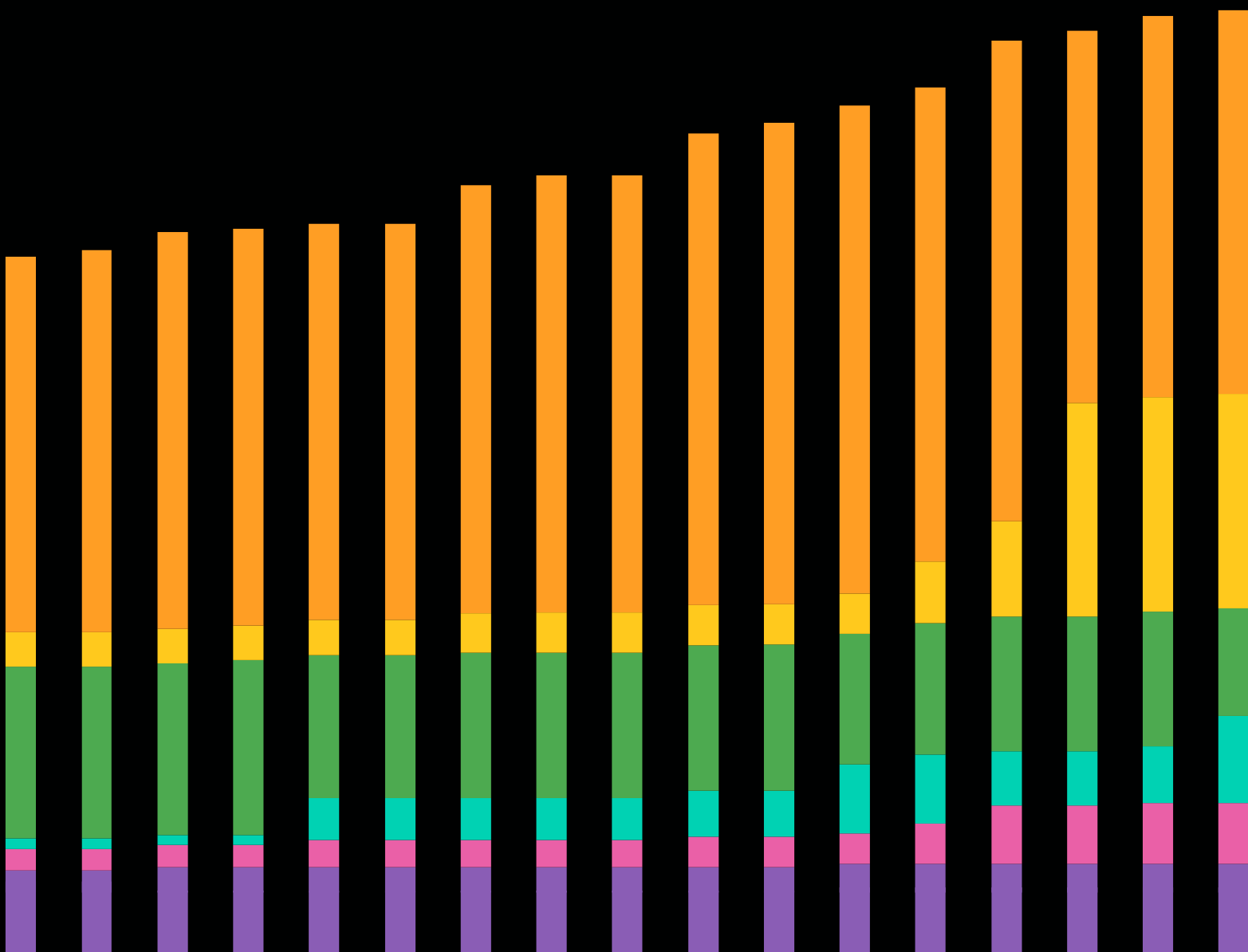


Bloomberg

White Paper

Euro Treasury Low Duration Green Bond Tilted Index



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Introduction

Green Bonds are fixed income instruments designed to finance projects with environmental benefits, such as renewable energy, clean transportation, and climate adaptation. By channeling capital into environmentally friendly initiatives, they help accelerate the transition to a low-carbon economy while offering transparency on how proceeds are used. Investing in Green Bonds allows investors to align their portfolios with environmental and sustainability objectives while maintaining traditional fixed income benefits. With growing regulatory support, increasing demand from ESG-focused investors, and improved market liquidity, Green Bonds offer a compelling opportunity to contribute to climate goals while seeking financial returns.

