FOR PROFESSIONAL AND QUALIFIED INVESTORS ONLY

Expert's view

Green bonds: going green in a fixed income portfolio

With rising acceptance of climate change—and an increasingly firm hand from regulators—some investors are turning to 'green' bonds to fund pro-climate projects. In this report, we review the key features and drivers of the green bond market and examine their diversification benefits in a fixed income portfolio.

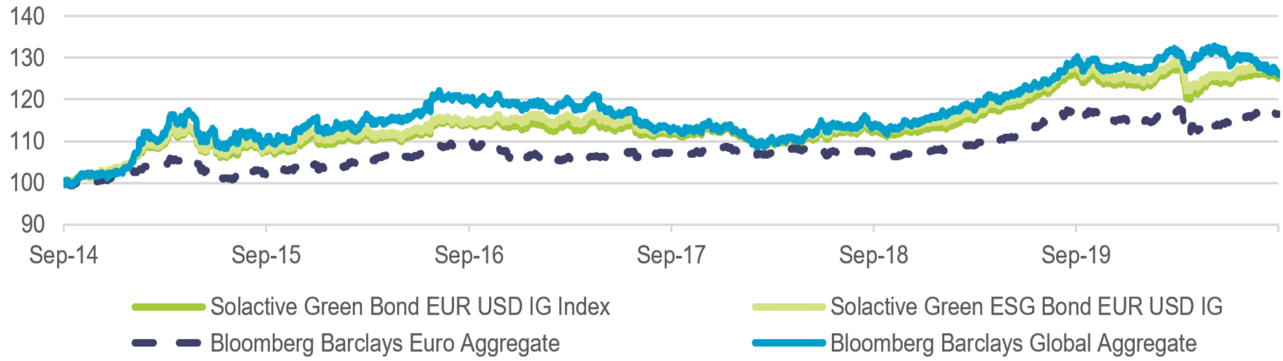
Facts and overview

- **Green bonds are designed to raise funds to finance eco-friendly projects.** They are backed by the issuer's balance sheet, and most are investment grade quality.
- The green bond market is small in relation to the overall bond market. But it's fast growing, and **fundamental drivers look stronger than ever**.
- Green bonds are benefiting from rising investor demand for green assets, policymakers aligning with the Paris Agreement goals, and companies looking to transform their operational and product models to achieve carbon emission targets.

Our key takeaways

- So far in 2020, most of the proceeds of green bonds outstanding were invested in **energy, building, and transportation projects**.
- Contrary to common perception, most green bonds tend to be issued with a **yield level higher or equivalent to conventional bonds**.
- **Green bonds are not a perfect replacement for a broader bond allocation**. However, in a world where environmental risk considerations are taking a greater importance, adding green bonds to a fixed income portfolio allocation may provide some protection versus traditional bonds.

Chart 1: Green bonds – a source of diversification in a fixed income portfolio
Solactive Green Bonds EUR USD performance vs. Bloomberg Barclays aggregate indices



Sources: Lyxor international asset management, Bloomberg. Data as at 31/08/2020. Base date 01/09/2014
Past performance is not a reliable indicator of future returns.

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Summary

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Green bonds: A fast-growing market

The green bond market is still small, representing 3.7% of current total bond issuance and less than 1% of the global bond market outstanding. However, medium- and long-term fundamental drivers of the green bond market are stronger than ever. Here's why:

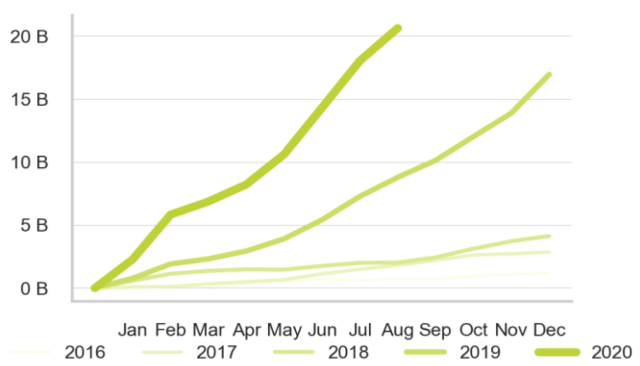
First, **investors are paying more attention to ESG- and climate-friendly investments**. A good proxy for this trend is net asset creation in ESG ETFs in Europe. ESG ETFs in Europe have collected more than 50% of their total assets this year (+€20.4bn).

