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Emerging Market Green Bonds Report 2019

Momentum Builds as Nascent Markets Grow

This document is for the exclusive attention of professional investors,
investment service providers, and other professionals in the financial industry.

Spring 2020

NOTE TO THE READER

As we publish this report, governments around the world are implementing unprecedented measures to fight one of the most acute pandemics since the Spanish Flu. The human toll of the coronavirus (COVID-19) pandemic is coupled with significant disruption to the world economy. While half of the world's population is asked to stay at home, governments and central bankers face twin supply and demand shocks, which they hope to dampen through extraordinary fiscal stimulus packages and monetary measures not seen since the Global Financial Crisis of 2008.

The immediate results of this global economic shutdown are known: widespread unemployment and a significant impact on the wellbeing of the poorest and most vulnerable members of society who may not benefit from the trillion dollar packages being implemented by developed economies. The medium-term results can be sobering—from debt servicing difficulties at the sovereign and corporate levels, to a reduction in supply that could engender dislocations as demand picks up, and to lower investment that translates into lower productivity and growth. The long-term outcomes will depend on the duration of the pandemic, the ability of a viable treatment and vaccine that can be distributed to vast amounts of people, and the effectiveness of the policy response in counteracting the current real economy freeze and diminishing its impact on the banking sector.

In emerging markets, all of the above is true and exacerbated. Weaker health infrastructure, insufficient nutrition, and inadequate access to water and sanitation may increase the severity of the human toll. Most economies have far less room for fiscal and monetary stimulus, and many are strongly impacted by the substantial price declines in energy and raw materials, as well as reductions in trade, tourism, and remittances. Emerging economies—as shown by early indicators—will likely be disproportionately hit by the crisis.

Why publish a report focused on the development of green finance in emerging markets at this time?

This paper is not intended to deflect from the urgency needed to address the COVID-19 crisis. Instead, we hope the paper's findings may inspire critical thinking on building sustainable financial systems to underpin a more resilient economy that will be necessary once the impact of the pandemic dissipates and the world community refocuses on the need to have a more balanced and green global economy.

Over the past few years, the global green bond market has received increasing attention for its ability and potential to mobilize capital for projects with environmental benefits. Today, both green bond issuers and investors face the challenge of overcoming market turbulence and uncertainty.

Despite the difficulty of assessing the long-term impacts of the current crisis, the need for continued climate change mobilization remains vital, and capital market instruments to finance these efforts, such as green bonds, especially in emerging markets, show potential signs of resilience.

In the short term...

The year 2019 was marked by an increasing investor focus on environmental, social, and governance (ESG) investments, which was predicted to spur another record year for green debt issuance in 2020. However, current market conditions dampen near-term prospects. As the credit cycle turns, one should expect a sluggish level of issuance across emerging markets. Not only will many investors shy away from risky assets as long as uncertainty remains high, but issuers may also be reluctant to issue at too high of a price if they think the spread levels (i) are not justified by fundamentals and (ii) will eventually subside. Green bonds in particular are by nature linked to well-defined green financing, or investing programs, and therefore might not be the preferred financing option during a crisis.

That said, increased volatility can also bring selected opportunities. When liquidity dries up and risk premia increase, investors that stay in the markets, as well as those that are ready to lend, have more bargaining power, including on pushing for the best ESG practices and sustainable use of proceeds. Responsible investors with long-term allocations to emerging markets can collaborate with issuers through the green bonds format and ESG funds to unlock long-term capital and help issuers become more resilient, from a financial and extra-financial standpoint.

In the long term...

Investors have shown an appetite for green investments. So far, investment flows since the start of the crisis have proven more resilient towards green investments when compared to their traditional counterparts. It is possible that investors view green issuers as more long-term oriented and able to weather short-term volatility. There is room for hope that in the long run, temporary negative impacts could decrease as the value in the green bond market potential remains apparent due to advantages such as lower incidence of controversies, greater customer loyalty, higher employee satisfaction and retention, and more conservative financial planning.

Additionally, social bond issuance has been linked to the crisis thanks to the bonds' role in implementing crisis-related projects that mitigate the negative health and socio-economic impacts, including two issuances by IFC in March 2020. Social bond issuances, a sub-segment of ESG fixed income, should secure investor and issuer confidence for other instruments such as green bonds, which are the founding pillars of the use-of-proceeds bonds.

Finally, over the next few months, economic stimulus efforts will offer new opportunities for channeling capital to the low-carbon transition. Over the course of 2019, a growing amount of research provided the basis for proposals to the Network for Greening the Financial System advocating for green monetary policy. Ultimately, the outcome of the green bond market will depend to a large extent on what stimulus efforts and policy directions are taken.

If anything, this crisis has highlighted the need to make the world economy more resilient to global shocks. The current crisis could be a mere dress rehearsal for the shocks to come if we are not in position to address climate mitigation globally and meet adaptation goals in emerging markets. The need for green investment is now, more than ever, critical.

KEY HIGHLIGHTS

Emerging Market Green Bonds



\$52 billion

green bond issuances in 2019



21%

increase in green bond issuances from 2018



\$168 billion

green bonds outstanding by the end
of 2019



59%

of cumulative green bond issuance
by financial institutions



35

emerging markets have issued green bonds
since 2012



5

emerging markets with debut offerings
in 2019



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FOREWORD



Yerlan Syzdykov
Global Head of Emerging Markets
Amundi

Amundi Asset Management

// Yield and investing with positive environmental impact: in an environment of low rates and of greater recognition of environmental challenges, these are two key investors' expectations that emerging market green bonds can perfectly match. In such a context, one can expect the demand for green debt issued by emerging market issuers to grow. One crucial question is whether the supply can follow.

While they account for more than one-third of global clean energy investments, emerging markets still represent only one-fifth of global green bond issuance. As such, they remain underrepresented in the green bond market. As this report shows, once largely concentrated in China, the green bond format is increasingly adopted by issuers in other emerging countries. This is a clear, positive signal, not only because it allows the Amundi Planet Emerging Green One fund to be ahead of schedule in its green bond investments, but also more generally because green bonds contribute to fill an environmental, social, and governance (ESG) transparency gap in emerging markets and provide investors with confidence over the positive green impacts of the projects financed along with the proper management of associated environmental and social risks.

When considering green bond investment strategies, some investors have also expressed concerns over the potential creation of a green bubble and the risk of having to sacrifice returns. Ultimately, this risk will depend on supply and demand dynamics and how the market for EM green bonds finds its own balance. This report also provides insights on this topic, which will no doubt remain an area of vigilance for market participants in the future. //

International Finance Corporation

// Over the past decade, green finance has moved from a niche market to one that is increasingly mainstream. Investment in green bonds is at record highs as investors align their strategies with environmental considerations. Emerging markets stepped up their issuance, with nascent green bond markets active in 35 countries.

International Finance Corporation is celebrating the 10th anniversary of our Green Bond program, with cumulative issuance since 2010 amounting to over \$10 billion, and it remains at the forefront of creating innovative market solutions. One such initiative is IFC's partnership on the Amundi Planet Emerging Green One fund, which offers a unique approach to stimulating the global demand for green bonds as well as their supply in emerging markets.

The next decade is critical for transitioning to low-carbon economies and mobilizing investment for sustainable development. Unlocking IFC's estimated \$29.4 trillion investment potential in emerging market cities requires expedited efforts from all market stakeholders. This report highlights where green bond markets can be scaled up and what steps will be necessary. //



Jean Pierre Lacombe
Director, Global Macroeconomics,
Market and Portfolio Research
IFC

Abbreviations and Acronyms

Amundi:	Amundi Asset Management
AP EGO:	Amundi Planet Emerging Green One
ASEAN:	Association of Southeast Asian Nations
CBI:	Climate Bonds Initiative
CO₂:	Carbon dioxide
DM:	Developed market
EC:	European Commission
EM:	Emerging market ¹
ESG:	Environmental, social and governance
EU:	European Union
FELABAN:	Latin American Federation of Banks
FTSE:	Financial Times Stock Exchange
GBP:	Green Bond Principles
GDP:	Gross domestic product
GFRP:	Green Finance Review Protocol
GHG:	Greenhouse gases
GW:	Gigawatt
ICMA:	International Capital Markets Association
IFC:	International Finance Corporation
IRP:	Integrated Resource Plan
KPI:	Key performance indicator
NDC:	Nationally Determined Contributions
NGFS:	Network of Central Banks and Supervisors for Greening the Financial System
OECD:	Organisation for Economic Co-operation and Development
PLN:	Polish zloty
SBN:	Sustainable Banking Network
SDGs:	Sustainable Development Goals
SLB:	Sustainability-linked bond
TCFD:	Task Force on Climate-related Financial Disclosure
TOE:	Ton of oil equivalent
UAE:	United Arab Emirates
UN:	United Nations
UNEP FI:	United Nations Environment Programme Finance Initiative
UNFCCC:	United Nations Framework Convention on Climate Change
ZAR:	South African rand

EXECUTIVE SUMMARY

Momentum is rapidly building for the global green bond market, which has now surpassed \$700 billion in outstanding issues. This market is a crucial source of financing for projects, with positive environmental impacts in both developed and emerging countries. Investor appetite for green bonds continues to grow, and emerging market issuers are likely to benefit from increasing demand.

This second edition of the “Emerging Market Green Bonds Report” highlights where there has been growth and where there is potential.

Key findings of this report

- Emerging market green bond issuances in 2019 amounted to \$52 billion, a 21 percent increase from 2018. By year end, outstanding issues of green bonds in emerging markets amounted to \$168 billion.
- Stepped-up issuance in countries other than China drove overall growth in 2019, including debut offerings from five new emerging market countries. China remained the largest issuer among emerging markets, again accounting for more than \$30 billion, as it has each year since 2016.
- Global green bond indexes outperformed global aggregate bond benchmarks once again in 2019. Available data show that emerging market green bonds generally do not trade at a premium compared with conventional bonds.
- Global initiatives are underpinning many of the promising policies and strategies on green finance being launched at the national and regional levels. Considerable challenges remain around the availability and quality of information related to measurement and reporting and the lack of harmonized standards and taxonomies.
- The potential for green bond issuance depends on a few key determinants. These include the existence and quality of sustainable finance policies and frameworks; momentum generated by existing green bond issuance, including by sovereigns; the stage of capital market development; and sufficiently strong governance and political stability. Country-level analysis of these determinants points out significant variance; however, some trends can be noted on a regional level:
 - **Sustainable finance policies and frameworks:** Countries in East Asia and the Pacific have demonstrated pioneering actions with respect to their sustainable finance policies and frameworks, whereas several countries in Latin America and the Caribbean and Sub-Saharan Africa are in the implementation stage.
 - **Momentum generated by existing green bond issuance:** East Asia and the Pacific, Europe and Central Asia, and Latin America and the Caribbean have the highest amounts of existing issuance relative to total bond markets. Planned sovereign green bond issuance in Latin America and the Caribbean is likely to further spur market development.
 - **Stage of capital market development:** East Asia and the Pacific has deeper domestic capital markets than other regions. The Middle East and North Africa has seen the growth of its banking sector and cross-border bond issuance.
 - **Governance and political stability:** Europe and Central Asia scores relatively high on governance indicators, followed by Latin America and the Caribbean.

INTRODUCTION

Financing countries' climate and sustainable development commitments will require global investment on an unprecedented scale. IFC estimates cumulative climate investment potential of \$29.4 trillion across six key sectors in emerging market cities through 2030. These sectors include waste, renewable energy, public transportation, climate-smart water, electric vehicles, and green buildings.² Institutional investors, multinational corporations, and financial institutions are mainstreaming environmental concerns into their investment strategies and business activities. Debt capital markets are crucial sources of long-term funding to help close financing gaps and mobilize capital for sustainable development.

Green bonds are fixed income instruments whose proceeds are earmarked exclusively for new and existing projects with environmental benefits focused on renewables, energy efficiency, water, clean transport, and climate change mitigation and adaptation. Rapid growth of the global green bond market over the past decade to more than \$700 billion in outstanding issues³ has required collaboration among multiple stakeholders, including first mover issuances by multilateral institutions, the mobilization of private and public sector issuers and investors, and numerous policy actions to provide and encourage regulatory frameworks, taxonomies, and enabling environments. Green bonds, although still representing a small fraction of the over \$100 trillion of bonds outstanding globally,⁴ represent a significant market opportunity for investors seeking to align their investment strategies with environmental considerations.

