RESEARCH PUBLICATION

MOODY'S INVESTORS SERVICE

Emerging Markets – Global

New financing initiatives to mobilise and scale up private investment into sustainable infrastructure

SECTOR IN-DEPTH

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Send Your Feedback

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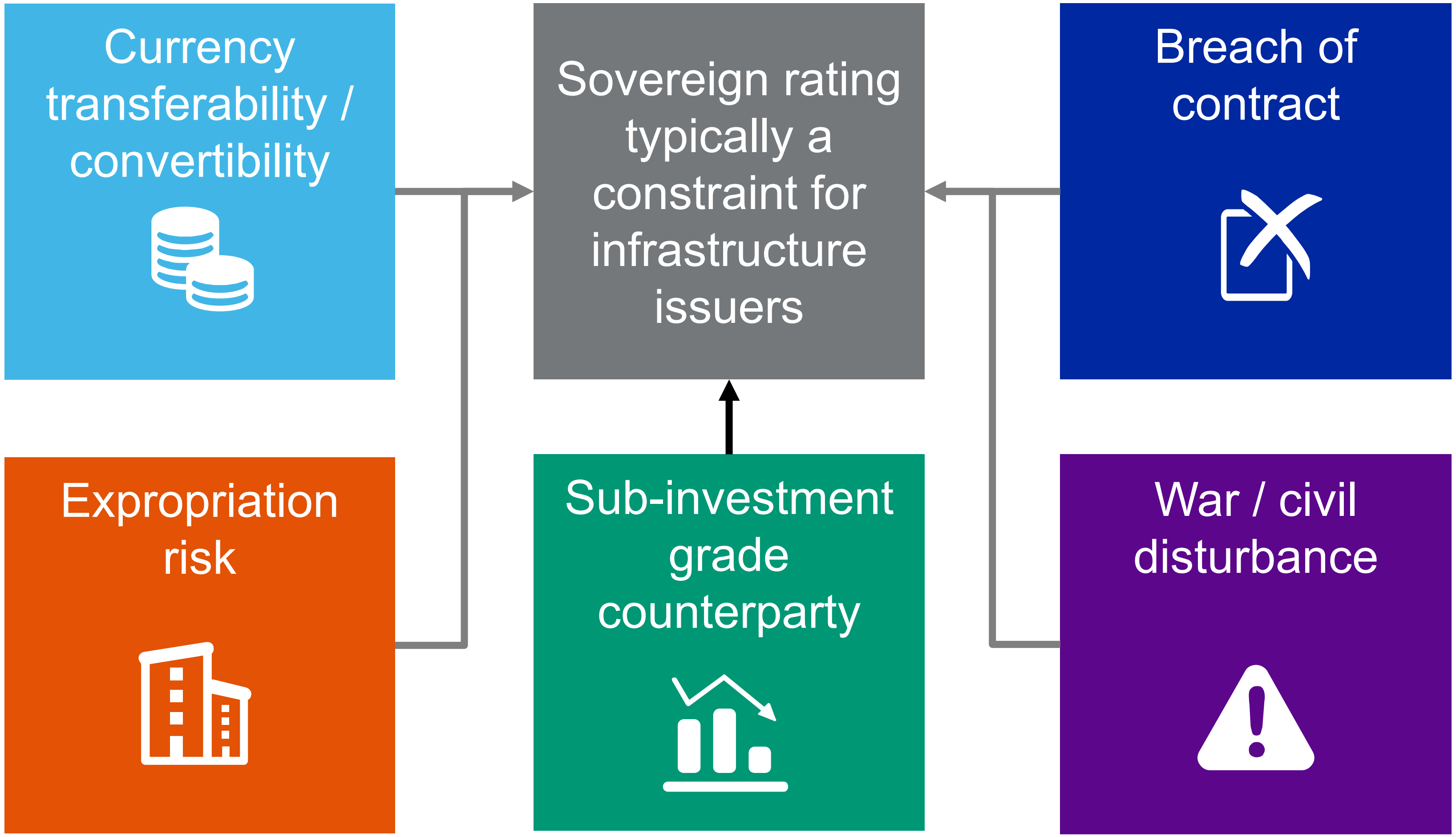
Country risk considerations impact on infrastructure issuers

Emerging markets present a number of challenges for infrastructure investors



Sovereign crises spill over to corporate, financial, infrastructure and local government sectors through multiple channels

ECONOMIC ENVIRONMENT

- » Economic recession
- » Falling corporate and tax revenues
- » Rising unemployment
- » Civil unrest, labor strikes
- » Inflation
- » Regional contagion reducing export demand

FINANCIAL CONDITIONS

- » Currency devaluation
- » Limited external market access
- » Higher domestic interest rates
- » Domestic credit crunch
- » Bank runs

GOVERNMENT POLICY

- » Political uncertainty and instability
- » Deposit freezes, foreign exchange controls and payment moratoriums
- » Changes in regulations, taxes, tariffs, government support
- » Write-downs in holdings of government bonds

