ESG Credit Indicators

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What They Say About Corporate Credit Risks

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S&P Global
Ratings

Why ESG Credit Indicators

1. Rising awareness and activism on climate, social and governance risks are pushing ESG considerations into the mainstream of decision making in consumption, production, and capital allocation, with increasing adoption by market participants and regulators.

2. These considerations are already incorporated in our credit rating analysis. We have released the ESG Credit Indicators to make their impact on issuers and the ratings we assign more transparent and accessible.

3. We applied ESG credit indicators to > 4,200 corporates (>500 in APAC) and > 1,000 financial services entities.

ESG Credit Indicators | Definitions

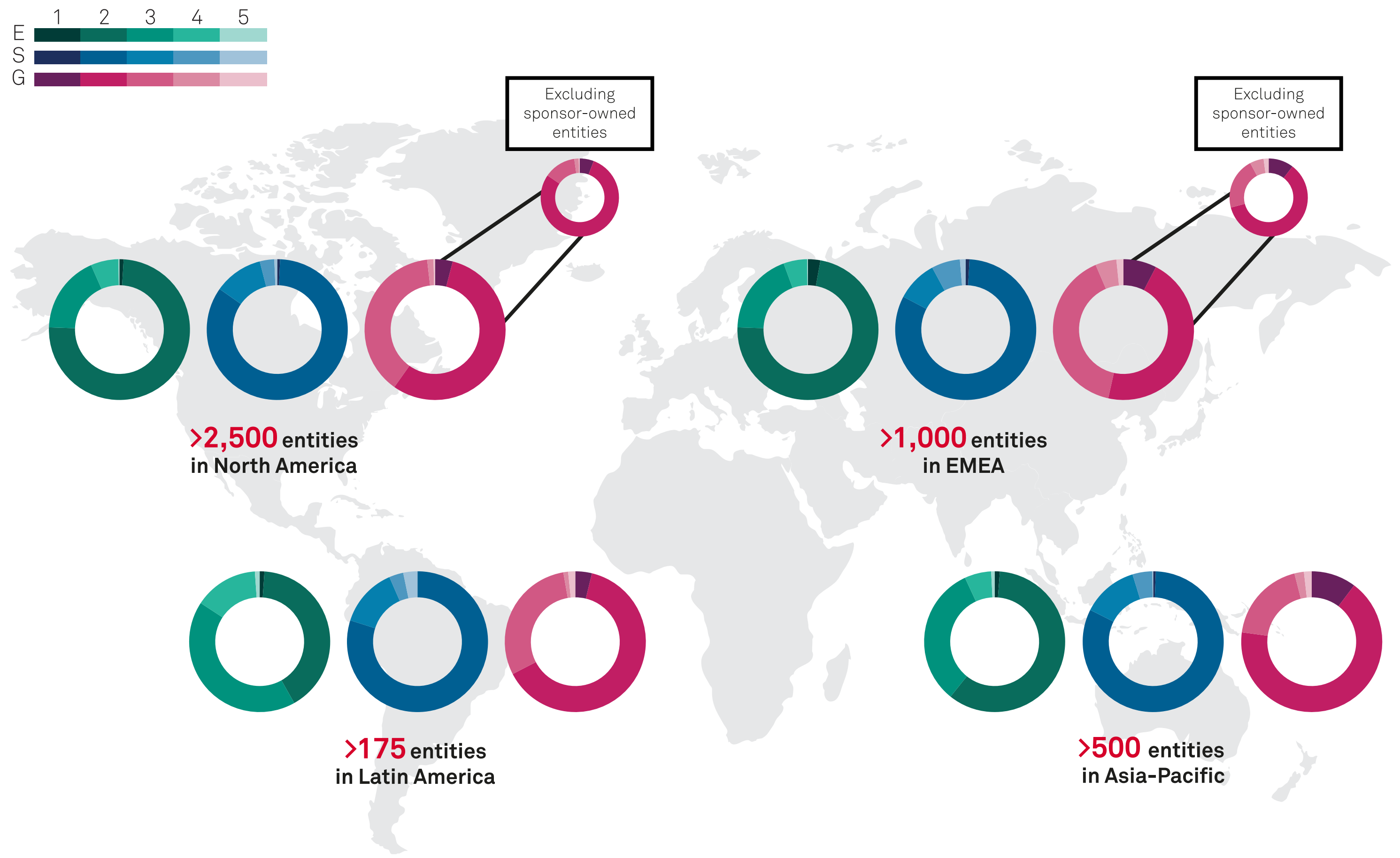
They reflect our opinion of how material the influence of ESG factors is in our credit analysis

Influence on credit	E	S	G	Definition
Positive	E-1	S-1	G-1	Factors are, on a net basis, a positive consideration in our credit rating analysis, affecting at least one analytical component.
Neutral	E-2	S-2	G-2	Factors are, on a net basis, a neutral consideration in our credit rating analysis.
Moderately negative	E-3	S-3	G-3	Factors are, on a net basis, a moderately negative consideration in our credit rating analysis, affecting at least one analytical component.
Negative	E-4	S-4	G-4	Factors are, on a net basis, a negative consideration in our credit rating analysis, affecting more than one analytical component or one severely.
Very negative	E-5	S-5	G-5	Factors are, on a net basis, a very negative consideration in our credit rating analysis, affecting several analytical components or one very severely.

- Net basis means that we take a holistic view on exposure to E/S/G factors and related mitigants.
- Analytical components include criteria scores and subscores (including the key analytical elements to assess them).
- Affecting means leading to a different outcome for an analytical component or lower/higher headroom for an analytical component.

ESG Credit Indicators | Global Application

For Corporate & Infrastructure, Now Reflected In > 4,200 Credit Ratings



1 = Positive. **2** = Neutral. **3** = Moderately negative. **4** = Negative. **5** = Very negative. Our opinion of the influence of ESG factors on our credit rating analysis is reflected on a 1-5 scale. Sponsor-owned entities are minimal in Latin America and Asia-Pacific and have no substantial change in the G distribution of those regions. ESG--Environmental, social, and governance. Source: S&P Global Ratings.

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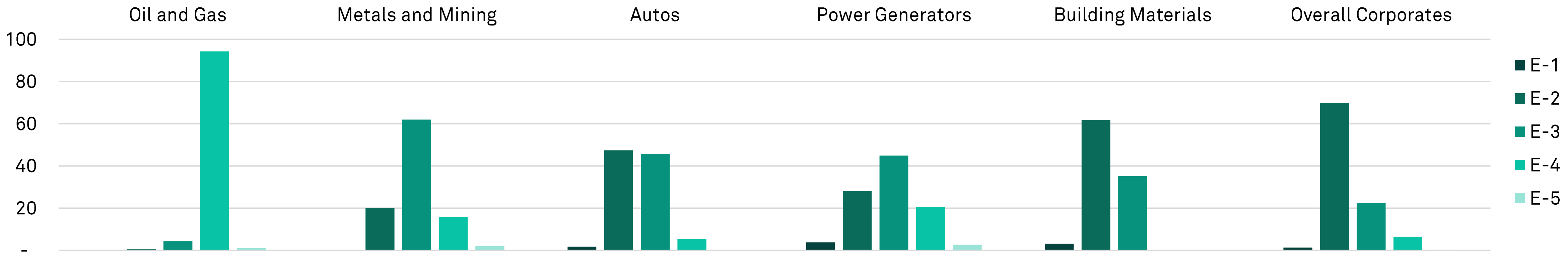
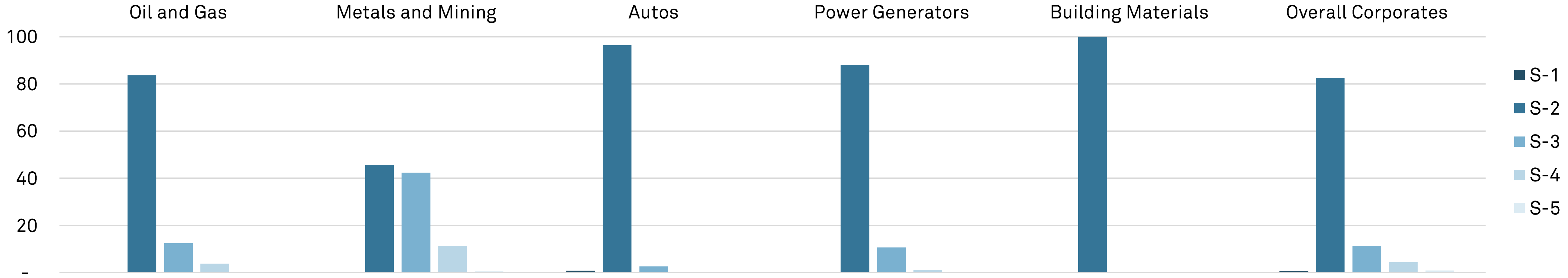
ESG Credit Indicators | Compare ESG Credit Risks Across Industries

