

SOVEREIGN GREEN BOND MARKET UPDATE

SEPTEMBER 2020



A MARKET READY FOR LIFTOFF

The sovereign green bond market is at a tipping point after Germany issued its landmark inaugural 10-year green transaction. The new issue was met with strong investor demand, which drove books to build to over 33 Bln Euros, enabling Germany to achieve a 1 bp primary market greenium*, and a 1.7 bps secondary greenium later in the trading session. Nineteen countries have issued green, social or sustainability bonds to date, with at least another dozen reported to be developing frameworks, or assessing the market. The sustainability market offers an opportunity for countries to access a broader and deeper pool of capital while aligning funding with sustainability policies. Sovereign issuance will pave the way for continued growth in sustainable credit markets, providing sustainable reference assets and cash equivalents, as well as clarity on the pricing of green assets.

✦ **Total sovereign issuance is reaching an important inflection point after lagging sectors in the early years of market development.** YTD 2020 issuance is USD ~\$19 billion, a touch below the USD\$ 20 Bln attained in 2019.

✦ **We expect another ~USD 15 Bln of sovereign issuance in Q4 2020** driven by new and existing sovereign programs in Europe. 2021 should bring several new green programs with existing ones growing through subsequent issuance.

✦ **Total sovereign sustainability bonds outstanding has surpassed USD\$80 Bln** representing roughly 9% of the total universe of all outstanding sustainable bonds.

✦ Given the growing importance of housing affordability and healthcare accessibility, **we may see social bond issuance develop in the future beyond the inaugural Ecuador transaction.** Established green issuers may evolve their frameworks to include this second label under a broader 'sustainable financing framework'.

✦ **Looking across the credit spectrum, the sustainable market offers a cross-section of issuer ratings:** 4 – AAA, 4 – AA, 4 – A, 3 – BBB, 5 BB and below, suggesting access to the sustainable market isn't biased by the wealth effect of countries although it may appear correlated at times.

✦ **Green programs demonstrate alignment to sustainability policy such as;** Net-Zero 2050 commitments, coal divestment, and growing central bank membership to the Network For Greening the Financial System ('NGFS'). 15 issuers are NGFS members and 14 have made Net-Zero 2050 commitments.

✦ **The geographic segmentation continues to be heavily tilted towards Europe,** with an emerging trend developing in Latin America following the Republic of Chile's award winning (Environmental Finance) 2019 transaction.

Global Sovereign Sustainable Bond Issuance

US\$ Billions Equivalent | Green, Social & Sustainability Bonds



Source: Bloomberg, Scotiabank, As September 8, 2020

MARKET CATALYSTS

1	2020 COVID Pandemic Funding Requirements causing borrowing programs to increase creating demand for new and larger pools of capital.
2	Growing Sovereign & Corporate Climate Targets and Regulatory Frameworks
3	Maturing Market Structure Market Size, Taxonomies & Standardization
4	Accelerating Climate Change Impact both physical and transition in parts of the world.
5	Shifting Shareholder and Investor Sentiment leading to the emergence of a 'clientele effect'.

Source: Scotiabank Economics

* The 'greenium' or 'green bond premium' indicates a yield and credit spread (price) for a green bond is lower (higher) than its non-green equivalent (maturity and coupon). This indicates a lower cost of debt for green issues.

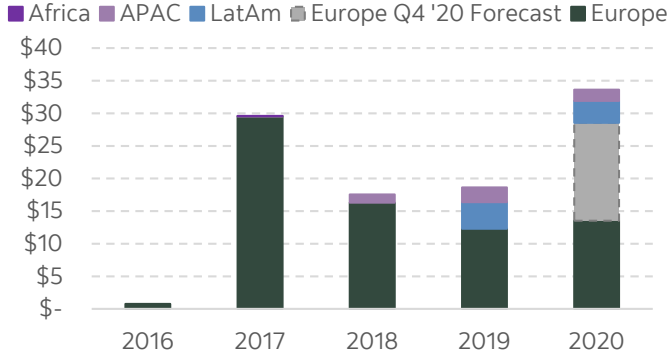
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Global Sovereign Green Bond Issuance by Region