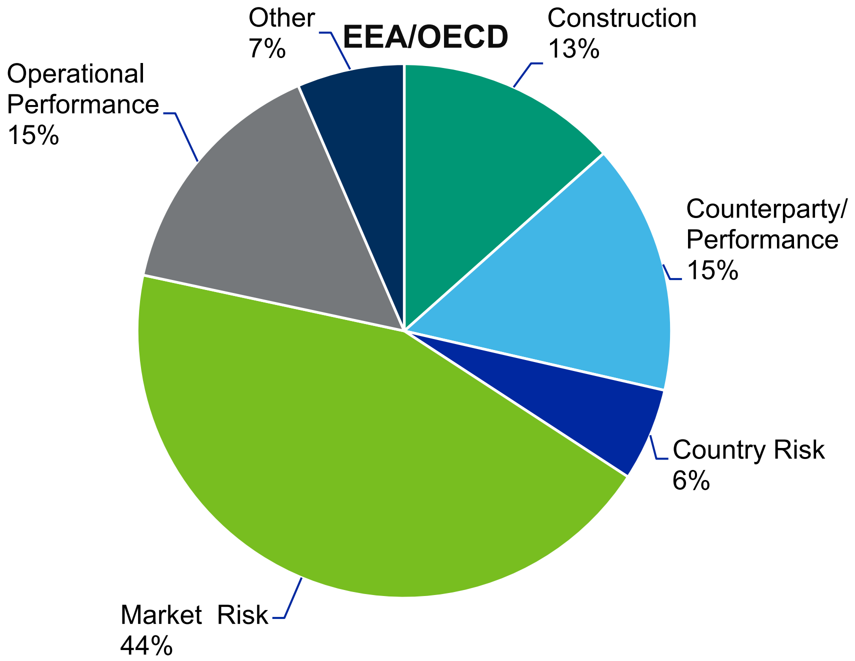
Spillover channels can reinforce each other into vicious loops

Source: Moody’s Investors Service
For more information see [Sovereign crises lead to sharp spikes in emerging market corporate and sub-sovereign default rates]

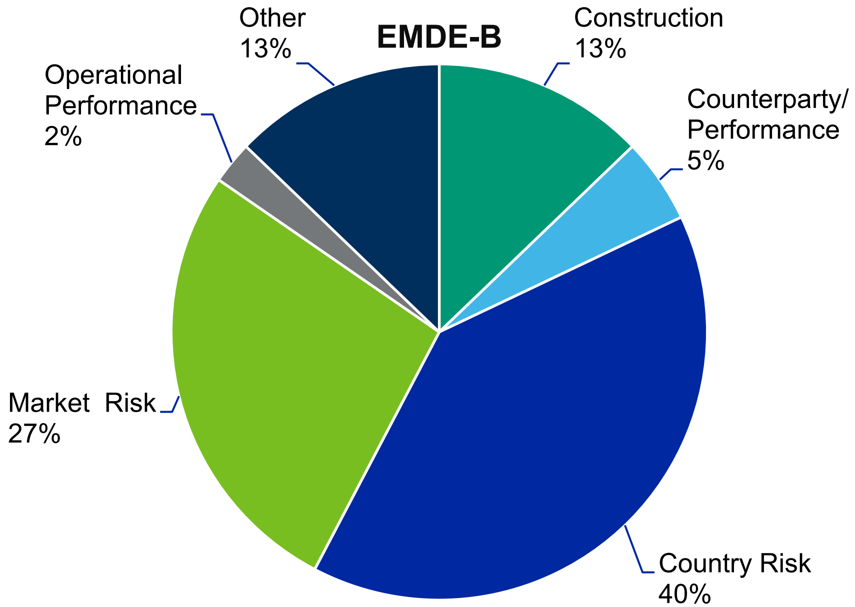
Insights from Moody's latest PF default study (March 2022)

Country risk is primary cause of default in Emerging Markets and Developing Economies (EMDEs)

Causes of default – EEA/OECD subset



Causes of default – EMDE-B subset



Source: Moody's Analytics Data Alliance Project Finance Data Consortium. For more information see Default and recovery rates for project finance bank loans, 1983-2020. Please refer to report Appendix B for the composition of the regional sub-sets.

- In EEA and EEA/OECD countries, the most prevalent cause of default is market risk
- In EMDE-A and EMDE-B subsets, country risk is the most prevalent cause of default, followed by market risk
- Average ultimate recovery rates show a very limited degree of variation across regional subsets.

Credit enhancement has sought to address these challenges and achieve a variety of goals

