Index Insights | Fixed Income

Government debt sustainability:

An examination of the FTSE Debt Capacity World Government Bond Index after 10 years

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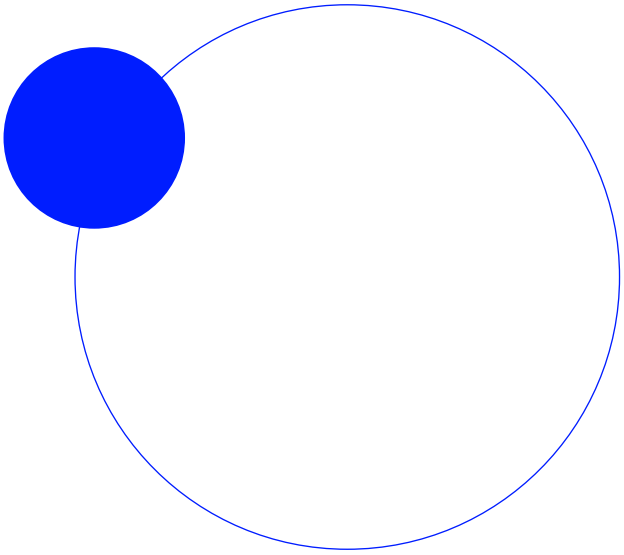
Executive summary

- The most widely used metrics for public debt sustainability are gross debt/GDP ratios, and debt service costs/GDP. This enables standardisation of measures across countries, using data which is widely available, even if the metrics are not perfect.
- Investor concerns about public debt sustainability in the G20 have deepened since rates rose in 2022, evidenced by higher term premia, higher long bond yields and steeper yield curves.
- There is no magic threshold level for these variables that triggers a sovereign debt crisis, since the ability to meet debt service costs hinges on real growth rates, real interest rates, debt ownership, and the relationship between monetary and fiscal policy.
- The FTSE Debt Capacity World Government Bond Index (DCWGBI) captures relative differences in sovereign debt/GDP ratios and debt/service costs by index constituents, and adjusts sovereign weights accordingly. In its 10 year history, this has led to a substantial underweight developing in the US and Japan. In contrast, Scandinavian government bonds have been overweighted versus the WGBI. The DCWGBI has consistently outperformed the WGBI, during its first 10 years, and particularly since Covid in 2020, reflecting US sovereign spread widening, and superior credit quality in the DCWGBI.
- If investor concerns about debt sustainability deepen, this may drive further outperformance by the DCWGBI, given its relative weights. Alternatively, if debt sustainability metrics improve, the index has the capacity to increase sovereign weightings accordingly, reducing the risk of underperformance.



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Gross government debt/GDP ratios and debt service costs have almost doubled since the GFC

Globally, government debt/GDP ratios and debt service costs have increased since the GFC and Covid, raising the relevance and importance of sovereign bond indices like the FTSE Debt Capacity World Government Bond Index (DCWGBI), which was built in October 2014. The DCWGBI uses both gross debt/GDP ratios and debt service costs/GDP as metrics for debt capacity, and sustainability. Debt/GDP is the most commonly used metric for debt capacity, because of the availability of gross debt and GDP data, and the simplicity of the ratio of the country's indebtedness (gross debt) to its repayment capacity (measured by GDP).

But using gross debt/GDP alone does not include the maturity structure of a country's debt, its interest rate sensitivity, or the breakdown of the debt between domestic and external (particularly important for EM economies). So by adding a measure of debt service costs, we can implicitly capture the duration of the debt and its interest rate sensitivity.[1] The weighting methodology of the DCWGBI is also designed to measure relative changes in debt/GDP (a long term sovereign risk indicator) and debt service costs (a mid-term sovereign risk indicator) and adjust weights accordingly.

