Note: Issuance of a USD 750 million, 10 yr., 6.125 percent coupon bond at a yield of 6.17%.

<sup>1</sup> Green-shaded fields indicate ESG-specific costs, blue-shaded fields are fixed costs.  
<sup>2</sup> Assumes a 4 bps greenium and an upfront sustainability structuring fee.  
<sup>3</sup> This fee can vary notably.  
<sup>4</sup> Assumes an SPO of medium complexity.  
<sup>5</sup> Assumes ratings provision by two agencies.  
<sup>6</sup> Assumes two post-issuance financial reviews.

**The exact modalities of the issuance process, the time required for the issuance, and total issuance cost can vary with the complexity of the issuance and any specific requirements on the sovereign's side.** The cost estimates in Table 2 are indicative, representing market practices and pricing as of mid-2022. They are reflective of a comparatively standard issuance. Issuers usually specify in their RFP if they want to see the mandates of sustainability structuring advisor and lead manager separated or combined. In the former case a fixed fee is required for the sustainability structuring adviser, while in the latter case no direct fee might be required. In that case, the lead manager will get reimbursed through a higher share of the syndicate fees. The issuer might want to hire the independent advisor before hiring the sustainability structuring adviser to receive input for the appropriate management of the issuance, starting with the drafting of the framework. Depending on circumstances and the potential for follow-on business expected by the sustainability structuring advisor/lead manager, fees can be different than what is shown in Table 5. The cost of less standard issuances—for instance, a blue bond—could be much higher.<sup>65</sup> The costs of more complex SPOs and reviews would be usually higher than what is reflected in Table 5. Some SPO providers have begun to offer

<sup>65</sup> Under the ICMA Green Bond Principles, blue bonds are considered a sub-category of green bonds.

combinations of SPOs that cover more than one type of ESG bond.<sup>66</sup> Such packages might result in an overall cost reduction.

**The marginal tangible cost of sovereign sustainable bond issuance does not appear exceedingly high as a share of overall costs (Table 2).** Based on our cost assumptions and the USD 750 million size, total fees and expenses increase by USD 266,000 for an SGB and USD 271,000 for an SLB; total tangible costs increase by 10.9 and 11 percent, respectively. With an assumed greenium of 4 bps,<sup>67</sup> issuer proceeds are about USD 1.95 million higher for both the SGB and the sovereign SLB than for the conventional bond. While the tangible costs of the conventional issuance come out to 4.3 bps per year when folded into the yield paid by the issuer, the tangible issuance costs of an SGB or SLB issuance amount to about 4.7 bps per year (Table 3).

	<b>Conventional Bond</b>	<b>Green/Social Bond</b>	<b>SLB</b>
<b>Yield at Issue</b> (investor perspective)	6.170	6.130	6.130
<b>Cost to Issuer</b> (in yield terms)	6.213	6.177	6.177

Source: IMF staff.  
Note: All notes from Table 2 apply.

**The green bond market has become quite standardized.** In many cases, obtaining a second party opinion can cost between USD 20,000 to USD 30,000. Although the SPO market is concentrated amongst a few players, new SPO providers emerge and add to the competition in the field. The sustainability structuring advisor can provide guidance on the selection of the SPO provider. For sufficiently large issuances, the savings achieved via the greenium make up for the additional tangible costs of the SBG issuance.

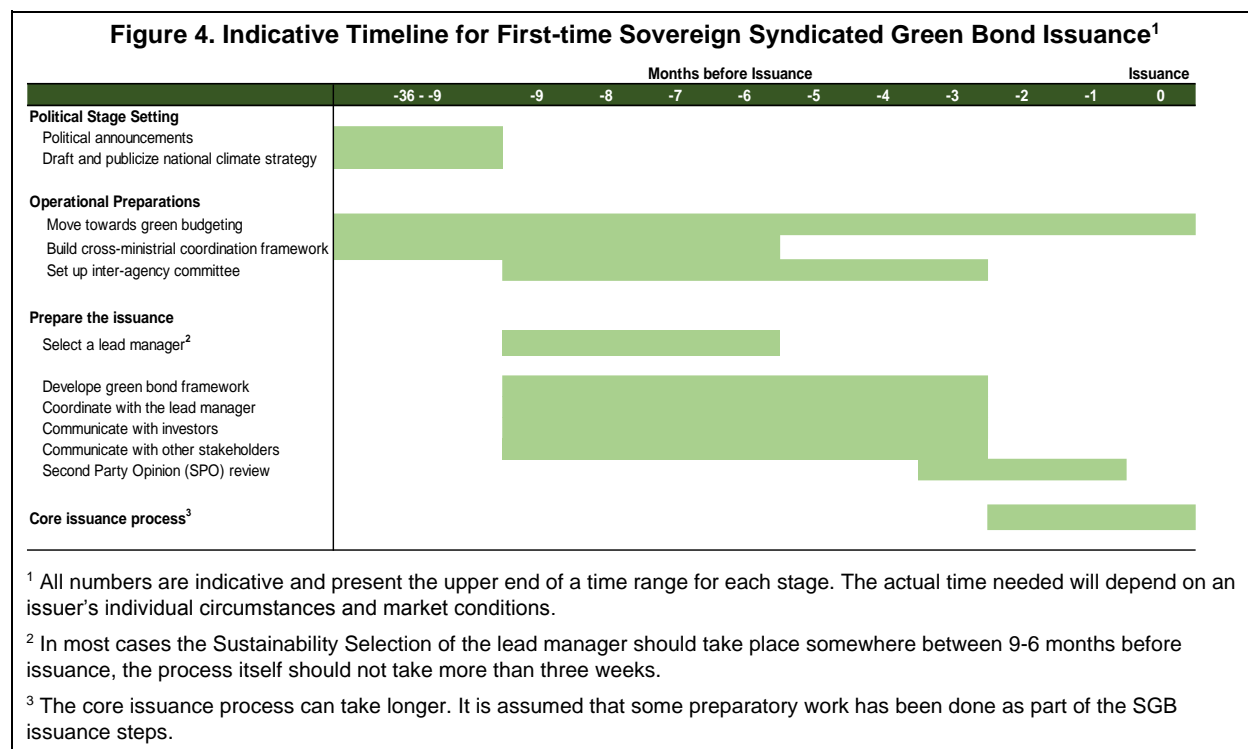
**The tangible costs of ESG bond issuance happen to be only a small part of the total issuance costs.** Much more significant are the unquantifiable costs associated with the effort to (i) select projects; (ii) collect data; (iii) government processes associated with ESG bond issuance; (iv) capacity additions to the MoF and the DMO; and (v) process additions needed for post-issuance reviews. Except for staffing additions, a lot of these costs are one-time in nature, which will not recur. While estimates of these costs are not available, many issuers consider them to be significant.

**The pre-issuance preparations needed on the part of the authorities become clear when considering the timeline of an SGB issuance (Figure 4).** The hiring of a sustainability structuring advisor can take place

<sup>66</sup> For instance, "hybrid reviews" are being offered, which cover frameworks that combine issuance across different types of sustainable bonds (green, social, and sustainability, or a combined green and SLB framework). Some SPO providers are offering packages that combine a framework SPO with post-issuance financial reviews.

<sup>67</sup> The 4 basis points is an assumption made by the authors. While in line with the evidence from the twin bond issuance by some AEs and empirical estimates provided for sovereign green bonds, there is no guarantee that a greenium can be achieved (see Appendix III and the sources cited there).

several months prior to the envisioned bond floatation;<sup>68</sup> countries where budgets allow for easy identification of projects that can be used in an SGB can start this process later. Communications with potential investors, other stakeholders, and SPO provider, should take place during the relevant phases of the issuance process. Most of the activities listed in the indicative timeline are the under the responsibility of the authorities.



## C. Sovereign Green Versus Conventional Issuances: An Issuer Perspective

**The SGB issuance process is more complex compared to the issuance of a conventional bond.** A pool of green projects exists together with sufficient capacity on the government's side to successfully execute those projects and to be able to account for their financing and their environmental benefits. Additional capacity at the DMO and other government agencies is required. The potential for fiscal encumbrances, fragmentation on the debt market side, and complications during the execution of special debt management operations in the future exists.