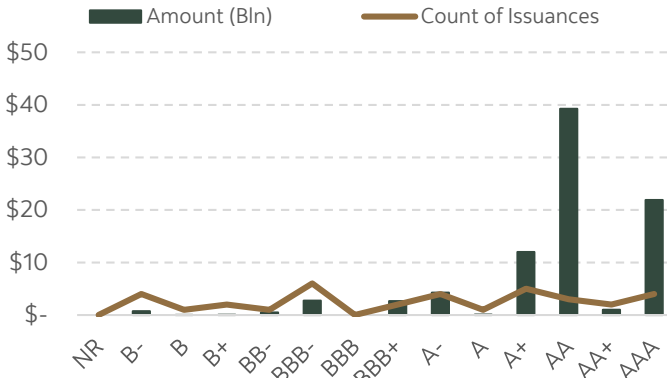
US\$ Billions Equivalent | Green, Social & Sustainability Bonds



Source: Bloomberg, Scotiabank Sustainable Finance. As at Sept. 8, 2020

Global Sovereign Green Issuance by Credit Rating

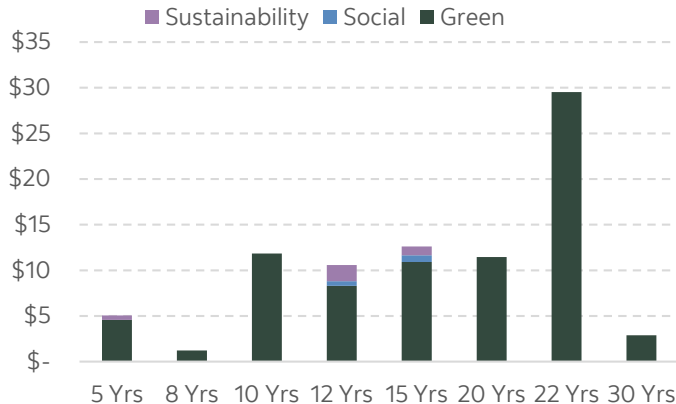
US\$ Billions Equivalent | Green, Social & Sustainability Bonds



Source: Bloomberg, Scotiabank Sustainable Finance. As at Sept. 8, 2020

Global Sovereign Green Bond Issuance by Maturity

US\$ Billions Equivalent | Maturity at Time of Issuance



Source: Bloomberg, Scotiabank Sustainable Finance. As at Sept. 8, 2020

SOVEREIGN MONITOR

Country	NGFS	Net-Zero 2050	Issued Sust. Bond	Exploring Market	S&P
Germany	✓	✓	✓		AAA
Netherlands	✓	✓	✓		AAA
Sweden	✓	✓	✓		AAA
Luxembourg	✓	✓	✓		AAA
Denmark	✓	✓		✓	AAA
Hong Kong	✓		✓		AA+
Austria	✓	✓		✓	AA+
Belgium	✓	✓	✓		AA
France	✓	✓	✓		AA
Korea	✓		✓		AA
Chile	✓	✓	✓		A+
Ireland	✓	✓	✓		A+
Lithuania	✓	✓	✓		A
Poland			✓		A-
Spain	✓	✓		✓	A-
Hungary	✓	✓	✓		BBB+
Thailand	✓		✓		BBB+
Peru	✓			✓	BBB+
Italy	✓	✓		✓	BBB
Portugal	✓	✓		✓	BBB
Mexico	✓			✓	BBB
Indonesia	✓		✓		BBB-
Colombia	✓			✓	BBB-
Guatemala			✓		BB-
Brazil	✓			✓	BB-
Dominican Rep.	✓			✓	BB-
Fiji		✓	✓		B+
Egypt				✓	B
Nigeria			✓		B
Ecuador			✓		B-
Seychelles			✓		NR

Source: Bloomberg, Scotiabank, Climate Bonds Initiative. September 8, 2020

Sustainable Finance Group

GERMANY'S GREEN BOND PROGRAM

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PROGRAM HIGHLIGHTS

Strong alignment with the European Sustainable Finance Regulation. The transaction sets a standard for future alignment to evolving European Sustainable Finance Taxonomy and the EU Green Bond Standard.

