

Lending for ESG: The Next Five Years

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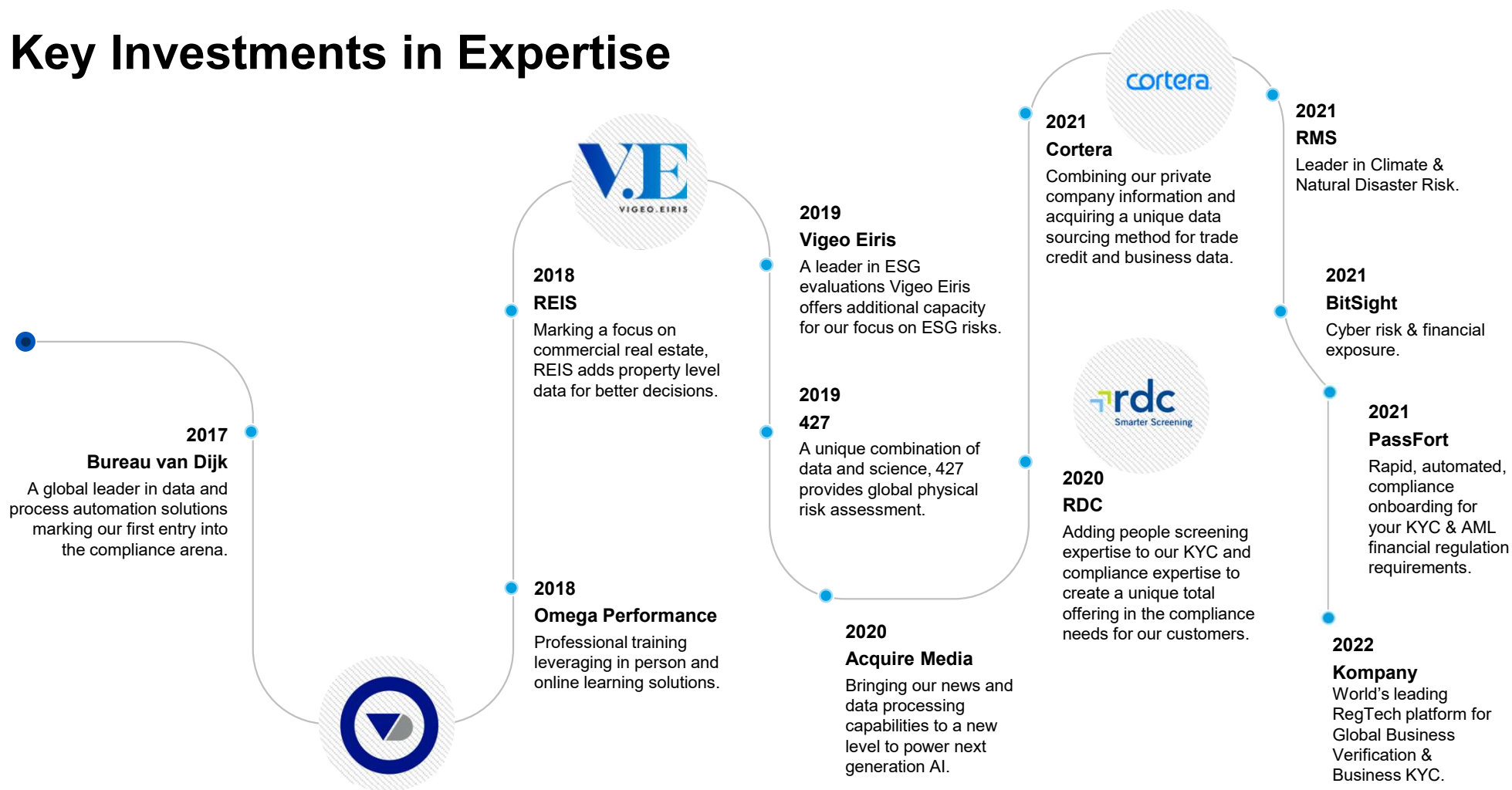
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Key Investments in Expertise