More broadly, impact investing aims to achieve both financial returns and measurable positive social or environmental impacts. In the 2019 IFC report, *Creating Impact: The Promise of Impact Investing*, IFC estimates investor appetite for impact investing is as high as \$26 trillion, including \$21 trillion in publicly traded stocks and bonds.⁵ Changes in preferences of investors, particularly as more wealth transfers to younger generations, include a greater propensity to consider social and environmental factors alongside risk and return objectives. Asset managers are expanding ESG-tailored investment vehicles across product types and asset classes.⁶

Other debt instruments include sustainability bonds—the proceeds of which are used for a mix of environmental and social projects. Debut issuances of sustainability-linked and transition bonds have sparked much discussion among market stakeholders, with guidance on taxonomy and definitions forthcoming (see Box 1: Labeled Bonds—Definitions and Guidelines). For the time being, however, green bonds remain the predominant debt instrument and the focus of this report, recognizing that efforts to scale green bond markets will set the pace for green and sustainable financing more widely.

This second edition of the "Emerging Market Green Bonds Report" builds on joint work by IFC and Amundi to (a) address the gap in available public information on green bonds in emerging markets and (b) discuss in depth the issues unique to green bonds in emerging markets versus developed markets.

By providing a thorough analysis of the development of green bonds in emerging markets, this report highlights where there has been progress and where there is potential. Although there are still barriers to entry and numerous challenges to address, this report offers an outlook on the potential for market growth over the coming years that is based on the input of many experts in the space⁷ and on a qualitative assessment. An update on the mobilization efforts of policy makers as well as case studies on specific countries and regions provide additional context for the potential of specific markets.

Box 1: Labeled Bonds – Definitions and Guidelines

Green bonds: Green bonds are fixed-income instruments with proceeds earmarked exclusively for new and existing projects that have environmental benefits. The Green Bond Principles (GBP) developed under the auspices of the International Capital Markets Association (ICMA) have four components: use of proceeds, process for project evaluation and selection, management of proceeds, and reporting.⁸ A number of countries and jurisdictions have developed their own set of guidelines for green bond issuance, many of which align with the GBP.

Social bonds: The use of proceeds from social bonds is directed toward projects that aim to achieve positive social outcomes especially, but not exclusively, for a target population. ICMA's Social Bond Principles have four components analogous to the GBP: use of proceeds, process for project evaluation and selection, management of proceeds, and reporting.⁹

Sustainability bonds: Sustainability bonds are debt instruments whose proceeds will finance or refinance a combination of green and social projects. The Sustainability Bond Guidelines established by ICMA are aligned with the four core components of both Green Bond Principles and Social Bond Principles.¹⁰

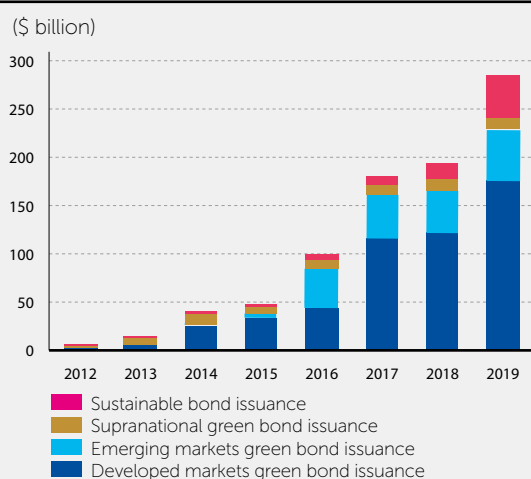
Sustainability-linked bonds: Sustainability-linked bonds (SLBs) are non-earmarked bonds whose financing cost may be increased in the event of failure to achieve a sustainable performance objective. ICMA has established a working group on sustainability/KPI-linked bonds to establish the main characteristics of SLBs and potentially to propose the creation of Sustainability-linked Bond Principles.

Transition bonds: Transition bonds are new products that aim to finance the transition to a low-carbon economy. ICMA has formed a working group to examine the lack of issuance in the green bond market by carbon-intensive corporates and will consider providing guidance for issuance.

THE CURRENT STATE OF THE MARKET

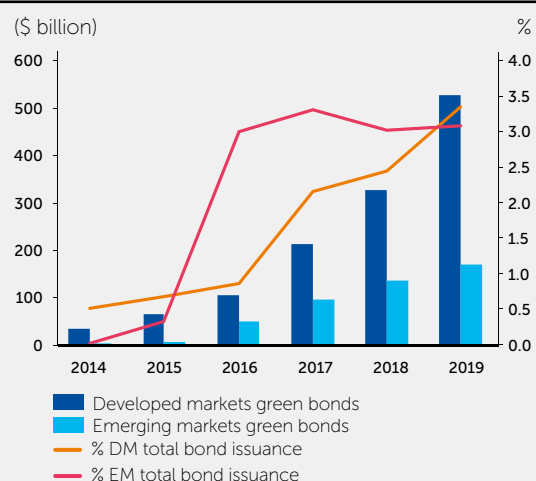
Globally, the green bond market outperformed expectations in 2019, with record issuance of \$240 billion. The nascent market for sustainability bonds doubled in size, with issuance of over \$40 billion in 2019 (Figure 1). Emerging market green bond issuances rose 21 percent to \$52 billion, bringing the amount outstanding to \$168 billion. Including developed and emerging markets, issuance of green bonds constituted marginally over 3 percent of total global bonds issued last year (Figure 2).

Figure 1 - Green and Sustainability Bond Issuance



Source: IFC Global Macro & Market Research, Bloomberg, Dealogic, Environmental Finance, Climate Bonds Initiative.

Figure 2 - Green Bond Market Size



Note: Total bond issuance includes all sectors and non-green bonds.

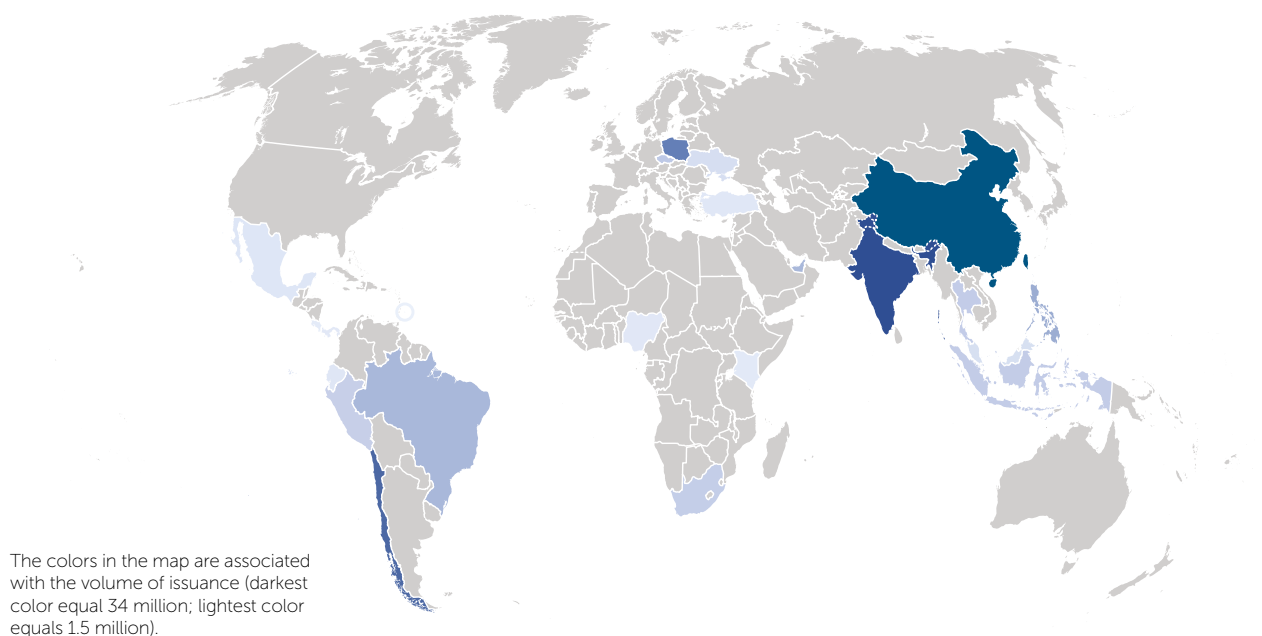
Source: IFC Global Macro & Market Research, Bloomberg, Dealogic, Environmental Finance, Climate Bonds Initiative.

China remained the largest emerging market issuer, as well as the second largest issuer globally. Although China has issued more than \$30 billion in green bonds each year since 2016, its issuance in 2019 declined by 7 percent from a year before.¹¹ Other emerging markets drove the overall growth in 2019 with \$18 billion of issues, nearly triple that in 2018. The largest volumes were registered by India, followed by Chile, Poland, the Philippines, the United Arab Emirates, and Brazil. New entrants to the green bond market included Barbados, the Czech Republic, Ecuador, Panama, and Ukraine, demonstrating the increasing geographical diversification of the green bond market across all regions (Figure 3).

Bond market conditions were supportive of debt issuance in 2019, with total issues by all sectors from emerging markets amounting to \$1.7 trillion, up from \$1.4 trillion in 2018 (Figure 4). Whereas bond issues by China rose by 21 percent, issuance in emerging markets other than China increased only 11 percent.

Stronger growth in green bond issues outside China was attributable to increasing awareness and know-how about green bonds among both issuers and investors as well as to demand for ESG products. Indeed, the incorporation of these instruments into investor strategies gained considerable momentum in 2019. Globally, ESG-dedicated funds hold about \$850 billion in assets under management, with many signs that demand has been outpacing supply.¹² The entry of emerging market issuers into this space has been quite recent but encouraging, enabling them to tap into strong demand for green bonds to secure capital from both domestic and international investors.

Figure 3 - Emerging Market Green Bond Issuance, 2019

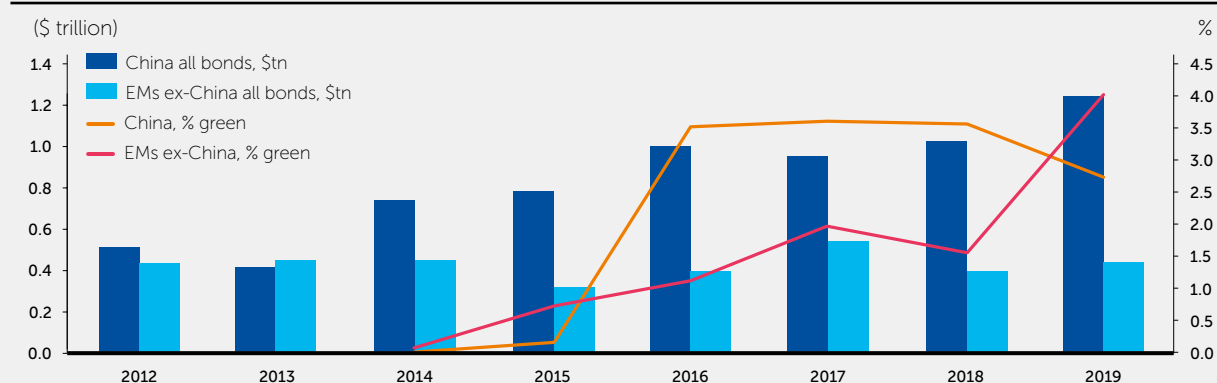


Source: IBRD 44973.

Country	Volume (\$ million)	Country	Volume (\$ million)
China	34 338.2	Peru	652.3
India	3 195.6	Malaysia	475.2
Chile	2 924.9	Ukraine	357.9
Poland	2 478.2	Panama	200.0
Philippines	1 498.0	Ecuador	150.0
United Arab Emirates	1 270.0	Mexico	129.0
Brazil	1 258.8	Nigeria	106.3
Czech Republic	832.7	Turkey	100.0
Indonesia	750.0	Kenya	41.5
Thailand	734.4	Costa Rica	3.5
South Africa	724.2	Barbados	1.5

Source: IFC Global Macro & Market Research, Bloomberg, Dealogic, Environmental Finance, Climate Bonds Initiative.

Figure 4 - Emerging Market Green Bond Issuance, 2019



Source: IFC Global Macro & Market Research, Bloomberg, Dealogic, Environmental Finance, Climate Bonds Initiative.