**Syndicated issuance has played a considerable role in the issuance of sovereign ESG bonds, even for countries which have large and liquid domestic bond markets.** International issuances are generally syndicated. However, even large European issuers like France, Germany, Italy, Spain, and the United Kingdom have predominately used syndications, although they issue in their own currency under their national legal systems. Syndications are generally used for the first-time issuance of an SGB, with taps subsequently conducted either via auctions or syndications. Four main reasons explain the use of syndications for ESG bond issuances: (i) The issuer can rely on the experience of the sustainability structuring advisor(s) and the lead manager(s) for project selection and drafting the SGBF; (ii) the lead manager(s) can bolster communications

<sup>68</sup> In some cases, this has been as early as 9 months prior to issuance.

with ESG-focused investors during the SGBF's drafting process and during the marketing phase of the issuance; (iii) this allows the issuer to attract more ESG-focused investors; and (iv) it allows the issuer to actively allocate parts of the issuance to specific investors. (i) is important as it allows for the SGBF to be drafted quickly in line with prevailing market conditions. The lead manager can also provide guidance to a first-time issuer on how to best adjust its operational framework to make the issuance most effective. (ii) and (iii) bolster the credibility of the SGBF and help achieve the twin goals of diversification of the investor base and the promotion of the country's green credentials.<sup>69,70</sup> (iv) reflects the practice of some sovereigns to prefer green investors when allocating an issue.

**Auctions have also played a role in tapping previously syndicated bond issuances on the part of AEs.**

France has syndicated the initial sale of its two green OATs in 2017 and 2021 amounting to EUR 7 billion; the former of the two bonds was tapped via 11 auctions and one EUR 4 billion syndication. Germany and Ireland have used auctions and syndications to tap their green bond issuances. The Netherlands provided the rare example of a country that relied only on auctions when issuing its green bond.<sup>71</sup>

**Some EMDEs' have issued ESG bonds domestically without prior issuance in the international markets.**

Colombia occupies a unique place by embarking on an auction-based local currency green bond issuance program without prior issuance of a syndicated bond. The first issuance took place in September 2021, was 4 ½ times oversubscribed and was subsequently tapped (Box 3). However, it took V.E, the SPO provider, more than 5 months to assess Colombia's SGBF, a relatively long time. Fiji auctioned 5- and 13-year year bonds in 2017 (IFC (2017)). Those were largely taken up by domestic banks and the national pension fund, respectively, and have not been followed up with further sales as of mid-2022. Nigeria issued a domestic green bond in late 2017, which received a transaction opinion from Moody's and was certified to be aligned with the CBI standards.<sup>72</sup>

**While ESG bond issuances are currently not subject to outright regulatory oversight, this could change going forward.**

Currently, the ESG investment sector is built on issuers complying with general issuance standards for conventional bonds. There are no legal repercussions in the case of non-compliance with ESG-related promises.<sup>73</sup> The European Union's (EU's) Green Bond Standard may change this. While they are currently voluntary and issuers can opt out from them, they could become a market standard that will have legal force in the EU and could become a model for other jurisdictions. In practice, regulatory authorities in the EU as well as in the U.S. are using their regulatory powers over the asset management industry to supervise ESG investments. In both jurisdictions asset management firms have been investigated for insufficient adherence to their stated ESG goals and standards. This could result in asset management firms becoming more discerning with regards to the ESG bonds they purchase, thus incentivizing those investors to select ESG

<sup>69</sup> Issuing via syndications dovetails with project-based green bonds essentially representing customized instruments. ESG-focused investors generally want to know what projects the bonds will finance and how the projects fit into the country's green transition. These considerations carry over into reopening of existing lines, with, for instance, France and Germany having used both syndications and auctions.

<sup>70</sup> Attracting a global investor base led Sweden to issue its Swedish Krona-denominated green bond in 2020 internationally under English Law.

<sup>71</sup> The Netherlands had decided to not deviate from its auction-based issuance policy.

<sup>72</sup> Developing economy countries should explore the availability of TA by MDBs, UNDP, and other organizations or of programs that cover some of the tangible costs of ESG bond issuance.

<sup>73</sup> For instance, the failure to complete promised projects in the case of UoP bonds or if KPIs are missed in the case of SLBs. In the former case this leads to reputational damages only, in the latter case to monetary penalties which may be not material.

bonds that abide by higher standards, support more ambitious goals, and project are more likely to be completed and targets are more likely to be achieved.

**Non-fulfillment of the expenditure commitments made as part of UoP bond issuances may have adverse reputational consequences for the issuer.** UoP bonds prospectuses usually note that the promises made by the issuer with regards to projects to be financed are not legally binding, and that any violation of these promises do not represent an event of default. This statement clarifies the conditions of issuance and reduces of adverse legal action against the issuer commencing.<sup>74</sup> A number of observers have noted that this lack of enforceability puts investors at a severe disadvantage, and maybe other bond structure—like SLBS—should be preferred. However, some focused ESG investors want to know that the funds they provided are specifically utilized to combat climate change, if a green bond was issued.<sup>75</sup> If the issuer of an UoP bond arbitrarily reneged on the expenditure promises made, he would likely be unable to issue additional UoP bonds—or other types of ESG bonds—anytime soon, Large investment management firms might look as such behavior by an issuer as a negative factor when evaluating upcoming issuances even of conventional bonds by the issuer.

## D. ESG Bond Issuance: Why, Where, and How

**Four main drivers behind sovereign ESG bond issuance are:** (i) Highlighting the commitment to environmental and social goals, the Paris Agreement, and the UN's SDGs, while increasing the issuer's profile on the global stage; (ii) bolstering the ESG capital markets and building a green yield curve;<sup>76</sup> (iii) accessing cos-effective funding, especially for ESG-related projects; (iv) widening and diversification of the investor base; and (v) catalyzing interagency cooperation within the government.<sup>77</sup>

**Most issuance of sovereign ESG bonds by EMDEs has taken place in the international bond markets.** Global bonds were responsible for 68 percent of issuances in 2021 (Annex 1). This is driven by the large appetite for ESG bonds by AE-based investors. This market is mainly focused on issuances that are denominated in the U.S. dollar and the Euro, mostly issued subject to New York or U.K. law, and supported by a set of intermediaries—banks, advisers, law firms, and SPO providers—that have imbued a high degree of standardization into the market for global ESG bonds, making it easily accessible to both investors and issuers.<sup>78</sup> When considering to issue ESG bonds domestically, sovereigns have to balance the opportunities that domestic issuance provides against the risk of fragmenting the domestic bond market. Annex 6 lists the key factors that impact ESG bond issuances and other funding sources for climate projects.

<sup>74</sup> While some observers criticize the lack of enforceability inherent in UoP bonds, including the potential for significant penalties into issuance documentation could disincentivize issuance. For instance, allowing creditors to declare an event of default in case a promise was not achieved, or having the ability to access international arbitration facilities could become costly for the issuer. The potential to face a London or a New York court in such cases can be too high a price to pay for many sovereigns, for example when extenuating local circumstances may have been a cause of the failure to perform.

<sup>75</sup> As some investors had pointed out, the pricing of the penalties in SLBs can also be a factor in their view of SLBs versus UoP bonds. For instance, 12.5 or 25 bps coupon step-ups for three years may not provide much of a financial incentive for an issuer to go through with measures to attain the promised SPTs if their achievement may become politically or economically too costly.

<sup>76</sup> Domestic government debt issuance can lead the way for sustainable debt issuance by the private sector by fostering market development and raising the profile of this debt. International sustainable sovereign debt issuance raises the country's profile in the global community and in the global debt markets, diversifying its investor base.

<sup>77</sup> While the last point is probably of lesser importance, it has been mentioned by some governments.

<sup>78</sup> An aversion to local currency risk by some AE-based investors bolsters the hard currency bond markets, too.