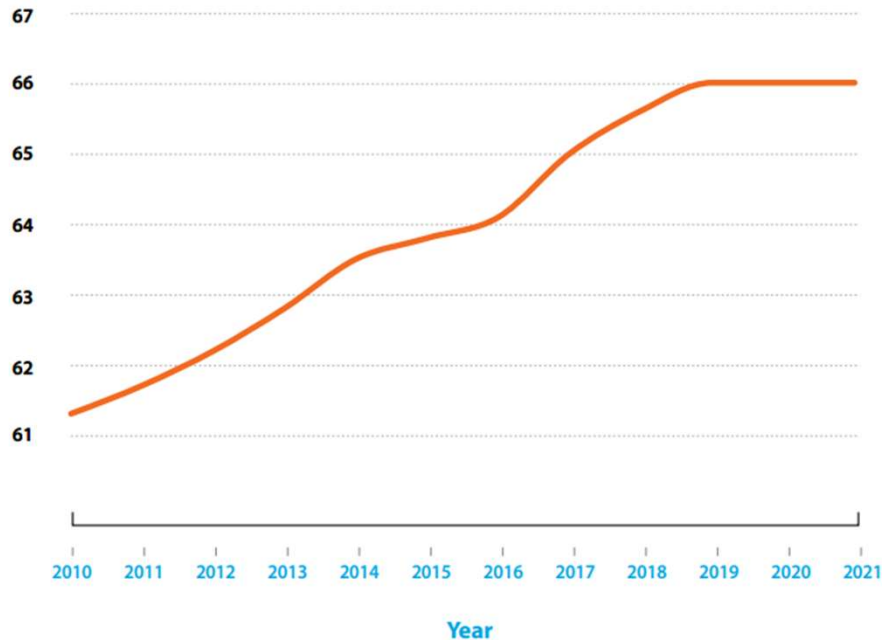
Agenda

- 
- 1. Current State**
 - 2. Key Factors**
 - 3. Changes**

Current State

Sustainable Development

SDG Index Score, World Average
(2010- 2021)

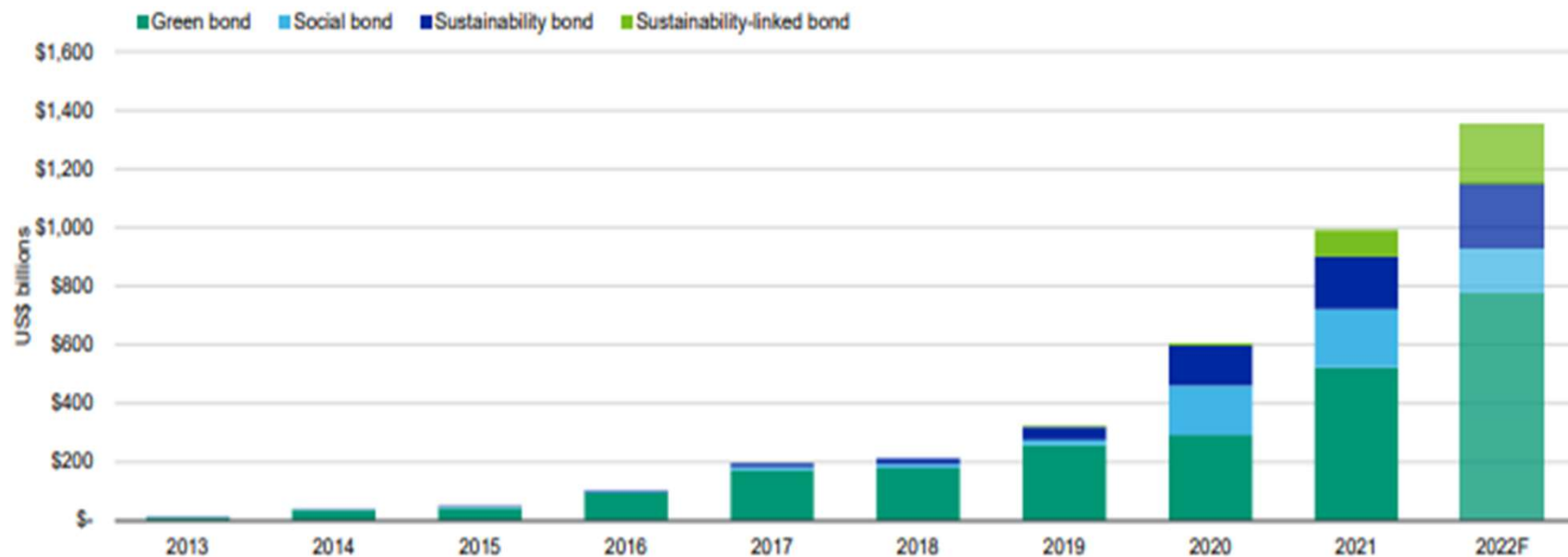


Sachs, J., Kroll, C., Lafortune, G., Fuller, G., & Woelm, F. (2022). *Sustainable Development Report 2022*. Cambridge: Cambridge University Press. doi:10.1017/9781009210058