East Asia and the Pacific remains the leader in emerging market green bond issuance (responsible for 81 percent of the total as illustrated in Figures 5 and 6), with China’s more than \$34 billion last year still accounting for most of the regional total.

Outside China, the region moved to the forefront of green bond market development. Southeast Asian countries have been stepping up issuance, with another sovereign green bond from Indonesia (\$750 million), a green sukuk from Malaysia, and a mix of corporates and financial institutions issuing in the Philippines and Thailand.

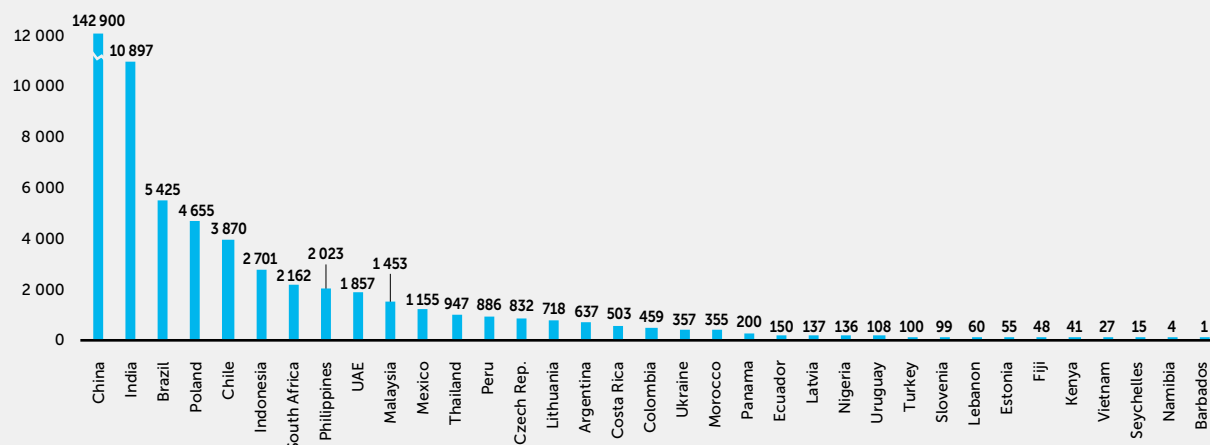
In South Asia, benchmark-sized issuances from nonfinancial corporates in India included those from Adani, Greenko, and Renew, with the use of proceeds going to renewable energy.

After a slow year in 2018, issuance in Latin America and the Caribbean grew rapidly in 2019, buoyed by two sovereign issues from Chile and new entrants including Barbados, Ecuador, and Panama. With 40 issuers from 11 countries, the region has the largest number of countries with nascent green bond markets.

Poland again led Europe and Central Asia with a sovereign bond issuance of €2 billion, as well as several by financial institutions. Both the Czech Republic and Ukraine saw debut issues from nonfinancial corporates, and private placements from financial institutions in Turkey added to the region’s totals.

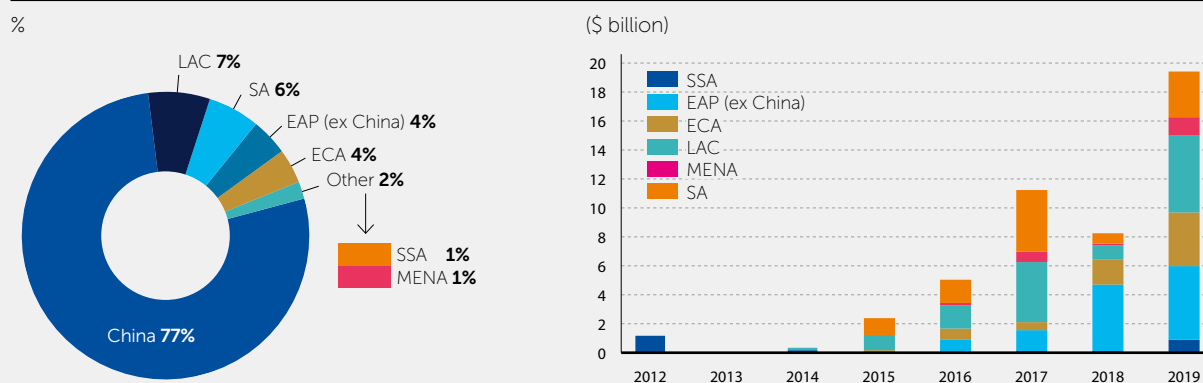
The Middle East and North Africa saw \$1.2 billion in green sukuk issuance from the United Arab Emirates company Majid Al Futtaim. Green bond market activity in Sub-Saharan Africa included a repeat sovereign issue by Nigeria, financial and corporate offerings in South Africa, and a debut green bond from a corporate in Kenya.

Figure 5 - Cumulative Emerging Market Green Bond Issuance, 2012–19 (\$ million)



Source: IFC Global Macro & Market Research, Bloomberg, Environmental Finance, Climate Bonds Initiative.

Figure 6 - Cumulative Emerging Market Green Bond Issuance by Region, 2012–19



Region	Number of countries	Number of issuers	Volume (\$ billion)
Sub-Saharan Africa (SSA)	5	13	2.4
East Asia and the Pacific (EAP)	7	217	150.1
Europe and Central Asia (ECA)	8	15	7.0
Latin America and the Caribbean (LAC)	11	40	13.4
Middle East and North Africa (MENA)	3	7	2.3
South Asia (SA)	1	21	10.9
Total	35	313	186.0

Source: IFC Global Macro & Market Research, Bloomberg, Dealogic, Environmental Finance, Climate Bonds Initiative.

Trends in emerging market green bond issuance

Issuing sectors: Financial institutions remain the largest issuing sector in emerging markets, making up 59 percent of cumulative green bond issuance by volume. This contrasts with 19 percent in developed markets (Figures 7 and 8). Looking at the volume of new issues during 2019, financial institutions accounted for 47 percent, followed by nonfinancial corporates (35 percent), sovereigns (12 percent), government agencies (5 percent), and municipalities (0.1 percent). Nonfinancial corporates and sovereigns both increased their share of new green bond issues, as nonfinancials' issuance grew by 81 percent compared with 2018 and sovereigns by 154 percent. Power and utility companies account for the largest share of issuance among nonfinancial corporates (56 percent), followed by construction and real estate (16 percent), transportation (13 percent), and manufacturing (10 percent) (Figure 9).

Figure 7 - Developed Market Green Bond Issuance, by Sector (\$ billion)

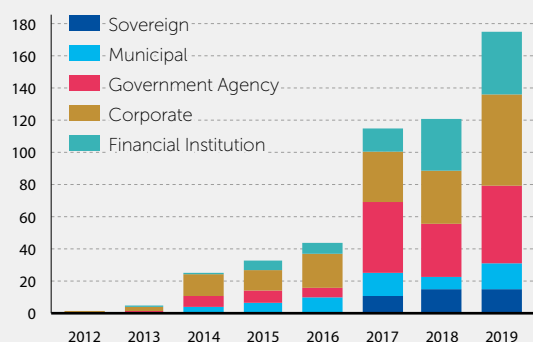
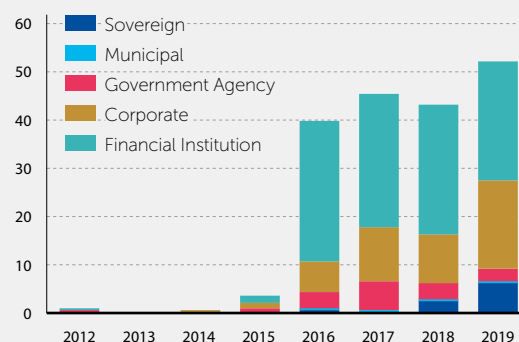


Figure 8 - Emerging Market Green Bond Issuance, by Sector (\$ billion)



Source: IFC Global Macro & Market Research, Bloomberg, Dealogic, Environmental Finance, Climate Bonds Initiative.

Issue size: Benchmark-sized bonds of at least \$300 million numbered more than 60 in 2019 (of which 32 were \$500 million or more—a 25 percent increase). The bulk of new issues are still smaller than benchmark size (Figure 10), with the range of issuance size from \$1.5 million to \$2.9 billion in 2019. For these markets to mature, benchmark-sized issues will be key to attracting substantial investment flows.

Figure 9 - EM Green Bond Nonfinancial Corporate Issuing Sector, 2012–19 (share)

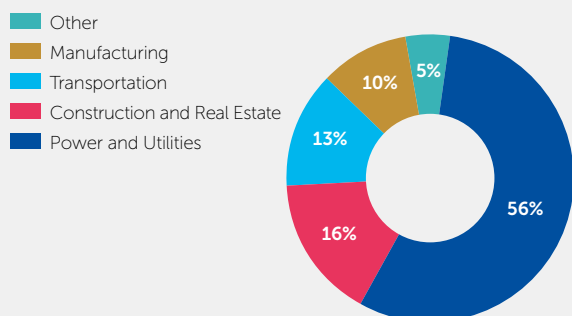
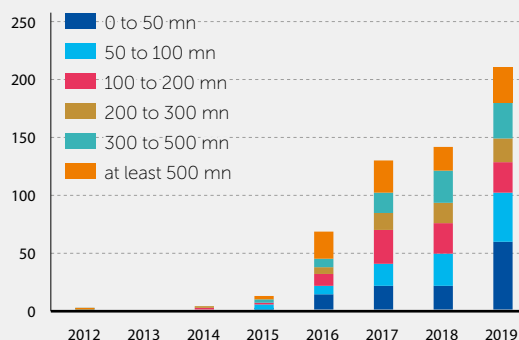


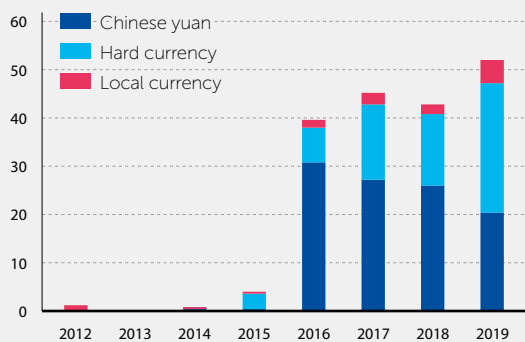
Figure 10 - EM Green Bond Issuance Size (number of bonds)



Source: IFC Global Macro & Market Research, Bloomberg, Dealogic, Environmental Finance, Climate Bonds Initiative.

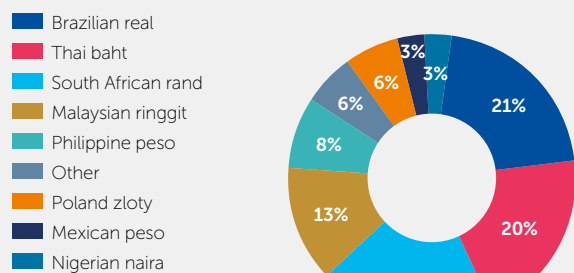
Currency: Prior to 2019, a majority of emerging market issuance was in Chinese yuan (by Chinese issuers). This past year saw a shift toward hard currencies (52 percent) and local currencies in other markets (9 percent). The Chinese green bond market remains driven by domestic demand, but a shift last year to more offshore issuance and a corresponding shift to hard currency issuance by Chinese green bond issuers points to increased focus on tapping into foreign investor appetite for emerging market green bonds (Figure 11). Investor appetite for local currency risk remained strong, all the same, with new issues in Brazilian real, Thai baht, and South African rand accounting for over half of green bond issuance denominated in local-currency outside China (Figure 12).

Figure 11 - EM Green Bond Issuance, by Currency
(\$ billion)



Source: IFC Global Macro & Market Research, Bloomberg, Dealogic, Environmental Finance, Climate Bonds Initiative.

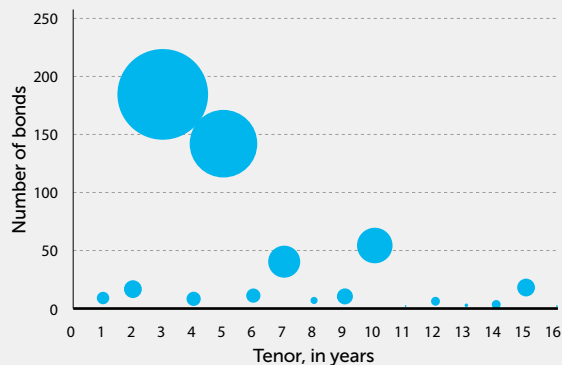
Figure 12 - 2019 Local Currency Green Bond Issuance, ex-China (%)



Tenor: The majority of emerging market green bonds are medium-term instruments, with 60 percent having a tenor of either three years or five years (Figure 13). About 10 percent of issuances are longer term, having terms over 10 years, including a few perpetual bonds.