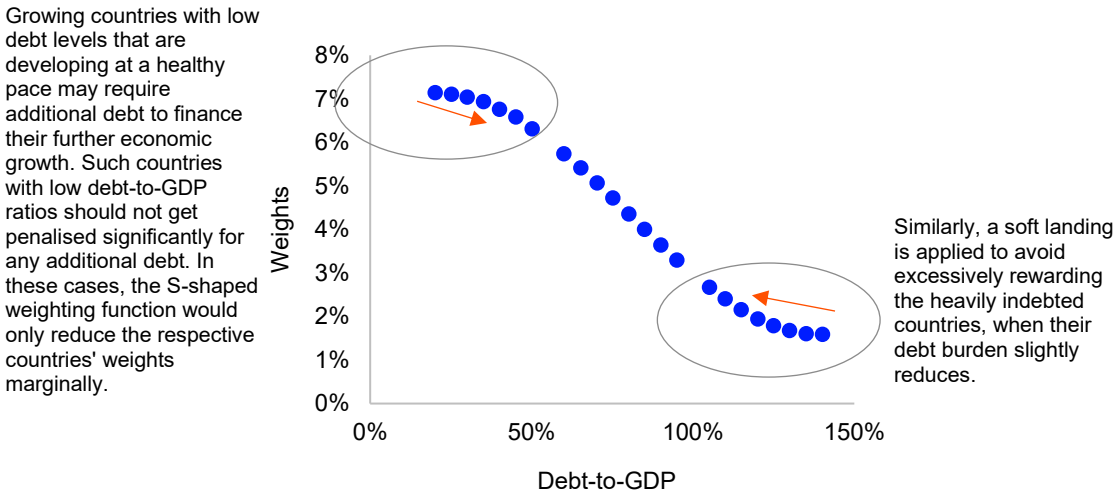
How is the Debt Capacity World Government Bond Index alternatively reweighted

The weighting function converts the gross debt/GDP ratios and debt service costs/GDP factors into weights. A higher Debt-to-GDP or Debt Service-to-GDP ratio indicates a heavier debt burden on the economy and worse debt service capacity of the country. In DCWGBI, this would result in a lower country weight.

However, intuitively, linear tilting of the country weights is not the best approach for the following reason. If countries have a relatively low Debt/GDP ratio and are deemed in good fiscal health, an even lower Debt/GDP doesn't necessarily mean a country is fiscally healthier, and vice versa. Instead, an S-shaped curve, rather than a linear function for weights achieves that objective and is more suitable for the weights associated with these factors. The function differentiates the fiscally healthier economies from the less healthy ones while not significantly discriminating against the various countries within each cluster, please see Chart 1 below.

[1] These are not perfect metrics, since net debt would be a better measure, and GDP may not capture repayment capacity accurately. But these measures have held up well in empirical studies (see "Constructing county-specific debt sustainability indices for developing countries", A.Rahaman, S.Ramadeo, University of Portsmouth, Working Paper, 2024-01).

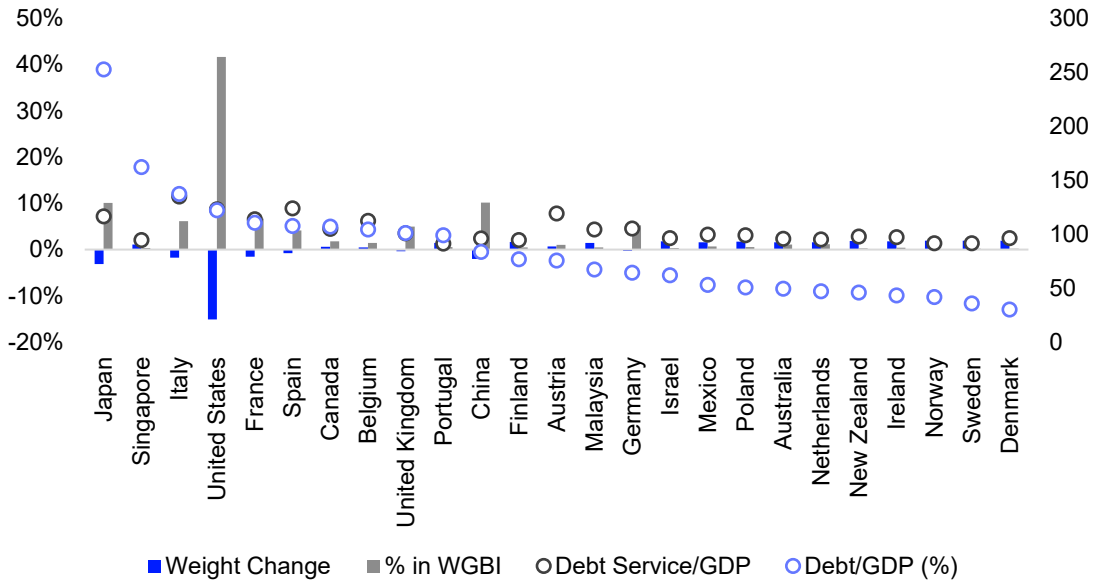
Chart 1: Illustration of country weights and gross debt/GDP ratios



