Bloomberg Fiscal Strength Weighted Index Methodology

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Bloomberg

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Introduction

The Bloomberg Fiscal Strength Weighted Index series is a rules-based alternative weight benchmark family that uses fundamental country scores to depart from market capitalization country weights in existing Bloomberg government bond indices. Capitalization weights represent market capacity and, therefore, are used as the baseline index weights. These weights are then scaled by the country scores to increase allocations to countries with higher fundamental scores and reduce exposure to countries with lower scores.

Country scores are based on macroeconomic and governance indicators and are calculated for each sovereign issuer in the index universe. Underlying indicators include measures of fiscal sustainability, dependence on external financing, and governance.

This methodology is intended to be read in conjunction with the Bloomberg Fixed Income Index Methodology.

Overview and Design

The Fiscal Strength weight index family uses scores derived from economic and governance factors to adjust the market capitalization weights of our flagship Bloomberg government bond benchmarks. The flagship Fiscal Strength weighted indices use economic factors only, typically resulting in a larger deviation from market capitalization weights than indices that also incorporate governance criteria.

We have chosen a small number of simple economic factors that have a clear and intuitive link to fiscal strength and are able to clearly represent "strong/improving" fundamentals versus "weak/deteriorating" fundamentals. These factors are available for developed and emerging markets so that index design can be flexible and applicable to any Bloomberg Treasury bond index (standard or bespoke) that includes developed or emerging markets government debt.

This document details the specific index design, methodology, and mechanics used to construct the Fiscal Strength weighted indices and has been divided into four subsections:

A. Selecting fundamental factors that measure fiscal strength
B. Translating economic and governance raw data into factor scores
C. Aggregating different factor scores into a composite country score
D. Applying country scores to existing Bloomberg indices to calculate new index weights

A. Selection of Fundamental Factors

Bloomberg Fiscal Strength Weighted Indices use publicly available economic and governance factors as the basis for adjusted index weights.

1. Economic Factors

We take three variables that we believe to be most useful and intuitive in the construction of a Fiscal Strength weighted benchmark bond index. These variables fall into two broad categories: financial solvency and dependence on external financing.

Debt as a Percentage of GDP

A central theme cited by fundamental investors is the aversion to giving larger weights to the largest borrowers on the premise that these borrowers may be at greater risk in their ability to service and repay their debt. Debt burden/leverage therefore emerges as a clear initial candidate to be used for the Fiscal Strength Weighted Index family. We use public debt as a percentage of GDP as a direct measure of leverage for sovereign issuers. This publicly available and easily obtained metric is, in our view, the simplest measure of fiscal solvency. It is also a long-term or "level" indicator that reflects not just borrowing over a short-term window, but also the net accumulation of debt over time. For the specific data used for this fundamental, we have selected gross public debt[1] and GDP levels as published by the IMF in its World Economic Outlook.

Deficit as a Percentage of GDP

Public deficit (government revenue – expenditures) is a measure of budget shortfall in a given year and is a useful short-term or "flow" indicator of financial solvency. In a sense, debt (a "level" indicator) can be thought of as an accumulation of deficits (a "flow" indicator) over time and incorporates an element of momentum to the selection of financial solvency fundamentals.

Current Account Balance as a Percentage of GDP

Current account balance is another "flow" indicator that measures improvement or deterioration of a country's economic strength. The current account balance (exports – imports) as a percentage of GDP is representative of the dependence of an economy on external lending. An economy that runs a current account surplus is less dependent on foreign creditors and can therefore be viewed, all other things equal, as exhibiting lower solvency risk. Conversely, large current account deficits imply significant dependence on continuing foreign capital inflows that may result in large private sector external debt; a sudden reduction in capital flow will affect current account deficit countries more than surplus countries.

[1] Gross public debt levels published by the IMF measure all outstanding liabilities of the government that require payment at a date or dates in the future.

2. Governance/Institutional Strength Factors

Governance indicators are intended to measure the effectiveness of the structures of authority and institutions of a country. These indicators may be especially useful when considering emerging markets that exhibit higher institutional risk than developed markets. They may be less useful in discriminating across developed markets, which typically benefit from stable and robust institutions.

The World Bank publishes quantitative scores on six different governance indicators. We calculate raw scores of each governance factor and then equally weight all six to calculate a single governance factor for each country.

- Rule of law
- Control of corruption
- Regulatory quality
- Political stability and absence of violence
- Government effectiveness
- Voice and accountability

3. Source Data

All three economic indicators come from the IMF WEO Database. The governance indicators come from the World Bank, using the latest available data as of October of each year.

For economic factors, we use forward-looking "projected" data reported in the WEO database for the next calendar year to reflect the best available data as of the annual index rebalancing date. For example, projected data for 2024 from the October 2023 database are used to determine factor scores for the 2024 rebalancing on November month-end 2023.

4. Frequency of Data Collection

Data are sourced once a year from the October edition of the IMF WEO database. Data are used in the calculation of index weights that are rebalanced effective as of December 1 of each year.