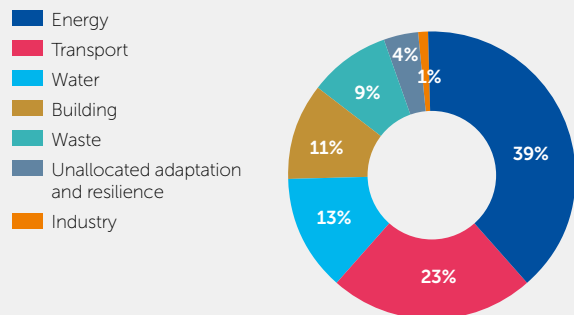
Use of proceeds: Most green bonds specify the allocation of use of proceeds for projects that address environmental concerns. The largest sector so designated in emerging markets is renewable energy, followed by transport, water, green buildings, waste, biodiversity conservation, and climate change adaptation, such as adapting building codes or protecting coastal wetlands (Figure 14).

Figure 13 - EM Green Bond Issuance, by Tenor (Number of bonds vs. tenor; size of bubbles correspond to amount issued)



Source: IFC Global Macro & Market Research, Bloomberg, Dealogic, Environmental Finance, Climate Bonds Initiative.

Figure 14 - EM Green Bond Issuance, by Use of Proceeds (%)

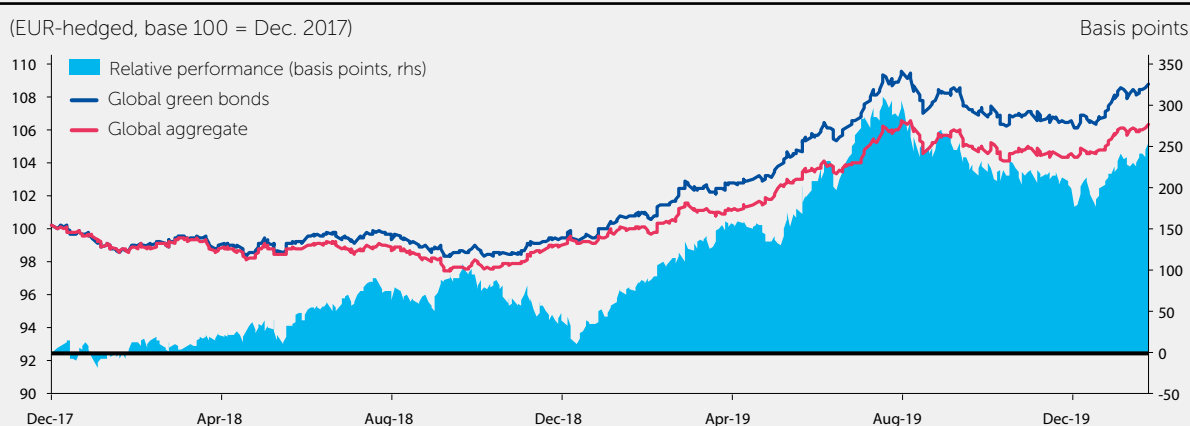


Market performance: Is there a “green” premium for EM green bonds?

Measured by indexes, 2019 was another year of outperformance

Global green bond indexes outperformed global aggregate bond benchmarks once again in 2019. Cumulative outperformance since the end of 2017 stood at over 200 basis points in early March 2020 (Figure 15).

Figure 15 - Total Return Performance of Global Green Bonds vs. Global Aggregates



Source: Bloomberg, Amundi.

Note: For global green bonds, the Bloomberg Barclays MSCI global green bond index is used in its EUR-hedged version. For global aggregates, the Bloomberg Barclays global aggregate index (EUR-hedged) is used. The two indexes are multicurrency investment grade indexes that include treasury, government-related, corporate, and securitized fixed-rate bonds from both developed and emerging market issuers.

Tempting as it might be to conclude that stronger demand for green bonds accounts for the relatively stronger returns indicated by the green bond benchmark, most of the difference is explained by the downward drift of developed market treasury rates playing in favor of the lower average yields and higher duration of the bonds in the green bond index. Interestingly, emerging markets have the same weight in the two indexes (about 9 percent). At this stage, however, there is no specific subindex for emerging market green bonds that would allow a similar analysis of comparative performance for this specific segment of the market.

Measured by secondary market prices, green bond premiums appear to be small

Investors setting green bond investment strategies may fear having to pay a premium in the form of lower yields when buying green bonds as these instruments tend to attract a larger number of investors. Capturing how much additional investor demand might be attached to the green label requires looking at how green bonds are priced on primary markets (see Box 2: Portfolio Manager’s View) and trade in secondary markets compared with conventional bonds.

Three recent studies show that, globally, green bonds trade in secondary markets at tighter spreads than similar conventional bonds by minuscule margins (of 2 basis points or less).¹³ Interestingly, EUR-denominated green bonds issued by sub-sovereigns trade at relatively tighter spreads than those issued by corporates and financial institutions (Figure 16). This pattern may be attributed to the structure of investor demand for green bonds, which has been largely dominated by European institutional investors such as insurers and pension funds, whose investment universes are biased toward the EUR currency and public issuers (sovereign, supra, and agency).

Figure 16 - Research Findings: Green Premiums Observed on Secondary Markets (EUR and USD, in Basis Points)

	Total (USD)	Total (EUR)	Sub-sovereigns (EUR)	Financials (EUR)	Corporates (EUR)
HSBC, 2020	na	na	-2.0	-1.0	-1.0
CACIB, 2019	na	-1.0	-1.6	-0.8	-0.3
Zerbib, 2018	-2.0	-2.0 to -1.0			

Source: HSBC, CACIB, Zerbib, Amundi.

Note: Figures are extrapolated from charts and/or rounded.

Green premiums in emerging markets are harder to assess but may sometimes be larger

For emerging market green bonds, drawing conclusions on the specific performance of green bonds is generally difficult given the still relatively limited number of issues and the relative lack of proxies, as senior curves are less populated. Efforts to measure additional demand for emerging market green bonds, in the same way that is done for developed markets, are hampered by much lower volumes of secondary market trading in most emerging markets compared with advanced markets, especially for private debt securities. Further complications include the still limited numbers of outstanding green bonds and more limited trading in government securities than in advanced markets, which leaves significant gaps in sovereign yields in many emerging markets and far fewer similar conventional bonds, be these sovereign or private.

A sample of 11 emerging market green bonds shows only three bonds that appear to trade at spreads significantly tighter than their respective sovereigns (6 to 12 basis points). Six bonds trade at tighter spreads relative to the extrapolated yield curves of their respective sovereigns by margins within the 0 to 2 basis points suggested by studies of developed markets, and two more trade at larger spreads (Figure 17).

The small sample prevents us from drawing any general conclusions from observation though. In addition, drawing issuer curves and estimating gaps in relative values are far from being an exact science, and it is always better to appreciate these differences in light of the general dispersion of the bonds around issuer curves (Figure 18).

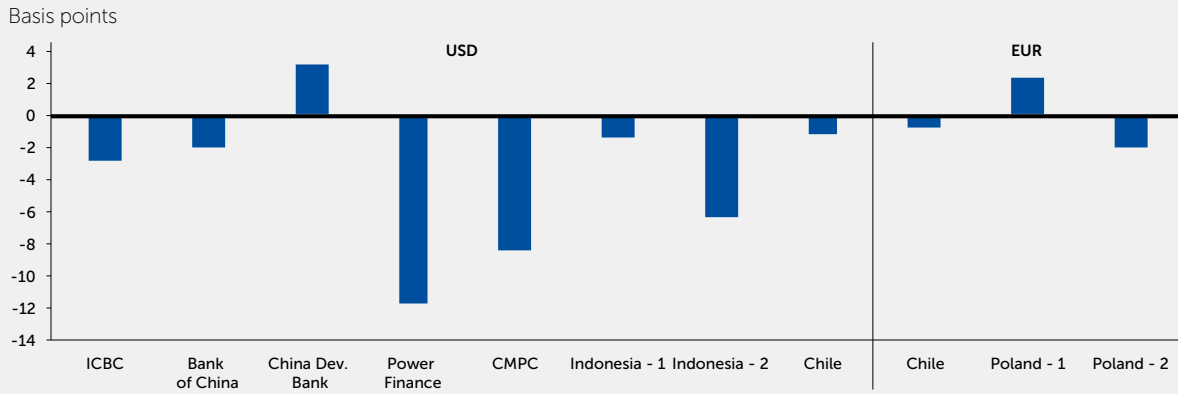
Box 2: Portfolio Manager's View

(Maxim Vydrine, Co-Head of Emerging Markets Corporate & High Yield Debt, Amundi)

"We observe no meaningful green premium for new primary market issuance in emerging markets. Most investors in emerging markets are not focused on green bonds, hence there is no excessive demand or scarcity to be 'priced-in' at this stage. This absence of a premium applies to the private placement market as well, where we see bonds being placed in line with the secondary curve for conventional bonds.

Demand for EM green bonds should increase over time as the market deepens and dedicated EM green bond funds are launched. Higher weights for green bonds in EM ESG indexes should also enhance demand as these indexes gain traction."

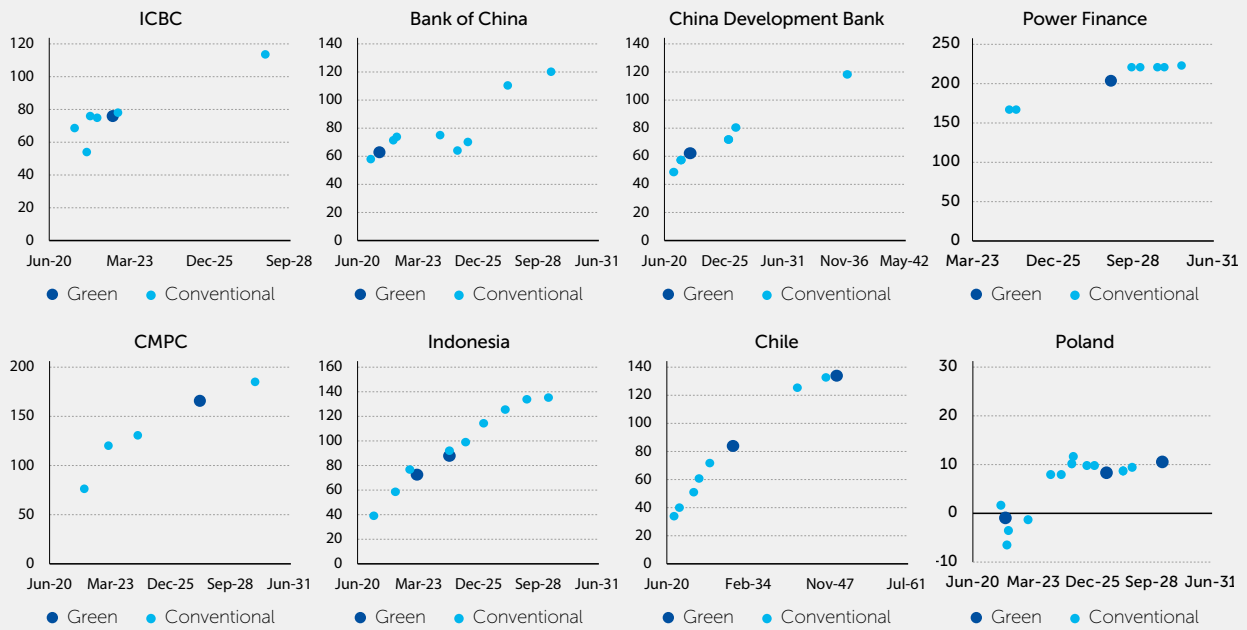
Figure 17 - Green Premiums of a Selection of EM Green Bonds



Source: Amundi.

Figure 18 - Senior Curves of a Sample of Emerging Market Green Bond Issuers

z-spreads, basis points (USD curves except for Poland – EUR)



Source: Amundi.