Second, **regulators around the globe are acting to increase green bond transparency** and leading the way towards commonly accepted standards. Regulators also increasingly require investors to take sustainability considerations into account. These factors could increase the demand for green bonds and support prices and performance.

Finally, **green bonds are an instrument of choice for policymakers** to support transition policies to achieve climate action and other environmental objectives. Sovereign issuance of green bonds has grown and diversified. Germany completed its first €6.6bn issuance in early September 2020 with a staggering bid-to-cover ratio of 5.5. The country may raise up to €12bn in 2020. Elsewhere in Europe, Sweden has already started its book-building process.

Chart 2: 2020 – another record year for 'green' assets

ESG ETFs: cumulative monthly flows (in €bn)



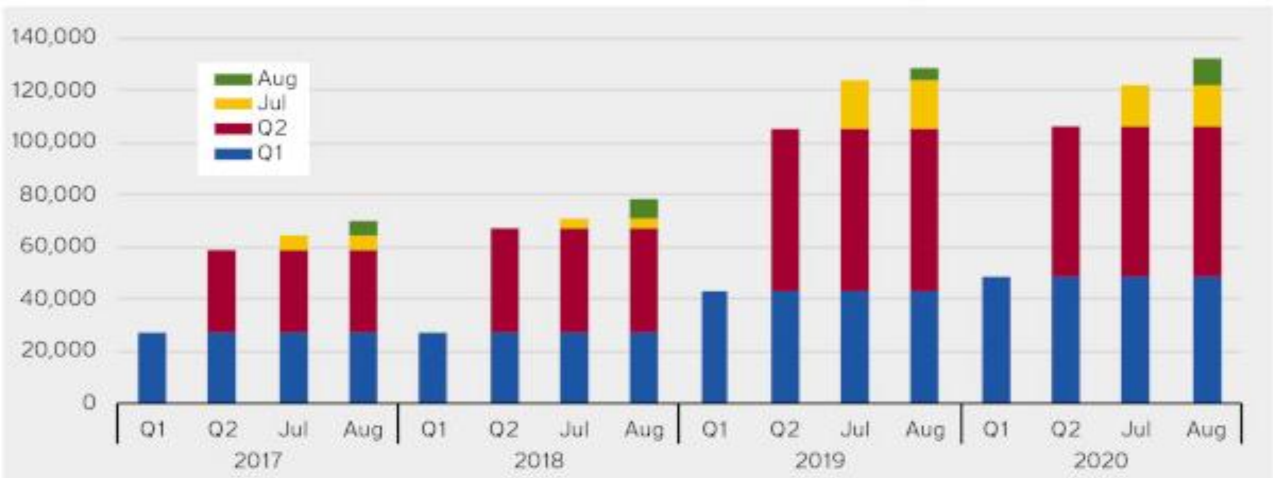
Sources: Lyxor international asset management, Bloomberg. Data as at 31/08/2020. Past performance is not a reliable indicator of future returns.

Beyond sovereign issuers, the EU has an ambitious green agenda under the European Green Deal investment plan and the €750bn post-Covid recovery fund, of which ~30% would be allocated to climate-friendly projects. S&P Global estimates that an EU green bond programme could amount up to €225bn.

Green bond issuers hit a milestone in H1 2020

The Climate Bonds Initiative (CBI) reported a 51% growth in issuance volume in 2019 compared to 2018, adding $258bn. While green bond issuance has dropped during the first half of 2020 as a result of the challenging market environment, monthly averages of issuance since June are in line with 2019 ($20bn). And when comparing year-to-date issuance at the end of August 2020, green bonds are set for a record year despite the Covid-19 crisis (see chart 3).