- **2015-2019 improvement rate 0.5 points/year**
 - Too slow to reach 2030 deadline
 - Poorer countries made larger gains
- **2020 and 2021 no forward progress**
 - Nonexistent recovery in poor countries
 - Multiple overlapping health and security crises
 - Progress on climate and biodiversity goals too slow
- **Growth in Sustainable Bond Finance**
 - 2013 below \$ 100 billion
 - 2021 roughly \$ 1,000 billion

Annual issuance of GSSS bonds, US\$ billions

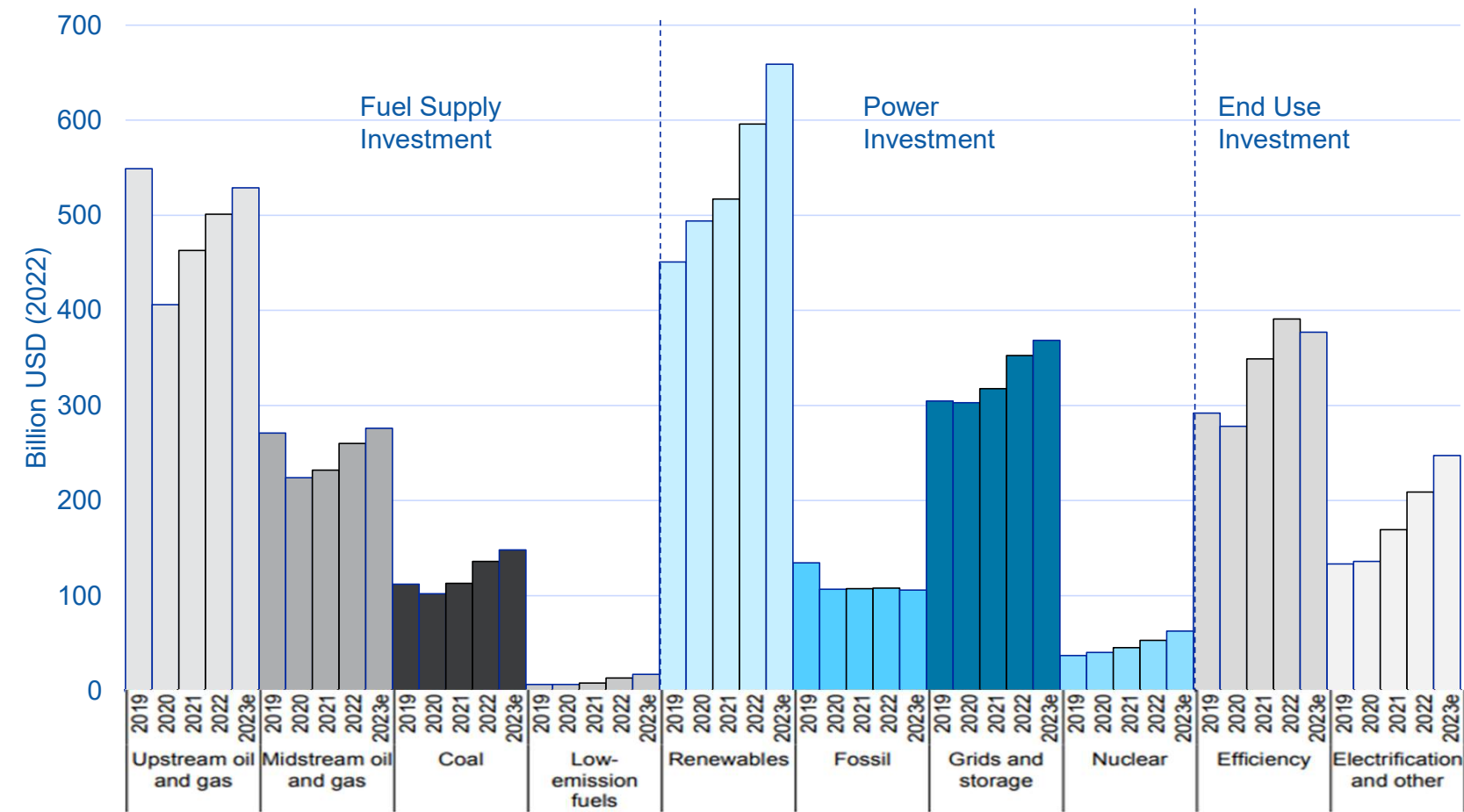
Green, social, sustainability and sustainability-linked (GSSS) bond volumes



2022F represents Moody's 2022 issuance forecast.