Reduce probability of default and/or improve recovery prospects

Match local currency revenues to debt

Lower borrowing cost

Support sustainability and/or other policy objectives

Establish bond markets; diversify financing

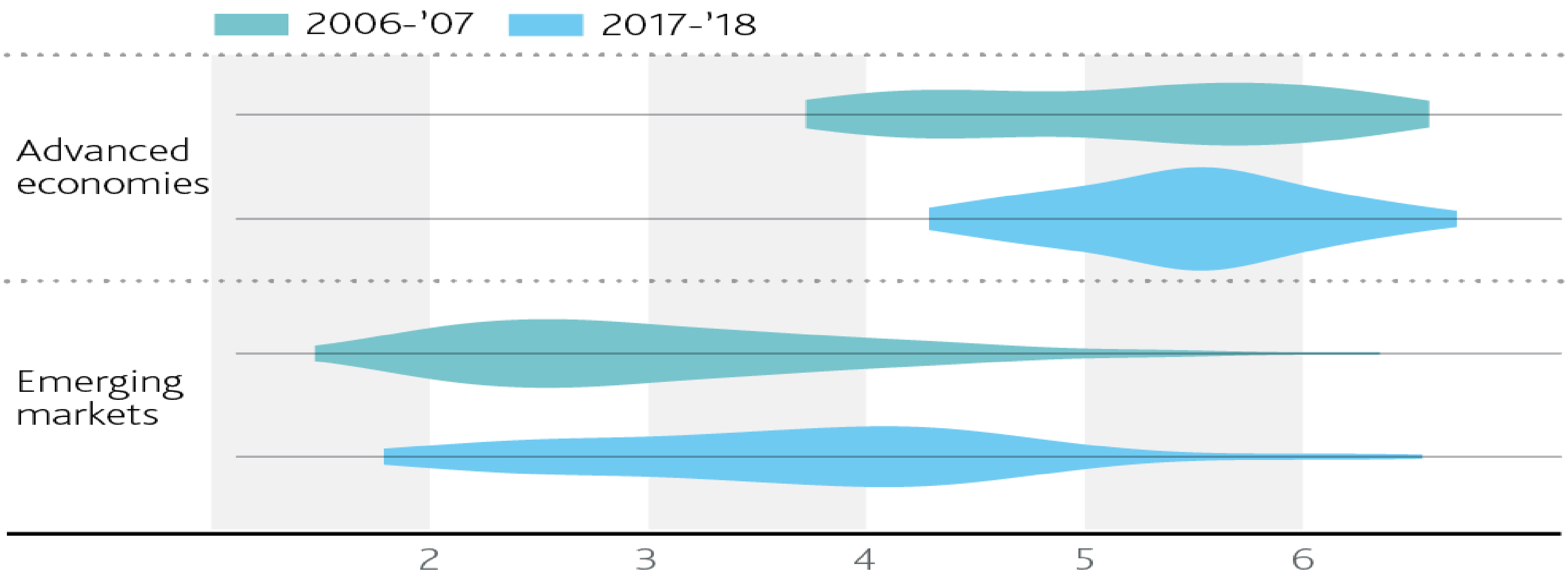
Extend maturities

2

EM infrastructure needs and financing gap

Infrastructure has improved in some emerging markets but remains below advanced economy levels

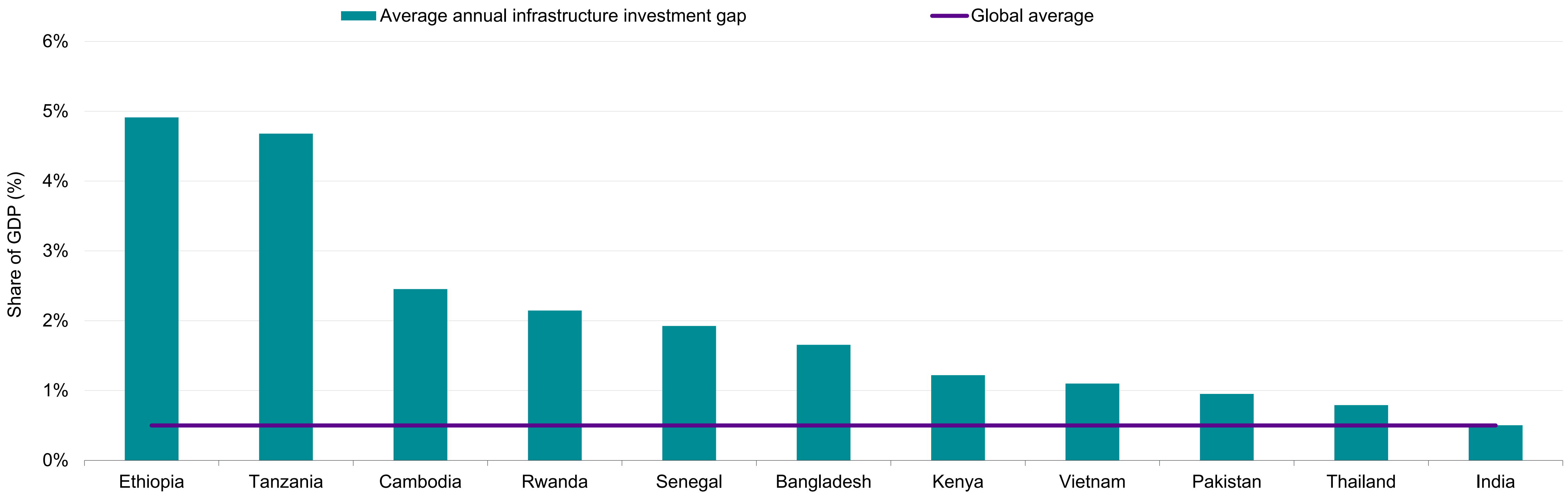
World Economic Forum's infrastructure pillar score



Infrastructure pillar score assesses quality of infrastructure (transport, utilities); a higher score denotes better infrastructure.
Source: World Economic Forum

Rapidly urbanizing economies' estimated infrastructure gaps are wider than the global average