The Bloomberg Global Aggregate Green Bond Index (a sub-index of the [Bloomberg Global Aggregate Green Social Sustainability Bond Index](#) that includes only Green Bonds) offers investors an objective and robust measure of the global market for fixed income securities issued to fund projects with direct environmental benefits. The Index includes investment grade bonds that are classified as Green by the Bloomberg Sustainable Finance Solutions Group (“SFS”) and that adhere to the ICMA Green Bond Principles and Guidelines.

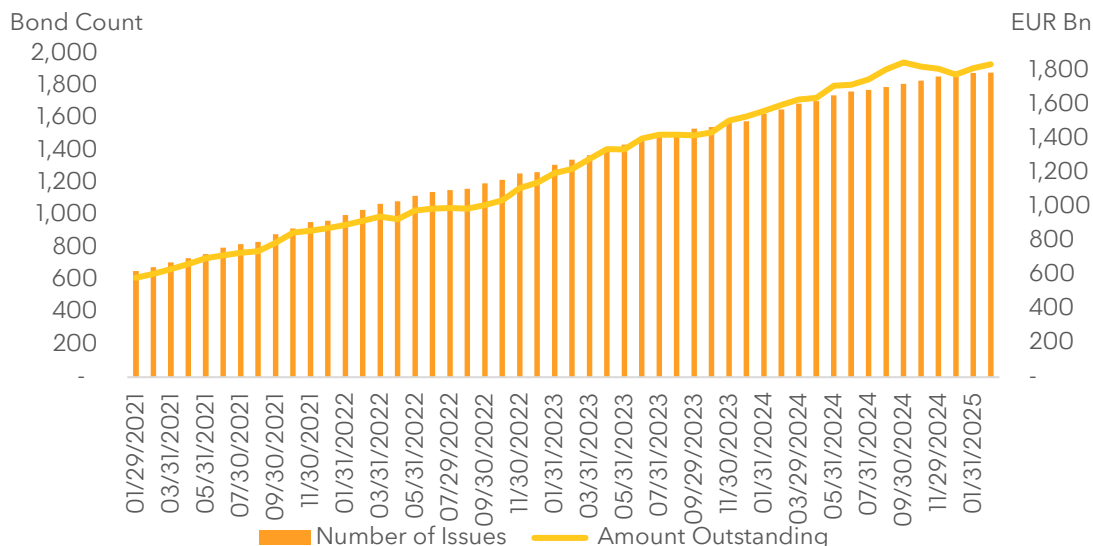
Our previous [“Tilting it green: Treasury Bond Indices”](#) publication analysed the broad Euro Treasury Green Bond market across all maturities, highlighting its growth and investment potential. The Euro Treasury Low Duration Green Bond Tilted Index builds on that research, focusing on the shorter duration segment for investors seeking lower interest rate sensitivity.

Green Bond Issuance Patterns

Green Bond issuance has been increasing steadily from EUR 481 Bn in January 2021 to EUR 1.768 Trn in February 2025, as measured by the Bloomberg Global Aggregate Green Bond Index (Figure 1). This 236% increase in issuance over the past four years spans all sectors, including Treasuries, Supranationals, Agencies, Corporates and Securitized bonds across multiple currencies.

Figure 1

Growth in Green Bond Issuance in the Bloomberg Global Aggregate Green Bond Index



Source: Bloomberg. Data from January 29, 2021, to February 28, 2025.