Source: FTSE Russell, FICC Research.

The Debt/GDP and calculated debt service/GDP ratios of each country are converted into weights, with lower weights assigned to more indebted countries, or countries with higher debt service costs as a % of GDP. The final weight of each country is determined as the weighted average of 3 components – (1) the country's market value weight, (2) the country's debt/GDP based weight, and (3) the country's debt service/GDP based weight. We define the factors as the deviation of each component divided by the total deviation. That is, the component that deviates more will have higher impact on the final weight. Chart 2 shows a comparison of DCWGBI and World Government Bond Index (WGBI) sovereign weights, based on these factors.

Chart 2: DCWGBI and WGBI country weight comparison



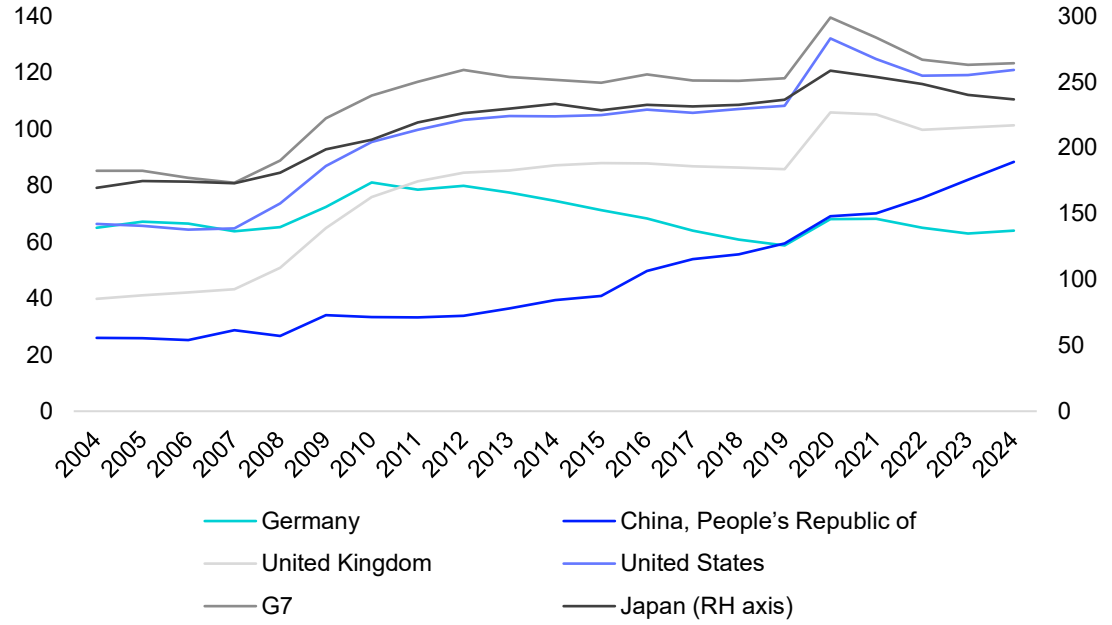
Source: FTSE Russell data, to May 31, 2025.

Transition to a higher interest rate regime transformed debt dynamics, adversely

Weak real growth since the GFC, and higher real yields more recently created adverse dynamics for government debt/GDP ratios, and debt service costs, unless current government expenditure is reduced substantially, relative to revenues. But this is difficult during a period of weak real growth, when there is cyclical pressure on tax revenues, and particularly with ageing populations and labour forces throughout the G20 economies[2].