**The choice between syndication and auction in EMDEs constitutes another important decision for the sovereign ESG bond issuer.** For EMDEs that issue in the international bond market syndication is a given for FX-denominated issuances. However, syndications have been used in the case of some local currency issuances. Uzbekistan issued a local currency SDG bond in the Eurobond market in 2021, while Chile used syndications to issue Chilean Peso-denominated social bonds in 2020 and 2021 to domestic and international investors.<sup>79</sup>

### Box 3. Domestic Green Bond Issuance through Auctions: Colombia

**Colombia has issued its first sovereign green bond in local currency—a 10-year, 750 billion Colombian pesos (equivalent to USD 200 million)—on September 29, 2021.** The bid-to-cover ratio of 4.6—the submitted bids amounted to COP 2.3 trillion—led the authorities to upsize the issuance by 50 percent from the originally scheduled COP 500 billion.<sup>1</sup> This green bond yielded 7.56 percent at issue, estimated by the authorities to be 7 bps inside the regular government bond curve. The bond was tapped the one month later, when another COP 650 billion were sold, with a wider greenium of approximately 20 bps.

**Colombia was the first Latin American sovereign to start its green bond issuance program with a focus on the domestic local currency bond market.** To bolster the domestic investor base, the government publicized its green bond framework in July 2021. It had been drafted with the technical support from the Inter-American Development Bank and the World Bank. More than half of the green bond debut sales went to domestic investors (investment funds and banks), while about 45 percent of the green bond debut sales went to overseas funds, much higher than the overall international investor shares of 26 percent of the outstanding stock of domestic government bonds. Proceeds from this issuance were intended to finance projects to attain Colombia's commitments to finance projects on the following areas: About 40 percent to water management, 27 percent in the transition of transport towards a cleaner and more sustainable system; and 14 percent in migration to non-conventional renewable energies.

**Issuing sovereign green bonds in local currency in local markets provides benchmark pricing reference points and signals the greenness of a country's fiscal policy.** With the most biodiversity per square meter in the world, Colombia claims its green bond framework ensures the local currency funding will go toward the green transition of the economy. The sale in pesos also allows the government to reduce its currency risk and help pave the way for other corporate sector issuers to tap the local market with green offerings. Issuances of sovereign green bond can foster liquidity in the secondary market and help build a benchmark yield curve and contribute to the development of local currency capital markets in green offerings. As the market develops, more issuances and re-openings of existing securities are planned. Their green bond issuance was backed by lawmakers by modifying the legal framework.

Sources: Colombian authorities, and IMF staff.

<sup>1</sup> This despite the country having lost its investment grade credit ratings in May 2021.

**Much of AEs' ESG bond issuances have also taken place via syndication (Annex 5).** One key factor behind this preference for syndications stems from many sovereigns' objective to have a significant share of ESG-focused investors in their investor base. Syndicate members can establish contacts with ESG investors helping the issuer to achieve the twin goals of the diversification of the investor base and promoting its green credentials. It also allows an issuer to direct the allocation towards specific investors, usually giving preference to ESG-focused investors. Sweden, although an AE, issued its first SGB in 2020 in London under English Law, which was denominated in Swedish Krona. Syndicated issuances, supported by a sustainability structuring advisor help to build a credible issuance framework, assist with project selection, and help advance interagency coordination within the issuer's government.

<sup>79</sup> The international portion was settled via Euroclear.

## E. Conclusion and Areas for Capacity Development

**Sovereign ESG bonds provide an opportunity for the issuer to advance environmental, social, and governance-related goals at reduced funding costs while diversifying the investor base.** The funding of environmental and social goals with ESG bonds helps to showcase the issuers commitments to these objectives and bolster the ESG-centered expenditures. For EMDEs, ESG bonds—both domestic and international—have helped to diversify the investor base. However, the issuer should be aware of significant administrative preparations prior to an issuance, while new sets of investor expectations will have to be satisfied. Issuing an ESG bond in a small or underdeveloped local currency bond market could fragment the market and could be at odds with the goals of financing at a low cost and market development.

**Sovereign ESG bond issuance warrants targeted capacity development at the level of the MoF and the DMO.** Capacity requirements of ESG bond issuance include an interagency committee, DMO-Fiscal coordination, financial and impact reporting, and investor communications. The additional capacity needs at the DMO level will depend on the existing fiscal capacity and the envisioned division of labor between the ministries that are touched by ESG bond issuances, the interagency committee that coordinates ESG bond issuances, and the DMO. The associated capacity development (CD), as it concerns MoFs and DMOs, should foster a long-term approach towards the transition to green financing.

**Sovereign issuers need to develop solid technical understanding and a strategy for the SGB issuance process.** The issuer will receive input from advisors, underwriters, its legal counsel, and TA providers, but it is critical that the sovereign issuer remains actively involved throughout the pre- and post- issuance process. Interagency coordination within the government on gross financing needs and eligible green expenditures is a critical and unique part of green bond issuance. The post-issuance responsibilities associated with ESG bonds can be heavy, so sovereigns should not underestimate the resources that will be needed to provide credible post-issuance reporting. TA could be sought to develop the internal capacity.