Distribution of Environmental scores – Selected sectors – % of rated universe



Distribution of Social scores – Selected sectors – % of rated universe



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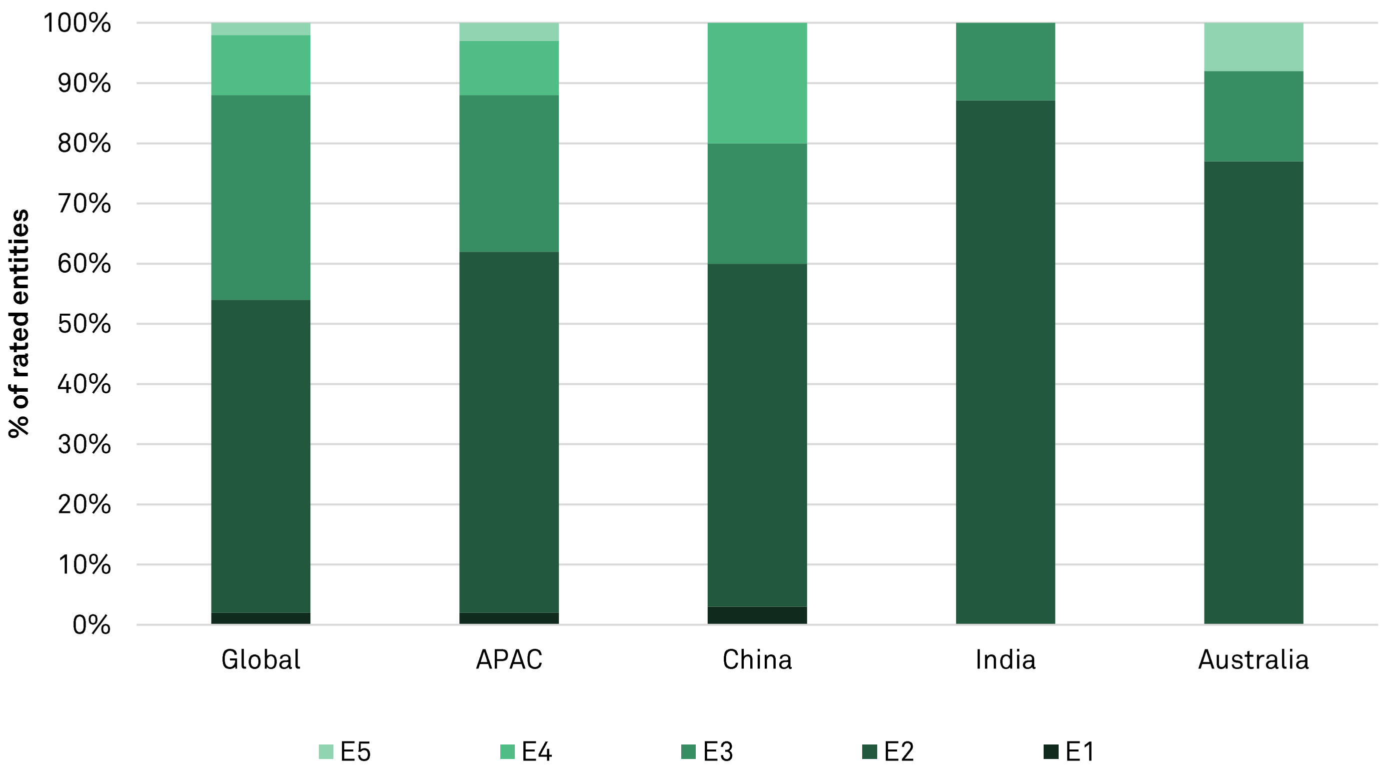
Source: S&P Global Ratings. ESG Credit Indicator Report Cardfor Oil and Gas, Metals and Mining, Autos, Power Generators, Building Materials and the overall rated corproate sector.

Sectoral: Environmental Factors weigh on Power Generators

Regulatory Support And Renewables Moderate APAC's Exposure To Environmental Risks



Note: Chart includes power generators and utility networks. Source: S&P Global Ratings.
**Environmental risk credit indicator of E-3 or higher.*

- Nearly **60%** of APAC power generators are exposed to environmental risk factors* worth **US$500 billion** of rated debt.
- >85% of utility networks have only indirect exposure to environmental risk factors.
- E-5: Company specific factors for Tepco Holdings and EnergyAustralia.
- E-4: Chinese players with sizable exposure to fossil fuel-based power plants risk lower utilization hours and additional costs to improve efficiency and carbon trading.
- E-3: Unregulated fossil fuel-based generators and LNG-focused Japanese utility networks.

ESG Credit Indicators | Importance To APAC Credit

57%

share of ratings in Asia-Pacific influenced by E, S or G risks

E risks are the biggest risk facing rated Asian companies, followed by G and S

U.S.$ 4 trillion

aggregate debt amount of rated companies in Asia-Pacific exposed to E, S or G risks

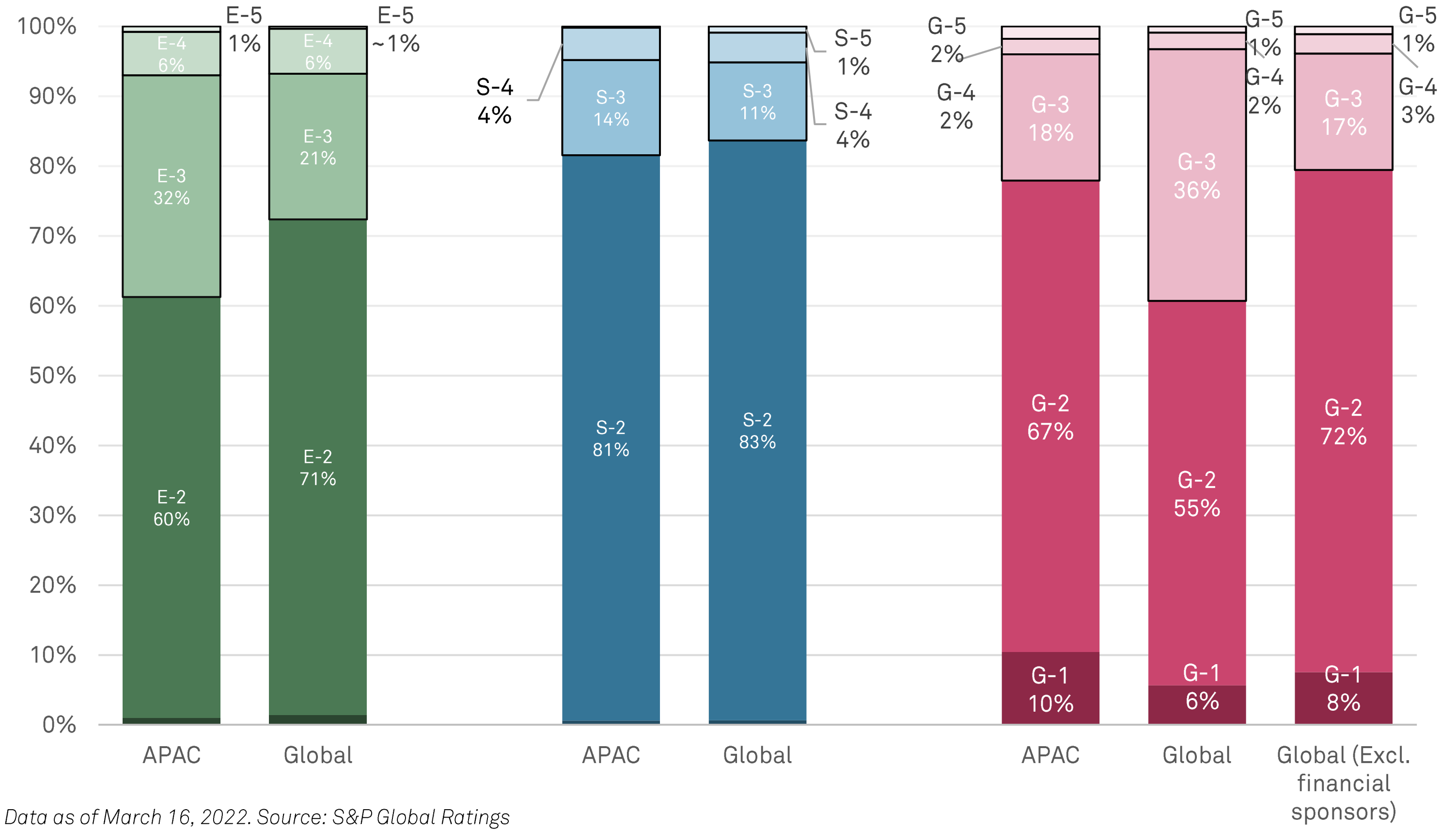
U.S.$ 2.8 trillion

aggregate debt amount of rated companies in Asia-Pacific exposed to E risks

Rated APAC Issuers Are More Exposed To E Risks, Less To G Risks, And Similar In S Risks vs. Global Peers