Higher bond yields, both nominal and real, and higher debt/GDP ratios have raised investor focus on government debt sustainability, particularly given weak real GDP growth rates. The switch to more active fiscal policy, for infrastructure development and the green transition has sharpened this focus further. Chart 3 shows how government debt/GDP ratios in the G7 and China have increased steadily since the early-2000s, after the twin shocks of the GFC and Covid.

Chart 3: G7 and China gross government debt as a percentage of GDP



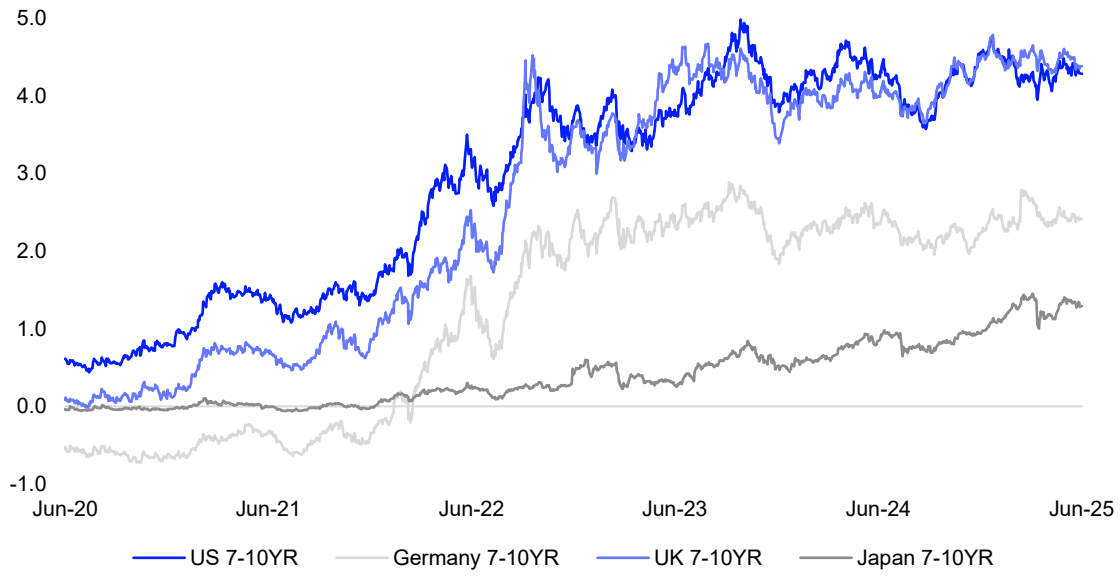
Source: IMF, data to end-2024.

[2] See "The Shape of things to come- is the era of G7 zero rates over ? FTSE Russell insights, 2023.