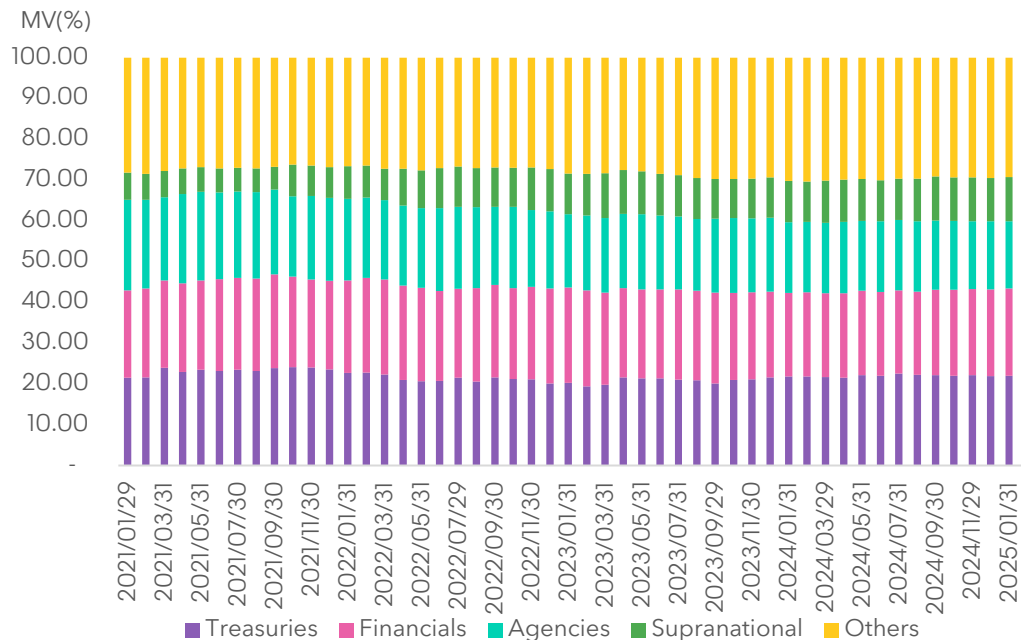
Within the Bloomberg Global Aggregate Green Bond Index, the Euro-denominated segment has also grown dramatically from 357 bonds and EUR 324 Bn amount outstanding in January 2021 to 1,091 bonds and EUR 1.17 Trn amount outstanding in February 2025. This represents a 260% increase in issuance and highlights the market appetite for such securities.

However, despite the significant increase in Green Bond issuance, it still represents only 2.41% of the Bloomberg Global Aggregate Index and 7.41% of the Bloomberg Euro Aggregate Index as of February 2025, emphasizing the potential further growth in sustainable fixed income markets.

Within the Bloomberg Euro Aggregate Green Bond Index, the largest Green Bond issuance by percent market value of total issuance as of February 28, 2025 has been coming from Treasuries (22%), followed by Financial Institutions (21%), Agencies (16%), and Supranationals (11%), with remaining ~30% of Green Bond issuance coming from the other sectors as seen in Figure 2.

Figure 2

Bloomberg Euro Aggregate Green Bond Issuance by BCLASS 2



Source: Bloomberg. Data from January 29, 2021, to February 28, 2025.

Within the largest Euro-denominated Green Bond segment by market value - Treasuries - the issuance is heavily concentrated in the longer-duration bonds, with more than 36% of the market value of issuance with at least 15 years remaining to maturity, and another 30.59% of the market value of issuance between 10-15 years remaining to maturity, as of February 28, 2025. There is only one bond that has less than 3 years remaining to maturity, and only two bonds that have between 3 and 5 years remaining to maturity in the Bloomberg Euro Treasury Green Bond Index (Figure 3).

Figure 3

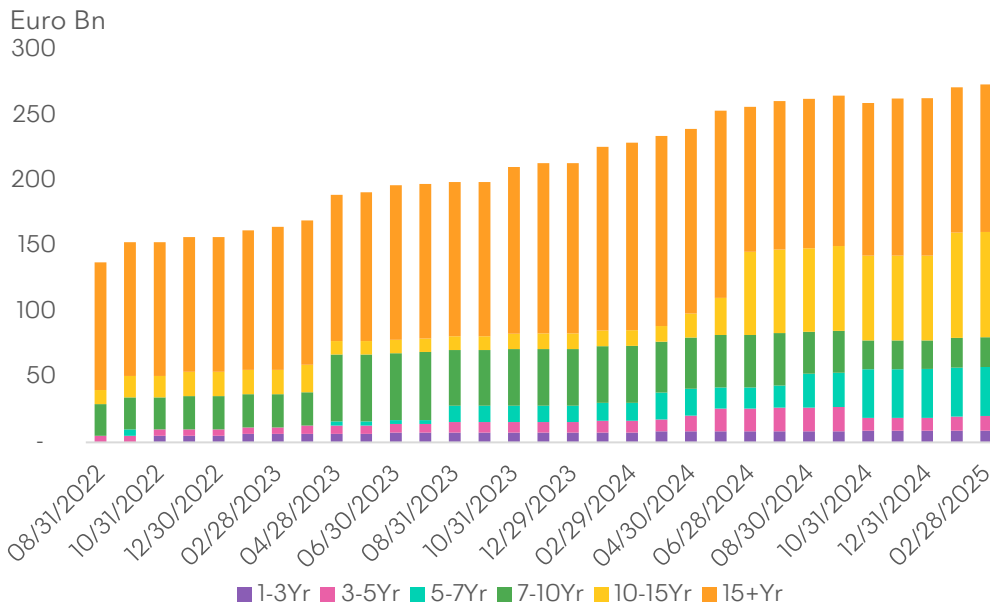
Bloomberg Euro Treasury Green Bond Index by Maturity