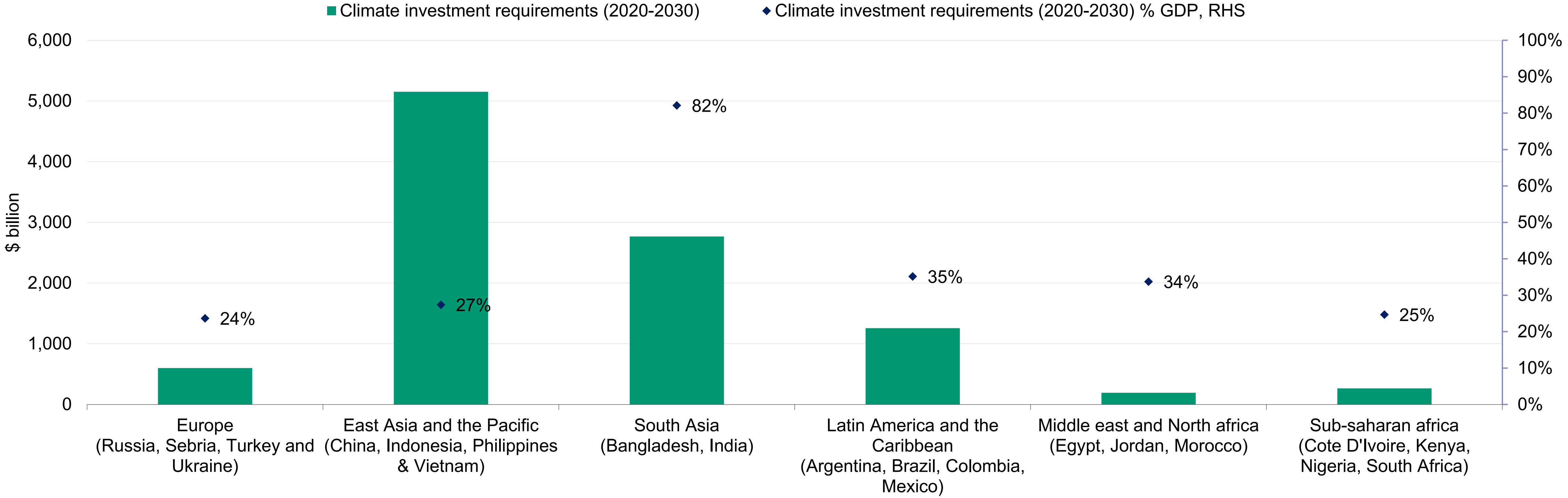
Estimated average annual infrastructure investment gap 2016-40, % of GDP



Sources: Global Infrastructure Hub, Oxford Economics and Moody's Investors Service
For more information see: ESG – Emerging Markets Environmental and social risk will curb growth potential from rise in urbanization

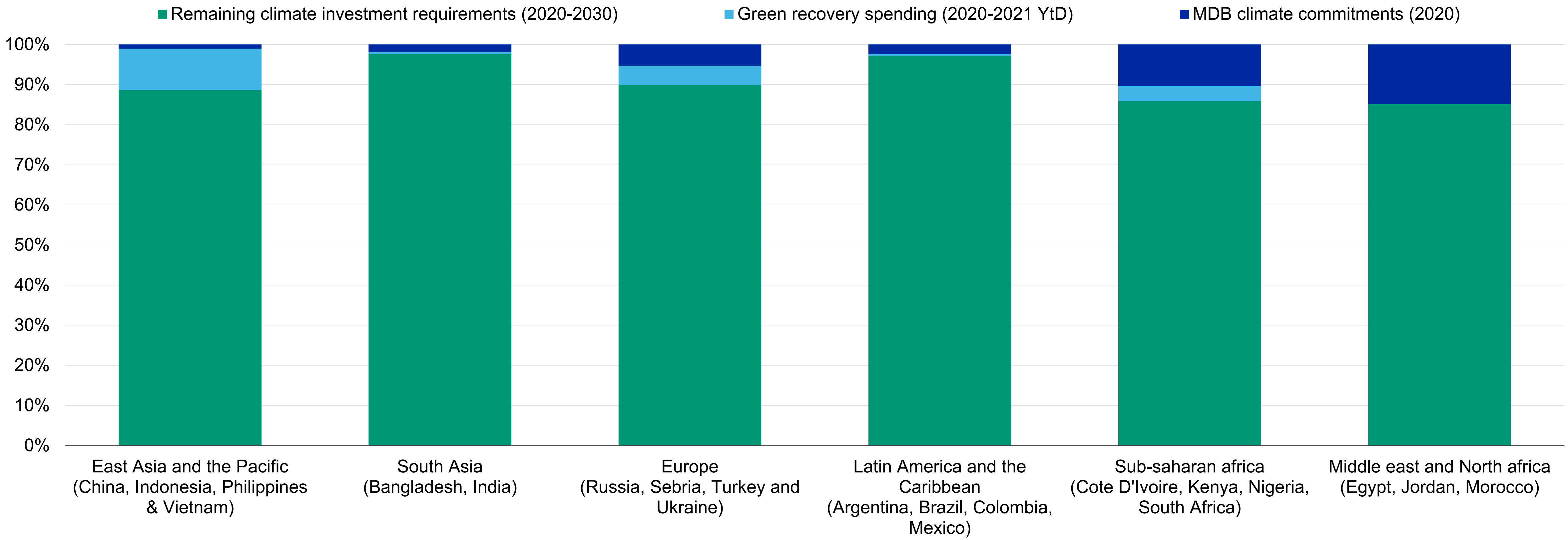
Green investment requirements vary by region, but are highest relative to GDP in South Asia

Relative to GDP, these investment requirements vary significantly by region, from around 20% in Europe to around 80% in South Asia



We proxy the green-financing requirements of 21 EMs based on the IFC's 2020 green investment opportunity estimates.
Sources: International Finance Corporation, Haver Analytics and Moody's Investors Service

MDB commitments and government green recovery spending accounted for a fraction of climate-investment requirements in 2020



Note: YTD is as of October. Sources: International Finance Corporation, Joint report on multilateral development banks and Moody's Investors Service
For more information, see: Sovereigns – Emerging markets Concessional and market-based financing vastly undershoots climate-resilience funding needs

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Credit enhancements: Moody's case studies