Sources: Moody's ESG Solutions and Environmental Finance Bond Database

IEA Energy-Sector Investment, 2019-2023e

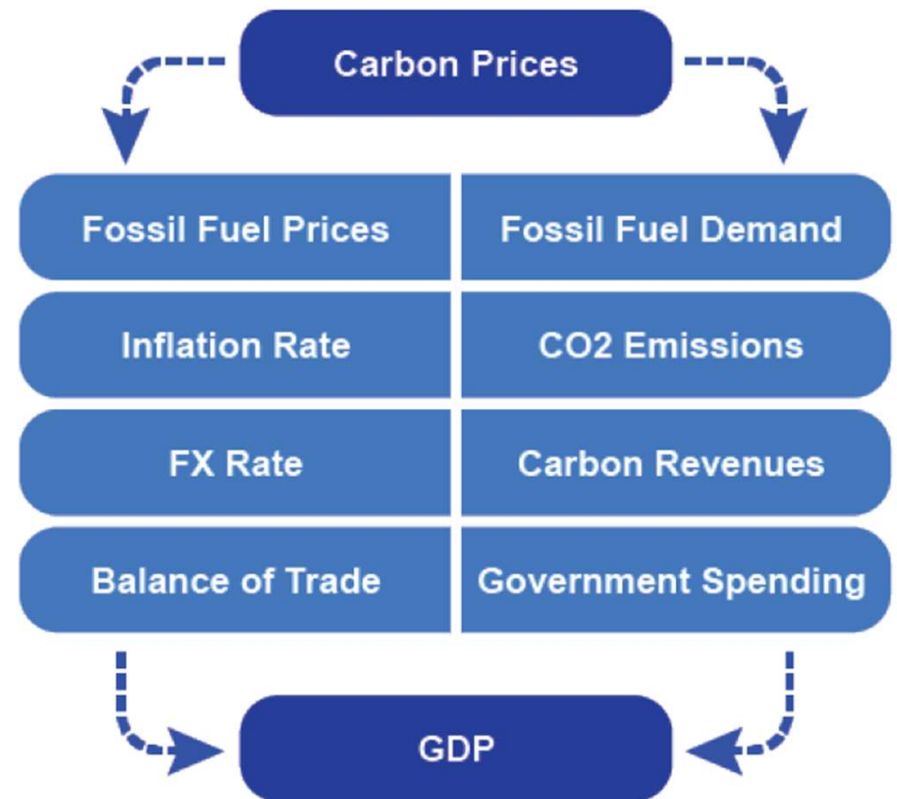
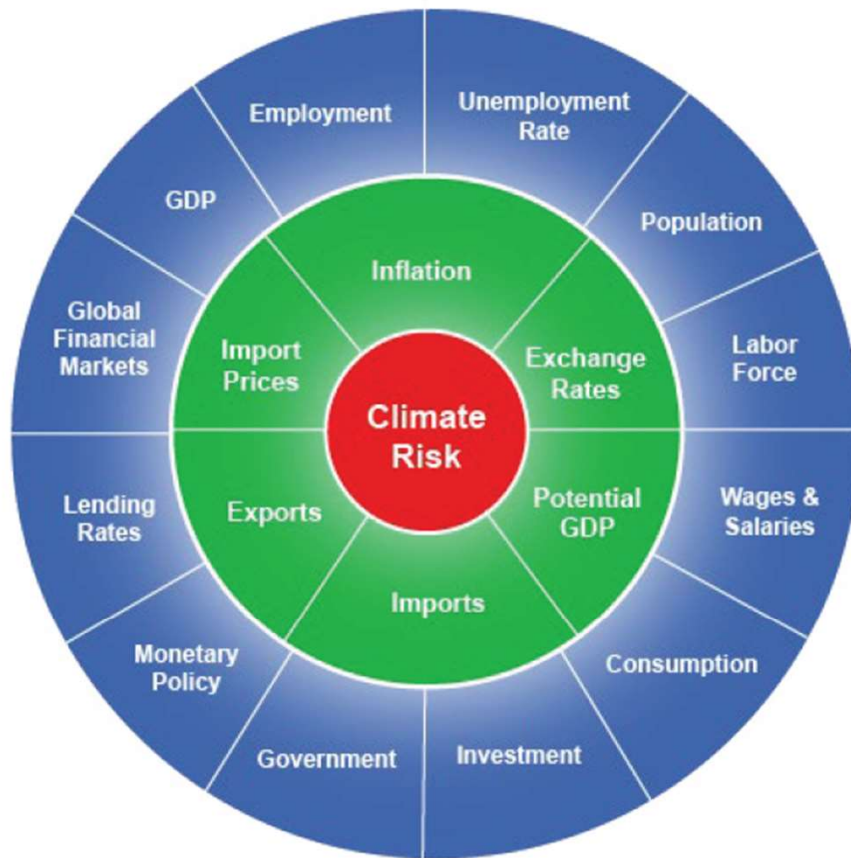