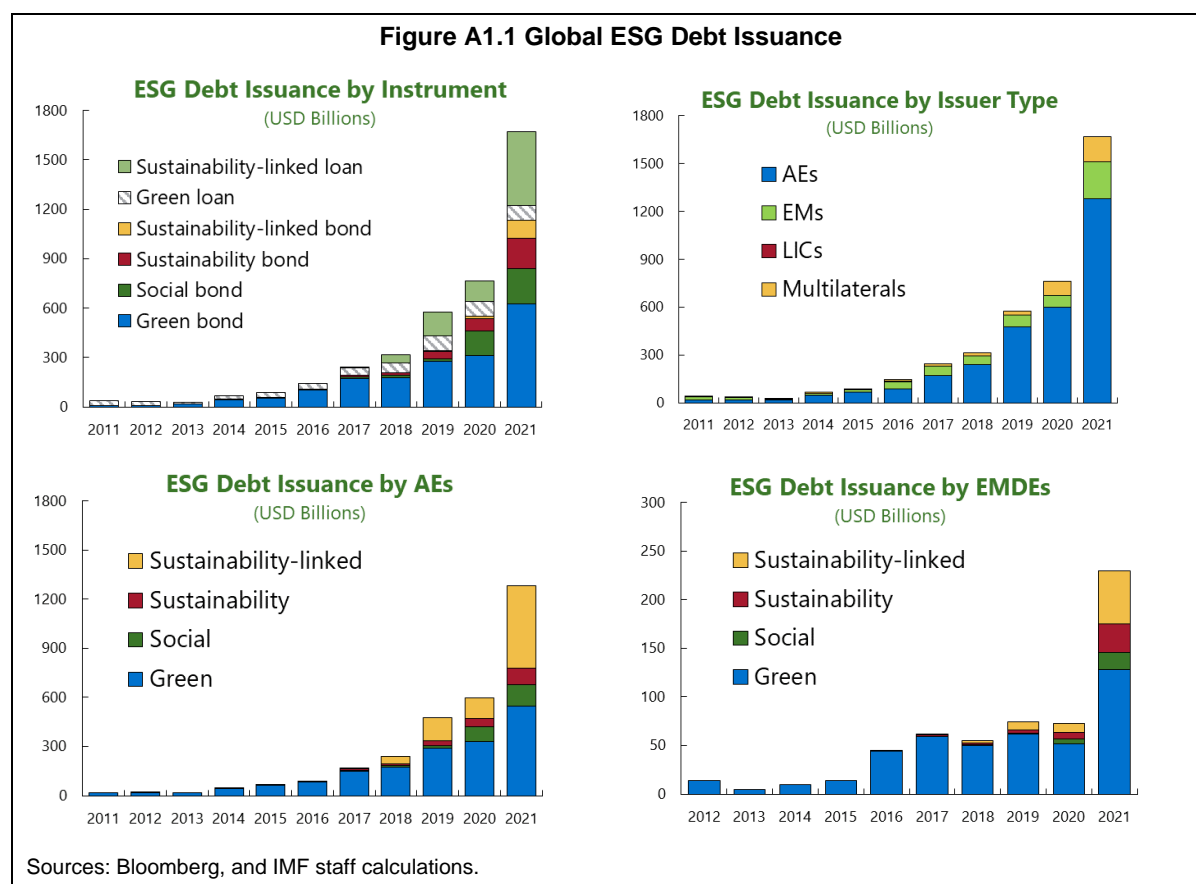


# Annexes

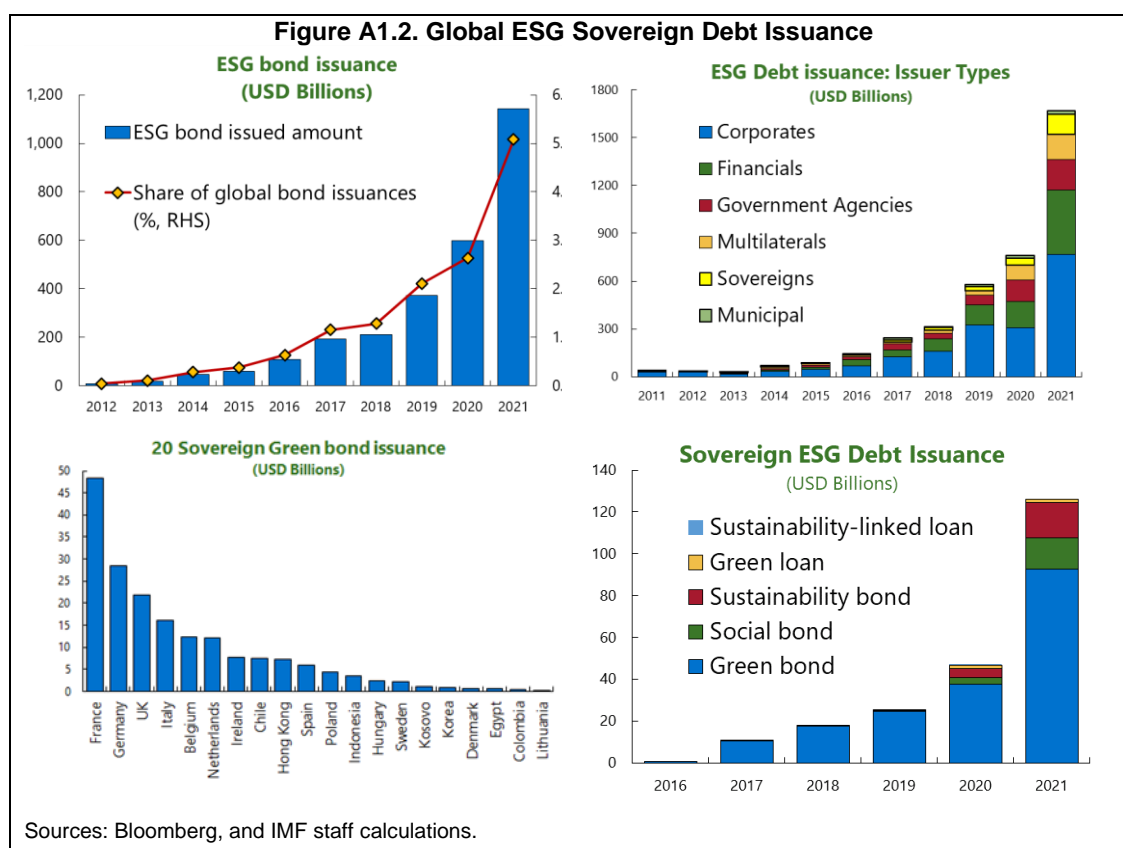
## I. The Markets for ESG Debt

**The COVID pandemic became a catalyst for the issuance of debt issued in support of Environmental, Social, and Governance (ESG) goals.** Total annual issuance has grown from USD 38 billion in 2011 to USD 1.7 trillion in 2021 (Figure A1.1, panel 1). About 77 percent of issuances originated in Advanced Economy countries (AEs) (Figure A1.1, panel 2). 2021 was a watershed year for ESG debt issuances, which increased 2.1 times from 2020 to 2021 for AEs (Figure A1.1, panel 3), and by a factor of 3.2 for EMDEs (Figure A1.1, panel 4). Cumulatively ESG debt issuance amounted to USD 4.0 trillion as of end-2021 of which bonds accounted for USD 2.8 trillion. Most of those were issued by investment grade corporates.

**Social bonds were more frequently issued after the start of the COVID-19 pandemic.** Corporate issuers, from the financial sector, first issued social bonds starting in 2015. They were followed by IFI issuances in 2017. The first sovereign social bond was issued by Ecuador in January 2020, followed by more social bond especially by EMDE issuers after the start of the COVID-19 pandemic. Sovereign social bond and sovereign sustainability bond issuance increased the most in terms of EMDEs' ESG bond issuances, with EMDEs' SGB issuance volumes declining between 2019 and 2021 (Figure A1.1, panel 2).



While the corporate sector, multilateral organizations, and subnational entities were first in line issuing ESG debt, sovereigns have become active issuers in this sector. As a share of total (sovereign and corporate) bond issuance, ESG bonds have increased from below 0.03 percent to slightly more than 5 percent of the value of all bond issuances between 2011 and 2021 (Figure A1.2, panel 1). Sovereigns became active issuers, with their share of all issuances doubling from 2020 to 2021, accounting for 8 percent of total ESG debt issuance that year (Figure A1.2, panel 2). On an absolute basis, large European issuers like France or Germany have been dominant in green bond issuances, with Chile as the largest EM issuer coming in at number eight (Figure A1.2, panel 3).<sup>1</sup> Sovereign issuance of ESG bonds increased 2.7 times between 2020 and 2021 (Figure A1.2, panel 4), while issuance by EMDE sovereigns increased by a factor of 2.3. For AEs this means that growth of sovereign issuance exceeded the growth of overall ESG debt issuance, while the growth of sovereign issuance for EMDEs was notably lower than overall ESG issuance by sovereign EMDE issuers.



<sup>1</sup> However, Chile has the highest share of ESG bonds at about 1/6 of its total debt of any sovereign ESG bond issuer of size.

## II. A Typology of ESG Debt

**ESG bonds issues fall into five distinct types which differ by the type of expenditures targeted and the way in which ESG goals are achieved:** (i) green bonds, where the funds raised are exclusively applied to environmental projects; (ii) social bonds, where the funds raised are exclusively spent on projects advancing social objectives;<sup>1</sup> (iii) sustainability bonds, which fund both environmental and social projects; (iv) sustainability-linked bonds (SLBs), where the funds raised can be spend on general corporate or budgetary purposes benefiting the issuer, but debt servicing terms change if the issuer does not achieve specific ESG milestones within a set timeframe; and (v) transition bonds, which are issued when the issuer cannot attract sufficient demand for other types of sustainable bonds.<sup>2,3</sup>

**Table A2.1 Issuers Use of ESG Debt by Type and Objective**

	Green	Social	Sustainability	Sustainability-linked	Transition
<b>Environment</b>	Sovereign Corporate Supranational Subnational Agency		Sovereign Corporate Supranational Subnational Agency	Sovereign Corporate	Corporate Supranational
<b>Social</b>		Sovereign Corporate Supranational Subnational Agency	Sovereign Corporate Supranational Subnational Agency	Corporate	
<b>Governance</b>				Corporate	

Source: IMF staff.  
Note: Data until March 2022.

### Social Bonds

**Social bonds are UoP bonds used to finance or refinance eligible social projects.** Eligible expenditures can be aligned with the UN's Sustainable Development Goals (SDGs), the Millennium Development Goals (MDGs), and specific examples include: the funding of (i) support payments during the COVID pandemic; (ii) microloan programs; or (iii) the funding of women-led small enterprises. The issuance process is similar to the process used to issue GBs. Project identification often involves different line ministries, and different

<sup>1</sup> Examples of those are support payments during the COVID pandemic, funding of microloans, or support of women-led small enterprises.

<sup>2</sup> This could be the case when the issuer's activities are not deemed to be sufficiently green by most ESG investors, or the funding raised by the issuance would lock in GHG emissions. However, projects financed with such bonds may reduce GHGs, for instance when an issuance finances carbon capture technology that will be used by coal-fired power plants. As of early 2022, transition bonds have only been issued by corporates and the EBRD, with only 17 bonds issued between 2017 and June 2021.