Distribution Of ESG Credit Indicators In Asia-Pacific vs. Global

Aggregated across issuers for each credit indicator, in billion US$



Data as of March 16, 2022. Source: S&P Global Ratings

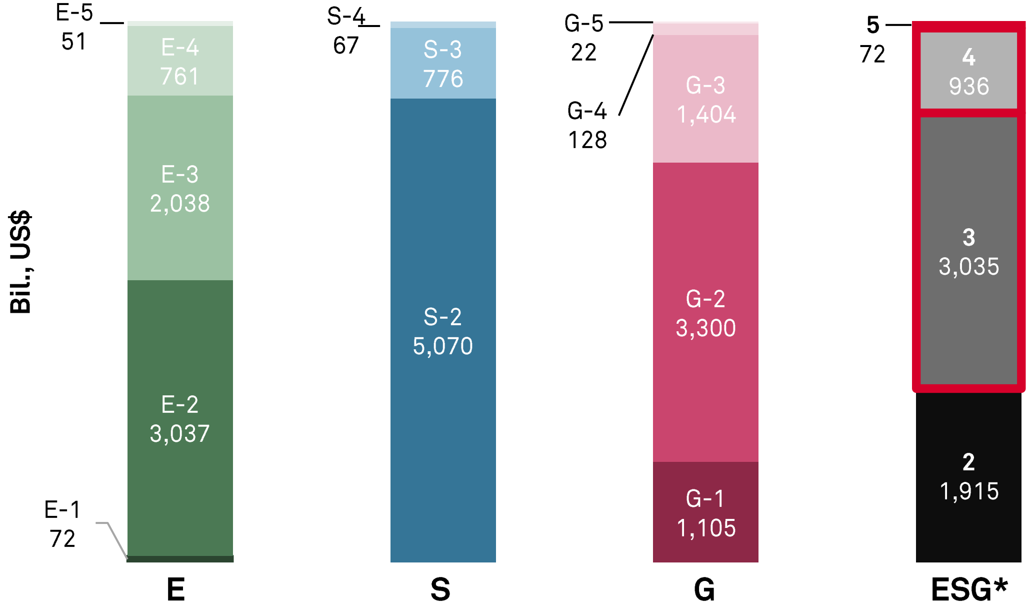
- Higher exposure to E risks in APAC is due to the higher share of companies rated in E-exposed sectors
- E risk is likely to stay prevalent in our credit analysis for three reasons:
  - E-exposed sectors to stay big borrowers given spending, refinancing needs
  - Energy mix likely to stay tilted towards fossil fuels despite the growth in renewables
  - Export based sectors to be sensitive to stricter regulations in export markets
- More negative influence of G factors globally than in APAC given the prevalence of sponsor-owned entities in Europe and NA.

Debt Exposure To ESG Risks Total US$4 Trillion For APAC Corporates

1. E risks are most material in terms of outstanding debt in Asia (~US$2.8 trillion), followed by G and S
2. Issuers exposed to E risks tend to be higher-rated companies, which we believe have greater flexibility in mitigating those risks
3. Issuers exposed to S and G risks are predominantly speculative grade entities, smaller, with more leverage and less flexibility

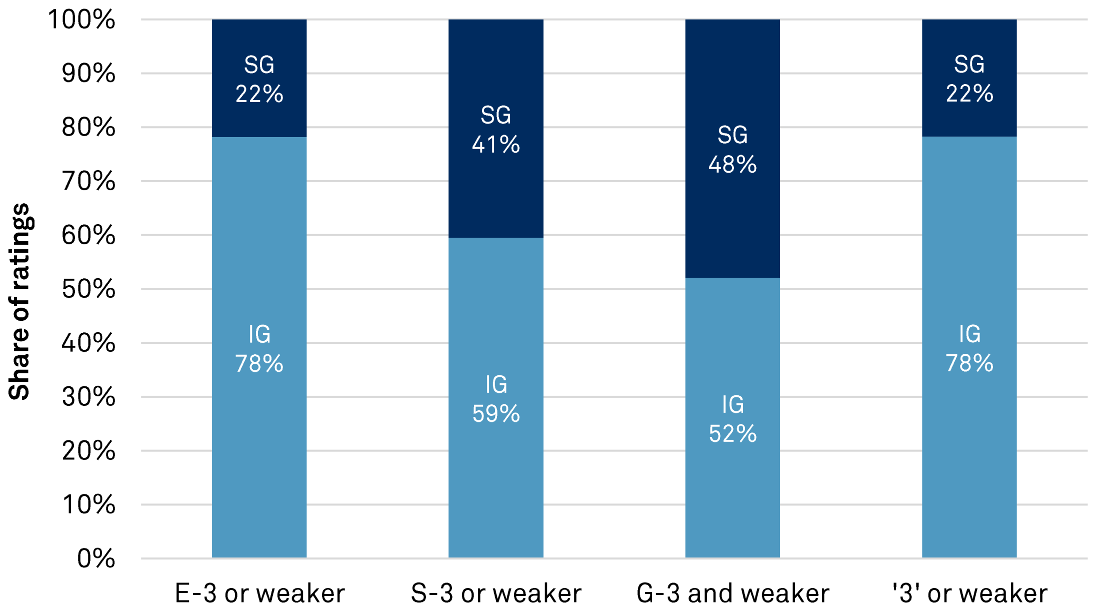
Debt Exposed Across To ESG Risks By Category

Aggregated across issuers for each credit indicator, in billion US$



Debt Exposed To ESG Risks Is Mostly Investment-Grade

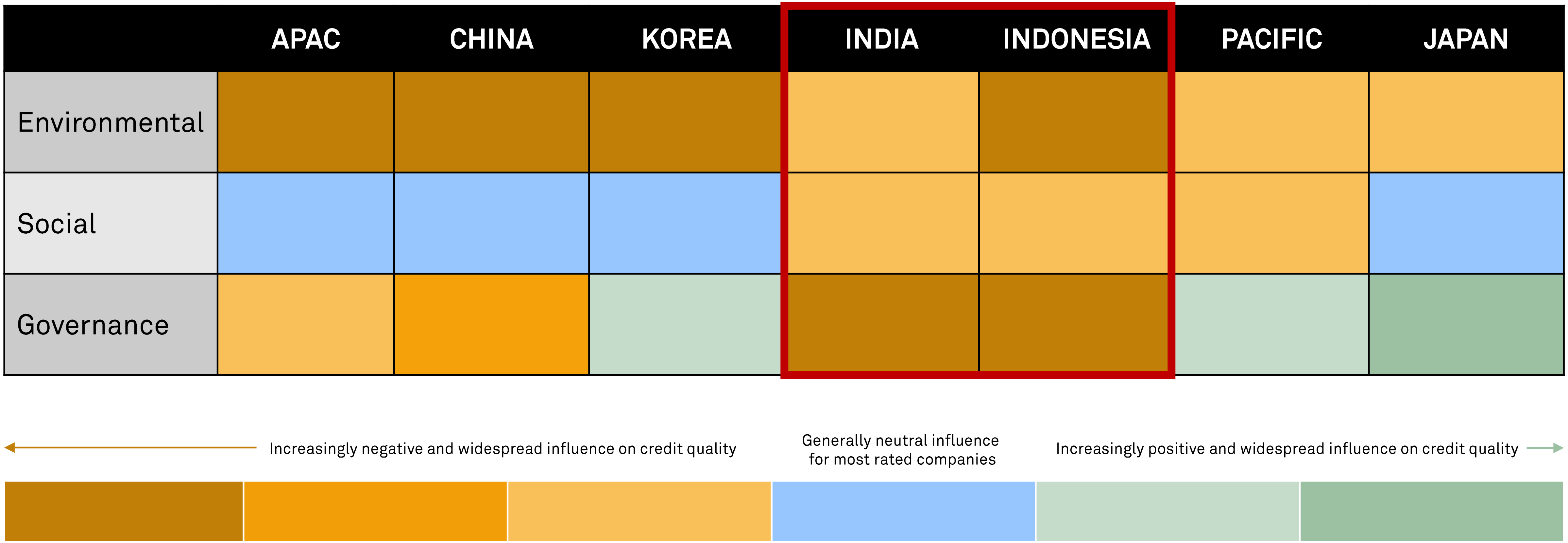
Rating categories of issuers exposed to E, S, G, as a percentage of rated entities exposed