B. Converting Economic and Governance Data into Factor Scores

Raw economic and governance data are converted into numerical factor scores that can then be used to adjust index weights. Countries exhibiting strength in a particular factor relative to other markets should receive higher scores on that factor and vice versa. By factor, the generalized scaling should be as follows:

- **Debt to GDP:** A country with a lower debt/GDP should receive a higher score than a country with a relatively higher debt/GDP.
- **Deficit to GDP:** A country with a lower deficit/GDP should receive a higher score than a country with a relatively higher deficit/GDP.
- **Currency Account Balance to GDP:** A country with a higher current account balance/GDP should receive a higher score than a country with a relatively lower current account balance/GDP.
- **Governance/Institutional Strength:** A country with a higher governance rating should receive a higher score than a country with relatively lower governance ratings.

In transforming raw economic and governance data into factor scores, we want to address three concerns:

- Extreme outliers should not receive an outsized benefit or penalty as when using a purely linear transformation function. For example, a country may exhibit a high debt level relative to other countries as a percentage of GDP, but this may also reflect market demand and capacity for that country's debt (internal and external).
- Factor scores should not be based only on relative rankings. If economic or governance variables become clustered, corresponding factor scores should become clustered too, reducing the discriminating power of the factor. For example, when applying a factor tilt to a set of developed markets, governance variables will likely all have similar values. In this case, the governance factor scores should have less importance in adjusting weights than when applied to a broader cross section of developed and emerging market issuers, some with strong and some with relatively weaker institutions.
- Factor scores should not depend on the set of issuers included in the index universe. For example, factor scores for euro area sovereigns should be the same for the Euro Treasury Index, as well as the broader Global Treasury Index[2].

These concerns are addressed by using a logistic function with appropriately chosen mean and dispersion parameters to transform macro variables into intuitive and usable factor scores that range from 0 to 10 for each fundamental. The function transforms the raw data using an s-shaped curve that controls the effect of extreme observations and ensures consistency across various country universes. See Appendix 2 for more details. Factor scores should not be seen as an opinion on the credit worthiness or rich/cheapness of a specific sovereign. They are simply a basis for comparing countries using well-known economic and governance fundamentals.

[2] In a relative ranking approach, factor scores would depend on the set of index eligible countries; hence, a country such as Germany would have different country scores for the euro treasury and the global treasury indices – which is not desirable.

C. Aggregating Individual Factor Scores into a Single Country Score

Individual factor scores are combined into composite country scores using a simple weighting methodology. As discussed earlier, the Fiscal Strength Weighted Index family includes a flagship index based on three economic variables, as well as an additional variant that incorporates governance indicators. We expect that the flagship index will generally tend to exhibit a more aggressive departure from market cap weights. Indeed, while many large developed market issuers do not score as well on economic variables, they benefit from relatively stronger governance indicators. Therefore, combining governance with economic variables tends to make country scores more similar across issuers.

We propose a simple and intuitive framework for aggregating factor scores into country scores.

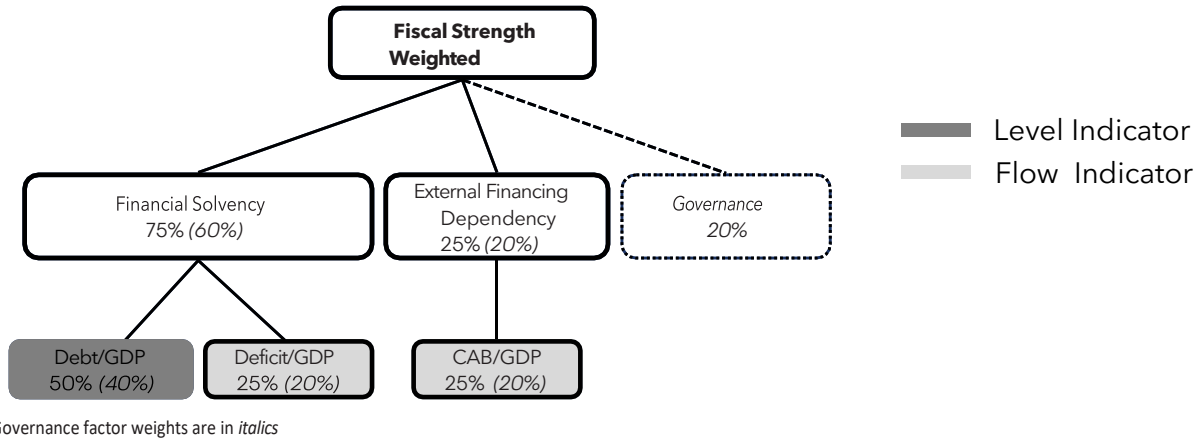
Fiscal Strength Index

For the flagship index, we incorporate two key relative weighting themes in our choice of weights.

