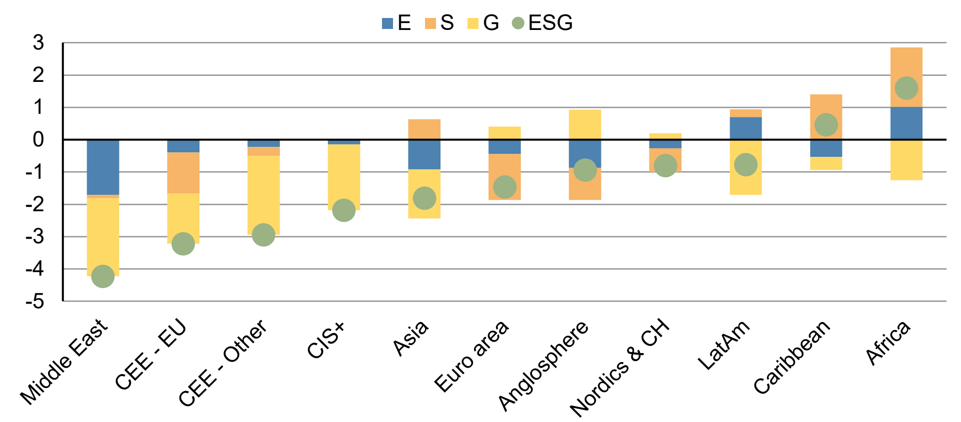
Sovereign ratings vs ESG drivers: long-term rating implications?

Environmental, social and governance (ESG) factors are a growing area of concern and increasingly relevant for sovereign ratings, accentuated further by the pandemic crisis. They relate mostly to structural, long-term drivers that can have an impact on a sovereign's economic growth and the sustainability of public finances. We identify significant, multi-notch regional differences when comparing our quantitatively implied sovereign ratings with an assessment based only on ESG factors. This points to divergent, potential rating-relevant challenges and opportunities.

In this research, we analyse the relationship between the indicative sovereign ratings determined by the quantitative model of our sovereign methodology and observational scores based on the methodology's stand-alone ESG pillar. We currently give a 20% weighting to the ESG pillar in our sovereign methodology, providing a transparent and forward-looking assessment of ESG factors for our current ratings. In comparing the indicative sovereign ratings with the ESG-specific indicative scores for 11 regions or country groups as shown on **Figure 1**, we can identify some of the potential ESG factors that may become relevant for the ratings outlook over the long-term.

Figure 1: Potential challenges and opportunities from ESG trends
Notches



Source: Scope Ratings GmbH. Annex I shows the country list. Scores are based on Scope's core variable scorecard, which is the first step for determining an indicative sovereign rating. For more details, please visit www.scoperatings.com

We draw the following conclusions from this analysis:

- **Implied ratings:** African sovereigns could benefit from a meaningful *potential* uplift compared with current indicative assessments based on the demographic and environmental opportunities they have, while the Middle East and Central and Eastern Europe (CEE) are most exposed to ESG-risks.
- **Environment:** Transition risks represent a big challenge for the Middle East while in Africa and Latin America, resource opportunities, if wisely used, may partly offset physical and transitions risks. Asian and Anglosphere countries (Australia, Canada, New Zealand, UK, US) face greater environmental challenges than the euro area.
- **Social:** Increased government spending and sluggish growth related to demographics - ageing populations - could be a drag on the long-term credit outlooks of the euro area, the Anglosphere and CEE. Conversely, African and Caribbean countries with high proportions of young workers could convert this demographic opportunity into a rating dividend.
- **Governance:** Governance scores are below current indicative ratings for all regions except for the advanced economies, underscoring the need to strengthen institutions, improve the ease of doing business and entrenching the rule of law to attract investment to enabling sustainable economic growth.

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Incorporating ESG risks into sovereign ratings

Explicit inclusion of ESG risks in Scope's sovereign ratings

Since October 2020, our sovereign ratings include a quantitative and qualitative assessment of the ESG risks that affect the credit profiles of sovereigns. While we currently rate 36 sovereigns publicly, our model includes 132 countries, enabling us to draw a few stylised conclusions for our ESG risk factors across and within regions.