Program designed to privilege liquidity and offer green pricing transparency by offering twin bonds, conventional and green bonds with identical maturity addressing a current gap in the green market

The program is designed to establish a European Green benchmark risk-free curve. This is an important step to grow the green finance market in the eurozone, as there will be significant green capex requirements to reach the EU's Net Zero by 2050 goal.

Germany set the minimum issuance size of EUR 4 billion, so green bonds will be futures' eligible. As the program develops, green bonds have the potential to become the cheapest-to-deliver one day and replace conventional bonds as the European risk-free reference-rate. The eligibility will also better enable investors to develop and express views around the greenium, while effectively managing risk, and increasing the efficiency of green portfolio construction.

Program designed to enable market intervention by the German Finance Ministry to achieve greater supply and demand equilibrium, provide greater liquidity, and express views around the green-conventional basis ('greenium').

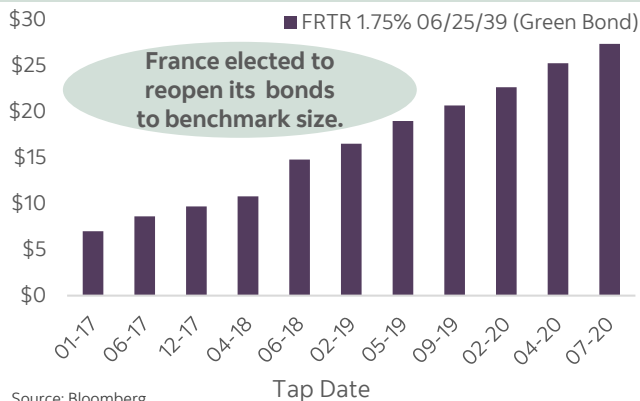
INAUGURAL ISSUANCE

Issuer:	Republic of Germany
Pricing Date:	September 2, 2020
Settlement Date:	September 9, 2020 (T+4)
Ratings:	Aaa / AAA / AAA
Offering:	€6.5B Green Bonds
Coupon:	0.00%
Maturity:	08/15/2030 (10-Year)
Reference 'Twin' Bond:	DBR 0% 08/15/2030 (ISIN DE0001102507)
Guidance:	DBR Flat area
Final Spread:	DBR - 1bps
Order Book:	>EUR 33 Bln
# of Investors:	~200

- Strong investor demand drove book building up to >33 Bln
- Priced a 1 bp primary market greenium
- Traded tighter on the break (-1.7 bps)
- The German Finance Agency purposed EUR 500mm of for market intervention

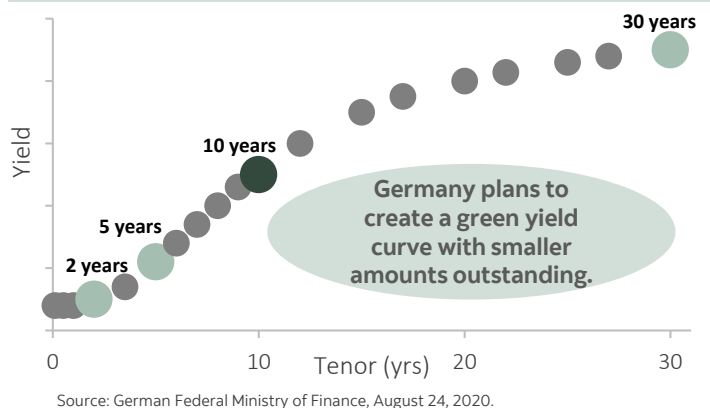
FRANCE – ACHIEVING BENCHMARK SIZE

Amount Outstanding | EUR Billions



GERMANY – DEVELOPING A GREEN YIELD CURVE

Sample German Yield Curve



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