…as nominal and real yields increased sharply across most WGBI constituents

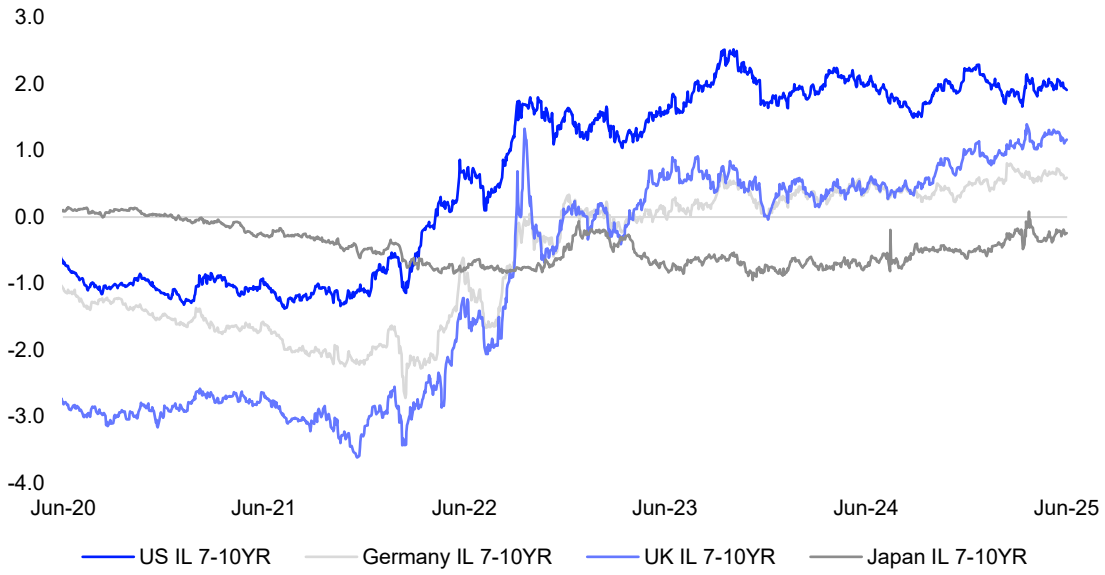
Higher real and nominal yields since 2021-22 are shown in Charts 4 and 5, despite the monetary policy easing by G7 central banks in 2024-25, as inflation fell. This follows a protracted period of very low yields and term premia, in which investors seemed prepared to give G7 sovereigns the benefit of the doubt for higher debt/GDP ratios, on the view they had increased mainly because of the GFC and Covid shocks and increases were only temporary. QE purchases also protected investors by depressing nominal and real yields, and debt service costs were therefore comparatively low.

Chart 4: Selected G7 nominal yields since Covid / 2020



Source: FTSE Russell data to June 13, 2025.

Chart 5: Selected G7 real yields since Covid



Source: FTSE Russell data to June 13, 2025.

Curves have steepened and term premia have increased

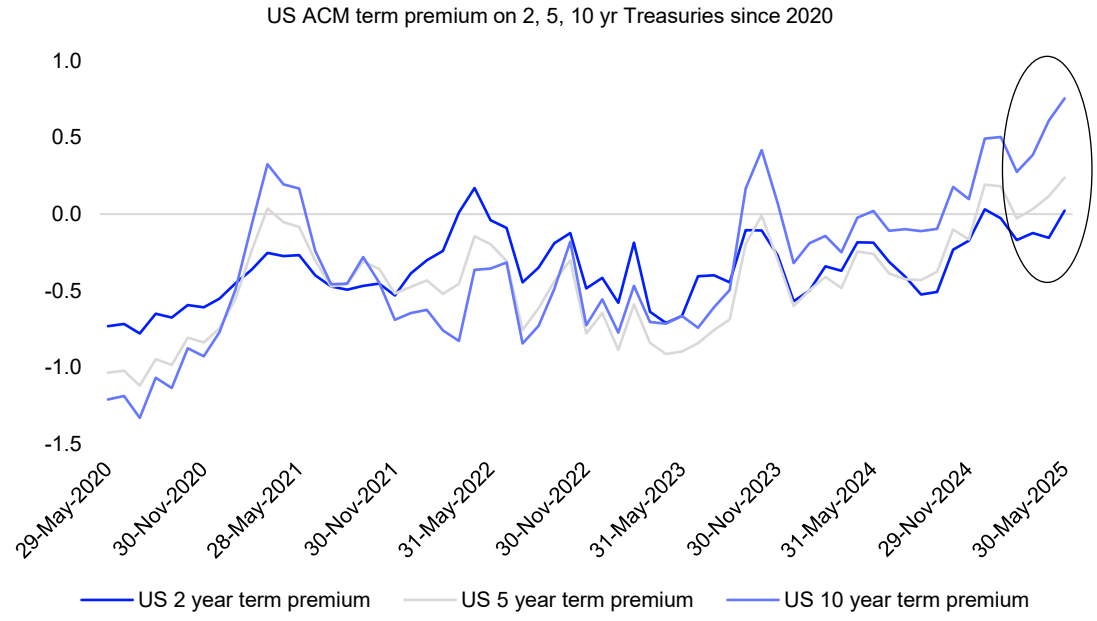
Since 2022, higher yields, bearish curve steepening, and increases in the term premium in government bonds are evident. This is most notable in US Treasuries, even if we cannot infer causation[3] directly from the correlation of higher debt/GDP ratios and debt service costs. Charts 6 and 7 also show US yield curve gradients and term premia have risen more in longer maturities, and there is more steepening of the yield curve in longs in the last 12 months.