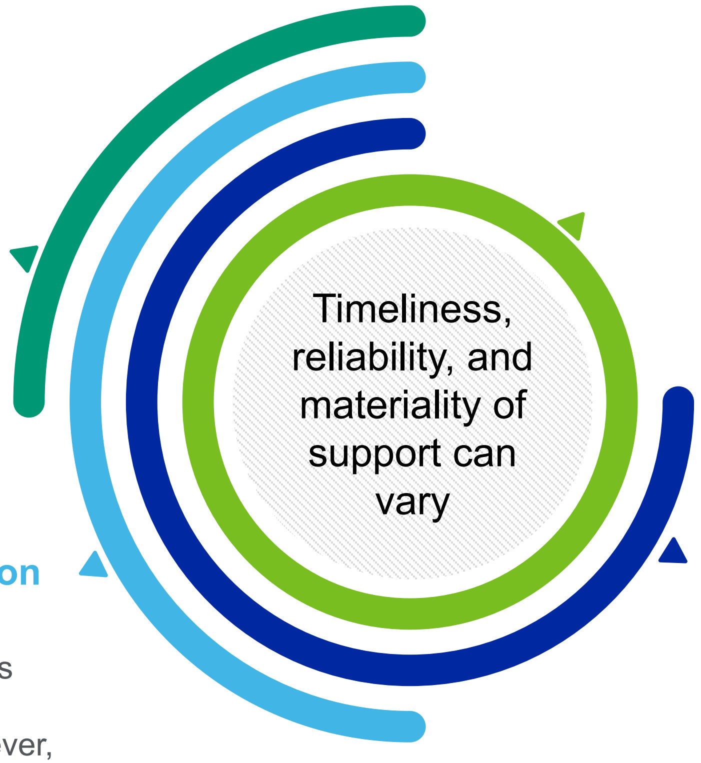
Four models of project risk transfer provide varying support to avoid default and/or enhance recovery prospects

Partial risk insurance

Political risk insurance covering a breach of contract, expropriation, currency transfer or convertibility restrictions. Important considerations include the reliability of the insurance response to the risk causing a default, and liquidity available to pay creditors in event of a protracted claims process (proving causation and establishing extent of loss).
Example: ELZ Finance S.A. (Baa2 stable).

Insurance for non-payment of debt obligation

Political risk insurance covering non-payment of a financial obligation. In contrast to guarantees, creditors must make a valid claim before receiving payment, exposing them to potential delay or failed claim. However, for rated precedents like *Platinum Securities Cayman SPC Ltd (Aa2 stable)* and *Central Storage Safety Project Trust (Aa2 stable)*, we considered the nature of the insured obligations, deal structure and availability liquidity sufficiently robust to support the ratings.



Full credit guarantees

Transactions that we rate with the credit substitution approach are typically assigned a rating consistent with the rating of the guarantor. Guarantee expected to insulate investors from the borrower's performance, default or bankruptcy and to provide payment of principal and accrued interest on the debt when due. Credit benefit relies on the terms of the policy, e.g. risk they provide a valid reason to avoid payment.
Example: Sindicatum (A1 negative)

Partial credit guarantees

A third party provides a guarantee of a borrower's payment obligations up to a limit less than 100% (regardless of the reason for default). Creditors remain exposed to the underlying default risk of the borrower, and so the credit benefit – even for partial credit guarantees provided by Aaa rated institutions – have been limited to a few notches. Uplift related to credit strengths of borrower/guarantor and % cover.
Example: Acorn Project (Two) LLP (B1 negative).

Case study: Bayfront infrastructure asset-backed securitizations

Bayfront Infrastructure Capital Pte. Ltd.

Bayfront Infrastructure Capital II Pte. Ltd.[1]

Securitizations backed by bank-syndicated senior project finance and infrastructure loans to projects in the Asia-Pacific, Middle East and South America

Diversification of financing

Transactions enhance institutional investor familiarity with the infrastructure sector and the resultant diversity by sector, geography and credit quality will also make the APAC infra corporate and project bond markets more robust.

Repeated scalable transactions

Investors know that there is a pipeline of issuances and banks have a predictable avenue to free up balance sheets for other greenfield infrastructure lending.

Part of underlying portfolios benefit from credit enhancements

A material portion of both the portfolios benefit from external credit support provided by export credit agencies, insurers or MDBs The portion of the portfolio that benefits from such credit enhancements is about 30% of the initial par amount of the portfolio for the first transaction and 20% of the second transaction.

Transaction acted as a platform to support policy objectives

Transactions are good examples of effort by policymakers to increase financing options to meet the region's significant infrastructure needs. Second transaction has a dedicated sustainability tranche backed by eligible green and social assets.

Note: 1: Various ratings depending on transaction and respective tranches. See the Bayfront Infrastructure Capital Pte. Ltd. and Bayfront Infrastructure Capital II Pte. Ltd. issuer pages on moodys.com for further information.

Case study: Sindicatum Renewable Energy Bonds guaranteed by GuarantCo

Sindicatum Renewable Energy Co. Pte. Ltd.

(A1 negative)

Guaranty from GuarantCo (A1 negative)

Guaranty ensures full and timely recovery

The guarantee from GuantCo covers timely payment of principal and interest of the Indian Rupee-denominated due 2023, 2025 and Philippine Peso-denominated bonds due 2028. The Notes were issued to finance the development of renewable projects in India and the Philippines.

Facilitate diversification of financing

The bonds are denominated in local currency but are settled in USD. The guarantee facilitated the lengthening of the debt tenor, which is not common for INR-denominated offshore bonds, and also the relatively small size of the issuances where each bond was less than USD30 million.

Potential for repeated transactions

Repeated transactions and relatively small quantum demonstrate scalability.

Transaction not exposed to project or sovereign considerations

Our credit view reflects the credit strengths of the guaranty provided by GuarantCo.

Note: See the Sindicatum Renewable Energy Co. Pte Ltd issuer page on moodys.com for further information.