- Financial solvency is a more important thematic category of fundamentals than dependence on external financing and should be given more weight. For that reason, we have chosen to apply a 75/25% tilt to financial solvency indicators (debt and deficit) versus dependence on external financing (current account balance).
- Equal weight is given to level (debt) and flow (deficit and current account balance) indicators. The idea here is to reward "improving fundamentals" as well as "good fundamentals."

The resulting index weights for each of the three factor scores is therefore:

- Debt as a % of GDP (50%) (financial solvency/level indicator)
- Deficit as a % of GDP (25%) (financial solvency/flow indicator)
- Current account balance as a % of GDP (25%) (external financing/flow indicator)



Fiscal Strength + Governance Weighted Index

This index variant assigns a 20% overall weight to the calculated governance score. With an 80% allocation to economic fundamentals, governance is effectively given a weighting equal to deficit and current account balance, which are all weighted less than debt as a % of GDP:

- Debt as a % of GDP (40%) (financial solvency/level Indicator)
- Deficit as a % of GDP (20%) (financial solvency/level Indicator)
- Current account balance as a % of GDP (20%) (external financing/flow indicator)
- Governance (20%)

Mechanics

Each of the previously calculated factor scores (integers from 0 to 10) are aggregated to a single country score using these assigned percentages. Country scores are not rounded to the nearest integer.

Fiscal Strength Weighted Country Score =

(50%* Debt/GDP score) + (25%* Deficit/GDP score) + (25%*Current Account Balance/GDP score)

Fiscal Strength + Governance Country Score =

(40%* Debt/GDP score) + (20%* Deficit/GDP score) + (20%* Current Account Balance/GDP score) + (20%*Gov score)

Figure 1

2024 Economic Raw Data and Factor Scores by Country

		Raw Fundamental Data			Individual Factor Scores				Weighted Country Scores	
Country Bloc	Country	Debt /GDP	Deficit /GDP	CAB /GDP	Debt /GDP Score	Deficit /GDP Score	CAB /GDP Score	Gov Score[3]	Fiscal Strength Score	Fiscal Strength +Gov Score
US	United States	126.9	-7.4	-2.8	2	0	3	7	1.75	2.8
Canada	Canada	103.3	-0.6	-1.0	3	4	4	8	3.5	4.4
LATAM EM	Brazil	90.3	-6.0	-1.8	4	1	4	4	3.25	3.4
	Chile	41.2	-1.3	-3.6	8	4	3	7	5.75	6
	Colombia	55.1	-2.4	-4.3	7	3	3	5	5	5
	Mexico	54.7	-5.4	-1.4	7	1	4	4	4.75	4.6
	Peru	34.0	-1.8	-2.1	8	3	4	4	5.75	5.4
Euro Area	Austria	74.0	-2.0	0.0	5	3	5	8	4.5	5.2
	Belgium	106.8	-4.8	-1.9	3	1	4	8	2.75	3.8
	Croatia	61.8	-1.7	-0.4	6	3	5	6	5	5.2
	Cyprus	70.9	1.7	-7.9	6	7	1	7	5	5.4
	Estonia	24.0	-3.2	2.6	9	2	7	8	6.75	7
	Finland	76.5	-2.5	-0.9	5	3	4	8	4.25	5
	France	110.5	-4.5	-1.3	3	1	4	7	2.75	3.6
	Germany	64.0	-1.7	6.6	6	3	8	8	5.75	6.2
	Ireland	39.0	1.8	7.2	8	7	9	8	8	8
	Italy	143.2	-4.0	0.9	1	2	6	6	2.5	3.2
	Luxembourg	29.3	-1.9	4.0	8	3	7	8	6.5	6.8
	Malta	55.2	-3.9	-2.9	7	2	3	7	4.75	5.2
	Netherlands	48.6	-1.9	7.6	7	3	9	8	6.5	6.8
	Portugal	104.0	-0.1	1.1	3	5	6	7	4.25	4.8
	Slovakia	56.5	-4.4	-4.0	7	1	3	6	4.5	4.8
	Slovenia	66.5	-2.7	3.8	6	3	7	7	5.5	5.8
	Spain	104.7	-3.0	2.0	3	2	6	7	3.5	4.2
	Greece	160.2	-0.8	-6.0	1	4	2	6	2	2.8
	Latvia	39.5	-1.8	-2.4	8	3	4	7	5.75	6
	Lithuania	34.4	-1.4	0.9	8	4	6	7	6.5	6.6
UK	United Kingdom	105.9	-3.9	-3.7	3	2	3	8	2.75	3.8
Other Europe	Denmark	29.0	0.9	9.9	8	6	9	8	7.75	7.8
	Norway	36.3	14.4	25.4	8	10	10	8	9	8.8
	Sweden	32.6	-0.6	5.4	8	4	8	8	7	7.2
	Switzerland	37.7	0.4	8.0	8	5	9	8	7.5	7.6
EMEA EM	Czech Rep	44.4	-2.3	1.7	8	3	6	7	6.25	6.4
	Egypt	88.1	-10.7	-2.4	4	0	4	3	3	3
	Hungary	65.7	-3.8	-1.6	6	2	4	6	4.5	4.8
	Israel	56.8	-2.1	4.0	7	3	7	6	6	6
	Poland	52.2	-4.7	0.3	7	1	5	6	5	5.2
	S.Africa	75.8	-6.5	-2.8	5	1	3	5	3.5	3.8
	Turkey	31.9	-3.7	-3.0	8	2	3	4	5.25	5
	Nigeria	41.3	-4.5	0.6	8	1	5	3	5.5	5
	Romania	52.7	-6.0	-7.1	7	1	1	6	4	4.4
Japan	Japan	251.9	-3.7	3.7	0	2	7	8	2.25	3.4
Australia/NZ	Australia	55.6	-2.2	-0.7	7	3	5	8	5.5	6
	New Zealand	49.9	-3.5	-6.5	7	2	2	8	4.5	5.2
Asia EM	China	87.4	-7.0	1.4	4	1	6	4	3.75	3.8
	Hong Kong	7.0	-1.0	6.3	9	4	8	7	7.5	7.4
	India	82.3	-8.5	-1.8	5	0	4	5	3.5	3.8
	Indonesia	38.6	-2.2	-0.6	8	3	5	5	6	5.8
	Malaysia	66.9	-4.4	2.8	6	1	7	6	5	5.2
	Philippines	57.7	-4.3	-2.6	7	2	3	4	4.75	4.6
	S.Korea	55.6	-0.9	1.7	7	4	6	7	6	6.2
	Singapore	168.3	2.8	15.2	1	8	10	8	5	5.6
	Taiwan	23.3	0.3	12.1	9	5	10	8	8.25	8.2
	Thailand	62.9	-2.7	1.9	6	3	6	5	5.25	5.2
Mean		69.1	-2.6	1.1					5.0	5.3
Std Dev		42.6	3.5	5.8					1.7	1.4
Min		7.0	-10.7	-7.9					1.8	2.8
Max		251.9	14.4	25.4					9.0	8.8