[3] David Hume, Enquiry concerning human understanding, 1748

Chart 6: US yield curve gradients since 2020

Source: FTSE Russell, LSEG. Data to June 13, 2025.

Chart 7: US term premia since 2020



Source: New York Fed, based on Adrian, Crump and Moench. Data to May 31, 2025.

Breakdown of monetary/fiscal policy co-ordination may explain this…

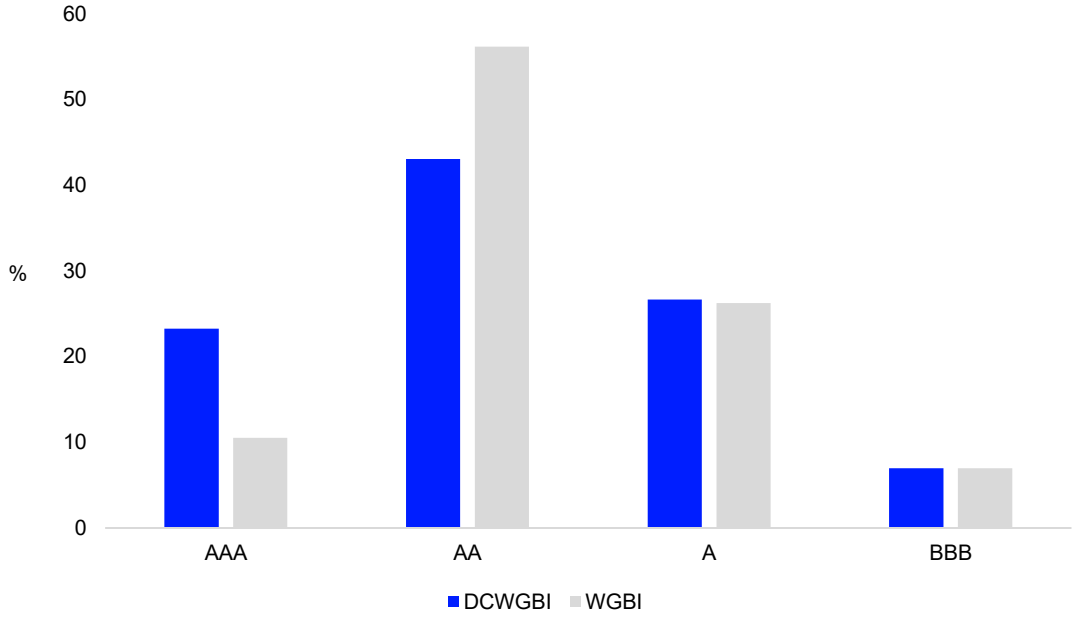
Another key factor in this may be the relationship between monetary and fiscal policy. Sargent and Wallace[4] explored scenarios in which the ability of a central bank to control inflation may be compromised by fiscal policy. But the modern orthodoxy is that an independent central bank will be supported by passive fiscal policy, which allows achievement of the inflation target, and a stable debt/GDP ratio. This so-called consensus assignment[5] refers to monetary policy controlling inflation and the business cycle, while fiscal policy focusses on controlling budget deficits and government debt. It also allows a bigger role for fiscal policy in the special circumstances in which monetary policy may be constrained by design, like a monetary union (Eurozone), or accident, like the zero lower bound on interest rates. But in each case, fiscal policy complements monetary policy by adjusting aggregate demand in the appropriate direction – it does not counter the thrust of monetary policy.

…with fiscal policy remaining stimulative even during recent monetary tightening

But of late there has been evidence of this consensus assignment breaking down, with fiscal policy remaining stimulative, even during monetary tightening phases, most notably following the inflation shock in 2021-22. Indeed, as explained in our recent note[6], the US has been one of the economies subject to the sharpest increases in debt/GDP, despite stronger growth versus Europe and Japan since Covid, as Chart 1 above also shows. The recent removal of the last remaining AAA-rating for Treasuries from Moody's has not helped investor sentiment either, but Chart 8 on Sovereign credit ratings shows that AA has become the new AAA, with AA now having a much higher weight than AAA in both indices. The DCWGBI also has higher credit quality than WGBI, as a result of the objective to underweight riskier sovereign debt.