Chart 3: Cumulative issuance of green bonds 2020 YTD to end-August (in m$)



Sources: Dealogic, DBRS, Morningstar. Data as at 31/08/2020. Past performance is not a reliable indicator of future returns.

In H1 2020, the overall number of green bond issuers passed 1,000 to 1,056. Sub-sovereign issuers represented 29% of total issuance, mostly from government-backed entities. Non-financial corporates represented about 25% of total issuance, followed by sovereigns (14%). On a regional basis total cumulative green issuance for Europe reached $362.7bn, with France leading ($102.0bn) followed by Germany ($57.8bn) and the Netherlands ($44.3bn) - see here for CBI's full H1 2020 review.

Year to date, most of the proceeds from green bonds outstanding were invested in energy (32%), followed by transports (28%) and buildings (27%). Other eligible uses of proceeds are water, waste, land use and marine resources, industry, and information & communications technology (ICT) – see chart 4. A higher proportion of green bond projects and assets were also earmarked for Low carbon Transport (28% of total assets raised versus 18% on average).

As an example: since the beginning of 2020, Société du Grand Paris has been among the largest issuer of green bonds. The Société du Grand Paris was established in 2010 by the French Government to construct the Grand Paris Express, which expands the Parisian metro and rail transport network. The network is powered entirely by electricity and has a high capacity utilisation and is compliant with the CBI's low-carbon transport criteria. Year to date, France has been the second largest issuing country with 13% of total issuance – see chart 5.

Chart 4: Use of proceeds by projects
2020 YTD

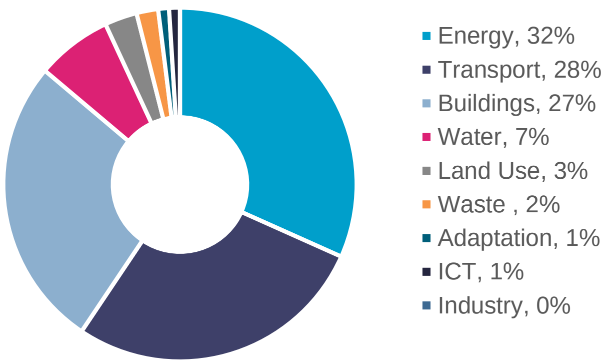
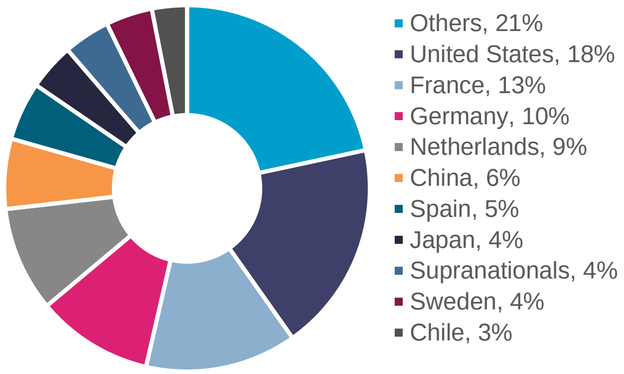


Chart 5: Green bonds issuances by countries
2020 YTD



Source: CBI, Lyxor International Asset management. Data as at 31/08/2020.