Environmental risks are likely to have long-term demand- and supply-side implications and could even disrupt economic and financial systems. Examples include the rise in costs from an increased incidence and severity of extreme weather conditions and the structural change economies must undergo as policymakers and regulators adopt and expand carbon-pricing mechanisms. Social risks arising from labour-market developments and aging populations have a fundamental impact on growth trends and the outlook for public finances. Lastly, the strength, soundness and stability of a country's political institutions inform the sovereign's ability to implement structural reforms, including those to address environmental and social challenges.

ESG informs on fundamental aspects of the economy and society

We use the following quantitative variables to capture ESG risks in our sovereign ratings (**Figure 2**). Details of this framework and the rationale for individual variables can be found in our Sovereign Ratings methodology. While some of these variables explicitly incorporate long-term forecasts, such as in the case of 'the old-age dependency ratio' (up to 2035), others reflect the most-recently available data, including 'CO_2 emissions', 'natural disaster risks' or 'governance indicators.' As such, these variables capture the underlying structural and societal features of an economy, informing on factors that may drive long-term economic growth and the sustainability of public finances. ESG factors thus have both a potential medium- and long-run impact on credit rating outlooks. We note that the ESG indicative scores used in this research are for observational purposes.

Figure 2: Quantitative ESG variables used in sovereign ratings

Risk category	Indicator
Environment	CO_2 emissions per USD 1,000 of GDP
	World Risk Index which measures the risk of disaster in consequence of extreme natural events
	Resource risks: a country's ecological footprint of consumption relative to its biocapacity
Social	Old-age-dependency ratio: ratio of population aged 65+ per 100 population 15-64
	Income inequality: income share held by highest 20% / income share held by lowest 20%
	Labour force participation rate, ages 15-64
Governance	Worldwide Governance Indicators

Source: Scope Ratings GmbH

Regional results

Varying implications of ESG considerations on long-term credit outlooks

Here, we provide a summary of the results for each geographic region or country group, sorted by the potential impact of ESG considerations on credit outlooks over the long-term, as highlighted in **Figure 1**:

- **Middle East (~ -4 notches):** The region faces the highest potential negative implications of ESG risks to credit quality over the long-term, driven primarily by environmental and governance-related factors. Specifically, the long-term challenge the region faces relates to very high CO_2 emissions relative to GDP as well as a low biocapacity compared with the ecological footprint of the region[1]. In addition, weak governance scores, further exacerbated by elevated geopolitical risks, also present challenges to the region's long-term sustainable growth outlook. Conversely, social factors, in particular demographic developments in addition to income inequality and labour issues are in line with current quantitatively derived indicative ratings. This does not imply, however, that these factors could not drive rating actions in one direction or the other in the future.

- **CEE-EU (~ -3 notches)**: The region faces particularly social and governance related challenges, but also important environmental risks that represent challenges to the sovereign rating outlooks over the long term. Critically, improvements in social cohesion and productivity are necessary to improve macroeconomic stability and sustainability and to support sustained income convergence of EU CEE sovereigns with western European standards given rising skill shortages which adverse demographic trends could make worse. Further improving physical and social infrastructure, education and health-care systems are important for raising the attractiveness of the labour markets. Longer-term transition away from carbon-intensive economic activities is important, given the prevailing economic importance of coal-based power generation.

Governance and social risks key for credit outlooks of developing Europe

- **CEE - Other & CIS+ (~ -2-3 notches):** The biggest potential challenge for the credit outlooks over the long-term compared to current indicative ratings relates to governance issues. We note the need for considerable structural reform to address the government's dominant role in the economy in many cases as well as low levels of savings resulting in underinvestment, affecting the region's living standards. Environmental and social risks are in line or moderately worse than the indicative ratings, reflecting i) the lower ecological deficits of regional sovereigns – or a surplus in case of Russia, ii) ageing, though relatively young populations with lower labour force participation, and iii) high CO_2 emissions relative to GDP.