Case study: Belize “Blue Bonds”

Platinum Securities Cayman SPC Ltd

(Aa2 stable)

DFC insurance for non-payment of underlying debt obligation, a loan to the Government of Belize (Caa3 stable)

Insurance policy ensures full recovery

The Issuer’s underlying asset is a “Blue Loan” to the Government of Belize. An insurance policy from DFC insulates Blue Bond holders from a default of Belize on the underlying Blue Loan. The policy benefits from the full faith and credit of the United States and covers non-payment of Arbitral Award and Denial of Justice in relation to the Blue Loan.

Liquidity safeguards timely payment

Liquidity provisions and contractual features designed to ensure timely payment of the Issuer’s debt service until the conclusion of an arbitration award and payment under DFC policy. Under an Event of Default at the Blue Loan, bondholders have access to liquidity adequate to cover at least 2 years of debt service and expenses.

Transaction supports marine conservation

The Blue Bond for Ocean Conservation program supports durable marine conservation efforts and sustainable marine-based economic activity. Belize pre-funded a marine conservation account with $23.4 million included in the Blue Loan and commits to make Conservation payments over the life of the Bonds.

Belize reduced its debt balance

Bond proceeds financed Belize’s buyback of its $556 million bonds due 2034 at a 45% discount to face value. The Blue Bond program, administered by The Nature Conservancy (TNC, Aa2 stable) uses private capital to refinance participating countries' public debt.

Note: See the Platinum Securities Cayman SPC Ltd issuer page on moodys.com for further information.

Case study: Colombia’s Puerta de Hierro Toll Road

Patrimonio Autonomo Montes de Maria (Puerta de Hierro)

(Aa1 stable)

DFC guaranty covers timely payment of interest and up to $350 million of principal payments

Guaranty ensures full and timely recovery

The guarantee from DFC covers timely payment of each of the scheduled principal and interest payments of the Colombian peso-denominated (inflation-indexed) COP760 billion (around $210 million at issuance) Notes due 2045. The Notes were issued to refinance Puerta de Hierro toll-road concession.

Peso appreciation exposure mitigated by “appreciation cover”

Since the Notes are peso denominated and DFC’s guarantee is denominated in US dollars, the exposure to Colombian peso appreciating against the US dollar is introduced. This risk is mitigated by the difference between the debt and a fixed guarantee cap (“appreciation cover”) of about $140 million.

First social bonds linked to infrastructure in Latin America

The issuer has labeled the Notes as a social bond because of the expected benefits to the population in the toll road’s service area. This was the first bond issuance of social bonds in Latin America linked to an infrastructure project.

Transaction not exposed to project or sovereign considerations

Our credit view reflects the credit strengths of the guaranty provided by DFC. The agency benefits from the full faith of the US government and the guaranty will constitute a direct, unconditional and senior obligation of the government.

Note: See the Patrimonio Autonomo Montes de Maria issuer page on moodys.com for further information.

Case study: Kenyan student housing

Acorn Project (Two) LLP

(B1 / Aa2.ke negative)

GuarantCo partial guarantee of principal and interest shortfalls

Partial guarantee improves expected recovery

Issuer's Notes are 50% guaranteed by GuarantCo (A1 negative), providing around 2 notches of uplift to the Notes relative to Moody's view of standalone credit profile. Creditors remain exposed to the underlying default risk of the Issuer.

Local currency issuance matches debt to revenue

The Kenyan shilling denominated Notes were cross listed in Nairobi and London.

Important green bond precedent in the East African market

First green bond in Kenya, proceeds used to finance green and environmentally friendly accommodation for Nairobi university students.

Diversification of financing and development of bond markets

The Notes set a precedent for green financing of infrastructure in Kenya, and had investment from domestic pension funds and insurance companies.

Note: See the Acorn Project (Two) LLP issuer page on moodys.com for further information.

Case study: Turkish PPP hospital

ELZ Finance S.A.

(Baa2 stable)

MIGA political risk insurance;

EBRD subordinated liquidity

Political risk insurance supports recovery subject to valid claim

MIGA PRI policy designed to respond to (1) currency transfer / conversion restrictions; (2) expropriation; and (3) breach of contract (incl. arbitral award default and denial of recourse) with respect to underlying PPP contract with government counterparty (i.e. not a debt agreement).

Subordinated liquidity supports debt service during arbitration

PRI policy requires waiting times, arbitration process, and achieving an arbitral award. To mitigate the risk of a protracted arbitration process, the financing structure includes a subordinated, standby revolving facility provided by the EBRD. Nearly 4 years of debt service liquidity (including DSRA) available for most of the tenor.

Green and social bond

Certified by third party, the project supports the provision of health care.

Extended maturity

The credit enhancement enabled long term investors to provide a tenor not typically seen at the time in the Turkish market for such issuers, 20 years.

Note: See the ELZ Finance S.A. issuer page on moodys.com for further information.