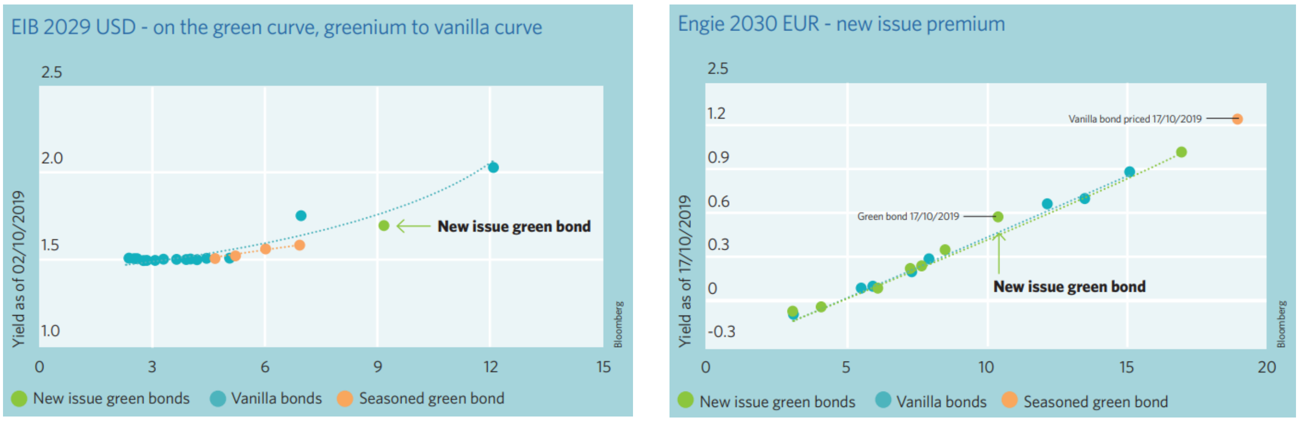
The 'greenium' debate

Issuing a green bond provides benefits to the issuer compared to traditional bonds. Not only, green bonds finance issuers' operational and product transition towards carbon print reduction and Paris-agreement objectives, but they also enhance corporate visibility and strengthen relations with stakeholders. This raised the debate on potential 'greenium' and whether investors should be ready to pay a higher price for a green bond.

A 'greenium' would materialise when a green bond is issued with a higher price (and corresponding lower yield) than conventional bonds at a specific point in time. CBI data show that, between 2016-2019, a greenium only materialised in 22% of EUR green bond issuance and 14% of USD issuance. The CBI's analysis suggests that most green bonds tend to be issued with a yield level higher or equivalent to conventional bonds, and that, on average, spread compression post-issuance tends to be higher for green bonds than for ordinary bonds.

An analysis from the European Commission's Joint Research Center suggests that green bond issuance could lead to lower long-term financing costs and could have a positive impact on the corporate bond pricing over the short term.

Chart 6: 'Greenium' not required in green bond new issuances



Source: CBI Report « Green Bond Pricing in the Primary Market: H2 (Q3-Q4) 2019 ", March 2020

The inaugural German sovereign issue in early September 2020 is another useful example. After strong oversubscription—the bid-to-cover ratio of 5.5, mentioned above—the German green bond was priced at just one basis point (0.01%) yield below the yield on the equivalent conventional 10-year bond.

Turning to regulation, the European Commission recently launched a public consultation on the EU Green Bond Standard to gather feedback on a range of issues relating to a future EU Green Bond Standard. Questions include a review on the financial benefits of issuing green bonds, as well as the additional costs incurred by green bond issuers.

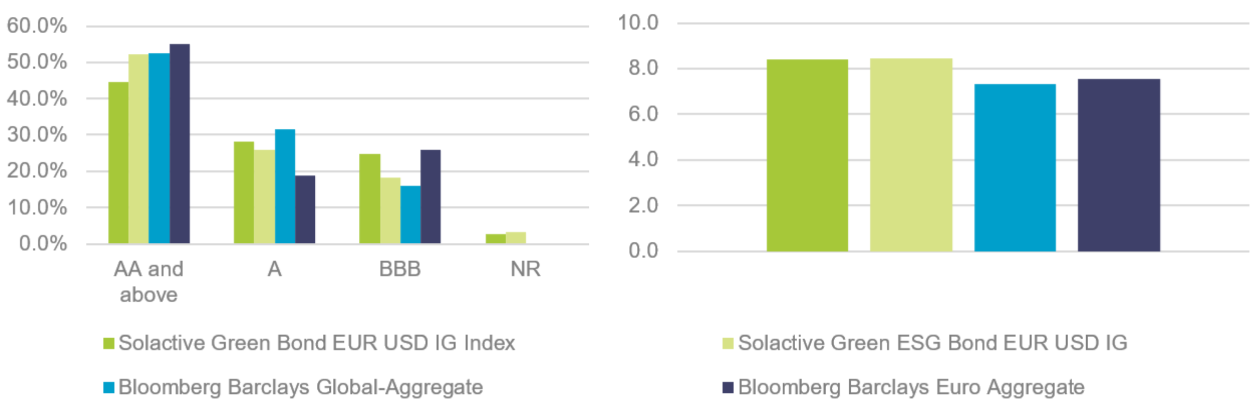
A 'green' source of portfolio diversification

Beyond the non-financial interests of investors, the case for green bonds begins with the rationale for holding any fixed income investment in a portfolio: income and risk levels compared to other portfolio holdings.