Left chart: *Aggregated reported debt amounts across issuers with a given E, S or G credit indicator. The debt of each company is only counted once to avoid duplication. *ESG: credit indicator based on the weakest E, S or G credit indicator. For example, an entity with E-E/S3/G4 will be included in the '4' category.* ***Right chart:*** *Rating categories of issuers exposed to E, S, G, as a percentage of rated entities exposed. SG—Speculative grade ratings of BB+ and below. IG--Investment grade ratings of BBB- and above. '3 or weaker' includes entities whose weakest E, S, or G indicator is a 3 or weaker, Source: S&P Global Ratings, company financials.*

ESG Considerations Tend To Weigh More Negatively On Rated Indian And Indonesian Companies Than Elsewhere In APAC

Influence Of ESG Factors In Corporate And Infrastructure Credit Ratings In Asia-Pacific
In terms of influence (positive, neutral, negative) and occurrence



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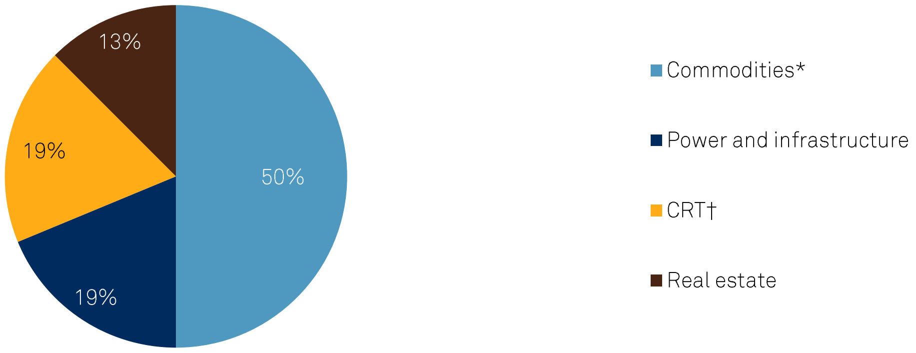
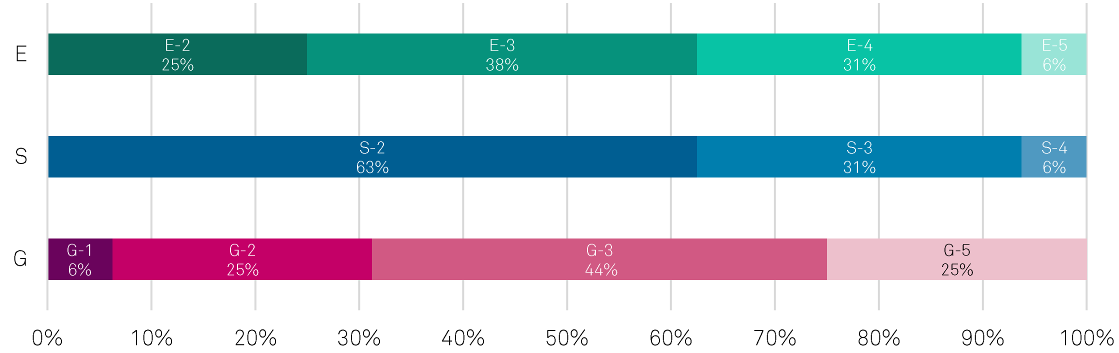
Country: Elevated Environmental & Governance Risks in Indonesia

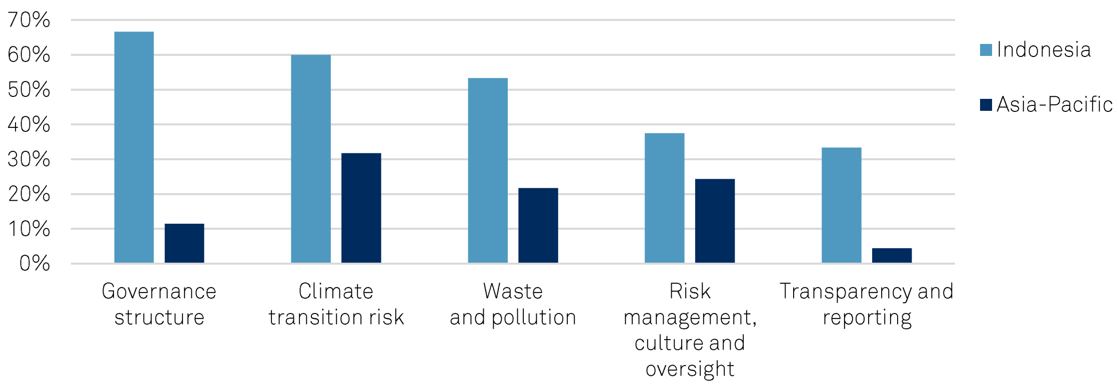
1. Sector distribution



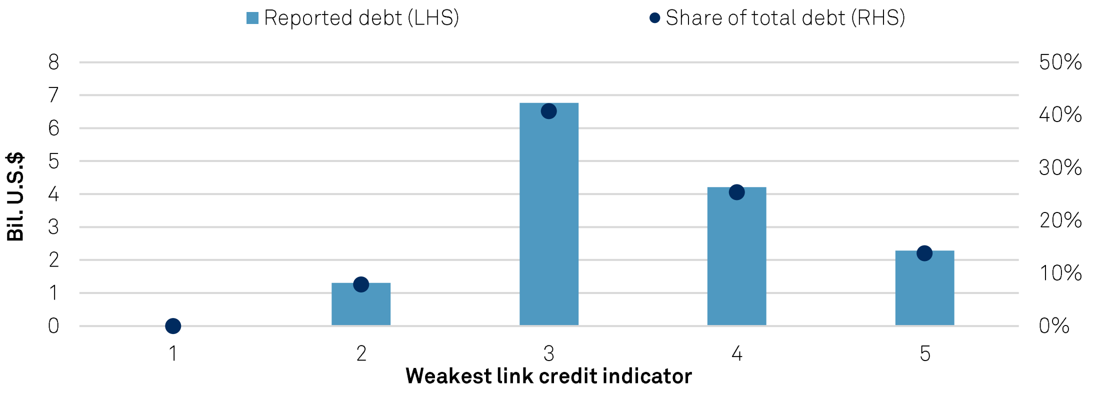
2. ESG Credit Indicator distribution



3. Top ESG Credit Factors



4. Debt exposure to ESG Risks



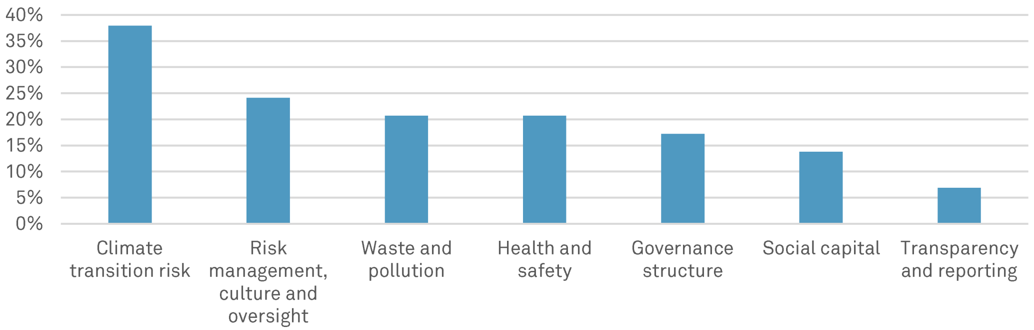
Data as of March 16, 2022. Rated companies in Indonesia. Charts exclude rated state-owned companies that have an 'almost certain' likelihood of government support and on which we did not release ESG credit indicators. ***1.*** *Sector distribution of rated companies. * Includes oil and gas, metals and mining, agribusiness and chemicals; †CRT--Consumer, Retail, Telecom. Includes consumer products, retailing and restaurants, leisure, media and healthcare.* ***2.*** *Distribution of ESG credit indicators for rated companies.* ***3.*** *Percentage of rated companies influenced by the given ESG credit factors.* ***4.*** *Distribution of rated companies based on their weakest link credit indicator. 'Weakest link credit indicator' is defined as the weakest E, S or G credit indicator assigned to a given company. For example, the weakest link credit indicator of a company with E-2 / S-3 / G-4 or a company with an E-4 / S-4 / G-4 credit indicator will be '4'. The reported gross debt estimates in billion, US$ are aggregated across the credit indicator category. We add the debt of each company only once to avoid double counting within each weakest link credit indicator category. Aggregate reported debt excludes the debt at rated state-owned companies that have an 'almost certain' likelihood of government support and on which we did not release ESG credit indicators. Source S&P Global Ratings, company financial statements.*