[3]For details on the raw governance data, please refer to Appendix 3

D. Applying Country Scores to Bloomberg Index Weights

Country scores (between 0 and 10) are used as a country-specific multiplier applied to the market value of each index-eligible country. These adjusted market values are then normalized to calculate new index weights[4].

- *Mechanics*

Every security in the traditional market value weighted index is included in the Fiscal Strength weighted version of the same index. Market weights are scaled using country scores and then normalized.

$$Fiscal\ Strength\ Weight_{Country} = \frac{Market\ Value\%_{Country} * Fiscal\ Strength\ Country\ Score}{\sum(Market\ Value\%_{Country} * Fiscal\ Strength\ Country\ Score)}$$

$$Fiscal\ Strength + Gov\ Weight_{Country} = \frac{Market\ Value\%_{Country} * Fiscal\ Strength + Gov\ Country\ Score}{\sum(Market\ Value\%_{Country} * Fiscal\ Strength + Gov\ Country\ Score)}$$

Within each country sub-index, individual bonds are weighted according to relative market capitalizations. Therefore, the returns and characteristics of individual country sub-indices are identical for Fiscal Strength weighted and market value weighted indices.

- *Timing and Frequency*

Country factor scores are determined annually using data from the October WEO database and become effective on December 1. These factors/multipliers are then held constant until the next year's calculation of country scores.

[4] This design allows index security and country weights to drift naturally with changes in index composition and the market value of existing index-eligible securities – a desirable characteristic for passive index investors.

Appendix 1: Accessing Fiscal Strength Weighted Indices

Index tickers that display the total return index levels are available on the Bloomberg Terminal. A list of total return tickers for major indices can be found in Figure 2.

Figure 2
Bloomberg Tickers for flagship Fiscal Strength Weighted Indices

Index	Ticker	Base Currency
Global Treasury Fiscal Strength Weighted	I27630US	USD Unhedged
Euro Treasury Fiscal Strength Weighted	I27462EU	EUR Unhedged
Global Treasury Universal Fiscal Strength Weighted	I27497US	USD Unhedged
Global Treasury Fiscal Strength+Gov	I27679US	USD Unhedged
Euro Treasury Fiscal Strength+Gov	I27479EU	EUR Unhedged
Global Treasury Universal Fiscal Strength+Gov	I27557US	USD Unhedged

Appendix 2: Calculating Factor Scores from Raw Data

Factor scores for individual fundamental indicators are obtained by applying a logistic transformation to the underlying fundamental indicator. The transformation maps the underlying macro-indicators of individual countries into scores ranging from 0 to 10. Transformation parameters are fixed to ensure that they effectively discriminate among values of the underlying indicator in a reasonable range. Figure 3 provides details on transformation parameters and effective ranges for each macro-indicator.