Below we focus on the characteristics of Solactive green bond indices comprising EUR and USD issuances in excess of €300m. This liquid yet representative universe is smaller than the overall green bond universe covered by the CBI, only allowing bonds that have been defined by the CBI as eligible constituents. We see that green bond indices share some similarities with the global bond market. Both include all issuers types across countries and currencies and are skewed towards high-quality bonds (at least 45% Solactive green bond indices holdings are rated AA and above – see chart 7). The yield and duration profiles are also similar to broader bond indices.

Chart 7: Green bonds indices share some similarities with Aggregate bond indices

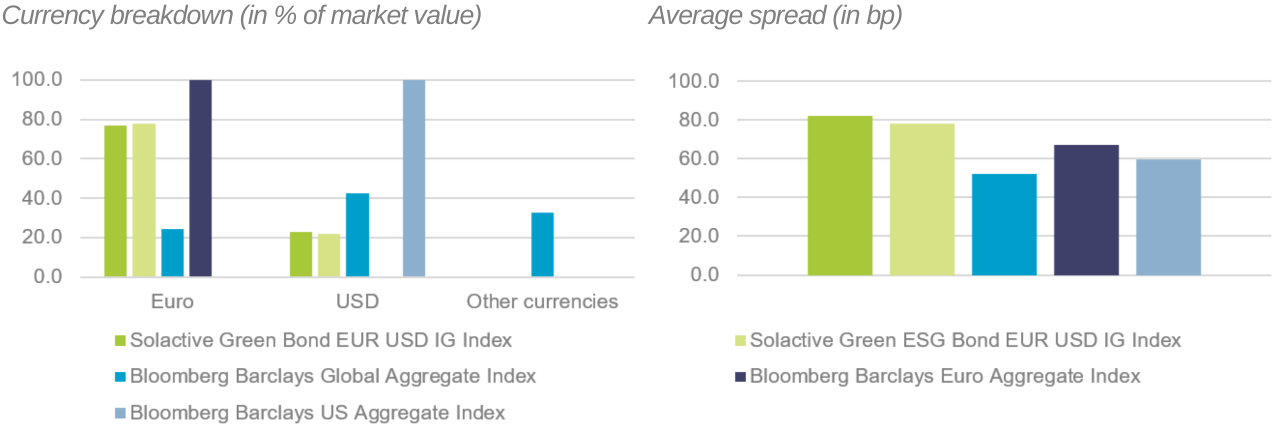
Credit rating breakdown (in %) *Average duration (in years)*



Average rating of the most conservative rating from agencies (S&P, Moody's, Fitch)
Source: Lyxor International Asset Management, Solactive, Bloomberg Barclays, data as at 31/07/2020. Past performance is not a reliable indicator of future returns

Given the overall high quality of the green bond universe, the primary risks to a green bond investor are interest rate risk and currency risk.