Appendix

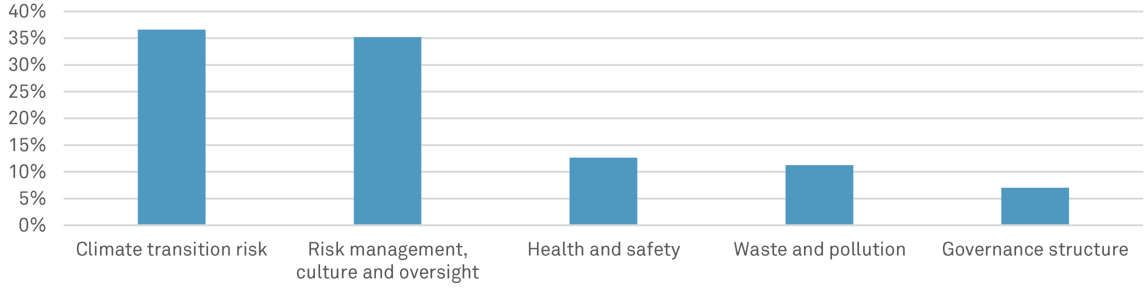
S&P Global Ratings

ESG Credit Indicators | Top ESG Credit Factors In APAC

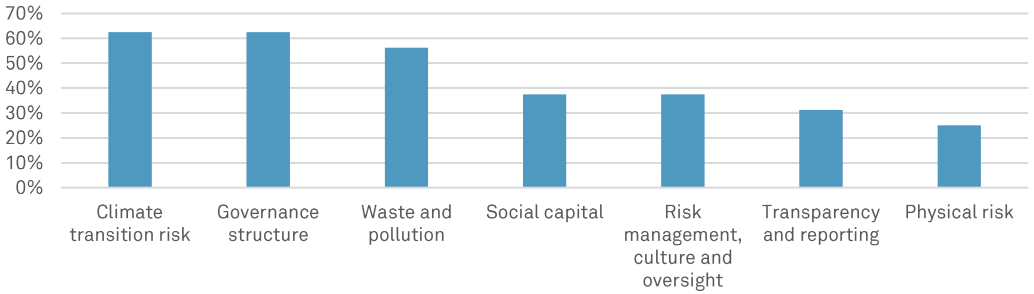
India (% of ratings influenced)



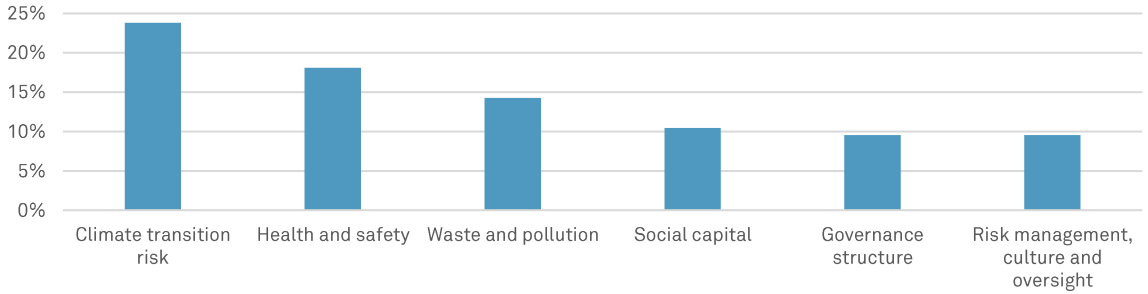
Japan (% of ratings influenced)



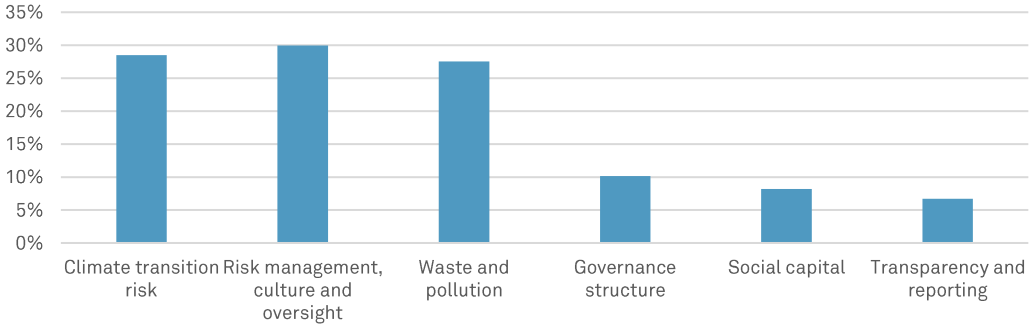
Indonesia (% of ratings influenced)



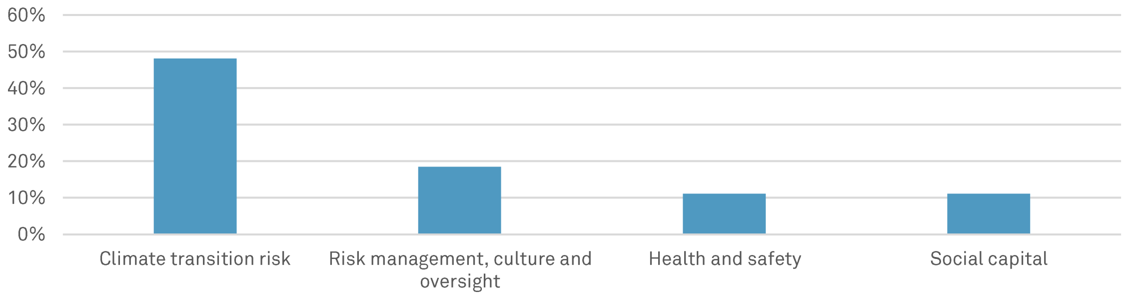
Pacific (% of ratings influenced)



China (% of ratings influenced)



Korea (% of ratings influenced)

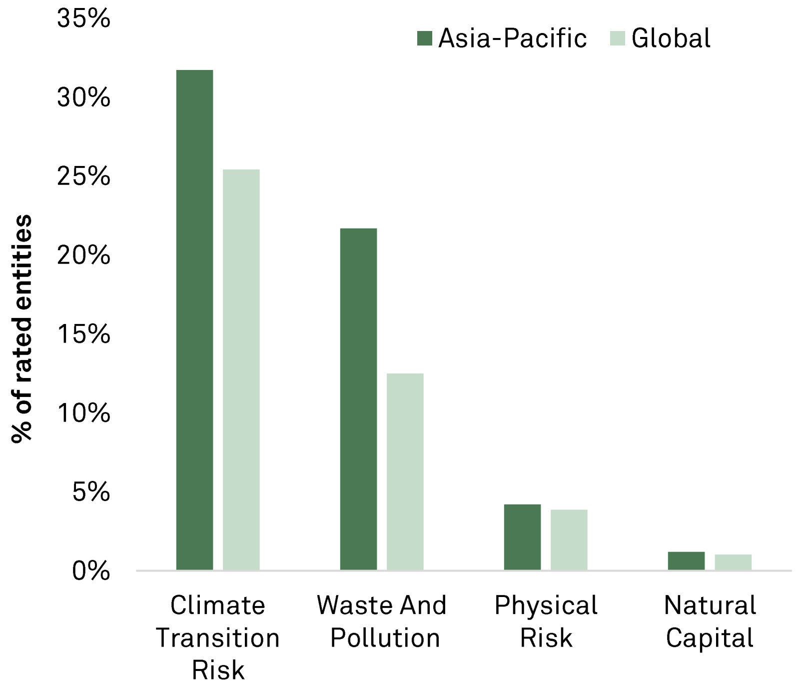


APAC E Risks | Climate Transition, Waste & Pollution Affect Most

1. Qualitatively, those risks are captured in our industry risk, and competitive position analysis
2. We are also capturing the short term and long-term implications of those risks on liquidity and funding and in our financial projections