Figure 3
Transformation parameters for Macro Indicators

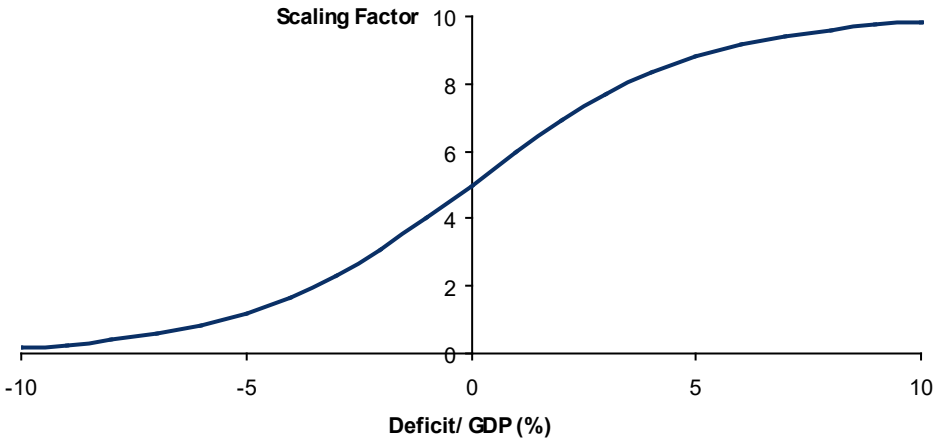
Macro Indicator	Min	Max	μ	s	σ	μ – 1.5σ	μ +1.5σ
Debt /GDP	0.6	139.3	80	30	54.4	-1.6	161.6
Deficit /GDP	-11.2	11.3	0	2.5	4.5	-6.8	6.8
CAB/ GDP	-9.2	18.4	0	4	7.3	-10.9	10.9
Corruption	-1.39	2.42	0	1	1.8	-2.7	2.7
Government Efficiency	-1.89	2.19	0	1	1.8	-2.7	2.7
Political Stability	-1.67	1.44	0	1	1.8	-2.7	2.7
Regulatory Quality	-2.39	1.84	0	1	1.8	-2.7	2.7
Rule of Law	-1.25	1.94	0	1	1.8	-2.7	2.7
Voice and Accountability	-2.24	1.57	0	1	1.8	-2.7	2.7

Extreme realizations of indicators that fall outside the effective range are capped at score limits (0 or 10). Therefore, their effect on index weights is limited. The functional form of the transformation is as follows:

$$Score(x) = Round\left(\frac{1}{\left(1+\exp\left[-\frac{x-\mu}{s}\right]\right)}, 1\right) * 10$$

where x is the macro-indicator, μ is the mean parameter that determines the location (center) of the effective range of the transformation, and s is the dispersion parameter determining the width of the effective range. Figure 4 shows an example of the (unrounded) transformation function for the deficit-to-GDP ratio.

Figure 4
Example Transformation Function for Deficit as % of GDP



Transformation parameters (mean and dispersion) are calibrated from the full list of index- eligible countries in our broadest government bond index (the Global Treasury Universal). In particular, the mean parameter is estimated as a long-term average of the indicator across all eligible countries, while the dispersion parameter is linked to the long-term average of cross-sectional standard deviations.

Transformation parameters are fixed and kept constant over time. As a result, if the values of a particular macro-indicator become similar (clustered) for many countries, factor scores will be similar as well. Factor scores that do not exhibit much cross-country variation do not contribute much to weight adjustments.