<sup>3</sup> Investor preferences can be strong in the sustainable finance sector, with some investors questioning certain types of debt, and even excluding certain types of debt that many other investors buy. For instance, see Liberatore (2021) on SLBs, and Energymonitor (2021) regarding transition bonds. It should be noted that market acceptance of SLBs could increase quickly, for instance if the KPIs and SPTs or the penalties associated with SLBs are strengthened.

counterparts within the government. Project identification, proceeds management, and disclosure of information on the project performance can require a high level of coordination amongst different agencies. In many cases this coordination would be most efficiently conducted by an inter-agency committee.

**In 2017, ICMA published the *Social Bond Principles (SBPs)*, which are based on four pillars and provide eligible categories for social financing.** The four pillars are the (i) use of proceeds; (ii) process for project evaluation and management; (iii) management of proceeds; and (iv) reporting. SBPs use the same transparency principles as the GBPs and provide recommendations with regards to the formulation of Social Bond Frameworks (SBFs) and financial and impact reviews. The bond proceeds should be used for projects that are broadly related to the project categories listed in the SBPs. GBFs and post-issuance reviews should be subjected to external reviews by external entities with appropriate credentials (ICMA 2021a).

### **Sustainability Bonds**

**Sustainability bonds are UoP bonds used to finance a combination of green and social projects.** Sustainability bonds therefore finance projects that are in alignment with ICMA's GBPs or its SBPs (ICMA (2021)).

**Sovereign sustainability bond issuance by EMDEs increased more than four-fold between 2020 and 2021.** Total issuance of those bonds by EMDEs of USD 13.2 billion was only USD 1.8 billion behind EMDEs' 2021 issuance of social bonds. This increase is more impressive given that neither sustainability nor social bonds had been issued by EMDEs prior to 2020 (Figure A1.2, panel 2).

### **Sustainability-Linked Bonds**

**The issuers of sustainability-linked bonds (SLB) promise investors that they will reach specific sustainability targets, with payoffs changing depending on whether those targets are reached.** SLBs are forward-looking, performance-based financial instruments. SLBs are not project-based and issuance proceeds can be used for general corporate or budgetary purposes. The set of targets can be environmental, social, or governance-related, or a combination thereof (ICMA (2021c)).

**The achievement of a target is evaluated using Key Performance Indicators (KPIs) which must outperform pre-determined Sustainability Performance Targets (SPTs).** A KPI is a variable or an index targeted by an SLB, while an SPT that pertains to this KPI is usually a threshold value. For instance, a KPI for a sovereign SLB could be a country's CO<sub>2</sub> emissions in gigatons. A related SPT could be a specific reduction five years after issuance versus a specific base year. There can be more than one SPT per KPI—for example, maximum GHG emissions five and eight years after issuance—and multiple KPIs for a given bond.

**The coupon step-up structure has become the market standard for SLBs. In this approach a bond's coupon ratchets upward when the prespecified SPTs are not achieved.**<sup>4</sup> For instance, the coupon of a 10-year SLB might increase by 25 bps if its KPIs are not reached by the end of year five until maturity. The size of the penalty, and the period over which the increase in the coupon is applied, the KPIs, and the SPTs are central to the design of an SLB, with 25 bps having become the market standard.

<sup>4</sup> Coupon step-downs or changes to the principal paid at maturity have also been utilized in SLBs. However, some investors have problems to invest in bonds whose coupons or principal payments might fall in the future.

**The credibility of an SLB will depend on its KPIs being material and measurable, with the associated SPTs being ambitious (ICMA (2021c)).** Certain prerequisites must be fulfilled for KPIs to be material and measurable. They should be highly relevant to the issuer's core sustainability strategy, be quantifiable, externally verifiable, and able to be benchmarked. SPTs should represent material improvements in the respective KPIs and be consistent with the issuer's overall ESG strategy. See Box 5 for an example of the features employed in a sovereign SLB.

**Some of the core structural characteristics of SLBs could present advantages from issuers compared to UoP bonds.** The proceeds of a sovereign SLB issuance can be spent for general budgetary purposes. This removes the need to select appropriate projects and provide financial and impact reporting on the projects. SLBs can be issued if a country has exhausted its pool of projects, or it does not have the infrastructure to select appropriate projects and provide financial and impact reports on them. Also, KPIs could be included that would not fit under a project umbrella.<sup>5</sup>

**The requirements of an SLB can be demanding for sovereigns, too.** To fulfill the criteria mentioned above, long-term time series on the KPIs should be viable, and they must be reliably and constantly measurable. The issuer must select SPTs that are ambitious as to not attract charges of greenwashing so that the issuance is attractive to many investors.

**Investor views of sovereign SLBs are mixed.** Some investors look at them as a positive addition to the other types on sustainable bonds. Some impact investors noted the potential for a lack of additionally and greenwashing, while other investors felt that this can be mitigated with ambitious targets and credible measurable KPIs. The SPTs and the penalties to debt service built into Chile's March 2022 sovereign SLB provide an example for the divergence of investor views an SLB issuance can attract (Box A2.1).

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<sup>5</sup> For instance, governance-related criteria like the share of women members of parliament.

### Box A2.1. The First Sovereign SLB: Chile 2022

The government of Chile issued the first sovereign sustainability-linked bond ever in March 2022 at end-March 2022. It was a USD 2 billion 20-year bond at 4.35 percent, 200 bps above US Treasuries. With the bond more than 4 times oversubscribed it was placed with an estimated greenium of 10 bps.

Chile's SLB framework comprises two KPIs: absolute greenhouse gas emissions and the share of non-conventional renewable energy generation in the national electric system. Specifically, the SPTs posit that the country emit no more than 95 million tons of carbon dioxide and equivalent by 2030 and that 60% of electricity production be derived from renewable energy by 2032. Missing each target would lead to an increase in the coupon of 12.5 bps for a total of 25 bps in the worst case. Many investors described the bond's SPTs as ambitious, with some investors seeing a many more sovereign SLB issuances ahead (Investments and Pensions Europe (2022)). Some impact investors were more critical of the issuance, noting that the penalties for missing the SPTs are too low and could make it easier to fail the STPs in the future.

Currency	Maturity	Step-Up Year	Step-Up
USD	2042	2034	12.5-25 bps/year

KPIs	SPTs	Reference (base year)
GHG Emissions/year	95 Mt CO <sub>2</sub> e by 2030 Total CO <sub>2</sub> e 2020-2030 ≤ 1,100 Mt CO <sub>2</sub> e	112.3Mt CO <sub>2</sub> e (2018)
Non-conventional Renewable Energy <sup>1</sup>	≥ 50% from NCRE by 2028 60% from NCRE by 2032	≥ 27% (2021)

Sources: Fitch Ratings, Sustainable Fitch, responsible-investor.com, Chilean Ministry of Finance, and IMF staff.

Notes: GHG=Green-House Gas; equ.=equivalent.

<sup>1</sup> Wind, Hydro (<20 MW), Biomass, Biogas, Solar, Ocean, and Green Hydrogen.

## Sovereign SDG Bonds

**Sovereign Sustainable Development Goal (SDG) bonds have been issued since September 2020.** SGD bonds are UoP bonds that target the achievement of a subset of the UN's SDGs. SDG bonds are similar, but not identical to sustainable debt, since the SDGs can be different from what is targeted by green or social bond issuances.<sup>6</sup> Mexico issued the first SDG bond in September 2020, which it followed up on with a larger issuance in July 2021. Benin issued its SDG bond in July 2021, with Indonesia following with a sustainability bond issued in sukuk format in October 2021.