Years to Maturity	Bond Count	Market Value %
1-3	1	3.80%
3-5	2	5.00%
5-7	4	15.25%
7-10	2	9.30%
10-15	5	30.59%
15+	10	36.06%
Total	24	100.00%

Source: Bloomberg. Data as of February 28, 2025.

This pattern of longer-dated Green Bond issuance within the Treasury sector has generally persisted throughout the past few years, as can be seen in Figure 4.

Figure 4
Bloomberg Euro Treasury Green Bond Issuance, by Maturity



Source: Bloomberg. Data from August 31, 2022, to February 28, 2025.

Liquidity of Green Bonds

If we compare Green Bonds to non-Green Bonds issued by the ten largest European countries governments or by corporations with country of risk being from one of these ten largest European countries (by debt outstanding), we can see that Green Bonds tend to be smaller in size than non-Green Bonds (Figure 5). This difference is much more pronounced in the Treasury space, where an average Green Bond tends to be almost half of the size of an average non-Green Bond (versus in Corporate space, where an average Green Bond tends to be only approximately 16% smaller than an average non-Green Bond).

If we look at bid-ask spreads, in the Corporate space Green Bonds have on average a slightly tighter bid-ask spread than non-Green Bonds. The same cannot be said in the Treasury space, where although altogether much tighter than Corporates, the Green Bonds’ bid-ask spread is approximately 33% wider than non-Green Bonds’ bid-ask spread.

Figure 5
Market-Value Weighted Average Bid-Ask Spread and Bond Size for Green and non-Green Treasury and Corporate Bonds

	Treasury		Corporate	
	Green Bond	Non-Green Bond	Green Bond	Non-Green Bond
Bid-ask spread	0.0232	0.0175	0.1522	0.1588
Amount outstanding (EUR bn)	14.62	27.35	0.76	0.90

Source: Bloomberg. Data as of March 31, 2025.

With that said, there is a large variability in the Green Bond Treasuries. Some countries’ Green Bonds have a very low average bid-ask spread, such as France and Italy (each at approximately 0.011), whereas others have a much wider bid-ask spread, such as Ireland and Austria (at approximately 0.07 and 0.08, respectively). The same can be said about variability in issuance size, with some countries, such as France, who issued two of the largest Green Bonds in the Treasury space at EUR 23.78 and 36.3bn, versus Ireland with the smallest Green Bond at EUR 4bn.

Nonetheless, with Green Bonds in the Treasury space being much more liquid compared to Corporates in both issuance size and spread, they provide additional diversification in a Treasury portfolio while also fulfilling environmental objectives.

Shorter Maturity: A Closer Look

During a higher rate environment, investors may become interested in a shorter duration segment, but as most euro-denominated Treasury Green Bonds are issued with longer-dated maturities, a question arises about how to combine the two objectives of lower duration and a meaningful exposure to Green Bonds effectively. The Euro Treasury Low Duration Green Bond Tilted Index focuses on the 3-5 year duration segment, as it strikes a balance between yield, risk, and interest rate sensitivity. Shorter-duration bonds may offer lower yields and limited return potential, while longer-duration bonds tend to be more volatile and sensitive to interest rate movements. The 3-5 year segment provides better risk-adjusted returns, offering investors a moderate yield pickup without excessive exposure to duration risk, making it an attractive point on the curve.