- **Asia (~ -2 notches):** Long-term challenges could emerge from environmental and governance considerations compared to current indicative ratings, while social factors, such as lower old-age dependency ratios, are supportive credit factors in some countries. Environmental risks represent a potential challenge for the credit outlooks of Asian sovereigns given elevated CO_2 emissions relative to GDP and natural disaster risks in several countries. Governance constraints relate primarily to low scores on control of corruption and political stability in several cases.

Demographics key rating challenge for developed countries over the long-term

- **Euro area (~ -1.5 notches):** Environmental and governance scores are broadly in line with indicative ratings, while social factors, in particular demographic developments, point to a significant long-term potential credit challenge. We note that environment-related trends and policy measures could potentially have a less severe impact on ratings of euro area economies in a global context given the reductions in CO_2 emissions over the last decades, which, more recently, are further supported by policy measures at the EU level. However, ageing populations and the subsequent decline in the labour supply despite increases in participation rates[2], will have negative implications on growth trends and public finances long term.

[1] **Biocapacity** is the ecosystems' capacity to produce biological materials used by people and to absorb waste material generated by humans, under current management schemes and extraction technologies. **Ecological footprint** is a measure of how much area of biologically productive land and water an individual, population, or activity requires to produce all the resources it consumes and to absorb the waste it generates, using prevailing technology and resource management practices. **An ecological deficit** occurs when the ecological footprint of a population exceeds the biocapacity of the area available to that population. For more detail, please visit https://www.footprintnetwork.org/

[2] European Commission, 'The 2021 Ageing Report'

- **Anglosphere (~ -1 notch):** Still high CO2 emissions relative to GDP and ageing populations – even though the trend is less adverse compared with euro area sovereigns – represent a potential challenge for the rating outlooks over the long-term. This could be to a degree offset by the countries' strong institutional frameworks, which could enhance the efforts to address these challenges. Here, we note the ambitious climate agenda of the Biden administration as well as comparatively open and well-regulated migration policies, particularly in Canada.
- **Nordics & CH (~ -1 notch):** On balance, these highly rated sovereigns appear to be among the least-challenged advanced economies from long-term ESG trends. We note that current transition risks are counterbalanced by increasing production of energy from renewables as a result of targeted environmental initiatives. For example, Norway has close to 100% renewable electricity production because of hydropower. In addition, demographic challenges are mitigated by very high labour participation rates.
- **LatAm & Caribbean (~ +/- 0 notch):** Governance risks present potentially the biggest challenge for the long-term credit outlooks of Latin American and Caribbean sovereigns while the demographic developments, if managed well in view of a weak social infrastructure, may encourage sustainable growth. Several countries display elevated natural disaster risks, which could potentially burden long-term public finance outlooks, while others still have high biocapacity reserves.

Social and environmental factors represent an opportunity for Africa, if managed adequately

- **Africa (~ +2 notches):** African sovereigns could benefit from social and environmental factors, provided governance frameworks and policies adequately exploit these opportunities. Specifically, the countries' credit outlooks could benefit from favourable demographics, if governments address unemployment and social inequalities. Securing the demographic dividend requires supportive policies, both on the labour demand side (job creation, reducing barriers to entrepreneurship) and on the labour supply end (investment in health, education, training). Similarly, abundant rain forest in parts of Africa, which sequesters carbon, could provide a meaningful opportunity to improve the fiscal position of some African sovereigns, for example, via initiatives to sell carbon offsets. This, however, requires a significant governance and reform effort. Other sovereigns in the region, however, are likely to face persistent risks of natural disasters, adversely impacting agricultural activities and risking the damage of critical infrastructure, curbing the long-term rating potential.

Limitations

ESG variables may inform on long-term challenges/ opportunities but no rating causality

Comparability & interpretation: The interpretation of our results requires maximum caution: a lower (higher) score in one of the E, S or G categories in **Figure 1** points to risks (opportunities) that *may* put downward (upward) pressure on the ratings over the long-term other things equal. It does not imply however, that it will necessarily lead to lower (higher) ratings as the causality is possible, but not assured.