**Given the similarity of SDG bonds to sustainability bonds, this paper considers SDG bonds as sustainability bonds where appropriate.** The main reasons for this are: (i) the social and environmental goals targeted by SDG bond issuances are targets pursued within other sustainable bond issuances; (ii) the investors for green, social, and SDG bonds are the same, implying that they would not allow for material conflicts between the objectives pursued by SDG bonds versus other bonds; and (iii) the SDG bond frameworks aim to be aligned with the ICMA's GBPs and SGPs. The SDG bond frameworks describe the

<sup>6</sup> For instance, achievement of SDG 2 (Zero Hunger) could come with negative environmental effects in some scenarios (ICMA 2020). The SDG goals have a target date of 2030, whereas specific climate goal target dates are often 2030, 2050, or other years derived from an issuing country's NDCs.

alignment of the planned expenditures with SDGs to a high degree of detail. The corresponding SPOs are reflective of this dual nature of SDG bonds.<sup>7</sup>

### Sovereign ESG Sukuk

**Indonesia and Malaysia have issued sovereign green and sustainability bonds.** Indonesia has issued international green bonds plus two domestic green retail bonds, as well as one global sustainability bond (Box A2.2). Malaysia has issued one global sustainability bond as of mid-2022. Besides Indonesia and Malaysia, issuances of sovereign ESG bonds by other Islamic countries can be expected. Non-sovereign issuers have also made use of green sukuk. Malaysia's corporate sector (utilities, real estate, and financial sector issuers), Saudi Electricity, and issuer based in the United Arab Emirates have issued green sukuk in local currency and the U.S. dollar.

#### Box A2.2. Sovereign Green Sukuk: Indonesia

**Indonesia issued its first green sovereign sukuk, a security that merges green and Islamic finance in 2018**, for USD 1.25 billion, followed by an USD 0.75 billion issuance in each of 2019, 2020, and 2021, and a Euro 0.5 billion issuance in 2021, to build its Green sukuk curve and diversify its investor base. The structure of a green sukuk "conventional" sukuks, except that the proceeds of a green sukuk can only be used to fund environmentally friendly projects. Indonesia's 2018 green sukuk broke records as it was the first sovereign green issuance from Asia, the biggest emerging market green deal and the biggest green sukuk at the time. This bond was listed on NASDAQ Dubai, and it reached about 30 percent more investors compared to a conventional sukuk issuance. Indonesia has also successfully placed two 2 year domestic-currency retail sukuk.

**Indonesia's SGBF aligns with the ICMA's Green Bond Principles and the Asian Green Bond Standard**, by addressing its use of proceeds around renewable energy, resilience to climate change, sustainable transportation, waste-to-energy management, green tourism/buildings and sustainable agriculture. Cicero provided the SPO.

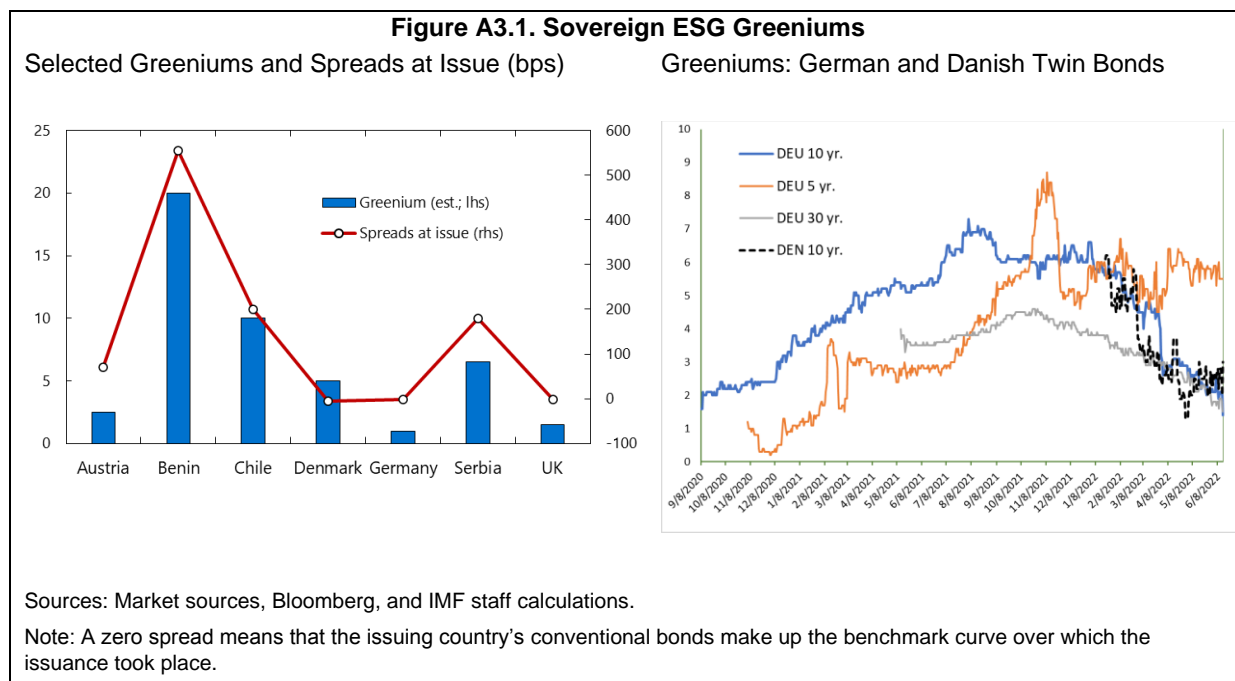
**Geographically, the investors in Indonesia's first issuance came mainly from Islamic countries:** The Middle East (32 percent), Asia (25 percent), Europe (18 percent), USA (15 percent), and Indonesia (10 percent). This green sukuk demonstrated the opportunity for Islamic finance to draw a higher share of Middle Eastern investors, with 29 percent of the issuance being allocated to green investors. By institution, 32 percent of the issuance went to asset managers, 25 percent to banks, 18 percent to pension funds and insurance companies, and 15 percent to sovereign wealth funds (SWFs) and public sector funds. A greater share of this issuance went to SWFs compared to sovereign conventional sukuk.

Sources: Climate Bond Initiative, country authorities, and Environmental Finance.

<sup>7</sup> The SPOs for SDG bond frameworks opine on the projects that have been proposed to achieve the issuer's SDG targets in depth (for example, V.E (2021)). However, they also assess the alignment of the SDG bond framework with the ICMA' social and green bond principles, possibly a reflection of them targeting the same investor base as sustainability bonds.

### III. Greeniums

**Evidence of greenium exists, although there is no agreed way to measure them (Figure A3.3).** The greenium is based on a customized point-in-time calculation at time of issue if a twin bond is not issued. Only in the latter case is it unequivocally measurable. Generally, new issues are placed at a premium to the existing curve of the issuer. This premium depends on market conditions, for instance global liquidity conditions or risk aversion. The greenium that the lead managers of an issue estimate is usually based on the unknown estimated yield of a conventional bond minus the yield of the equivalent ESG bond that was issued. Estimates for sovereign bond greeniums are positive, with greeniums larger for higher spread issues (Figure A3.3, panel 1).<sup>1</sup> Market data for twin bonds show that secondary market greeniums vary over time (Figure A3.3.1, panel 2). However, it should be noted that the evidence in favor positive Greeniums is not clear, with the conclusions of empirical studies depending on the universe of issuers used, the sample period, and the methodology used.



<sup>1</sup> The correlation between spread and greenium at issue is 0.97.



### Box A3.1. ESG Bonds: Greenium and Liquidity

While the existence of a greenium in ESG bonds is widely acknowledged, the factors driving it, and whether it is a long-term or only a short-to-medium term phenomenon is strongly debated. While a greenium means savings for the issuer, it would imply that over the long term ESG fixed income investors in the aggregate would underperform investors that invest in both ESG and conventional bonds.<sup>1</sup>

Lower liquidity of ESG bonds compared to conventional bonds was identified by market participants as a cause of negative sovereign greenium. However, except for liquidity differentials there is little reason to expect persistent negative greeniums on economic grounds. If a sufficiently large pool of total return-focused investors exists, they can be expected step in and purchase ESG bonds that trade at a negative greenium if such a transaction is sufficiently profitable (including any trading costs). Therefore, primary and secondary market greeniums should be non-negative.

However, the empirical evidence regarding greeniums has been mixed. While the totality of the evidence supports the existence of positive greeniums, some studies found negative greeniums. The empirical results depend on the period and the market sectors that were considered. Most studies focus on the corporate sector with their conclusions potentially not applying to sovereign ESG bonds.<sup>2</sup> One factor that complicates the greenium calculation is that the new issuances come out at a yield several basis points (bps) above what the secondary market would indicate (otherwise the investors could just buy bonds in the secondary market). This “new issue premium” depends on market conditions at the time of issue, including risk aversion and overall market liquidity. Such a calculation is usually situation-specific and hard to replicate in large samples. The greeniums provided by the members of issuance syndicates can therefore be sometimes much larger than what a simple comparison of a newly issues bond's yield or spread with an interpolated yield or spread curve would suggest.