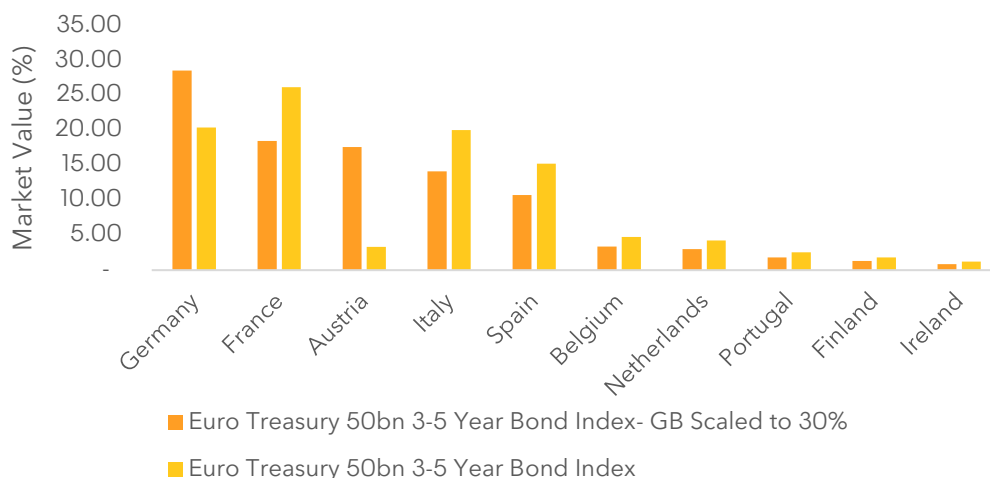
Within the Bloomberg Euro Treasury 50bn 3-5 Year Index - an index that tracks the Euro-denominated treasury bonds from the largest ten countries in Europe with 3-5 years remaining to maturity - there are only two Green Bonds, which make up only 0.8% of this index. One possibility to gain a more meaningful exposure to Green Bonds during a time of higher interest rates is to increase the weight of these two Green Bonds, such as rescaling them to a total of 30% of market value of the index.

The full maturity Bloomberg Euro Treasury Green Bond Tilted Index (as covered in the “Tilting it green: Treasury Bond Indices” paper) took a similar approach, whereby all of the Green Bonds are given at least a 30% weight in the index, while controlling for country weights and country-level duration.

However, the approach of uplifting all of the index-eligible Green Bonds in the Euro Treasury 50bn 3-5 Year Index results in a very high concentration in two bonds (of 67 bonds total), and significant turnover when Green Bonds enter or exit this index. It would also result in a more imbalanced country exposure, as can be seen in Figure 6. The two currently eligible Green Bonds from Germany and Austria would increase the weights of those two countries by 8.16% and 14.28%, respectively, while decreasing the weights of all the other countries proportionally. Even if we apply the same maximization-based allocation approach used in the Euro Treasury Green Bond Tilted Index—which seeks to achieve the highest possible Green Bond exposure while controlling for country concentration and duration—the challenge in the 3-5 year segment is fundamentally different. The limited number of eligible Green Bonds in this maturity range severely restricts the flexibility of the rebalancing process. With only two Green Bonds available, the model lacks sufficient instruments to diversify across countries or issuers. As a result, any attempt to scale their weight up to meet a green allocation target—such as 30%—would lead to extreme country skews, overexposure to individual issuers, and potential liquidity risks.

Figure 6

Weight of Green Bonds in the scaled and unscaled Bloomberg Euro Treasury 3-5 Year Index