REGULATORY AND POLICY DEVELOPMENTS

As green and sustainable finance becomes more mainstream, harmonized guidance and standards regarding taxonomies, reporting, and measurement is critical to ensure investor confidence. To some degree, policies may need to reflect unique national circumstances; however, a certain level of harmonization is desirable so that policy fragmentation does not undercut market growth.

The 2019 report of the Sustainable Banking Network (SBN—an IFC initiative with members from 38 countries representing \$43 trillion of bank assets, or 86 percent of the total in emerging markets—assessed that notable progress had been made to address gaps in terms of green finance definitions, data, reporting, and incentives.¹⁴ According to the review, national green bond guidelines had been established in 14 SBN countries. The number of regional green bond frameworks had also increased, contributing to improved harmonization of practices and definitions. These include the Association of Southeast Asian Nations (ASEAN) Green, Social, and Sustainability Bond Standards (see Box 3: Focus on ASEAN); the Marrakech Pledge; and supporting actions led by FELABAN (the Latin American Federation of Banks).

In addition, Georgia, Mongolia, and Sri Lanka each released sustainable finance roadmaps in 2018 and 2019, benefiting from examples developed by China, Indonesia, and Morocco. Central banks in Nepal, Pakistan, and Paraguay circulated guidance on environment and social risk management or green banking. Banking associations in Panama and Sri Lanka launched sustainable banking initiatives, while Cambodia's banking association published sustainable principles.

Global initiatives related to climate change risks and mitigation efforts, including green and sustainable finance, are underpinning many of the policies and strategies launched at the national and regional levels.

The implementation of these initiatives means that the further adoption of guidance and standards is likely in many jurisdictions.

Task Force on Climate-related Financial Disclosure: The Financial Stability Board's Task Force on Climate-related Financial Disclosure (TCFD) developed voluntary, consistent climate-related financial risk disclosures for use by companies when providing information to investors, lenders, insurers, and other stakeholders. An increasing number of emerging market financial institutions and corporates have signed on as "supporters" of the TCFD and are reporting according to the TCFD framework.

Network for Greening the Financial System: The Network of Central Banks and Supervisors for Greening the Financial System (NGFS) shares best practices and aims to enhance the role of the financial system to manage risks and to mobilize capital for green and low-carbon investments. Emerging market central banks and other financial authorities have a large presence in the network.¹⁵

EU taxonomy and Green Bond Standard: The EU taxonomy classifies economic activities and sectors related to climate change mitigation and adaptation. The voluntary EU Green Bond Standard will facilitate alignment with the EU green taxonomy, ensure mandatory reporting on use of proceeds and environmental impact, mandate verification of the Green Bond Framework, and require a final allocation report by an external reviewer.

For any fund branded as "green," European investors will have to disclose the share of their investments that is aligned with the EU taxonomy. Efforts by emerging market issuers to provide data showing alignment with the EU taxonomy and the Green Bond Standard at both the issuer and bond/project level will help maintain and attract European investment flows. Providing such data may prove challenging, however, given that for some activities, the taxonomy refers to eligibility criteria specific to EU regulations (for example, buildings).

United Nations Framework Convention on Climate Change: Country commitments (Nationally Determined Contributions, or NDCs) to the 2015 United Nations Framework Convention on Climate Change are directly informing strategies for many national sustainable finance initiatives. As part of the agreement, countries agreed to communicate updated NDCs every five years.

UN Sustainable Development Goals: The UN Sustainable Development Goals (UN SDGs) include a set of 17 global goals. Of these, green bonds support the development of infrastructure across sectors particularly related to SDG 6 (Clean Water and Sanitation), SDG 7 (Affordable and Clean Energy), SDG 11 (Sustainable Cities and Communities), SDG 13 (Climate Action), SDG 14 (Life Below Water), and SDG 15 (Life on Land).¹⁶

A growing number of investors have adopted the UN SDGs as a reference point to illustrate the relationship between their investments and impact goals but do not have a common standard for what constitutes impact. IFC led the launch of the Operating Principles for Impact Management in 2019 to create a framework for the design and implementation of impact management systems, ensuring that impact considerations are integrated throughout the investment cycle.¹⁷

Box 3: Focus on ASEAN: Climate change is an unprecedented investment opportunity for the Association of Southeast Asian Nations

The commercialization of low-carbon and clean energy solutions embody vast opportunities. Already, old technology systems are being replaced by more efficient climate-friendly substitutes. The transformation toward low-carbon and energy-resilient technologies across ASEAN stands as a reference point.

The ASEAN region is in the midst of responding to an unprecedented challenge of reducing its resource and carbon intensity to achieve sustainable growth. This requires reversing the trend of the past 15 years, during which regional energy demand grew by 60 percent.¹⁸ Indeed, by 2016, the ASEAN region accounted for 4 percent of global emissions.¹⁹

Under the World Economic Forum's Energy Transition Index, the average ranking across ASEAN is 45 out of the 115 countries covering emerging and developed markets. The index measures a multitude of factors relevant to the low-carbon energy transition, including progress on energy system structures, regulation and political commitments, institutions and governance, capital and investment, infrastructure and innovative businesses, and human capital and consumer participation. Notably,

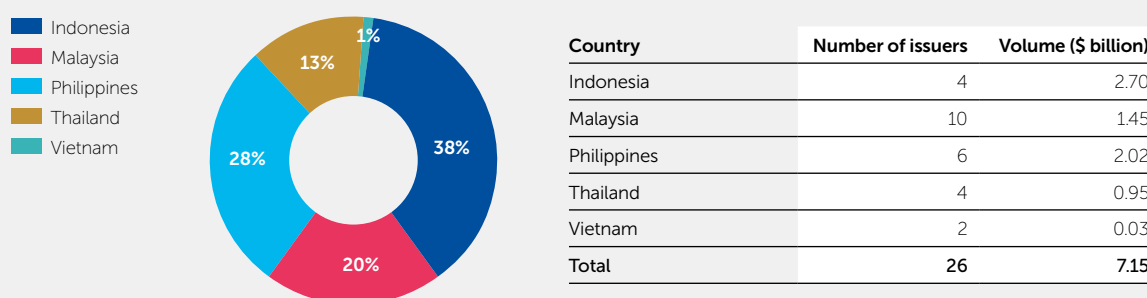
the region improved on the production of electricity from renewables, which is 130 percent higher than 2007 levels for Indonesia, Thailand, Vietnam, Malaysia, and the Philippines. This is expected to triple by 2025. The source of growth varies by country. Indonesia and the Philippines expect to capitalize on geothermal resources originating from their 100 or so active volcanoes. On the other hand, given its long coastline, Vietnam differentiates its energy mix with growing wind capacity. Finally, Malaysia and Thailand have seen the most growth from solar and biomass.

New investment opportunities are multiplying. Cities, for example, which account for 80 percent of gross domestic product (GDP) in most ASEAN countries, are already setting their own climate agendas, all of which will need financing. In Jakarta, IFC estimates the climate investment opportunity between 2018 and 2030 will amount to \$30 billion. In another example, Kuala Lumpur has committed to reducing greenhouse gas emissions by 20 percent by 2022 via investments in energy-efficient buildings. Ho Chi Minh City, another case, plans to reduce emissions by 19 percent from 2013 levels by 2020.

The ASEAN green market is a cornerstone of the green bond market in emerging economies

The ASEAN region's first green bond issuance was in 2016 and amounted to \$226 million.²⁰ By the end of 2019, green bond issuances in the region reached \$7 billion, with issues in Indonesia, Malaysia, the Philippines, Thailand, and Vietnam among 26 issuers (Figure 19).²¹

Figure 19 - ASEAN Green Bond Issuances



Source: IFC Global Macro & Market Research, Bloomberg, Dealogic, Environmental Finance, Climate Bonds Initiative.

By sector, nonfinancial corporations have been the largest green bond issuers, representing 48 percent of the total issued. Low-carbon buildings have been the main use of proceeds (40 percent), followed by energy (32 percent).²²

Several foreign entities have issued green bonds in local ASEAN currencies in recent years, which has helped to deepen these domestic markets. IFC has been one such issuer, offering a green bond in 2018 denominated in Philippine pesos and another in Indonesian rupiah. Crédit Agricole CIB has issued several notes in Indonesian rupiah.²³

ASEAN policy makers at both the regional and national levels have become a major force in driving the development of the market. The ASEAN Capital Markets Forum published the ASEAN Green Bond Standards, providing guidance and clarity on green definitions and processes similar to the Green Bond Principles but applied to the local context.²⁴ At the national level, the Central Bank of Malaysia is working on a "principle-based" green taxonomy for insurers and banks in order

to identify and label economic activities that could be beneficial in achieving climate change objectives. The State Bank of Vietnam has begun implementing directives on Promoting Green Credit Growth and Environmental and Social Risks Management in Credit Granting Activities.²⁵ Indonesia has started to implement its sustainability roadmap and was the first Asian state to issue a sovereign green bond, raising \$1.25 billion in 2018 and another \$0.75 billion in 2019.

Looking forward, a reasonable estimate may be that outstanding green bonds issued by emerging markets could reach \$250 billion by end of 2021.²⁶ Assuming ASEAN's share of total emerging market issuance remains unchanged at the 2.6 percent seen since 2012, green bond issues in the region could amount to \$6.5 billion by 2021.²⁷ The nonprofit Climate Bonds Initiative (CBI) has identified \$10 billion in outstanding bonds in the ASEAN region from issuers that now have climate change-aligned profiles. Sixty percent of these will mature over the next seven years, giving issuers the chance to refinance repayments with new bonds labeled green.²⁸

OUTLOOK AND POTENTIAL FOR THE GREEN BOND MARKET

Green bond issuance in emerging markets has grown thanks to increasing recognition among issuers and investors of the benefits they can provide. For investors, green bonds are traditional fixed-income instruments that offer yields commensurate with the risk exposure while providing assurance that the funds will be channeled to projects with clear environmental benefits. For issuers, green bond issuance provides a means to broaden their investor base and sends a signal to the market on their commitment to environmental considerations.

Market participants cite encouraging signs of future potential in the increased investor appetite they witness among both international and local investors.²⁹ This reflects growing adoption of ESG investment strategies as well as growing awareness about green financing products. Market participants expect a greater diversity of issuers to come to market as understanding grows that green bonds can help to meet funding needs. At the same time, the low yield environment encourages international investors to seek yield in emerging markets. Key challenges need to be addressed, however, to enable more rapid expansion of the market, including the following:

- Quality and availability of information to identify, measure, and track green investment
- Supply constraints, including the limited availability of labeled green assets and a pipeline of green projects
- Lack of awareness and know-how about issuing and investing in green products
- Overall macroeconomic and policy instability as well as challenges related to regulatory frameworks, including harmonized standards, green definitions, and green taxonomies
- Underdeveloped capital markets with insufficient liquidity and high transaction costs

Quality and availability of information: Identifying, measuring, and tracking green investment requires the use and analysis of data that are not yet readily available or standardized in many markets. According to most green bond frameworks or guidelines, for a bond to be labeled as green, the issuer needs to specify eligibility criteria prior to issuance, as well as measure and report on the environmental impact regularly post-issuance.³⁰

External reviewers providing pre-issuance opinions and post-issuance verification have been growing in number. Such reporting is integral to providing assurance of the bond's green criteria and quality. Investor demand for impact reporting both pre- and post-issuance has been increasing, according to CBI. CBI produced a study on post-issuance reporting, which found that two-thirds of issuers provide post-issuance use of proceeds reporting.³¹ Larger issuance size tends to be predictive of a higher likelihood to report.

Investors often also seek information about the overall ESG performance of green bond issuers. The expansion of ESG rating agencies' emerging market coverage should limit the number of ESG "blind spots" for investors. However, the lack of a generally accepted taxonomy means that ESG scoring methodology varies. This can create confusion among issuers and investors alike. Investors and stakeholders receive incomplete or inconsistent information that is not necessarily comparable or material to their analysis and decision making. For markets to develop, best practices and internationally recognized standards will need to be drawn upon to help expand the availability and regular reporting of data.

Supply constraints: The limited availability of assets that are labeled green poses a constraint on green bond finance. Identifying assets and projects as green constitutes a major part of the challenge. Additionally, some potential issuers see little advantage to labeling a bond as green, particularly when there are perceived reputational risks and uncertainty about how the market defines greenness.³²

As green taxonomies continue to develop at national, regional, and international levels, clearer and more widely used definitions of greenness will create more certainty among stakeholders as to what constitutes a green asset.