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Appendix

ESG Integration into Credit Analysis

Our rating analysis considers all material credit considerations, including ESG

SECTOR-SPECIFIC METHODOLOGIES

Methodology Scorecard / Model

Other Considerations

ESG CROSS-SECTOR METHODOLOGY

ISSUER PROFILE SCORES

Environmental IPS

- Carbon transition
- Physical climate risks
- Water management
- Waste and pollution
- Natural capital

Social IPS

- Customer relations
- Human capital
- Demographic and societal trends
- Health and safety
- Responsible production

Governance IPS

- Financial strategy & risk management
- Management credibility & track record
- Organizational structure
- Compliance & reporting
- Board structure, policies & procedures

CREDIT RATING

ESG CREDIT IMPACT SCORE*

CIS-1 *Positive*

CIS-2 *Neutral-to-low*

CIS-3 *Moderately Negative*

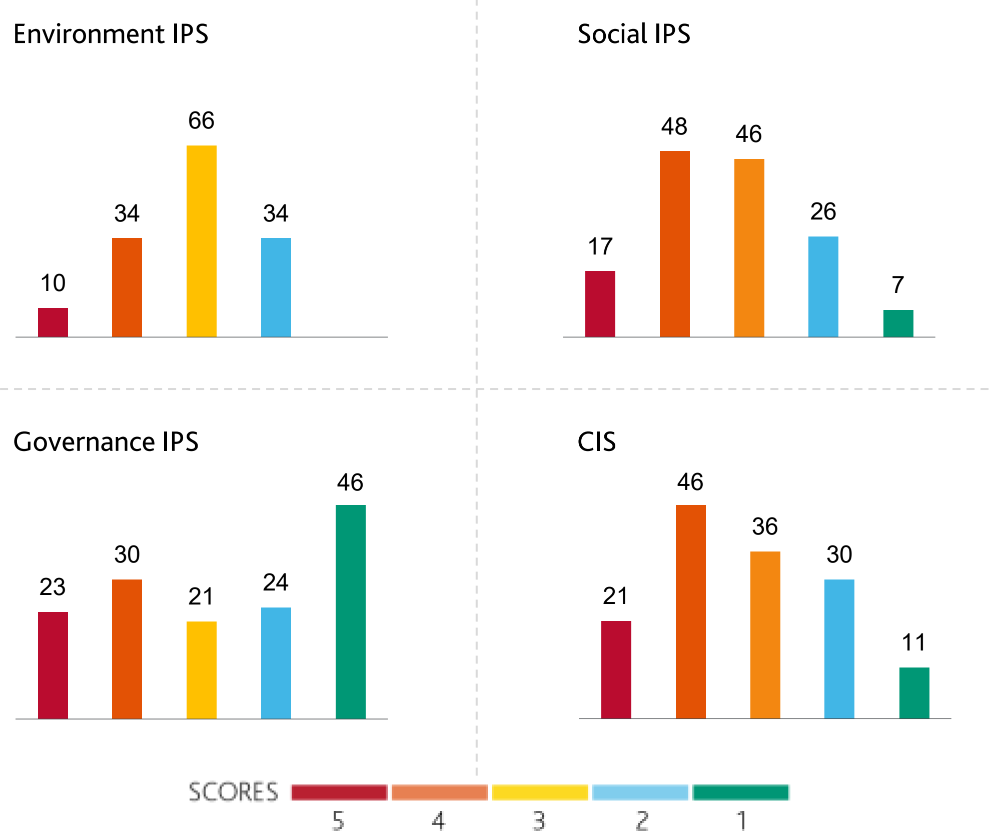
CIS-4 *Highly Negative*

CIS-5 *Very Highly Negative*

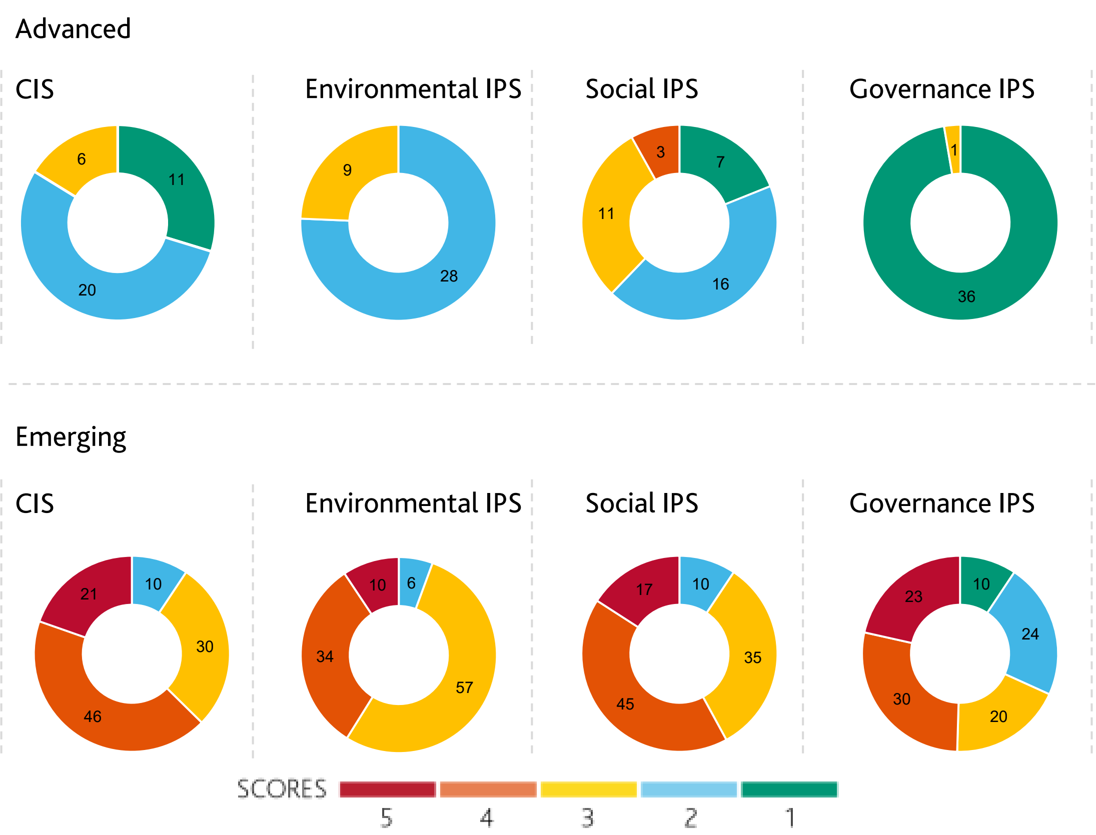
The ESG credit impact score (CIS) is an output of the rating process that more transparently communicates the impact of ESG considerations on the credit rating of an issuer or transaction.