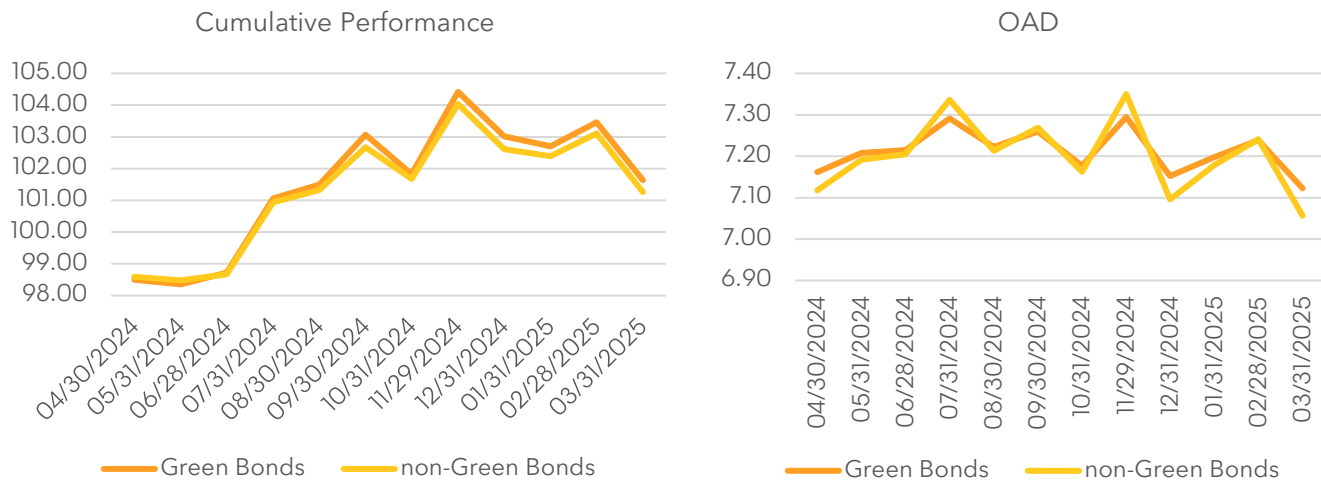
Source: Bloomberg. Data as of February 28, 2025.

Performance of Green Bonds

Another consideration in overweighting Green Bonds in a broader index is their performance. Overweighting two bonds that have a natural market value weight of 0.8% to be 30% market value of an index exaggerates the impact of these bonds on the performance of the index. As such, it is important to take a closer look at these bonds' returns.

We can start by breaking down the Euro Treasury 50bn Bond Index, which tracks the Euro-denominated debt with at least 1 year remaining to maturity from the ten largest European governments, into two segments: Green Bonds and non-Green Bonds. As not all countries issue Green Bonds, and if they do, then not necessarily in a similar issuance pattern as non-Green Bonds, we can make both the Green Bond and the non-Green Bond segments duration- and credit rating-neutral to the Euro Treasury 50bn Bond Index. This allows us to compare the performance of these two segments while controlling for both interest and credit sensitivities. From Figure 7 we can see that the Green Bond segment outperformed the non-Green Bond segment by 37 bps over the past 12 months, while duration has not deviated more than 0.07 years during this period.

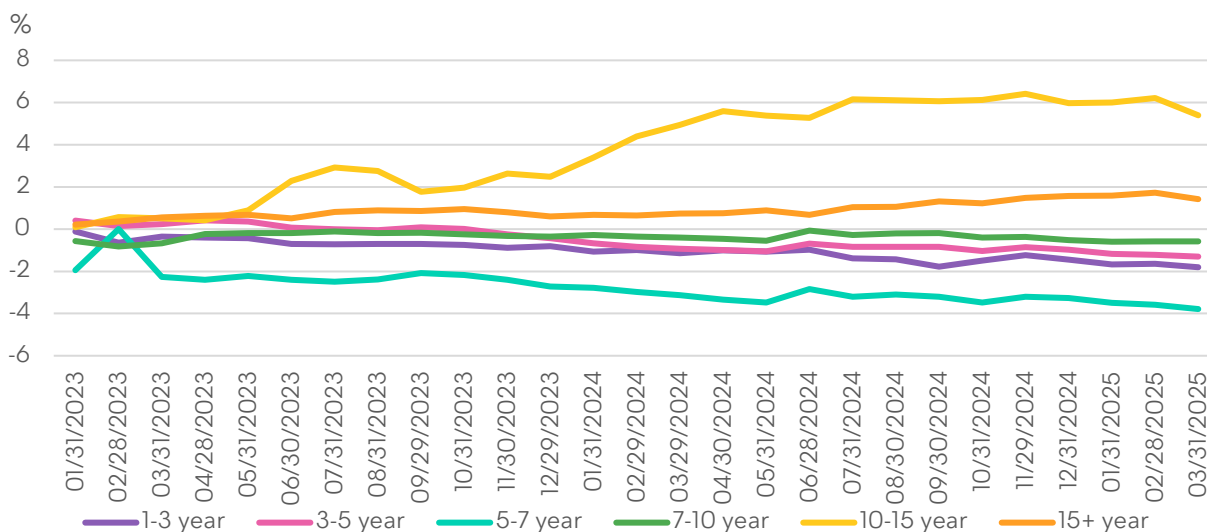
Figure 7
Cumulative Performance and OAD of Green vs non-Green Bonds



Source: Bloomberg. Data from April 30, 2024, to March 31, 2025.