Empirical studies that focused on sovereign greeniums found mixed results. Doronzo, Siuracusa, and Antonelli (2021) found a negative greenium at issuance for about two-thirds of their sample, and a secondary market greenium of 0.5 basis points. Using a larger sample that ended later, Ando, Roch, Wiradinata, and Fu (2022) found average greeniums of 3.7 and 30.4 basis points for euro- and USD-denominated bonds, respectively.<sup>3</sup> Grzegorzcyk and Wolff (2022) found evidence of a small positive greenium.

Preclaw and Bakshi (2015) cite the following factors as drivers of greeniums:

- **Investors paying more for ESG bonds because they provide additional non-monetary payoffs:** (i) related to positive externalities they help to provide; (ii) regulatory and political pressures they face to own ESG bonds; and/or (iii) investors wanting to showcase their commitment to ESG investments towards their own end-investors or other stakeholders.
- **Lower volatilities of the spreads of ESG bonds versus the spreads of similar conventional bonds.**
- **Supply-demand mismatch and low turnover:** These factors have been cited by market participants as main drivers behind greeniums. The two factors can coalesce into a “virtuous greenium cycle” for ESG bonds: Excess demand by less price sensitive ESG investors at time of issue leads to a greenium. With additional funds flowing into ESG bonds, demand exceeds supply in the secondary market, leading to wider secondary market greeniums. Some investors have noted that “green bonds are the last to be sold,” since they believe it would be hard to buy them back. This reduces their liquidity even more, with buyers having to offer even better prices to the original holders. These observations are consistent with ESG investors not viewing ESG bonds' liquidity negatively.<sup>4</sup> Changes in the demand-supply balance have been cited as a factor in relative fluctuations in greeniums between green and social bonds (Goldman Sachs (2021) and Financial Times (2022)).

**Non-monetary payoffs:** This factor could be relevant; however, while Mayer and Henide (2021) would some evidence in support of this hypothesis, a careful examination that considers the specific environmental and social benefits of different ESG bonds is outstanding as of mid-2022. It can be argued that non-monetary payoffs are a significant driver behind the demand-supply imbalances discussed above.

**Low spread volatility:** Evidence for lower spread volatilities of ESG bonds has been mixed (Preclaw and Bakshi (2015)). The underlying assumption for this lower spread volatility is negative correlation between credit spreads and greeniums, for which theoretical arguments are lacking. In a study focused on sovereign bonds, Hyman (2022) could not detect significant

outperformance of sovereign ESG bonds over their conventional peers after controlling for risk. Neither did Hyman (2022) find reduced return volatility of sovereign ESG bonds versus their conventional peers.

**Summary:** Greeniums, their magnitude, and their dynamics are determined by the tradeoff between ESG bonds' liquidity and their scarcity premium. Fundamentally lower liquidity of ESG bonds and the overall scarcity premium they attract due to net new cash flows from investors into the sector. While this demand-supply imbalance has led to lower yields for ESG bonds compared to conventional bonds, investors and issuers should be aware that greeniums can become negative.

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<sup>1</sup> This would be at odds with claims made by some ESG advocates that they can do good while outperforming investors that do not sufficiently incorporate ESG factors in their investment processes.

<sup>2</sup> See Affirmative (2021) for a literature overview. Meyer and Henide (2021) provide estimate greeniums for European corporates and report notable differences across sectors.

<sup>3</sup> The results are affected by different sample, time periods, and methodologies. Some of the analysis in Doronzo et al. only used bonds issued by France, Belgium, the Netherlands, and Ireland as the basis for some of their results. Also, Doronzo et al. used greeniums derived from interpolated base curves as dependent variables, while Ando et al. derived greeniums as functions of estimated regression coefficients.

<sup>4</sup> This is consistent with the observations in Affirmative (2019).

## IV. Budget and Debt Market Fragmentation Risks

**If SGB funding comprises a large share of the universe of eligible projects, care must be taken not to encumber future expenditures.** Dedicating funds raised towards specific expenditures results in a loss in budgetary flexibility.<sup>1</sup> For instance, if a country issues an SGB at the start of budget year  $t$ , it may commit itself to start specific capital projects in year  $t+2$ . Albeit the government might want to change its expenditure plans in year  $t+2$ , its commitments under the SGB may prevent it from doing so. Although green projects related to SGB issuances are not a huge share of expenditures, careful planning is important to avoid detrimental effects from expenditure encumbrances.

**Flexibility on the conditions around the expenditures financed with an UoP bond must be aligned with investor expectations.** From a debt management perspective, sovereigns would want to retain the flexibility to fund projects implemented in the past as much as possible and announce reliance on a wide-ranging universe of project types (Box 4.1). To be credible towards investors, however, common time frames for the lookback period are 1-2 years prior to issuance and 1-2 years post-issuance. Similarly, the types of projects that can be funded have to fall into the groups referenced by ICMA in its GBPs. The issuer should ask its advisers, the SPO, and investors for their feedback, and adjust the prospectus if needed. If the time windows around the issuance data are too wide, or the ICMA's full catalogue of project types is used without reference to the country's environmental needs, investors might deem the planned SGB issuance opportunistic and lacking proper foundation, in turn making the issue harder to sell. As noted, the types of green projects cited by ICMA include clean water and sanitation as well as transportation, two types of projects that normally receive government funding.

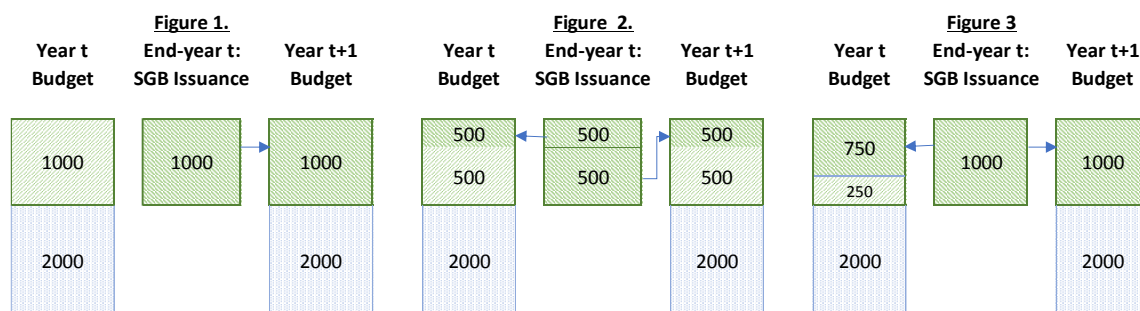
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<sup>1</sup> The potential for encumbrance will depend on the manner in which projects financed by ESG bonds relate to the issuing sovereign's budget process. In the extreme case that an issuance only finances projects executed in the past, and/or finances projects that commence after issuance and which would not be implemented without the ESG bond funding no budgetary encumbrance would occur. In practice, most sovereign ESG UoP bond issuances are not that restrictive. While some of the expenditures towards past projects and some may not be implemented without the dedicated funding the ESG bond provides, projects in the areas of transportation, clean water, sewerage, or electric vehicle subsidies have been parts of the public expenditures of many countries since the 2010s. Similarly, many of the projects listed under social bond issuances are expenditures governments perform (for instance, COVID relief during the 2020 pandemic). Projects may be modified to increase their appeal for ESG investors.

### Box A4.1. Green Funding Allocation: An Illustrative Example

We present the hypothetical example of a country that has a budget totaling 3,000 currency units (CUs) in year t and year t+1. In each year CU 1,000 out of the CU 3,000 are directed towards green projects, and therefore eligible for financing raised from the issuance of SGBs. The remaining CU 2,000 in each year are comprised of non-green expenditures. The country issues an SGB at the end of year t in the amount of CU 1,000.

The three different approaches to the allocation of expenditures are illustrated below. The first approach shows the CU 1,000 issued being fully allocated to new projects in year t+1 (Figure 1). Figure 2 depicts the case there the universe of green projects equals exactly CU 1,000, with one half of the universe of eligible green projects already completed in year t, and the remaining CU 500 directed towards projects to be undertaken in year t+1.