Relative performance critical for credit ratings

We also note that our results are less dramatic compared with those identified by other studies[3] assessing the impact of climate change on sovereign ratings. One of the reasons is that our methodological approach for determining indicative ratings is *relative*, not *absolute*. This is critical for our final ratings, as under our relative approach, the same level of deterioration in one variable across all sovereigns will not necessarily result in across-the-board downgrades. Another reason is that we calculate simple averages for each region based on the results of regional sovereigns, while the number of sovereigns in each

[3] See for example Bennet Institute 2021. 'Rising Temperatures, Falling Ratings: The Effect of Climate Change on Sovereign Creditworthiness'

region varies considerably. The use of medians, however, produces similar outcomes. For the distribution per region, please see Annex II.

Quantitative factors to be complemented by qualitative analysis

Qualitative factors: The quantitative variables are not exhaustive and provide only a first indicative assessment of a sovereign's exposure to ESG risks. The impact on ratings therefore depends critically on a qualitative assessment to complement the quantitative variables for analytical elements not captured. Examples include the assessment of a sovereign's environmental taxation level and expenditure, its current and expected share of renewable energy of its total energy consumption, migration policies, the effectiveness of the education and health systems, as well as an assessment of a governments' willingness and ability to implement policies that mitigate ESG risks in a sustained way. This is not captured in this analysis as it relies on quantitative factors only.

Difficulty to assess the exact magnitude and timing of materialising of ESG risks

Uncertainty & timing: While economic, fiscal and financial stability costs are already rising from growing environmental and climate risks, it is difficult to ascertain the precise impact of these risks on sovereign creditworthiness over a given time horizon. This is because the tail-risk nature of environmental risks, which are characterized by deep uncertainty and non-linearity, is such that the chance of them materialising is not reflected in historic data and the possibility of extreme values cannot be ruled out. We also note, in line with ECB research, that transition and physical risks are ultimately intertwined (in some cases also social and environmental risks). In the absence of climate policies, economies may face higher costs from increasing physical risks while the policies to limit carbon emissions, such as a carbon tax, may increase transition costs, particularly if introduced abruptly. The impact of these risks, however, is likely to vary across regions.

Furthermore, this risk is subject to the structure of the potential carbon tax, and how the receipts will be distributed. As a growing body of literature confirms[4], we believe there is a high degree of certainty that some combination of physical and transition as well as resource risks will ultimately materialise in the future, informing our decision to incorporate these risks into our methodological update last year.

Similarly, while social risks and demographic trends have a fundamental impact on the long-term sustainability of public finances, the labour market and potential economic growth, the projections are sensitive to migration flows, changes in fertility rates and life expectancy. Lastly, the degree to which these risks could materialise depends on the current, but also future policy response. As it is, our model is not a predictive model for the timing and magnitude of occurrence of ESG risks, but assesses a sovereign's relative credit strengths and weaknesses, allowing for a comprehensive peer group analysis.

Evolving analysis to confirm the selection of ESG variables

Impact on ratings: By incorporating ESG risks explicitly into our model, we determine de facto exogenously the extent of the impact these variables can have on our sovereign ratings. However, this does not mean that ESG risks could not have an additional impact on sovereign ratings[5]. This is because ESG risks could affect the economy and the financial system through channels that are already captured and reflected via the traditional macro-economic and fiscal variables in our model.

Over time, this relationship could change, and potentially even give rise to multi-collinearity concerns, amplifying, erroneously, the actual impact on ratings. For these reasons, we will monitor the quantitative relationship between these variables with each methodological update to continue to inform our choice of variables and the weight we attribute them in our scorecards.

[4] See for example, IMF Climate Change Portal
[5] See for example Bennet Institute 2021. 'Rising Temperatures, Falling Ratings: The Effect of Climate Change on Sovereign Creditworthiness'.