If we take a closer look at the driver of the Green Bond outperformance, we can see that Green Bonds performed better than non-Green Bonds in the longer maturity segments. In the 15+ year segment, Green Bonds outperformed non-Green Bonds by 1.41% in cumulative returns since January 2023. In the 10-15 year segment, Green Bonds outperformed non-Green Bonds by 5.4% over the same time period. Meanwhile, Green Bonds in other maturity segments underperformed the non-Green Bonds to various degrees, as can be seen in Figure 8.

Figure 8
Cumulative Returns Differences between Green Bonds and non-Green Bonds in Maturity Carveouts of Euro Treasury 50bn Bond Index



Source: Bloomberg. Data from January 31, 2023, to March 31, 2025.

As such, the performance of Green Bonds in various maturity bands provides another reason for choosing a broader set of Green Bonds than only the 3-5 year ones in order to gain green exposure.

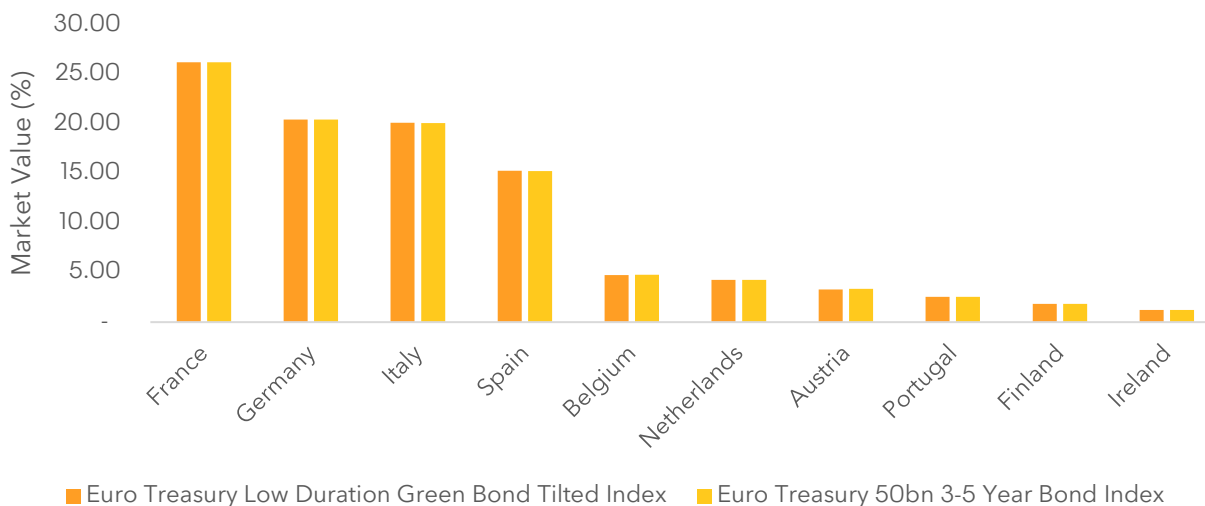
Incorporating a Broader Set of Green Bonds

An alternative way to increase exposure to Green Bonds within the Euro Treasury 50bn 3-5 Year Index (versus simply increasing the weight of two Green Bonds to 30%) is to divide it into two components – a Green Bond component and a non-Green Bond component, as has been designed in the Euro Treasury Low Duration Green Bond Tilted Index. For the Green bond component, the index uses Green Bonds from ten largest European countries across the maturity spectrum – not just the 3-5 year bonds. The Green Bonds that have a duration closer to the Bloomberg Euro Treasury 50bn 3-5 Year Index's average duration are given more weight, and ones that are further away from average duration target and given less weight. All of these Green Bonds are then tilted such that they cumulatively make up 30% of the Euro Treasury Low Duration Green Bond Tilted Index by market value. The weights of these Green Bonds are grouped by country and are also compared to the country weights in the Euro Treasury 50bn 3-5 Year Index. If the weight of the Green Bonds for a given country exceeds its weight in the Euro Treasury 50bn 3-5 Year Index, the weight of that country's Green Bonds is capped and the remaining market value is reallocated pro-rata to other Green Bonds from other countries, within a 0.5% deviation. For the non-Green Bond component, all of the bonds already have remaining maturities between 3-5 years, and their weights are scaled to cumulatively be 70% of the index by market value, subject to preserving the country neutrality. If a country's weight is already fully met with Green Bonds, then there would be no non-Green Bonds for that country.