[4] "Some unpleasant monetarist arithmetic" – Thomas J. Sargent, Neil Wallace, Fed.Reserve Bank of Minneapolis, Quarterly Review, Sargent and Wallace, Fall 1981.
[5] "Monetary and Fiscal Policy Interaction: The Current Consensus Assignment in Light of Recent Developments." Kirsanova, Tatania; Leith, Campbell and Wren-Lewis, Simon. Economic Journal, 2009
[6] Time to leave Treasuries for the duration – FTSE Russell, May 2025.

Chart 8: Sovereign Credit Rating weights in DCWGBI and WGBI



Source: FTSE Russell, as of May 31. Past performance is no guarantee of future results.

More generally, it seems plausible that Investor uncertainty over the nature of fiscal regimes may be a factor contributing to the increase in the term premium, due to fears about higher debt issuance[7]. Some of these forces are structural, including the green transition, infrastructure, and defence spending. For example, Germany has now suspended the debt brake to allow for an increase in defence spending as a share of GDP.

Relative changes in gross debt/GDP and debt service costs drive index weights

Although increases in debt/GDP ratios and debt service costs are a feature in nearly all DCWGBI constituents, it is relative changes in these variables that drive country weight changes in the index, as explained earlier. And the combination of higher for longer US rates and a higher US debt/GDP ratio has caused the underweight of US Treasuries in the DCWGBI to increase further, to over 15%, versus the WGBI. This far exceeds the underweight of JGBs in the index, which is now only 3%, having dropped from an underweight of about 10% during the GFC. In contrast, Scandinavian government bonds have a significant overweight in the DCWGBI of nearly 6%, versus the WGBI weighting, reflecting lower gross debt/GDP and debt service cost ratios. China's country weight in both global indexes has grown sharply since WGBI inclusion in 2021, and now exceeds 10% in the WGBI, but the increase in gross debt/GDP since Covid means the DCWGBI weight is 2% lower than the WGBI weight. Other DCWGBI weights are much closer to the WGBI weights, as Table 1 shows.

[7] Is it time for some unpleasant monetarist arithmetic? – David Andolfatto, Fed.Reserve Bank of St Louis, Third Quarter, 2021.

Table 1: Selected DCWGBI country weights versus WGBI

Index	Effective duration	Weighted average life	US weight	Japan weight	UK weight	China weight	France weight	Combined Sweden, Norway and Denmark weight
Debt capacity WGBI	6.97	9.4 years	26.5%	6.96%	4.6%	8.1%	5.1%	6.3%
WGBI	6.95	9.5 years	41%	10.1%	5%	10.15%	6.7%	0.5%

Performance returns show DCWGBI delivering stronger returns versus WGBI over 5 years…

Finally, perhaps unsurprisingly given these country weights, and US spread widening, the DCWGBI has outperformed the WGBI in recent years. Since the beginning of 2025, DCWGBI has outperformed WGBI by about 1.5% in USD (5.3% v 6.8%), as the Table 2 shows. This owes very little to duration differences since the two indices have virtually identical effective duration and average life, as the Table 2 shows. If debt sustainability concerns deepen, the relatively short duration and average life of the US Treasury market may also raise concerns about refinancing costs with higher coupons and maturity walls. Another important factor is a weakening US dollar because DCWGBI underweights the dollar by 15% against WGBI, due to the lower US Treasury weighting.