Appendix 3: 2024 Economic and Governance Raw Data and Factor Scores by Country

		Fundamental Data									Factor Scores				Weighted Country Scores	
					Governance											
Country Bloc	Country	Debt / GDP	Deficit / GDP	CAB / GDP	Corruption	Govt Effective	Political Stability	Regulatory Quality	Rule of Law	Voice & Accountability	Debt /GDP Score	Deficit /GDP Score	CAB /GDP Score	Gov Score	Fiscal Strength	Fiscal Strength +Gov
US	United States	126.9	-7.4	-2.8	1.10	1.26	-0.04	1.42	1.37	0.85	2	0	3	7	1.75	2.8
Canada	Canada	103.3	-0.6	-1.0	1.66	1.57	0.77	1.68	1.57	1.43	3	4	4	8	3.5	4.4
LATAM EM	Brazil	90.3	-6.0	-1.8	-0.57	-0.59	-0.33	-0.22	-0.26	0.21	4	1	4	4	3.25	3.4
	Chile	41.2	-1.3	-3.6	0.97	0.55	0.12	0.98	0.69	0.97	8	4	3	7	5.75	6
	Colombia	55.1	-2.4	-4.3	-0.36	0.01	-0.64	0.14	-0.43	0.17	7	3	3	5	5	5
	Mexico	54.7	-5.4	-1.4	-1.01	-0.28	-0.69	-0.15	-0.87	-0.12	7	1	4	4	4.75	4.6
	Peru	34.0	-1.8	-2.1	-0.81	-0.40	-0.45	0.21	-0.55	0.05	8	3	4	4	5.75	5.4
Euro Area	Austria	74.0	-2.0	0.0	1.26	1.47	0.64	1.28	1.71	1.41	5	3	5	8	4.5	5.2
	Belgium	106.8	-4.8	-1.9	1.50	1.23	0.58	1.25	1.35	1.29	3	1	4	8	2.75	3.8
	Croatia	61.8	-1.7	-0.4	0.15	0.58	0.61	0.50	0.37	0.61	6	3	5	6	5	5.2
	Cyprus	70.9	1.7	-7.9	0.42	0.73	0.42	0.77	0.57	0.85	6	7	1	7	5	5.4
	Estonia	24.0	-3.2	2.6	1.54	1.34	0.72	1.56	1.43	1.20	9	2	7	8	6.75	7
	Finland	76.5	-2.5	-0.9	2.25	1.76	0.89	1.78	1.96	1.60	5	3	4	8	4.25	5
	France	110.5	-4.5	-1.3	1.26	1.17	0.33	1.19	1.18	1.11	3	1	4	7	2.75	3.6
	Germany	64.0	-1.7	6.6	1.82	1.29	0.61	1.52	1.53	1.41	6	3	8	8	5.75	6.2
	Greece	160.2	-0.8	-6.0	0.04	0.45	0.06	0.46	0.33	0.95	1	4	2	6	2	2.8
	Ireland	39.0	1.8	7.2	1.67	1.55	0.88	1.64	1.53	1.45	8	7	9	8	8	8
	Italy	143.2	-4.0	0.9	0.53	0.45	0.41	0.51	0.30	1.07	1	2	6	6	2.5	3.2
	Latvia	39.5	-1.8	-2.4	0.69	0.69	0.48	1.17	0.92	0.93	8	3	4	7	5.75	6
	Lithuania	34.4	-1.4	0.9	0.75	0.99	0.65	1.30	1.06	1.06	8	4	6	7	6.5	6.6
	Luxembourg	29.3	-1.9	4.0	1.88	1.77	1.06	1.83	1.77	1.54	8	3	7	8	6.5	6.8
	Malta	55.2	-3.9	-2.9	0.24	0.80	0.91	0.67	0.79	1.08	7	2	3	7	4.75	5.2
	Netherlands	48.6	-1.9	7.6	1.92	1.58	0.72	1.71	1.66	1.54	7	3	9	8	6.5	6.8
	Portugal	104.0	-0.1	1.1	0.73	1.00	0.86	0.76	1.11	1.25	3	5	6	7	4.25	4.8
	Slovakia	56.5	-4.4	-4.0	0.21	0.38	0.44	0.85	0.62	0.89	7	1	3	6	4.5	4.8
	Slovenia	66.5	-2.7	3.8	0.77	1.07	0.71	0.69	0.97	0.97	6	3	7	7	5.5	5.8
	Spain	104.7	-3.0	2.0	0.69	0.92	0.27	0.80	0.80	1.01	3	2	6	7	3.5	4.2
UK	United Kingdom	105.9	-3.9	-3.7	1.62	1.24	0.50	1.57	1.42	1.23	3	2	3	8	2.75	3.8
Other Europe	Denmark	29.0	0.9	9.9	2.40	1.99	0.87	1.84	1.90	1.59	8	6	9	8	7.75	7.8
	Norway	36.3	14.4	25.4	2.07	1.94	0.86	1.52	1.76	1.77	8	10	10	8	9	8.8
	Sweden	32.6	-0.6	5.4	2.06	1.57	0.90	1.68	1.69	1.52	8	4	8	8	7	7.2
	Switzerland	37.7	0.4	8.0	2.01	2.05	1.16	1.62	1.75	1.62	8	5	9	8	7.5	7.6
EMEA EM	Czech Rep	44.4	-2.3	1.7	0.66	1.09	0.82	1.39	1.10	1.04	8	3	6	7	6.25	6.4
	Egypt	88.1	-10.7	-2.4	-0.68	-0.45	-1.03	-0.71	-0.26	-1.45	4	0	4	3	3	3
	Hungary	65.7	-3.8	-1.6	-0.10	0.53	0.64	0.41	0.42	0.42	6	2	4	6	4.5	4.8
	Israel	56.8	-2.1	4.0	0.78	1.24	-1.29	1.21	0.95	0.67	7	3	7	6	6	6
	Poland	52.2	-4.7	0.3	0.51	0.26	0.50	0.72	0.43	0.60	7	1	5	6	5	5.2
	S.Africa	75.8	-6.5	-2.8	-0.32	-0.13	-0.72	-0.19	0.02	0.71	5	1	3	5	3.5	3.8
	Turkey	31.9	-3.7	-3.0	-0.47	-0.20	-1.04	-0.24	-0.46	-0.93	8	2	3	4	5.25	5
	Nigeria	41.3	-4.5	0.6	-1.10	-1.04	-1.80	-1.16	-0.91	-0.60	8	1	5	3	5.5	5
	Romania	52.7	-6.0	-7.1	0.02	0.00	0.49	0.36	0.40	0.56	7	1	1	6	4	4.4
Japan	Japan	251.9	-3.7	3.7	1.54	1.62	1.07	1.44	1.56	1.02	0	2	7	8	2.25	3.4
Australia/NZ	Australia	55.6	-2.2	-0.7	1.76	1.53	0.93	1.89	1.51	1.32	7	3	5	8	5.5	6
	New Zealand	49.9	-3.5	-6.5	2.16	1.34	1.31	1.87	1.73	1.64	7	2	2	8	4.5	5.2
Asia EM	China	87.4	-7.0	1.4	0.02	0.50	-0.44	-0.42	-0.04	-1.61	4	1	6	4	3.75	3.8
	Hong Kong	7.0	-1.0	6.3	1.61	1.59	0.61	1.59	1.28	-0.41	9	4	8	7	7.5	7.4
	India	82.3	-8.5	-1.8	-0.32	0.37	-0.57	-0.05	0.11	0.05	5	0	4	5	3.5	3.8
	Indonesia	38.6	-2.2	-0.6	-0.43	0.44	-0.44	0.21	-0.19	0.14	8	3	5	5	6	5.8
	Malaysia	66.9	-4.4	2.8	0.25	0.99	0.14	0.64	0.56	0.00	6	1	7	6	5	5.2
	Philippines	57.7	-4.3	-2.6	-0.54	0.06	-0.71	0.06	-0.52	-0.06	7	2	3	4	4.75	4.6
	S.Korea	55.6	-0.9	1.7	0.75	1.35	0.56	1.15	1.16	0.87	7	4	6	7	6	6.2
	Singapore	168.3	2.8	15.2	2.09	2.14	1.46	2.21	1.78	-0.05	1	8	10	8	5	5.6
	Taiwan	23.3	0.3	12.1	1.15	1.40	0.75	1.41	1.26	1.08	9	5	10	8	8.25	8.2
	Thailand	62.9	-2.7	1.9	-0.45	0.13	-0.38	0.17	0.07	-0.62	6	3	6	5	5.25	5.2
Mean											5.9	2.9	5.3	6.5	5.0	5.3
Std Dev											2.3	2.0	2.3	1.5	1.7	1.4
Min											0	0	1	3	1.75	2.8
Max											9	10	10	8	9	8.8