Moody’s ESG factor scores for rated sovereigns

ESG factors most often have a “Highly Negative” credit impact… (Number of sovereigns)



… but this varies significantly between AEs and EMs (Number of sovereigns)



Includes data for 107 rated EM sovereigns and 37 rated advanced economies. As of 14 March 2022.
Source: Moody's Investors Service

Recent rated precedents incorporating risk transfer (1)

Trans-action date	Precedent	Issuer/ Current Rating (as of 28/3/22)	Context
Nov. 2021	Political risk insurance of non-payment	Platinum Securities Cayman SPC Ltd / Aa2 stable	» $364m Blue Bonds proceeds ultimately lent by the Issuer to the Government of **Belize** (Caa3 stable), with loan insured by the U.S. DFC (insurance policy covering non-payment of Arbitral Award and Denial of Justice). » Proceeds financed Belize's cash tender of its 2034 bonds below par in return for gov't commitments to allocate part of the cash savings into a marine conservation fund.
Oct. 2021	Full credit guarantee	Rio Smart Lighting S.a r.l. / Aa1 stable	» BRL925 million (c. $180 million) Notes to partially finance 20-year PPP for the modernization and maintenance of public lighting system in Rio de Janeiro (Govt of **Brazil**, Ba2 stable). » U.S. DFC unconditional, irrevocable guarantee covers timely payment of the Notes principal and interest (up to $267 million).
April 2021	Full credit guarantee	Patrimonio Autónomo Montes de María ("Puerta de Hierro") / Aa1 stable	» COP 760bn ($210m) Notes issued in connection with a toll-road concession granted by the Government of **Colombia** (Baa2 stable). » U.S. DFC unconditional, irrevocable guarantee covers timely payment of the Notes principal and interest (up to $350 million for principal payments).
Aug. 2019	Partial credit guarantee	Acorn Project (Two) LLP / B1 negative	» KES 5.7bn ($50m) fixed rate 5-yr notes issued to construct a student accommodation building project in **Kenya** (B2 negative). First green bond in Kenya; first KES bond cross-listed in London. » The notes are 50% guaranteed by GuarantCo (A1 negative) providing c. 2 notches of rating uplift.

Recent rated precedents incorporating risk transfer (2)

Trans-action date	Precedent	Issuer/ Current Rating (as of 28/3/22)	Context
Aug. 2018	Full credit guarantee	Sindicatum Renewable Energy Co. Pte Ltd / A1 negative	» Sindicatum, a Singapore-based renewables developer, issued green bonds to finance a portfolio of power projects in the **Philippines** (Baa2 stable) and **India** (Baa3 stable) » The INR and PHP-denominated bonds benefit from a financial guarantee of principal and interest provided by GuarantCo (A1 negative).
July 2018	Securitisation (CLO)	Bayfront Infrastructure Capital Pte. Ltd. / Class A: Aaa (sf); Class B: Aa1 (sf); Class C: A2 (sf)	» Bayfront Infrastructure Capital, a CLO backed by bank-syndicated senior project finance and infrastructure loans to projects in **Asia Pacific & Middle East** » About 30% of the portfolio benefits from external credit support by cover providers such as multilateral development banks and export credit agencies - geographical location may not reflect counterparty risk since cover provider is located in another jurisdiction
Jan. 2018	Political risk insurance of non-payment	Central Storage Safety Project Trust / Aa2 stable	» $250m Notes proceeds on-lent to **Ukraine** (Caa2 RUR-D) state-owned utility for the development of a spent nuclear fuel storage facility. » The loan is insured by the U.S. DFC (insurance policy covering non-payment of Arbitral Award and Denial of Justice).
Dec. 2016	Partial risk insurance; subordinated liquidity	ELZ Finance S.A. / Baa2 stable	» Bonds issued in connection with hospital PPP project in **Turkey** (B2 negative). » The bonds benefit from political risk insurance from MIGA (breach of contract, expropriation, currency transfer/convertibility) and liquidity facilities from EBRD.

Moody’s related publications

Global emerging markets

- » Emerging Markets – Global: Financial Conditions Monitor: March 2022, 29 March 2022
- » Emerging Markets – Global: Quarterly EM Issuance Monitor, Q4 2021, 27 January 2022
- » Global Emerging Markets Chartbook – December 2021 (Slides), 13 December 2021
- » ESG – Emerging Markets: Environmental and social risk will curb growth potential from rise in urbanization, 30 November 2021
- » Sovereigns – Emerging markets: Concessional and market-based financing vastly undershoots climate-resilience funding needs, 26 October 2021
- » Sovereign Defaults Series: Sovereign crises lead to sharp spikes in emerging market corporate and sub-sovereign default rates, 28 October 2020

Sector research

- » Default and recovery rates for project finance bank loans, 1983-2020, 15 March 2022
- » Infrastructure & Project Finance – Asia-Pacific: Continued growth of project bonds helps funding diversity and focus on sustainability, 30 September 2021
- » Infrastructure & Project Finance – Global: Innovation in sustainable finance to boost private investment in emerging markets, 6 April 2020

Topic pages

- » Emerging Markets
- » 2021 Outlooks