Table 2: Performance of WGBI versus DCWGBI

FTSE Russell Factsheet | FTSE Debt Capacity World Government Bond Index (DCWGBI) | May 31, 2025

ANNUALISED RETURNS (in %)

	DCWGBI								WGBI							
	USD	USD Hedged	EUR	EUR Hedged	JPY	JPY Hedged	GBP	GBP Hedged	USD	USD Hedged	EUR	EUR Hedged	JPY	JPY Hedged	GBP	GBP Hedged
YTD*	6.86	1.63	-2.53	0.85	-1.89	-0.18	-0.76	1.65	5.30	1.51	-3.95	0.74	-3.32	-0.29	-2.20	1.54
1 Year	7.28	5.79	2.58	3.92	-1.50	0.49	1.28	5.60	6.47	5.38	1.81	3.51	-2.24	0.09	0.52	5.18
3 Years	0.77	1.98	-1.16	-0.13	4.70	-3.25	-1.48	1.30	-0.02	1.56	-1.93	-0.55	3.88	-3.65	-2.25	0.88
5 Years	-2.00	-0.78	-2.40	-2.41	3.89	-4.14	-3.69	-1.27	-2.73	-0.94	-3.12	-2.57	3.13	-4.29	-4.40	-1.43

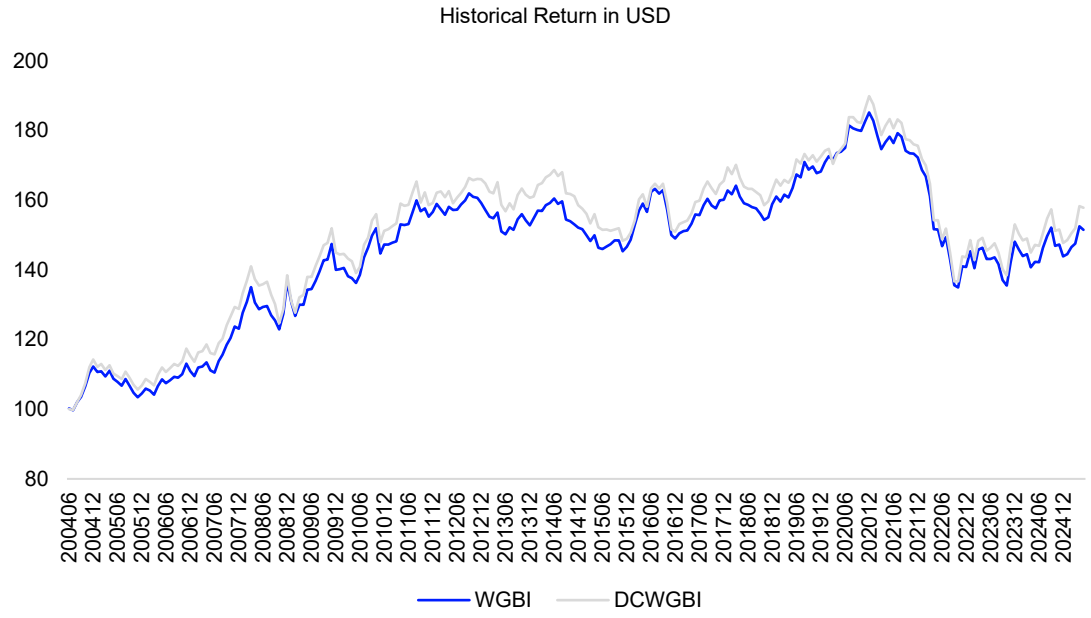
*Not annualised

Source: FTSE Russell data to May 31, 2025.

….and DCWGBI also outperforms on a longer time horizon

Looking at a longer time horizon, DCWGBI annually outperforms WGBI by about 70 bps consistently in the last 5 years, and the outperformance has widened since 2025, perhaps due to increased investor concern about sovereign debt sustainability, and default risks, as in the 2010 Eurozone sovereign debt crisis. This outperformance is shown in Chart 9.

Chart 9: Longer run performance of WGBI versus DCWGBI



Source: FTSE Russell data to end-May 2025.

Flexibility to capture relative changes in debt sustainability symmetrically important

Finally, looking ahead, the advantage of indices like the DCWGBI is that they have flexibility to capture both deterioration in gross debt/GDP ratios and debt service costs and improvements in these metrics, by increasing weightings. In the pre-GFC era, when gross debt/GDP ratios were nearer 50% than 100%, this capacity was less important, since sovereign debt sustainability was a less critical issue for investors.

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