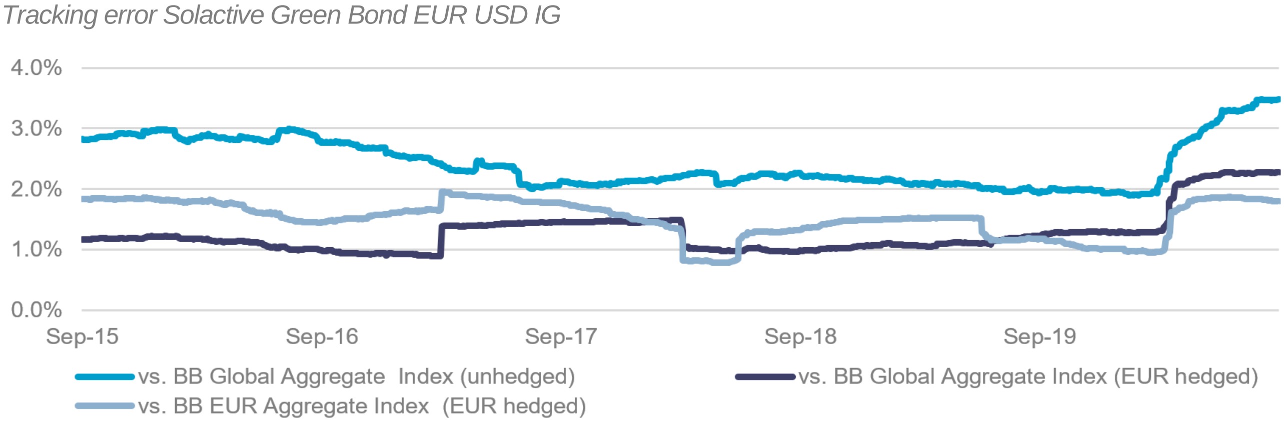
Chart 8: Green bonds investors can be exposed to currency and interest risk



Source: Lyxor International Asset Management, Solactive, Bloomberg Barclays, data as at 31/07/2020.
Past performance is not a reliable indicator of future returns

On the positive side, an allocation to green bonds can be a source of portfolio diversification. Chart 9 below shows that historically, green bonds indices tend to have a high tracking error compared to broader fixed income indices.

Chart 9: Green bonds – a source of diversification for bonds



Source: Lyxor International Asset Management, Solactive, Bloomberg Barclays, data as at 31/08/2020.
Past performance is not a reliable indicator of future returns

Table 1 also shows the risk/return profile of green bonds compared to global aggregate indices. While the Solactive green bond index shares some similarities with euro aggregate, it has some differences with the global aggregate index. Table 1 also shows maximum drawdown for each index over the past six years including and excluding data from the Covid-19 market downturn.

Table 1: Risk analysis Green bonds vs Aggregates (31/08/2014 – 31/08/2020)

	Solactive Green Bond EUR USD IG Hedged to EUR	*Bloomberg Barclays Euro Aggregate*	*Bloomberg Barclays Global Aggregate Hedged to EUR*
Period 1: Aug 2014 – Aug 2020			
Max Drawdown	*-7.04%*	*-5.43%*	*-5.24%*
From peak	*09/03/2020*	*03/09/2019*	*09/03/2020*
To bottom	*19/03/2020*	*18/03/2020*	*19/03/2020*
Annualised volatility	*3.13%*	*3.18%*	*2.62%*
Sharpe ratio (rf=0)	*0.79*	*0.81*	*0.84*
Period 2: Aug 2014 – end Feb 2020 (Pre Covid 19 crisis)			
Max Drawdown	*-4.36%*	*-5.06%*	*-5.00%*
From peak	*07/09/2016*	*15/04/2015*	*08/07/2016*
To bottom	*10/03/2017*	*10/06/2015*	*10/10/2018*

Source: Lyxor International Asset Management, Solactive, Bloomberg Barclays, data as at 31/08/2020.
Past performance is not a reliable indicator of future returns

The difference in sector exposure is a source of higher decorrelation of returns. As an example, supranational issuers (government-related) represent more than 40% of the green bond universe versus only 14% of the Global Aggregate Index. Such difference in sector allocation can lead to significant differences in sector contribution to overall index duration, as shown on Chart 10 below.