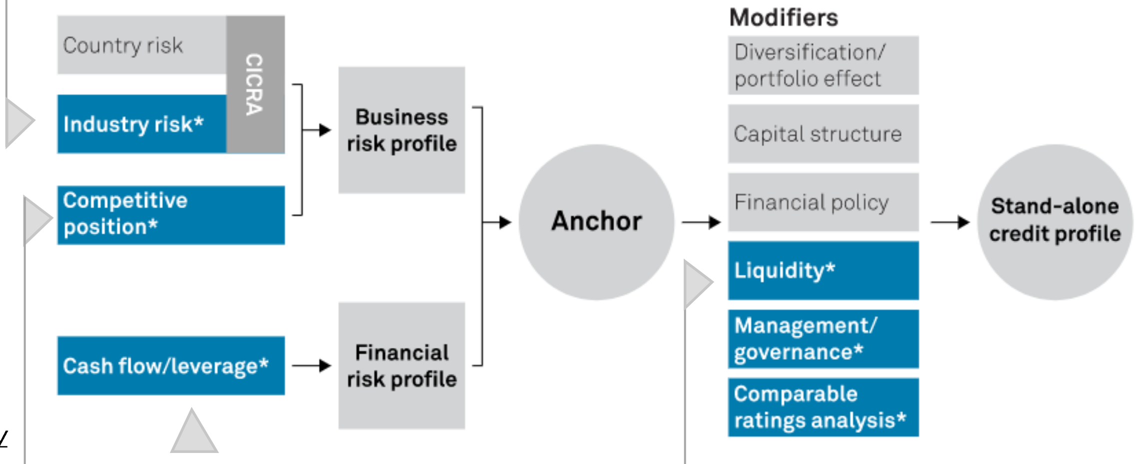
Main E Credit Factors In Asia-Pacific vs. Global

Proportion of rated entities exposed to the E credit factor



Data as of March 16, 2022. Source: S&P Global Ratings

*Increasingly stringent and expensive regulatory requirements (**autos, heavy industry**), product substitution from climate transition (**autos, oil and gas, coal, fossil-fired power generation**).*



*<u>Competitive advantage</u> (product positioning and competitive pressures given transition trends in **autos**, priority power dispatch for **renewable power**)*

*<u>Scale, scope and diversity</u> (asset concentration and physical risk, product and geographic concentration: **commodities manufacturing, power***

<u>Profitability and efficiency</u>: regulatory burden on compliance, stability and long-term profitability outlook

*<u>Large capex requirements</u> to strengthen regulatory compliance (**power plants, autos, chemicals**) or shift legacy business models (**oil and gas, mining**); <u>large retirement or cleaning liabilities</u> (**commodities**)*

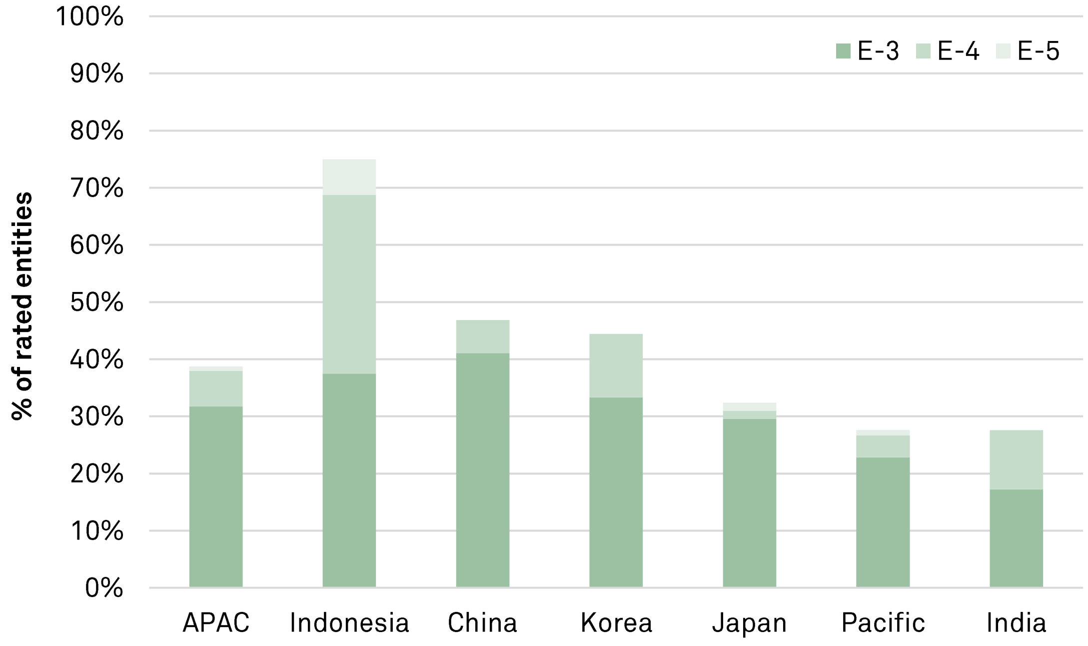
*<u>Funding availability and cost</u> for companies exposed to climate transition risk. **Most exposed: coal mining, palm oil, small oil and gas, small fossil fired power generation***

APAC E Risks | Affects 40% Of Rated Issuers

1. E risks influence ratings most negatively in the commodities, power, automobile, EPC and real estate sectors
2. The proportion varies from country to country depending on the rating distribution

Exposure To E Risks Varies Significantly Within Asia-Pacific

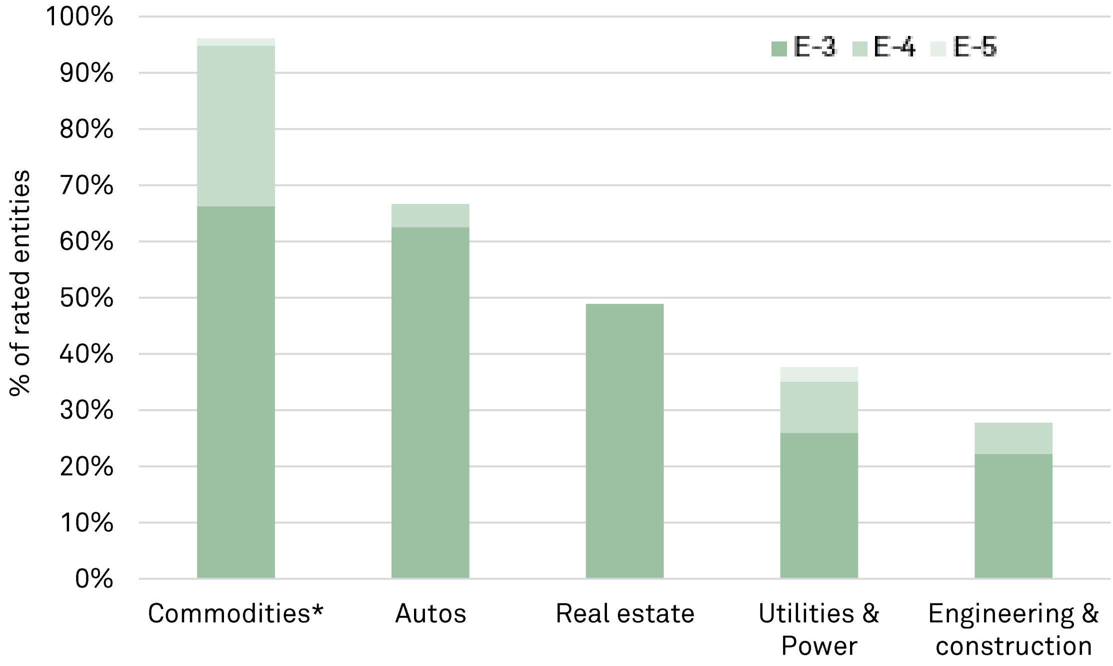
Proportion of rated entities exposed to E risks (E-3 and weaker) across countries



Data as of March 16, 2022. Source: S&P Global Ratings

Rated Sectors Most Exposed To E Risks In Asia-Pacific

Proportion of rated entities in each sector with an E-3 credit indicator and weaker



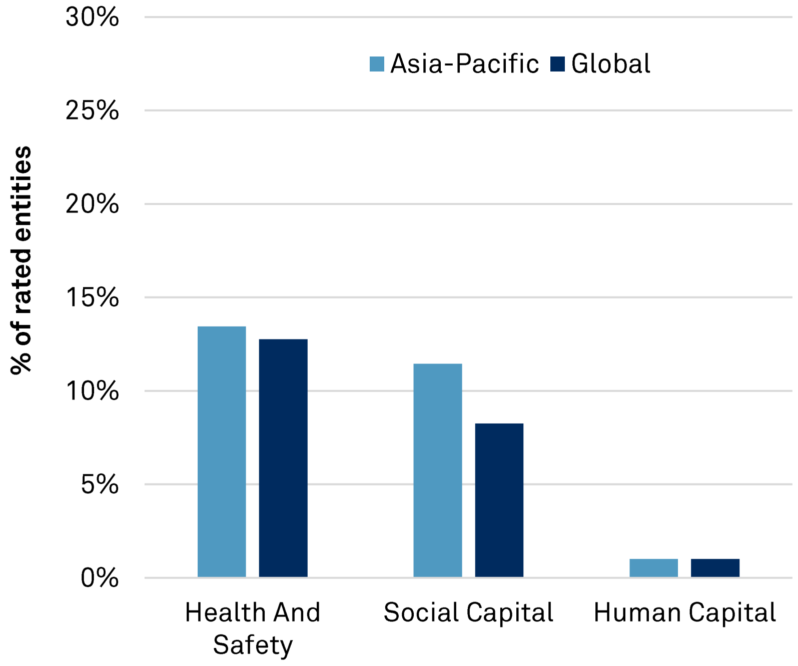
** Commodities include oil and gas, metals, mining, chemicals and agribusiness. Data as of March 16, 2022. Source: S&P Global Ratings*