Annex I: Sovereign list per region

Sovereigns per region										
Middle East	**CEE – EU**	**CEE - Other**	**CIS+**	**Asia**	**Euro area**	**Anglosphere**	**Nordics & CH**	**LatAm**	**Caribbean**	**Africa**
Israel	Bulgaria	Albania	Armenia	Bangladesh	Austria	Australia	Denmark	Argentina	Barbados	Algeria
Jordan	Croatia	Belarus	Azerbaijan	Burma (Myanmar)	Belgium	Canada	Iceland	Bolivia	Belize	Angola
Kuwait	Czech Republic	Bosnia & Herzegovina	Georgia	Cambodia	Cyprus	New Zealand	Norway	Brazil	Dominican Republic	Benin
Lebanon	Hungary	North Macedonia	Kazakhstan	China	Estonia	UK	Sweden	Chile	Jamaica	Botswana
Oman	Poland	Serbia	Kyrgyzstan	Hong Kong	Finland	USA	Switzerland	Colombia	Trinidad & Tobago	Burkina Faso
Qatar	Romania	Ukraine	Moldova	India	France			Costa Rica		Cameroon
Saudi Arabia			Montenegro	Indonesia	Germany			Ecuador		Congo (DRC)
Turkey			Russia	Japan	Greece			El Salvador		Djibouti
U.A.E.			Uzbekistan	Laos	Ireland			Guatemala		Egypt
				Malaysia	Italy			Guyana		Ethiopia
				Nepal	Latvia			Honduras		Gabon
				Pakistan	Lithuania			Mexico		Gambia
				Papua New Guinea	Luxembourg			Nicaragua		Ghana
				Philippines	Malta			Panama		Guinea
				Singapore	Netherlands			Paraguay		Ivory Coast
				South Korea	Portugal			Peru		Kenya
				Sri Lanka	Slovakia			Uruguay		Madagascar
				Thailand	Slovenia					Malawi
				Vietnam	Spain					Mali
										Mauritius
										Morocco
										Mozambique
										Namibia
										Niger
										Nigeria
										Rwanda
										Senegal
										South Africa
										Tanzania
										Tunisia
										Uganda
										Zambia

Annex II: Potential challenges and opportunities from ESG trends

Notches

		Middle East	CEE – EU	CEE - Other	CIS+	Asia	Euro area	Anglosphere	Nordics & CH	LatAm	Caribbean	Africa
E	Min	-3.7	-2.0	-1.0	-1.3	-4.0	-4.7	-1.7	-1.0	-3.3	-2.3	-2.0
	25th	-3.0	-1.8	-0.7	-1.3	-2.8	-0.7	-1.3	-0.3	-0.3	-1.7	0.3
	Median	-1.7	-0.3	-0.5	0.0	-1.3	-0.3	-0.7	0.0	0.3	-1.0	1.0
	75th	0.0	0.8	0.2	0.3	0.8	0.3	-0.3	0.0	2.3	0.0	1.8
	Max	0.7	1.3	1.0	2.3	4.0	1.3	-0.3	0.0	3.3	2.3	4.0
S	Min	-2.7	-2.0	-2.0	-1.3	-3.7	-3.0	-1.7	-1.7	-1.7	0.0	-1.0
	25th	-2.0	-1.6	-1.6	-0.3	-0.7	-2.0	-1.0	-1.0	-0.3	1.3	0.3
	Median	0.7	-1.2	-0.2	0.3	0.7	-1.7	-1.0	-1.0	0.3	1.3	1.7
	75th	1.0	-1.0	0.5	0.7	2.0	-1.0	-0.7	-1.0	1.0	2.0	3.7
	Max	1.7	-0.7	2.0	0.7	4.7	1.3	-0.7	1.0	2.0	2.3	4.7
G	Min	-4.3	-3.0	-3.0	-4.7	-3.7	-0.7	0.3	0.0	-3.7	-2.0	-2.7
	25th	-3.7	-2.1	-2.7	-3.0	-2.3	-0.2	0.3	0.0	-2.7	-1.7	-1.7
	Median	-2.3	-1.3	-2.7	-2.0	-1.7	0.3	1.0	0.0	-2.0	-0.7	-1.3
	75th	-1.3	-1.1	-2.2	-1.0	-0.8	0.8	1.3	0.0	-1.3	0.3	-0.7
	Max	-0.3	-0.3	-1.7	0.3	1.7	1.7	1.7	1.0	1.0	2.0	2.0

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