Source: IMF, World Bank, Bloomberg

Appendix 4: Backtest Assumptions and Limitations

Backtest Assumptions

The rules outlined above are applied historically, however the following assumptions have been made:

Unless otherwise specified, the calendars and pricing used at the time of calculating the backtest are assumed to reflect those available at the time.

Limitations of the Index

Though the Index is designed to be representative of the markets it measures or otherwise aligns with its stated objective, it may not be representative in every case or achieve its stated objective in all instances. It is designed and calculated strictly to follow the rules of this Methodology, and any Index level or other output is limited in its usefulness to such design and calculation.

Markets can be volatile, including those market interests that the Index measures or upon which the Index is dependent to achieve its stated objective. For example, illiquidity can have an impact on the quality or amount of data available to the administrator for calculation and may cause the Index to produce unpredictable or unanticipated results.

Appendix 5: Benchmark Oversight and Governance

Benchmark Governance, Audit, and Review Structure

Please refer to the BISL Benchmark Procedures Handbook available here.

Index and Methodology Changes

Please refer to the BISL Benchmark Procedures Handbook available here.

Expert Judgement and Discretion

Please refer to the BISL Benchmark Procedures Handbook available here.

Conflicts of Interest

Please refer to the BISL Benchmark Procedures Handbook available here.

Restatement Policy

Please refer to the BISL Benchmark Procedures Handbook available here.

Cessation Policy

Please refer to the BISL Benchmark Procedures Handbook available here.

Appendix 6: Environmental, Social and Governance (ESG) Disclosure

EXPLANATION OF HOW ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG) FACTORS ARE REFLECTED IN THE KEY ELEMENTS OF THE BENCHMARK METHODOLOGY			
1. Name of the benchmark administrator.	Bloomberg Index Services Limited ("BISL")		
2. Type of benchmark	Sovereign		
3. Name of the benchmark or family benchmarks.	Bloomberg Fiscal Strength + Governance Weighted Index		
4. Does the benchmark methodology for the benchmark or family of benchmarks take into account ESG factors?	Yes		
5. Where the response to Item 4 is positive, please list below, for each family of benchmarks, those ESG factors that are taken into account in the benchmark methodology, taking into account the ESG factors listed in Annex II to Delegated Regulation (EU) 2020/1816. Please explain how those ESG factors are used for the selection, weighting or exclusion of underlying assets. The ESG factors shall be disclosed at an aggregated weighted average value at the level of the family of benchmarks.			
a) List of environmental factors considered:	This index does not take into account this ESG factor.		
b) List of social factors considered:	This index does not take into account this ESG factor.		
c) List of governance factors considered:	Rule of law	Weighting	Rule of law captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. Please see methodology here for additional details. The benchmark incorporates this ESG factor on an equally weighted basis with the other ESG factors to calculate the Governance Score. The Governance is then assigned a 20% weight in the calculation of the country score which is used to tilt the baseline country market value weights. Please see the Overview and Design section of this methodology for further details.
	Control of corruption	Weighting	Control of corruption captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. Please see methodology here for additional details. The benchmark incorporates this ESG factor on an equally weighted basis with the other ESG factors to calculate the Governance Score. The Governance is then assigned a 20% weight in the calculation of the country score which is used to tilt the baseline country market value weights. Please see the Overview and Design section of this methodology