APAC S Risks | Health & Safety, Social Capital Affect Most

1. Health and safety has been a major driver of rating transitions in mobility sectors (transport, retail, leisure), mining to a lesser extent.
2. Concentration risk (product, asset, geographies) magnifies S risks
3. Price controls or regulations on ‘social capital’ grounds is an increasingly relevant S factor in countries such as Indonesia and China

Main S Credit Factors In Asia-Pacific vs. Global

Proportion of rated entities exposed to the S credit factor



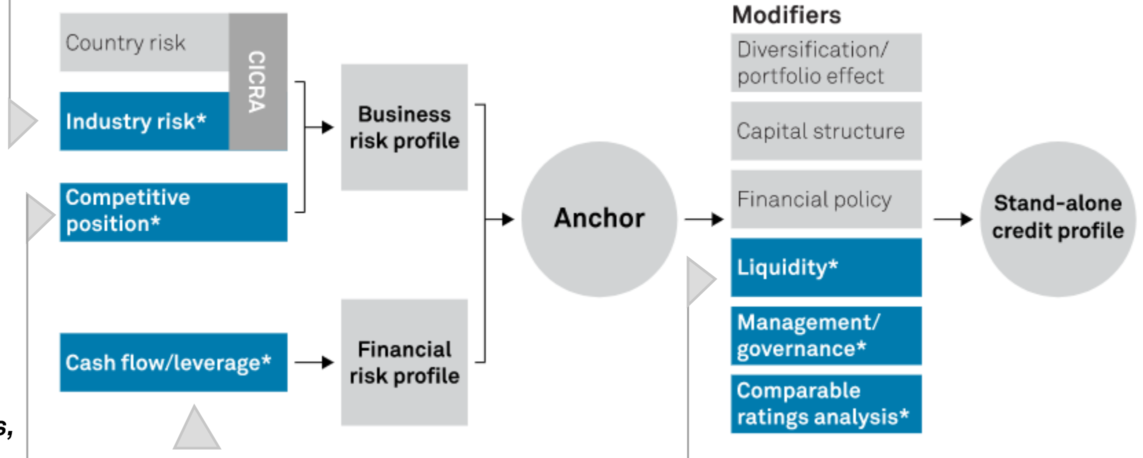
Data as of March 16, 2022. Source: S&P Global Ratings

*Impact of health-related trends on volumes or growth (**tobacco**), impact of pandemics, geopolitics on mobility (**transportation, leisure, retail**), long-term demographics trends (**health**).*

*<u>Competitive positioning</u>: Positioning and market share in S-sensitive products or services (**healthcare, tobacco, public service obligations**)*

*<u>Scale, scope and diversity</u>: Geographic/product concentration: **mobility sectors, transportation, leisure**); asset concentration (**mining**)*

*<u>Profitability</u>: flexibility of cost base (**retail, transportation cyclical**); sensitivity to price caps or compliance costs (**technology, mining**); volatility of profitability through a cycle*



*Provisions for past health and safety litigation (**tobacco, asbestos**); magnified cash flow ratio volatility (**mobility sectors, discretionary retail**); Actual or potential regulatory fines (**technology**)*

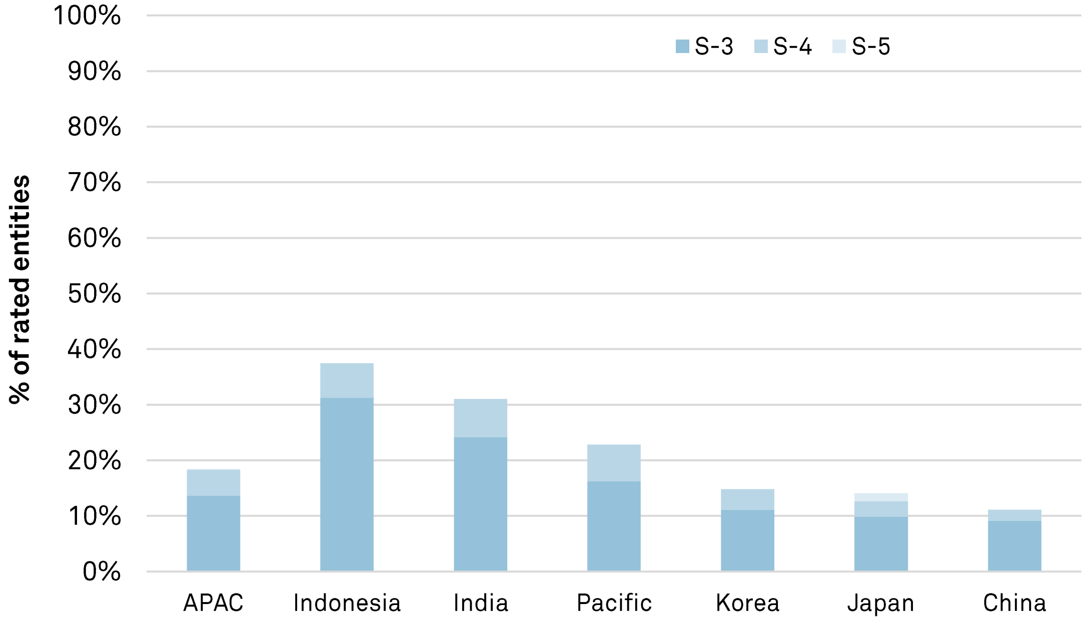
*<u>Funding availability and cost</u> for companies exposed to social risks. **Most exposed: smaller issuers in S-sensitive sectors (mining, technology); mobility space***

APAC S Risks | Concentrated In Mobility And Mining

1. The influence of S risks on ratings is lower than E risks, and net neutral for about 80% of rated companies in Asia-Pacific
2. Mobility (transportation, leisure, some consumer and retail) and commodities (especially mining) are the most affected
3. Country exposure to S risks depends on the rating universe

S Risks Influence Ratings Less Than E Risks In Asia-Pacific

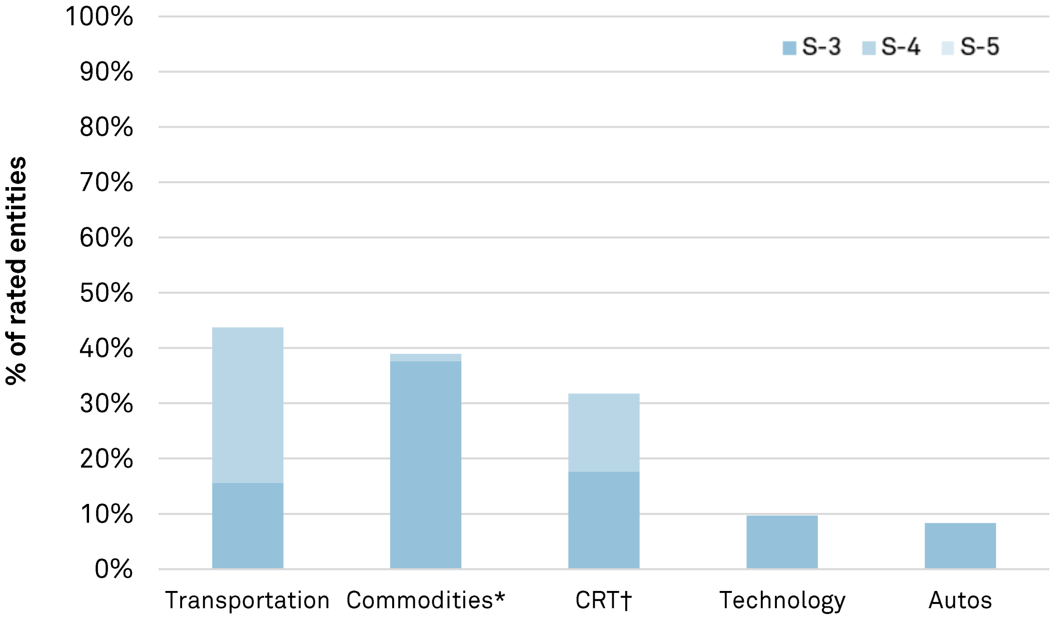
Proportion of rated entities exposed to S risks (S-3 and weaker) across countries