While both these allocations of funds fully exhaust the CU 1,000 issued, the allocation shown in Figure 7.1.b reduces the risk of the issuer to not being able to fulfill the commitments it has made to the bond investors. In the case depicted in Figure 7.1.a, all projects must be executed in year t+1. This deprives the issuer of the flexibility to replace one project that was to be financed with the funds raised by the bond issuance if, for instance, year t+1 budget priorities change, or some projects cannot be executed for technical reasons.

The issuer could have obtained even greater flexibility by increasing the universe of eligible projects beyond a total of CU 1,000. Additionally, the share of expenditures that can be devoted towards year t expenditures could be increased. Such a case is depicted in Figure 7.1.c.

In that case up to three quarters of the funding raised by the green bond issuance could be spent on already existing projects. To increase its green bond funding flexibility further, the issuing country can include all green projects planned for year t+1 in the set of projects eligible for SGB funding. As shown in Figure 7.1.c., the final project selection could then take place in year t+1, with the first allocation report published at end-t+1.

Source: IMF staff.

### The key elements related to the project part of an UoP issuance that could impact budget

**fragmentation are highlighted here.** The determination on how to fix each element must be made by the issuer in conjunction with his advisors, the lead manager, and investors:

- Plan to spend the funds raised within 2 years before and after before and after an issuance;
- Set the share of issuances allocated to past projects;
- Focus future expenditures on projects that are within the capacity of the authorities; and
- Focus expenditures on projects for which financial and impact reporting can be completed without difficulty;
- Issue sustainability bonds instead of SGBs. Sustainability bonds cover a much larger pool of eligible expenditures, with many of the social expenditures that can be financed with a sustainability bond more in line with traditional budget items, with their impact easier to account for;
- The bond documentation should note that insufficient performance of UoPs on both the project-side or with regards to performance measurement and reporting does not constitute an event of default, nor

does it provide the right to put the bond back to the issuer;<sup>1</sup> and if any of the above are not achievable, issue sustainability-linked or transition bonds.

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<sup>1</sup> See, for instance, Baker McKenzie (2019).

## V. Sovereign ESG Bonds

**Sovereign ESG bond issuances have been issued in four formats: green bonds, social bonds, sustainability bonds, and sustainability-linked bonds.** Advanced economies' issuances have been exclusively focused on GBs, while issuances by EMDEs have seen almost as much issuance of sustainability bonds as of green bonds. Assuming an equal distribution of expenditures targeting environmental versus green expenditures by the sustainability bonds issued by EMDEs would imply that 58 percent of the funds raised were related to the environment and 42 percent financed referenced social goals (Table A5.1).

**Table 5.1. Sovereign ESG Bonds Issued by Country**  
(USD billion)

Country	Green	Social	Sustainability	Sustainability-linked	Total	Share Local Curr. (percent)	Share Syndicated (percent)
<b>Advanced Economies</b>							
Andorra			1.2		1.2	100	100
Austria	4.3				4.3	100	100
Belgium	12.4				12.4	100	45
Canada	4.0				4.0	100	100
Denmark	1.0				1.0	100	0
France	51.5				51.5	100	44
Germany	30.2				30.2	100	84
Ireland	7.8				7.8	100	72
Isle of Man			0.6		0.6	100	100
Italy	16.1				16.1	100	100
Latvia			0.7		0.7	100	100
Lithuania	0.1				0.1	100	0
Luxembourg			1.8		1.8	100	100
Netherlands	12.1				12.1	100	0
Spain	7.3				7.3	100	100
Sweden	2.3				2.3	100	100
United Kingdom	22.1				22.1	100	99
<b>AE Total</b>	<b>171.1</b>	<b>0.0</b>	<b>4.2</b>	<b>0.0</b>	<b>175.3</b>	<b>100</b>	<b>67</b>
<b>EMDEs</b>							
Benin			0.6		0.6		100
Chile	7.5	16.0	7.5	2.0	33.0	16.4	100
Colombia	0.4				0.4	100	0
Ecuador		0.7			0.7		100
Egypt	0.8				0.8		100
Fiji	0.1				0.1	100	0
Guatemala		0.5			0.5		100
Hong Kong	7.3				7.3		100
Hungary	2.9				2.9	18.8	100
Indonesia	3.5		0.6		4.1		89
Malaysia			0.8		0.8		100
Mexico			2.4		2.4		100
Nigeria	0.1				0.1	100	100
Peru		1.1	3.3		4.4		100
Philippines			1.0		1.0		100
Poland	4.3				4.3		100
Republic of Kosovo	1.2				1.2		100
Slovenia			1.2		1.2	100	100
South Korea	0.8		0.5		1.3		100
Thailand			6.2		6.2	100	26
Uzbekistan			0.9		0.9	27.0	100
<b>EMDE Total</b>	<b>28.7</b>	<b>18.4</b>	<b>24.9</b>	<b>2.0</b>	<b>73.9</b>	<b>19.1</b>	<b>92.6</b>
<b>Grand Total</b>	<b>195.7</b>	<b>18.4</b>	<b>29.1</b>	<b>2.0</b>	<b>245.2</b>	<b>75.5</b>	<b>74.1</b>

Sources: Bloomberg, Dealogic, Hungarian authorities, and IMF staff.

Note: Data through June 9, 2022.

**The currency composition of the funds raised is another area of distinction between AEs and EMDEs. AES issued all in their home currency.** This is driven by the sufficiently large local-currency bond markets of AEs and that fact that their home currencies are accepted by global investors. In addition, many smaller countries in Europe are part of the Eurozone, enabling them, to issue into the wider market for Euro-denominated sovereign bonds.

**The share of syndications is higher for EMDEs than for AEs (93 versus 67 percent, respectively).** The greater reliance on the international bond markets on the part of EMDEs stands behind this. It should be noted that about two-thirds of issuances had been syndicated by AE sovereigns, too (see Table A5.1).

## **VI. Financing ESG-Related Expenditures with Debt: A Comparison**

This Annex summarizes the salient features of different types that can be used to finance ESG-related expenditures (Table A6.1). The funding decisions is multidimensional, with its main aspects being (i) funding terms (mainly the interest rate and the repayment schedule); (ii) conditionality—this can mean that for concessional loans the creditor oversees a project or the need to purchase goods and services from the provider of the debt; (iii) a long and demanding application process for concessional debt; (iv) the refinancing risks associated with market debt; (v) the currency risk that can be associated with external debt; and (vi) the potential for detrimental effects on the development of the local currency bond market.



Table A6.1. Sovereign ESG Funding for EMDEs

	External ESG Financing		Domestic ESG Financing
	Concessional	Market	Market
<b>Pros</b>	Low cost (below market interest rates or explicit grants)	More diverse and larger investor base	Represents a more reliable source of funding
	Long grace periods	Potential exists for the quick issuance of large volumes (depending on investor demand)	Frequent issuance possible in line with funding needs
	Long maturities	Less demanding process to tap the capital market	Flexible size (depending on the state of LCBM development)
	Access to donors' project management expertise	ESG bonds can carry a lower interest rate than conventional debt (greenium) Longer maturities/lower refinancing risks	Reduced refinancing risk compared to international issuances Provision of a green benchmark  No FX risk
<b>Cons</b>	Long and demanding application process	Higher cost than concessional funding: Explicit fees directly related to an issuance program plus administrative and operational demands	Higher interest rates compared to international issuances or concessional funding
	Projects must conform to donors' priorities and selection criteria	Green market reputational risk	Shorter maturity (depending on the level of LCBM development)
	Lengthy and rigid project execution process (due to oversight and impact mitigation requirements from the donor side)	Reporting and compliance requirements post-issuance	Crowding out of the private sector
	Applying for funding from climate-focused investment funds is competitive	Refinancing risks: General risk of demand for country's bonds falling. In addition, for climate bonds, an issuer's green credentials might fall short of market requirements	
	Funding from climate-focused investment funds can entail the need for notable operational capabilities	Changing requirements for ESG and especially climate bond issuance	
	FX risk	FX risk	

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