This design of the Bloomberg Euro Treasury Low Duration Green Bond Tilted Index thus achieves multiple objectives – it has a much higher exposure to Green Bonds (30%), while maintaining higher diversification by significantly reducing concentration risk; it broadly preserves country-level exposure similar to the Euro Treasury 50bn 3-5 Year Index (as can be seen in Figure 9); and it retains a similar duration profile as the Euro Treasury 50bn 3-5 Year Index.

Figure 9

Bloomberg Euro Treasury Low Duration Green Bond Tilted Index vs Bloomberg Euro Treasury 50bn 3-5 Year Index, by Country

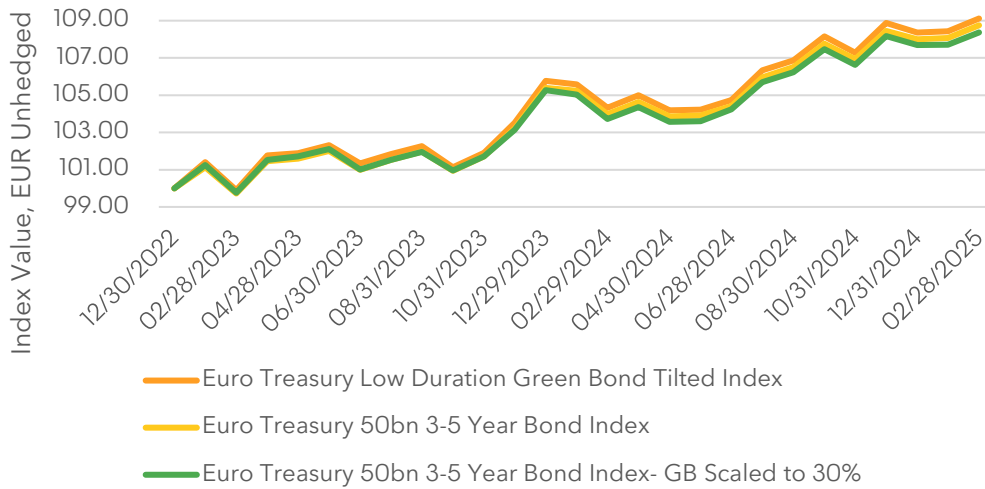


Source: Bloomberg. Data as of February 28, 2025.

Comparing the performance of the Bloomberg Euro Treasury Low Duration Green Bond Tilted Index with the Bloomberg Euro Treasury 50bn 3-5 Year Index and also with the version where the Green Bonds are simplistically scaled up to 30%, we can see that since the beginning of 2023 the Euro Treasury Low Duration Green Bond Tilted Index has outperformed the other two indices by approximately 37bps and 75bps, respectively (Figure 10).

Figure 10

Cumulative Performance of Euro Treasury Low Duration Green Bond Tilted Index vs Euro Treasury 50bn 3-5 Year Index vs the Euro Treasury 50bn 3-5 Year Index with a 30% Uplift in Green Bonds



Source: Bloomberg. Data from December 30, 2022 to February 28, 2025.

Conclusion

Green Bond issuance has reached over EUR 1.7 Trn in the Bloomberg Global Aggregate Green Bond Index, indicating strong and sustained investor interest in green finance. The Bloomberg Euro Treasury Low Duration Green Bond Tilted Index provides a unique framework for integrating Green Bonds into a fixed income portfolio while maintaining a low duration profile. By allocating 30% to Green Bonds across all maturities and tilting their weights based on remaining years to maturity, the index balances the need for diversification with risk profile management. Meanwhile, the 70% allocation to 3-5 year Euro Treasury non-Green Bonds adds stability, liquidity, and a controlled interest rate exposure.

Despite the growing momentum in Green Bond issuance, the availability of bonds in a specific maturity segment, for example 3-5 years, remains limited, leading to challenges in diversification and increasing turnover as bonds roll down the curve. The Euro Treasury Low Duration Green Bond Tilted Index provides investors with a measured approach to Green Bond exposure, aligning with both climate-conscious investing and risk management in the Euro fixed income landscape.

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