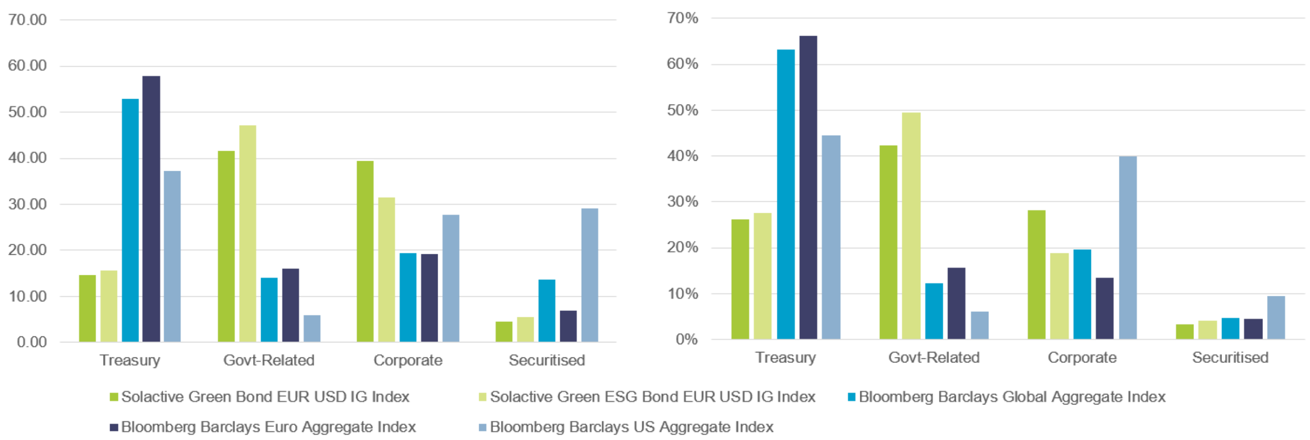
Table 2: Solactive Green Bonds EUR USD IG Index – sector & currency breakdown (% market value)

	Total	Corporate	Government-Related	Securitised	Treasury
Total	**100.00**	**39.46**	**41.51**	**4.46**	**14.57**
Euro	**77.00**	27.49	30.67	4.26	14.57
United States Dollar	**23.00**	11.97	10.83	0.20	

Source: Lyxor International Asset Management, Solactive, Bloomberg Barclays, data as at 31/07/2020.
Past performance is not a reliable indicator of future returns

Chart 10: Impact from sector exposure to the duration profile

Sector breakdown (in % of market value) *Contribution to duration in % of total index duration*



Source: Lyxor International Asset Management, Solactive, Bloomberg Barclays, data as at 31/07/2020.
Past performance is not a reliable indicator of future returns

As a result, while aggregate indices and green bond indices share some similarities (overall credit rating and duration), the breakdown of sector and currency exposure clearly differentiates between the two index structures.

Therefore: while green bonds are not a perfect replacement for a broader bond allocation, **they can be a useful hedge against climate-related risks in a fixed income portfolio**. As has been explained, green bond issuers directly address climate risk factors as the issued bond is directly tied to a green project.

In a world where environmental risk considerations are taking a greater place, including green bonds in a fixed income portfolio allocation may provide some level of protection versus a more traditional bond portfolio allocation.

Table 3: Related indices for an allocation to green bonds

Index Exposure	Index name & investment objective	Bloomberg ticker
Green bonds	**Solactive Green Bond EUR USD IG Index** The Solactive Green Bond EUR USD IG Index, a benchmark of EUR and USD denominated investment-grade green bonds issued by sovereigns, supranationals, development banks and corporates. The index constituents are labelled green bonds defined as eligible for index inclusion by the Climate Bonds Initiative (CBI), an independent not-for-profit organisation dedicated to the promotion of investments for a low carbon and climate-resilient economy.	SGREENIG Index
Green bonds (ESG filtered)	**Solactive Green ESG Bond EUR USD IG TR Index** The Solactive ESG Green Bond EUR USD IG TR Index is a rules-based, market value weighted, total return index designed to mirror the investment grade green bond market of instruments denominated in Euro or U.S. Dollars after screening its issuers for ESG criteria. The index is based on the Solactive Green Bond EUR USD IG Index.	SGRESGIG Index

Source: Lyxor International Asset Management

Have a look at our focus on green bonds for more on index methodology.

For more information on Lyxor ETF's ESG range please contact your Lyxor ETF sales representative.

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