Lack of awareness and know-how about green debt instruments: Green financial products are relatively new financial instruments, particularly in emerging markets. Understanding how to meet the criteria for a green label and developing measurement and disclosure tools usually require additional time and resources on the part of the issuer, particularly for a debut green bond issuance.

Many market participants highlighted increases in awareness and the development of education processes among both issuers and investors as factors likely to contribute to increasing momentum of growing green bond markets in the years to come.

Under the auspices of IFC's Green Bond Technical Assistance Program, which supports green bond market development with a focus on financial institutions active in emerging markets, IFC has initiated the Green Finance Review Protocol (GFRP) for emerging markets to help standardize external review reporting and avoid greenwashing as green finance scales up. The GFRP addresses two key issues flagged by market feedback: (a) green bond documentation is not comparable from bond to bond, making analysis, decision-making, and aggregation challenging for market participants; and (b) emerging markets see new second-opinion providers engaging but without much know-how or accountability.

Overall macroeconomic and policy instability as well as challenges related to regulatory frameworks: Stable macroeconomic and policy environments are critical for sustaining ongoing increases in green bond issuance and investor demand, as are supportive regulatory frameworks. Sound taxation and accounting frameworks, legislative enforcement, protection of creditor rights, and bankruptcy and competition law are building blocks for a favorable investment climate. Sustainable finance policies and regulatory frameworks are also needed to encourage capital flow to green projects and sectors, especially where they effectively address deficiencies in green finance definitions, data, and reporting.

Underdeveloped capital markets with insufficient liquidity and high transaction costs: For many emerging market economies, limited capital market depth and underdeveloped financial market infrastructure are key hindrances to boosting green bond issuance. Along with sustained macroeconomic stability, a sound banking sector, and supportive regulatory and legal frameworks, adequate market infrastructure is needed to provide the foundation for capital market depth and liquidity.³³ This infrastructure includes exchanges and trading platforms, clearing houses, credit risk assessment, custodians, and fiduciaries, without which bond markets will be difficult to scale.

Efforts to develop local currency markets increase emerging markets' ability to withstand currency risk, reducing reliance on foreign currency borrowing, and reduce exposure to exchange rate risks. As these markets develop, innovation in terms of de-risking and hedging instruments could attract more international investment flows.

Countries that prioritize developing this essential capital markets infrastructure may simultaneously be able to incorporate the needed frameworks for green and sustainable finance, enabling them to green their financial systems as they deepen their capital markets.

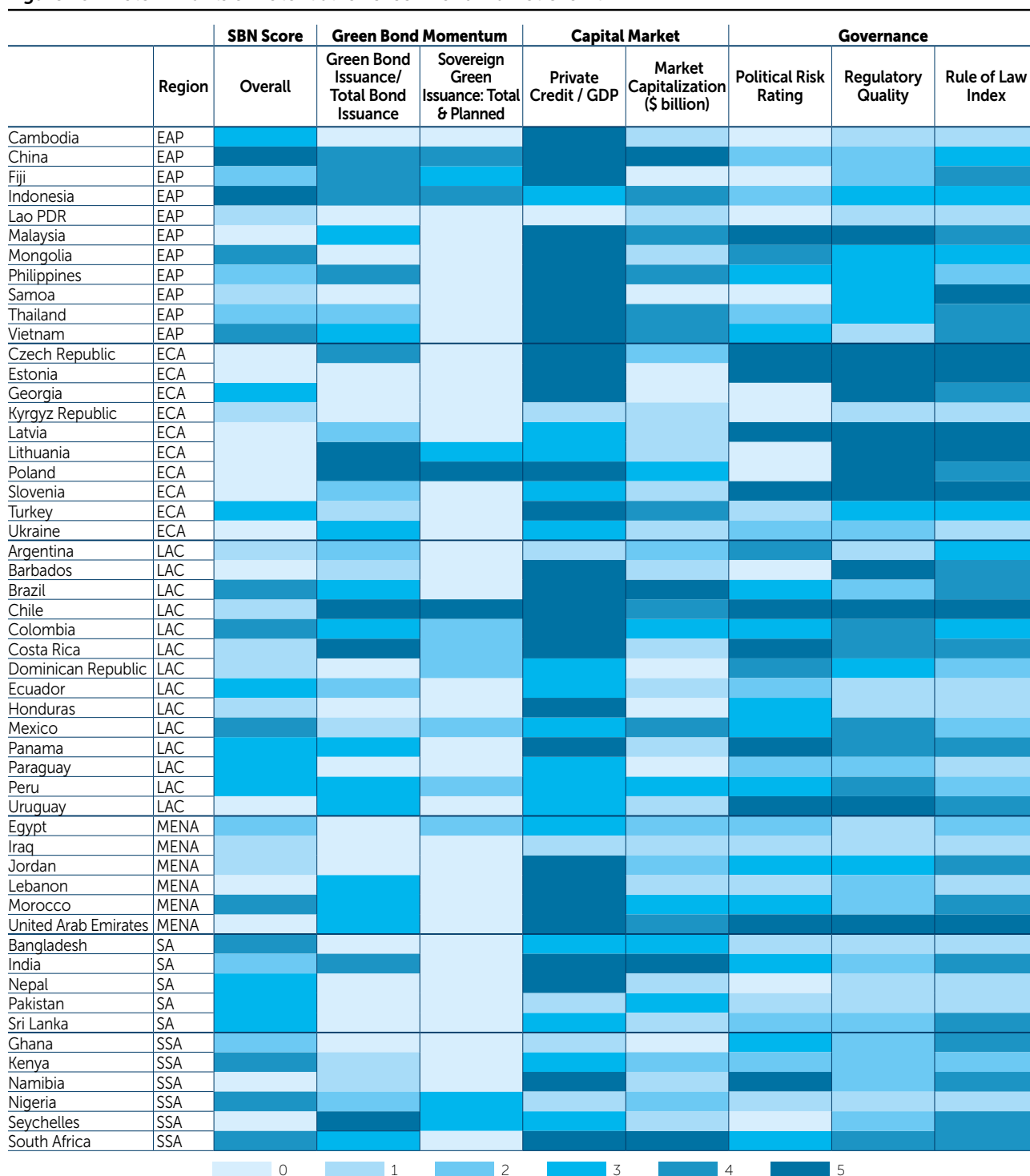
Potential for green bond issuances varies among emerging market countries

Though each economy has unique factors that lead to the development and scaling of a green bond market, several drivers indicate potential for green bond market growth across emerging markets, including the following:

1. Sustainable finance policies and frameworks
2. Green bond issuance momentum
3. Capital market development
4. Governance and political stability

Figure 20 sketches out how individual emerging markets vary in their potential to accelerate green bond issuance.

Figure 20 - Determinants of Potential for Green Bond Market Growth



Notes: Countries included are those that are SBN members and/or green bond issuers. Countries are scored from 0 to 5 on each of the components, with 5 being the highest on a relative basis, according to available data.

The **SBN Score** is based on the Sustainable Banking Network (SBN) measurement framework assessing national sustainable finance policies. Countries who are not SBN members are indicated in the lightest shade of blue.

Green Bond Issuance/Total Bond Issuance is the percent of green bond issuance out of total bond issuance from 2016-2019.

Sovereign Green Bond Issuance is based on whether the sovereign has already issued green bonds and whether it has announced plans to do so.

Private Credit/GDP refers to financial resources provided to the private sector by financial institutions. The data source is the World Bank.

Market Capitalization data are sourced from the World Bank, World Federation of Exchanges, and Bloomberg.

The **Political Risk Rating** is the latest available from the PRS Group.

The **Regulatory Quality** and **Rule of Law Index** indicators are from the World Bank.

East Asia and the Pacific

International investors demonstrated increased appetite for green bonds in East Asia and the Pacific in 2019, as did local investors. China leads emerging markets as the top issuer, with the country continuing to make strides on the policy front. The 2019 Government Work Report explicitly mentioned “the development of green finance” as a priority for the second year in a row.³⁴ Seven Chinese government bodies issued the Green Industries Guidance Catalogue in March 2019—a framework to define and harmonize standards of green industry—providing opportunities for investment in green assets and activities. In May 2019, Hong Kong SAR, China, issued a \$1 billion sovereign green bond as it continues to establish itself as a green finance hub.

Elsewhere in the region, Indonesia has shown leadership through its sovereign issuance and comprehensive regulatory framework on sustainable finance. The relative depth of capital markets in the region is a key driver for potential growth of green bond markets.

Europe and Central Asia

Europe and Central Asia scores the highest on governance indicators among the regions but has not seen much movement in terms of national sustainable finance policies and strategies. Nevertheless, some countries are signaling potential growth. Poland, having issued the first sovereign green bond in 2016, has committed to issuing sovereign green bonds annually (see Box 4: Focus on Poland). Hungary’s central bank introduced a green preferential capital requirement program beginning in 2020 for bank mortgages and loans related to energy-efficient homes, and a consultation with the banking sector on green covered bonds is also underway. Turkey’s green funding potential is expected to increase along with its green infrastructure investments (see Box 5: Focus on Turkey).

Latin America and the Caribbean

As a region, Latin America and the Caribbean boasts the largest number of green bond markets among emerging market regions and is likely to see growth, given a plethora of announcements for planned sovereign issuance, including from Colombia, Costa Rica, the Dominican Republic, Mexico, and Peru.³⁵ Chile already repeated its sovereign issuance in January 2020, with total green bond issuance now over \$6 billion. Many green bonds in Brazil have been issued by corporates in local currency—a trend that is expected to continue given the depth of the local investor base.

As a steering committee member of the Network of Central Banks and Supervisors for Greening the Financial System, the Banco de Mexico is active in defining and promoting best practices on the management of climate-related and environmental risks as well as scaling up green finance. Additionally, the National Securities Commission of Argentina issued a resolution on guidelines for issuing social, green, and sustainable bonds in March 2019.³⁶

Middle East and North Africa

Relatively high levels of domestic credit to the private sector point to the growth of the banking sector in the Middle East and North Africa. The steady increase in cross-border bond issuances by financial institutions in the region³⁷ indicates potential for green bond market growth. Financial institutions in emerging markets are likely issuers of green bonds (accounting for 59 percent of cumulative issuance) where they are not overly liquid, with loan deposit ratios below 100 percent, and interested in extended loan tenors to meet borrowers’ needs. Interest in sustainability among multiple stakeholders in the Middle East and North Africa has led to stepped-up issuance, particularly in the United Arab Emirates and Morocco. Egypt’s announcement that it would issue a sovereign green bond could also boost momentum for issuance in the region.

South Asia

India is the only country in South Asia that has issued green bonds, and with its fast-growing urban population, India’s climate-smart investment potential through 2030 is estimated at \$2.1 trillion.³⁸ Other countries in the region are showing a commitment to developing their national sustainable finance policies. As SBN members, Bangladesh, Nepal, Pakistan, and Sri Lanka are all in the implementation stage, meaning that policies are starting to be put into practice.

Sub-Saharan Africa

To date, Sub-Saharan Africa has seen relatively low volumes of green bond issuance. Market participants observed that hard currency issues may be necessary initially in order to spur market development. South Africa shows promise, however, given a number of positive “green” determinants and recent announcements suggesting that green bond market development is an integral part of the country’s strategy on climate finance (see Box 6: Focus on South Africa). Nigeria has taken several steps toward building its green bond market, including repeat sovereign issues and enactment of green bond regulations by the Securities and Exchange Commission and the Nigerian Stock Exchange in December 2018. Kenya’s first green bond began trading on the London Stock Exchange in early 2020.