Data as of March 16, 2022. Source: S&P Global Ratings

Rated Sectors Most Exposed To S Risks In Asia-Pacific

Proportion of rated entities in each sector with an S-3 credit indicator and weaker



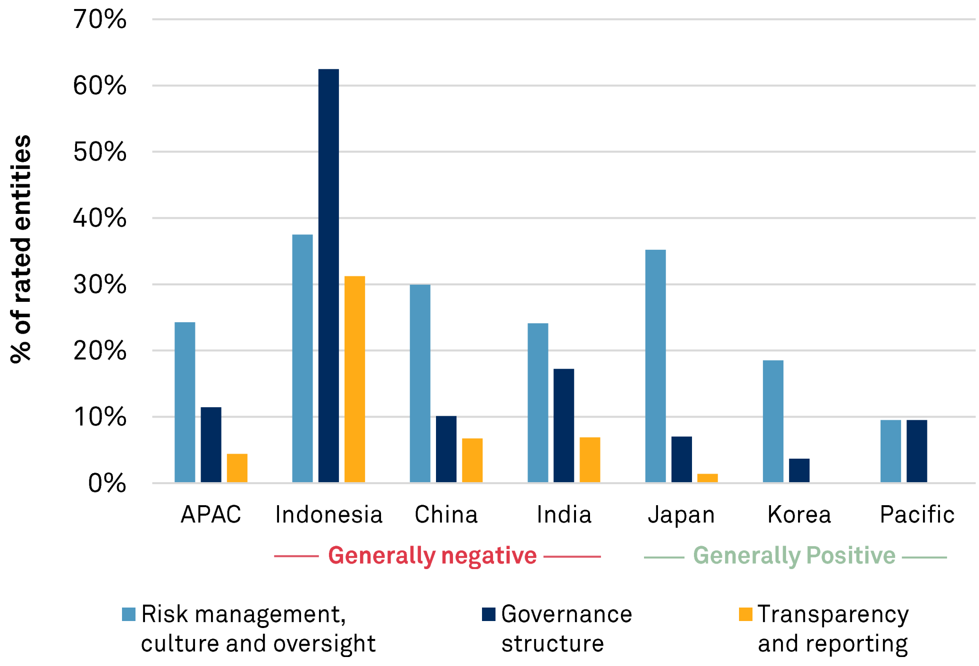
** Commodities include oil and gas, metals, mining, chemicals and agribusiness. †CRT includes consumer, retail, technology, healthcare, telecoms and leisure. Data as of March 16, 2022. Source: S&P Global Ratings*

APAC G Risks | Culture/Oversight, Governance Struc. Affect Most

1. The prevalence of family-ownership, owner-friendly decision making, and complex group structures weighs on G in emerging Asia
2. Aggressive growth, rapid strategic changes, reactive liquidity management, willingness to pay issues are more frequent in emerging Asia
3. We observe steadier strategic execution, more sophisticated controls, less ‘strategy’ event risk in Korea, Japan, Pacific countries

Main G Credit Factors Across Asia-Pacific

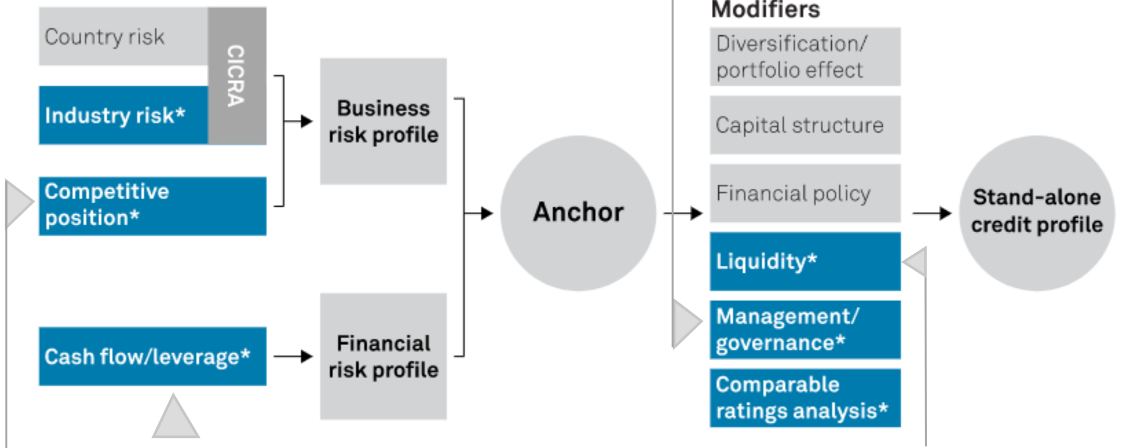
Proportion of rated entities exposed to the G credit factor and its influence



Data as of March 16, 2022. Source: S&P Global Ratings

Directly: M&G assessment. *Quality and independence of decision making, board oversight and internal controls, disclosure and transparency, strategic planning and execution, relations with stakeholders.*

Indirectly: competitive positioning, profitability: *Material deficiencies in governance and risk management leading to reputation, customer damage and financial losses, or poor strategic execution.*



Indirectly: *History of regulatory, tax, or legal infractions outside industry norms, creating liability risk.*

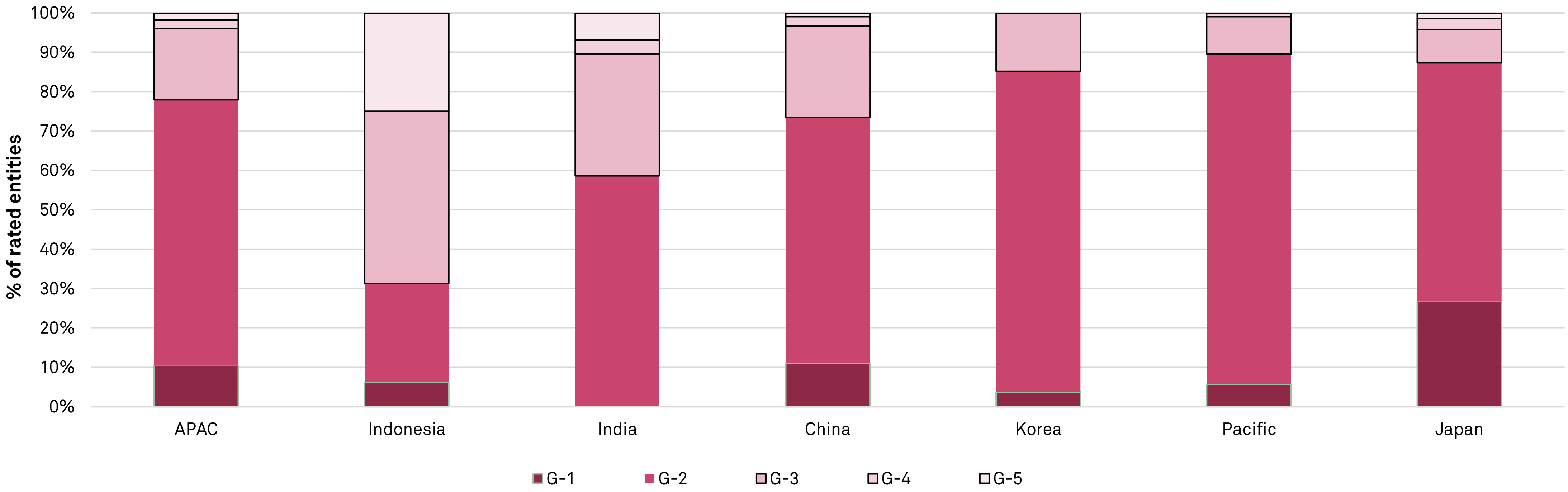
Indirectly: Funding availability and refinancing *for companies exposed to governance risks, transparency, disclosure, especially when market has lost confidence,*

APAC G Risks | Affect One-Third Of Ratings

1. G is the second most influential ESG factor in Asia-Pacific, captured in about 1/3 of ratings
2. Unlike E factors, G factors are largely issuer-specific rather than sector-specific
3. Unlike E or S factors, G has both a positive and a negative influence on our ratings in Asia-Pacific, largely due to the higher share of investment grade companies, especially in Japan

The Rating Influence of G Varies Significantly Across Asia-Pacific

Distribution of G credit indicators across Asia-Pacific countries



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