			for further details.
	Regulatory quality	Weighting	Regulatory quality captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. Please see methodology here for additional details. The benchmark incorporates this ESG factor on an equally weighted basis with the other ESG factors to calculate the Governance Score. The Governance is then assigned a 20% weight in the calculation of the country score which is used to tilt the baseline country market value weights. Please see the Overview and Design section of this methodology for further details.
	Political stability and absence of violence	Weighting	Political Stability and Absence of Violence/Terrorism measures perceptions of the likelihood of political instability and/or politically motivated violence, including terrorism Please see methodology here for additional details. The benchmark incorporates this ESG factor on an equally weighted basis with the other ESG factors to calculate the Governance Score. The Governance is then assigned a 20% weight in the calculation of the country score which is used to tilt the baseline country market value weights. Please see the Overview and Design section of this methodology for further details.

	Government effectiveness	Weighting	Government effectiveness captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. Please see methodology here for additional details. The benchmark incorporates this ESG factor on an equally weighted basis with the other ESG factors to calculate the Governance Score. The Governance is then assigned a 20% weight in the calculation of the country score which is used to tilt the baseline country market value weights. Please see the Overview and Design section of this methodology for further details.
	Voice and accountability	Weighting	Voice and accountability captures perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media. Please see methodology here for additional details. The benchmark incorporates this ESG factor on an equally weighted basis with the other ESG factors to calculate the Governance Score. The Governance is then assigned a 20% weight in the calculation of the country score which is used to tilt the baseline country market value weights. Please see the Overview and Design section of this methodology for further details.

C6. Where the response to Item 4 is positive, please list below, for each benchmark, those ESG factors that are taken into account in the benchmark methodology, taking into account the ESG factors listed in Annex II to Delegated Regulation (EU) 2020/1816, depending on the relevant underlying asset concerned. Please explain how those ESG factors are used for the selection, weighting or exclusion of underlying assets. The ESG factors shall not be disclosed for each constituent of the benchmark, but shall be disclosed at an aggregated weighted average value of the benchmark. Alternatively, all of this information may be provided in the form of a hyperlink to a website of the benchmark administrator included in this explanation. The information on the website shall be easily available and accessible. Benchmark administrators shall ensure that information published on their website remains available for five years	
a) List of environmental factors considered:	As above
b) List of social factors considered:	As above
c) List of governance factors considered:	As above
7. Data and standards used.	
a) Data input. *(i) Describe whether the data are reported, modelled or, sourced internally or externally.* *(ii) Where the data are reported, modelled or sourced externally, please name the third party data provider.*	ESG data is sourced externally from the World Bank. For further information please see their website here.

b) Verification of data and guaranteeing the quality of those data. *Describe how data are verified and how the quality of those data is ensured.*	The World Governance Indicators ("WGI") compile and summarize information from over 30 existing data sources that report the views and experiences of citizens, entrepreneurs, and experts in the public, private and NGO sectors from around the world, on the quality of various aspects of governance. The WGI draw on four different types of source data: • **Surveys of households and firms,** including the Afrobarometer surveys, Gallup World Poll, and Global Competitiveness Report survey, • **Commercial business information providers,** including the Economist Intelligence Unit, IHS Markit, Political Risk Services, • **Non-governmental organizations,** including Global Integrity, Freedom House, Reporters Without Borders, and • **Public sector organizations,** including the CPIA assessments of World Bank and regional development banks. The full list of WGI data sources is available here. The full methodology paper can be accessed here.
c) Reference standards *Describe the international standards used in the benchmark methodology.*	Please refer to the underlying data sources mentioned above for any international standards used in their compilation.
Date on which information has been last updated and reason for the update:	May 2024 – Publication of Methodology

Publication Currency

Bloomberg may offer this index in additional currencies for both unhedged and hedged indices.

- See Appendix 2 of the Bloomberg Fixed Income Index Methodology for Currency Hedging and Currency Returns.
- See Appendix 12 of the Bloomberg Fixed Income Index Methodology for Index Identification and Publication Currency.

Version History

Date	Update
May 2024	Publication

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