Box 4: Focus on Poland—Programs to green the economy have potential to mobilize private sector capital

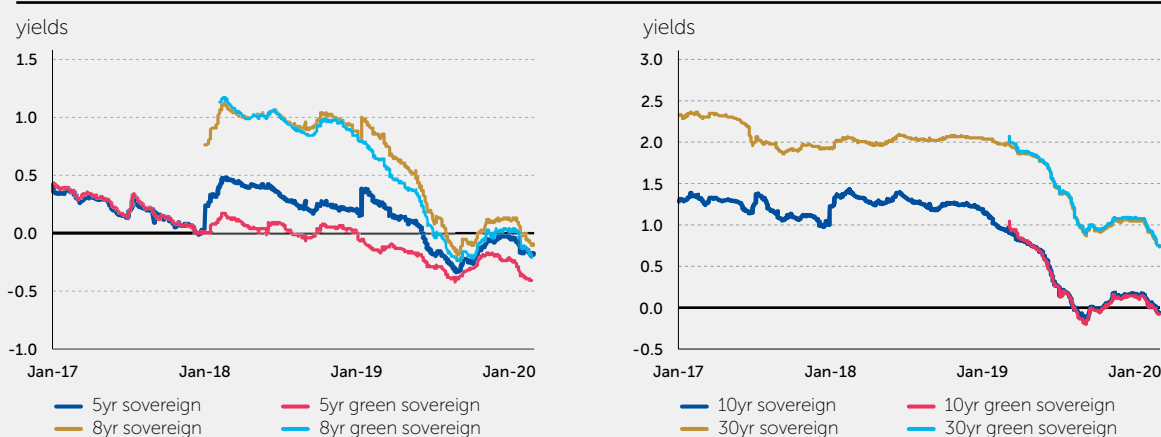
The European Commission (EC) has put environmental sustainability at the top of the EU agenda (the “European Green Deal”). The goal is to make the EU the first climate-neutral continent by 2050, while achieving a greater reduction of gas emissions by 2030 compared with current targets. Although Poland has declared its energy systems and economy to be too dependent on coal and lignite to make the transition over this period (about 80 percent of the country’s electricity production still relies on coal and lignite), the country has nonetheless pursued a number of programs to green its economy, giving rise to several areas for green bonds.

At the end of last year, Polish Prime Minister Mateusz Morawiecki dissolved the Ministry of Energy and created the Ministry of Climate, the mandate of which is to work on climate policy and regulations. The prime minister has also launched a Clean Air Programme—a system of financial support and incentives designed to reach 4.5 million households around Poland over the next 10 years.³⁹ Although renewable energy potential in Poland remains to a large extent untapped, and

significant barriers to investment prevail (such as strict rules on minimal distances between wind farms and local buildings or procedural uncertainty concerning permits and connecting agreements), on-shore wind was introduced to auctions of renewable energy sources in 2018. Moreover, the government has worked intensively on drafting legislation on offshore wind, which is to be adopted in 2020. The creation of a green bond market that channels private sector capital is critical to address the multibillion-euro funding needs for the Clean Air Programme, energy efficiency measures, and other climate-related projects.

Though the green bond market is still at a nascent stage, the Polish government was the first sovereign issuer of green bonds worldwide in December 2016, and it has committed to undertake issuances annually.⁴⁰ Since 2016, there have been three issuances totaling €3.75 billion,⁴¹ making Poland the most frequent sovereign issuer of debt linked to climate and environmental projects, as well as the first country to build a yield curve (Figure 21).

Figure 21 - Poland Sovereign vs. Sovereign Green



The government’s Green Bond Framework includes renewable energy, clean transport infrastructure, sustainable agriculture, afforestation, national parks, and reclamation of waste heaps. The framework specifically excludes nuclear power, fossil fuel power and transportation, palm oil, hydro projects larger than 20 megawatts, and transmission infrastructure that uses more than 25 percent of electricity from fossil fuels.

On the corporate side, by contrast, the market is relatively thin, with five issuances to date—a €137 million

BZWBK Santander issuance in 2017, a Polish zloty (PLN) 250 million five-year floating note by PKO BH in June 2019, a PLN 400 million covered bond issued by ING Bank Hipoteczny in October 2019, PKO BH PLN 250 million Green Covered Bond in November 2019, and a PLN 1 billion bond issued by Cyfrowy Polsat in January 2020 (the last one is the only issue to date by a nonfinancial sector corporate in the country). To date, no green bonds have been issued at the regional (Voivodships) or municipal level.

Looking ahead, although the country has been opposing more stringent restrictions on coal-based emissions, offshore wind and photovoltaic generation, along with distributed generation, are expected to contribute more to the required increase of renewable energy sources in Poland's energy mix between 2030 and 2050.⁴² Additionally, a number of developments outside of the energy space provide opportunities for future green bond activity. The overall cost to change single-family houses from coal- and wood-based heating systems to clean boilers may exceed €30 billion over the next 10 years.⁴³ This change, together with a huge gap between the number of properties per capita in Poland and in developed European markets, means that long-term funding could come through green bonds. So too,

energy efficiency improvements are a high priority as the country reduces the energy intensity of both industry and buildings. The alignment of new building standards to the EU Energy Performance of Buildings Directive is one signal of a strong move in this direction.

Companies using debt to finance waste-to-energy projects are also likely to start leveraging green debt.⁴⁴ The country has also set a target of one million electric vehicles by 2025, which will require investments in charging infrastructure. Finally, the fact that Poland will receive the greatest share of the €7.5 billion Just Transition Fund under the European Green Deal not only commits the country to the EU bloc-wide carbon neutrality but also should help to unlock private funds through EU financial instruments, notably InvestEU.

Box 5: Focus on Turkey—Energy efficiency critical to sustain economic growth

Although greenhouse gas (GHG) emissions per capita in Turkey are still low, their growth in recent years have been the fastest among Annex 1 countries in the United Nations Framework Convention on Climate Change (UNFCCC). Economic growth has not yet decoupled from rising energy use, pollution, and greenhouse gas emissions, which is reflected in a GHG emissions intensity 61 percent higher than the EU average (0.29 kg of CO₂/2010 US GDP versus 0.18 kg). The national GHG inventory submitted to the UNFCCC Secretariat in April 2019 reports that the total GHG emissions in 2017 were 526.3 million tons of CO₂ equivalent, excluding Land Use, Land Use Change, and Forestry, with 6 percent increase from the previous year. Turkey's per capita GHG emissions for 2017 amounted to 6.6 tons of CO₂ equivalent (up from 4 tons in 1990). The energy sector contributed the largest share, with 72 percent, followed by industrial processes and product use with 13 percent, agriculture with 12 percent, and the waste sector with 3 percent.⁴⁵

Energy efficiency will be critical for Turkey to sustain economic growth over the medium term while meeting its commitments for climate change and environmental sustainability. Turkey's energy intensity (i.e., energy use per unit of GDP, or 0.12 toe/2010 \$1,000 of GDP in 2016) was slightly higher than that of OECD countries (0.11) and EU countries (0.07 to 0.10) and compares favorably with many of its neighboring countries in Eastern Europe and the Balkans. However, as energy use per capita in Turkey rises (from its current 1.5 toe per capita compared with 4.2 in OECD countries), its energy intensity is expected to grow. This high energy intensity negatively affects

energy security—Turkey's energy imports have increased in recent years, from \$37.2 billion in 2017 to about \$43.0 billion in 2018, accounting for almost 19 percent of the country's total imports.⁴⁶

The government has recognized the importance of energy efficiency, as evidenced by its inclusion in various policy documents. These include the Energy Efficiency Law (2007), secondary legislation on Energy Performance of Buildings (2009), Electricity Market and Security of Supply Strategy (2009), the National Climate Change Strategy (NCCS, 2010-20), the National Climate Change Action Plan (NCCAP, 2011-23), the Energy Efficiency Strategy (2012), and the successive Energy Efficiency Action Plan (NEEAP, 2016). Energy efficiency is a key component of the government's energy security strategy through its 10th Development Plan and the draft 11th plan. The National Energy Efficiency Strategy of 2012 calls for a 10 percent reduction in energy intensity across all sectors, and the National Energy Efficiency Action Plan approved in January 2018 calls for a major scaling-up of energy efficiency, including an \$11 billion investment in energy saving measures to reduce consumption by 23.9 million tons equivalent petroleum (14 percent) by 2023.⁴⁷

Green finance will be needed to support Turkey's clean energy transition by increasing the share of renewables in its energy mix and promoting scale-up of energy efficiency in small and medium enterprises and the public sector in line with the country's energy strategy and climate action commitments. In particular, long-term green loans and bonds will be needed to finance the share of renewables, greener buildings, and more climate-friendly

transportation, both intercity, particularly rail, and intracity, with municipal assets.

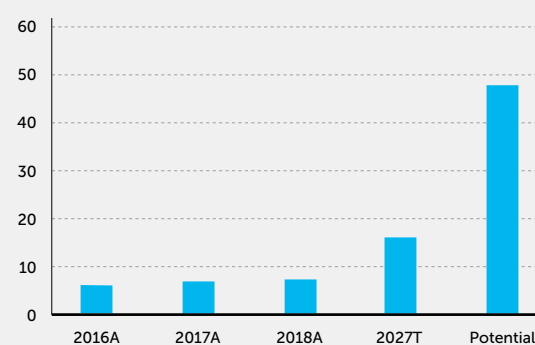
Turkey's plans for instance include a fast expansion of its railway network with a target to complete 11,700 kilometers of high-speed railway lines between 2018 and 2023. The country also intends to electrify all existing lines. Achieving this would require €39 billion in investments over the five years, more than twice the sum spent on rail expansion over the past 15 years, according to Turkey's transport minister.

On the power generation front, positive changes to the regulatory framework for renewable energies—with the implementation of Renewable Energy Zones, auctions, and guaranteed prices—are also expected to drive private investments in the sector. Another auction of 1 gigawatt (GW) of wind capacity was completed in 2019, and the country expects to reach 32 GW of solar and wind capacity by 2027 (compared with 12 GW at the end of 2018) (Figure 22).

The green bond issuance potential of financial institutions

that are active in the country are expected to expand over the medium term, along with their green project finance portfolio. The AP EGO fund recently invested in three green private placements issued by Turkish banks, hence contributing to funding of green infrastructure development in the country.

Figure 22 - Wind Capacity Development in Turkey
(GW; A = actual; T = target)



Source: GWEC, Turkish Ministry of Energy and Natural Resources.

Box 6: Focus on South Africa—Investment potential in renewable energy

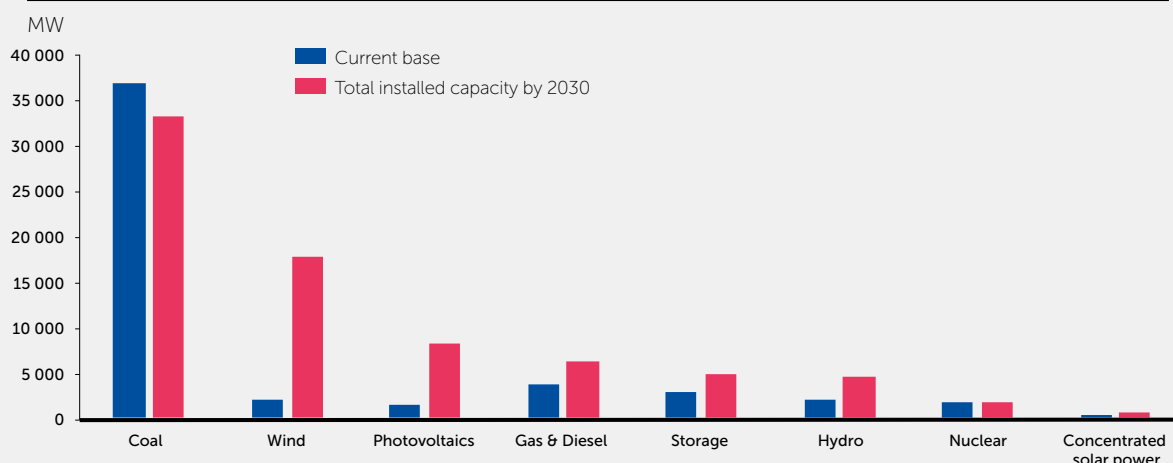
The adoption of green bonds into South Africa's financial infrastructure looks promising. Although the future of the market will depend on market appetite, a number of positive determinants and recent announcements suggest that green bonds are likely to become an integral part of the country's climate finance. Coal power will remain South Africa's dominant source of electricity over the next decade; however, the country has been promoting a greener economy for many years and is a leading example on the African continent.

Various policies and strategies include the 2004 National Climate Change Response Strategy, the 2011 National Climate Change Response White Paper, and the 2019 Draft National Climate Change Adaptation Strategy, among others. South Africa has also played an active role in the global climate negotiations. In addition, in September 2010, the government introduced a carbon-related rate differentiation on taxes for new vehicles. The Integrated Resource Plan (IRP), which emphasizes the importance of renewable energy in the government energy security plan, was published in 2019. Under the IRP, coal, which currently accounts for 85 percent of South Africa's electricity generation, will be reduced to 59 percent, with solar contributing 18 percent and wind 6 percent (Figure 23). Also in 2019, the government put a carbon tax in place, and a climate change bill is expected

to be passed into law this year. The purpose of the bill is to build an effective climate change response and ensure the long-term transition to a climate-resilient and lower-carbon economy.

The financial industry has been active in taking measures to develop a sustainable finance market. In 2011, South Africa adopted its Code for Responsible Investing to encourage commitments and collaborative engagement by institutional investors (mainly pension funds) and asset managers to manage environmental, social, and governance issues in asset ownership practices. The five key principles were inspired by the United Nations-supported Principles for Responsible Investment, and they were strengthened by a 2012 law on pension fund investing (Regulation 28 of the Pension Funds Act) and by the voluntary King IV Code on Corporate Governance (Principle 17) in 2016. South Africa was the second country globally, after the United Kingdom, to issue an ESG regulation for the pension fund sector. Within this context, the growth of the country's green bond market has accelerated, and according to the United Nations Environment Programme Finance Initiative (UNEP FI), South Africa has been at the forefront of introducing best practices in environmental and social risk management in Africa and helping to drive change on the continent.

Figure 23 - South Africa: IRP 2019 Emerging Long Term Plan



South Africa's four largest banks were among the earliest emerging-market signatories of the Equator Principles, and they have been early to act as lead arrangers and issuers for green bonds.⁴⁸ Standard Chartered South Africa was the lead arranger for Soitec's issuance of a green bond in 2013.⁴⁹ The bond was denominated in South African rand (\$111 million) and financed the construction of a solar plant in Touws River. Recently, Nedbank listed a renewable energy bond on the Johannesburg Stock Exchange, the first bank in South Africa to offer such an instrument to investors. The bonds were significantly oversubscribed. Nedbank also pioneered the creation of the first green index and listed the BGreen Exchange Traded Fund in 2011. In late February 2020, Standard Bank of South Africa announced the issuance of its \$200 million first ever London Stock Exchange-listed green bond via private placement with IFC. This was South Africa's first offshore green bond issuance.

The public sector has also engaged in issuing green bonds in South Africa. The South African rand (ZAR) 1.46 billion and ZAR 1 billion green bonds were issued by the City of Johannesburg in 2014 and the City of Cape Town in 2017, respectively. The City of Johannesburg used the proceeds for climate change mitigation and low-carbon infrastructure projects, among others, while the City of Cape Town used the bond proceeds for projects such as electric buses, energy-efficient buildings, water management alternatives, sewerage effluent treatment, and the rehabilitation and protection of coastal structures.

Launched in October 2018, the JSE Green Bond segment has been an effective platform for investors to acquire green securities and also has enabled companies to accumulate funds for their low-carbon initiatives. The City of Cape Town was the first in the country to list its bonds on the green segment; the success of issuance resulted in the city being awarded "Green bond of the year" by the Climate Bonds Initiative. Growthpoint Properties, a real estate investment trust, was the first local private company to issue a green bond on the JSE.

Although coal power will remain South Africa's dominant source of electricity over the next decade, the country has considerable renewable energy potential, especially in the context of the recent energy crisis and President Ramaphosa's February 2020 statement, in which he announced that municipalities in good financial form will be allowed to procure their own power from independent power producers. The president also announced that a Section 34 ministerial determination will be issued shortly to put the IRP into effect, enabling the development of additional grid capacity from renewable energy, natural gas, hydropower, battery storage, and coal.⁵⁰

The City of Cape Town already announced that it will implement its own integrated resource plan and stated that it is doing a study to determine how best to overcome energy poverty, through various projects, including installing solar kits and solar home systems, increasing free basic electricity, and improving access to gas.⁵¹

ENDNOTES

1. The definition of emerging markets/economies/countries is based on Amundi Planet Emerging Green One's investment universe. It consists of the Fund's Target Countries, which are IFC member countries, including countries eligible to receive International Development Association's (IDA) resources and countries eligible to receive Official Development Assistance (ODA) as defined by the Organisation for Economic Co-operation and Development's (OECD) Development Assistance Committee (DAC), which qualify as Emerging Markets and are not excluded as per the Fund's Investment Guidelines.
2. IFC (2018) Climate Investment Opportunities in Cities – An IFC Analysis. In the 2019 IFC report Green Buildings: A Finance and Policy Blueprint for Emerging Markets, IFC estimates that green buildings represent a \$24.7 trillion investment opportunity across emerging market cities by 2030.
3. Based on data from Environmental Finance and Climate Bonds Initiative.
4. Based on data from Dealogic.
5. IFC (2019) Creating Impact: The Promise of Impact Investing, access at: https://www.ifc.org/wps/wcm/connect/publications_ext_content/ifc_external_publication_site/publications_listing_page/promise-of-impact-investing
6. Morgan Stanley Institute for Sustainable Investing and Bloomberg (2019) Sustainable Signals: Growth and Opportunity in Asset Management, access at: https://www.morganstanley.com/assets/pdfs/2415532_Sustainable_Signals_Asset_Manager_2019_L.pdf
7. These include experts from IFC and Amundi, as well as green bond market participants who were interviewed for this report.
8. The Green Bond Principles are available at: <https://www.icmagroup.org/green-social-and-sustainability-bonds/green-bond-principles-gbp/>
9. The Social Bond Principles are available at: <https://www.icmagroup.org/green-social-and-sustainability-bonds/social-bond-principles-sbp/>
10. The Sustainability Bond Guidelines are available at: <https://www.icmagroup.org/green-social-and-sustainability-bonds/sustainability-bond-guidelines-sbg/>
11. Reported figures of China's bond issuance are based on both domestic and international issuance that are aligned with international guidelines as specified by Climate Bonds Initiative.
12. IMF (October 2019) Global Financial Stability Report.
13. Crédit Agricole CIB (2019), HSBC (2020), Zerbib (2018). Is There a Green Bond Premium?
14. IFC and Sustainable Banking Network (2019), Global Progress Report of the Sustainable Banking Network – Innovations in Policy and Industry Actions in Emerging Markets, access at: https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/company-resources/sustainable-finance/sbn_2019+globalprogressreport
15. Emerging market members include Abu Dhabi Financial Services Regulatory Authority, Banco Central de Costa Rica, Banco de Mexico, Central Bank of Colombia, Bank Al-Maghrib, Bank of Indonesia, Central Bank of Malaysia, Bank of Thailand, Banque Centrale de Tunisie, Central Bank of Hungary, Comision Nacional Bancaria y de Valores (Mexico), Comision para el Mercado Financiero de Chile, Dubai Financial Services Authority, Hong Kong Monetary Authority, National Bank of Georgia, Národná banka Slovenska, People's Bank of China, South African Reserve Bank, and Superintendencia Financiera De Colombia. IFC has observer status.
16. For a mapping of SDGs to green bonds, see ICMA's high-level mapping to the sustainable development goals: <https://www.icmagroup.org/green-social-and-sustainability-bonds/mapping-to-the-sustainable-development-goals/>
17. The Operating Principles for Impact Management are available at: <https://www.impactprinciples.org/>
18. IEA (2017), Southeast Asia: A new heavyweight in global energy.
19. IEA (2018) CO₂ emissions from fuel combustion, 2018.
20. Climate Bonds Initiatives database, accessed February 20, 2020.
21. Climate Bonds Initiatives database, accessed February 20, 2020.
22. Climate Bonds Initiative (2018), ASEAN Green Finance State of the Market.
23. Climate Bonds Initiative (2018), ASEAN Green Finance State of the Market.
24. ASEAN Green Bond Standards, ASEAN Capital Markets Forum, 2018.
25. IFC, Vietnam Makes Significant Progress in Sustainable Finance Reforms, Available at: <https://ifcextapps.ifc.org/ifcext/pressroom/ifcpressroom.nsf/0/3E1123A3944C21E5852582410005BDB2>.
26. IFC and Amundi (2019), Emerging Market Green Bonds Report 2018.
27. IFC and Amundi (2019), Emerging Market Green Bonds Report 2018.
28. Climate Bonds Initiative (2018), ASEAN Green Finance State of the Market.
29. Market participants from financial institutions active in green bond markets were interviewed for this report.
30. Many green bond guidelines and frameworks are based on the Green Bond Principles.
31. Climate Bonds Initiative (2019), Post-Issuance Reporting in the Green Bond Market, available at: https://www.climatebonds.net/files/reports/cbi_post-issuance-reporting_rev092019_en_0.pdf
32. Based on interviews with market participants.
33. Rojas-Suarez (2014), Towards strong and stable capital markets in emerging market economies, BIS Paper No. 75c., available at: <https://www.bis.org/publ/bppdf/bispap75c.pdf>
34. The report can be accessed at: http://english.www.gov.cn/premier/speeches/2019/03/16/content_281476565265580.htm
35. As stated by media reports, including from Bloomberg News "Latin America wants in on green bonds" (Feb 2020).
36. See: <https://www.boletinoficial.gob.ar/detalleAviso/primera/203933/20190322>
37. IFC and Amundi (2019), Emerging Market Green Bonds Report 2018.
38. IFC (2018), Climate Investment Opportunities in Cities – An IFC Analysis.
39. The Polish residential housing sector is characterized by one of the worst indicators of energy consumption and CO₂ emissions (over 110 kg CO₂ per usable floor area) in the EU.
40. See Polityka Energetyczna Polski do 2040 r.: <https://www.gov.pl/attachment/433c2e3f-364d-4845-acc2-2e0239405825>
41. European green bond deals are denominated primarily in euros.
42. In line with the Polish Clean Air Program, see: <https://www.gov.pl/web/climate/the-clean-air-programme-was-launched-a-year-ago>
43. See World Bank, "Poland: Catching-Up Regions," 2018: <https://openknowledge.worldbank.org/bitstream/handle/10986/30190/127331-REVISED-PolandCuREnergyEfficiencyen.pdf?sequence=1&isAllowed=y>
44. See for instance <https://www.climatebonds.net/standard/waste>
45. World Bank Renewable Energy Integration Project and Energy Transformation Program for Turkey documents.
46. World Bank Renewable Energy Integration Project and Energy Transformation Program for Turkey documents.
47. Available at: <https://www.enrji.gov.tr/en-US/Pages/National-Energy-Efficiency-Action-Plan>
48. Absa Group Limited, FirstRand Limited, Nedbank Limited and Standard Bank of South Africa Limited.
49. Uche Duru, Anthony Nyong (2016), Why Africa Needs Green Bonds. The 2013 public listing followed the first unlisted private placement by state-owned Industrial Development Corporation in 2012 (this was also the first-ever emerging market green bond). Nedbank was the lead arranger and manager of this 5.2 billion rand green bond issue, which was used to finance clean energy projects.
50. State on the Nation Address, 2020.
51. As reported here: <https://www.capetownetc.com/cape-town/cape-town-to-open-independent-power-office/> and <https://www.dailymaverick.co.za/article/2020-02-16-cape-town-moves-to-set-up-own-electricity-supply/>

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CONTACT DETAILS



Timothée Jaulin
timothee.jaulin@amundi.com
Head of Supranational Entities Coverage
Amundi



Jean Pierre Lacombe
jlacombe@ifc.org
Director, Global Macroeconomics,
Market and Portfolio Research
International Finance Corporation



Tobias Hessenberger
tobias.hessenberger@amundi.com
Business Solutions and Innovation
Amundi



Jean Marie Masse
jmasse@ifc.org
Chief Investment Officer, Financial
Institutions Group
International Finance Corporation



Erwan Crehalet
erwan.crehalet@amundi.com
ESG Analyst
Climate Change
Amundi



Monika Blaszkiewicz
mblaszkiewicz@ifc.org
Economist, Global Macroeconomics,
Market and Portfolio Research
International Finance Corporation



Jessica Stallings
jstallings1@ifc.org
Sustainable Finance Consultant,
Global Macroeconomics,
Market and Portfolio Research
International Finance Corporation



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Amundi Asset Management - 90 Boulevard Pasteur 75015 Paris France - Tel: +33 1 76 33 30 30

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