Key Factors

Key Drivers

Category	Comment
Resilience	The ability of financial system, projects, and investments to withstand and adapt to environmental risks and shocks. It is inclusive of the Supply Chain as well.
Efficiency	The ability of financial mechanisms and investments to achieve environmentally sustainable outcomes in a cost-effective manner. It includes carbon pricing, level of subsidies, and transaction costs as well.
Efficacy	The degree of impact for the financial resources. Influenced by regulatory frameworks, policy incentives, technological advancements and the market conditions.
Transparency	Providing clear and comprehensive information about the environmental impact risks and performance of green financial products, projects and organizations. Examples: Environmental impact disclosures, reporting standards, accessible information to all stakeholders, and disclosure of climate change-related risks.

Energy Transition = Macroeconomics

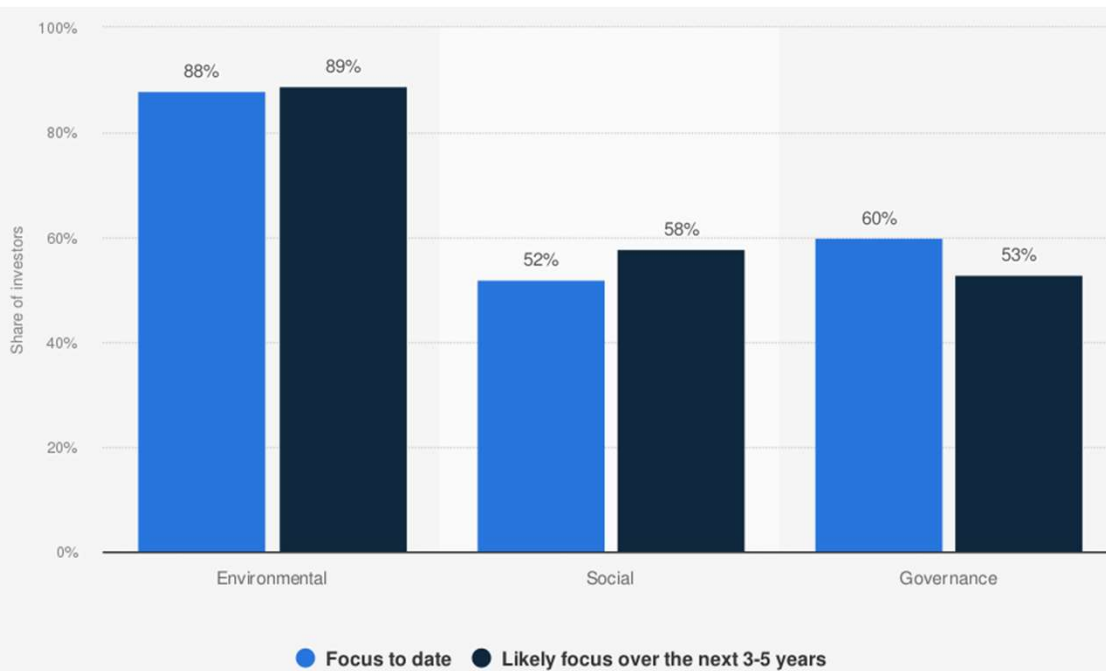


Source: Moody's Analytics

Changes

ESG focus worldwide 2020

Which of the ESG aspects is your main sustainable investment focus



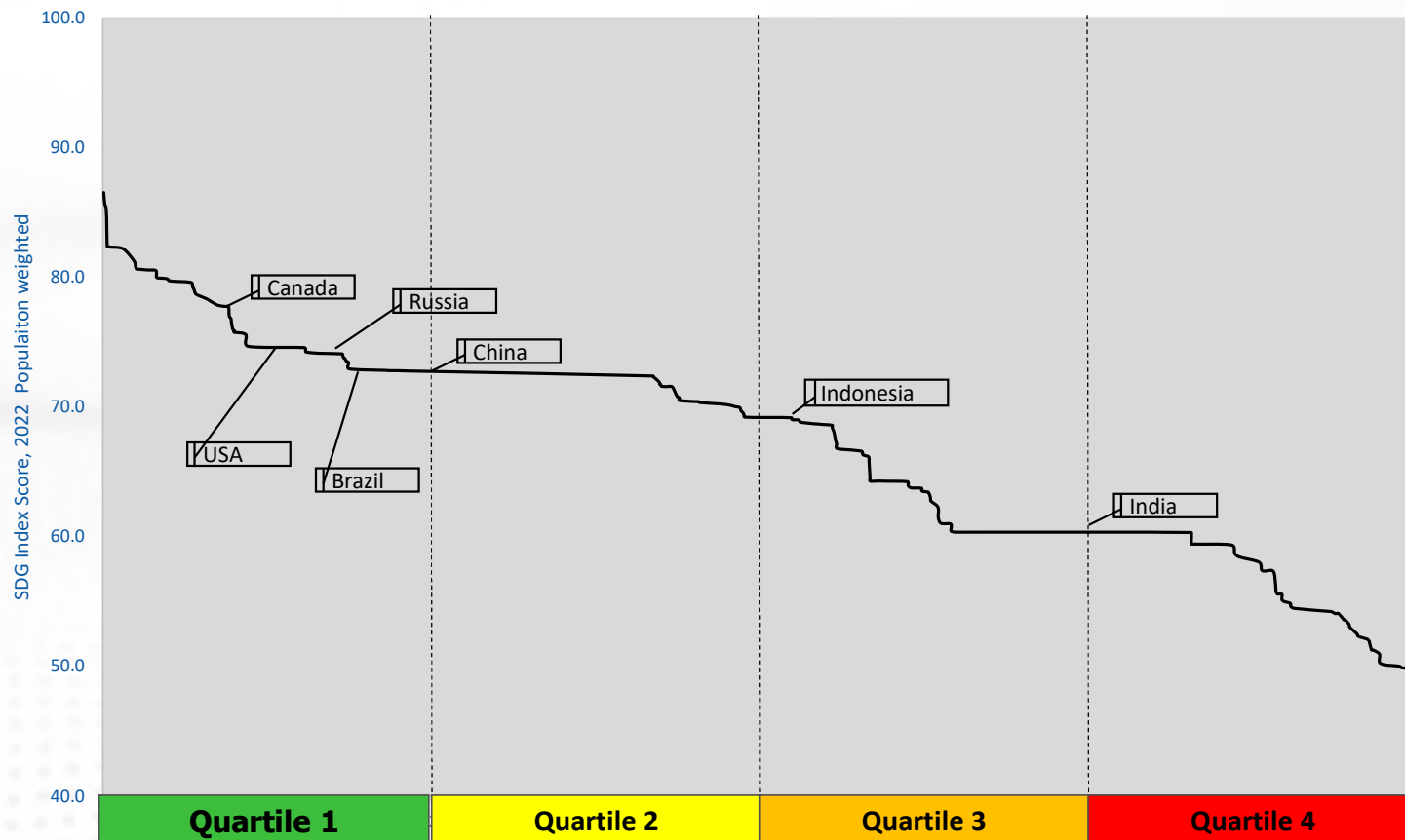
Source
BlackRock
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Additional Information:
Worldwide; July to September 2020 ; 324 respondents*

- **2020 Edelman Trust Barometer Special Report: Institutional Investors US results**
 - Social ranked #1; previously ranked #3
 - Governance dropped from #1 to #2
- **Oil and Gas (O&G) heavily impacted by “E”**
 - O&G possible to score high on “G”
 - Tesla dropped, ExxonMobil stayed S&P 500 ESG Index
- **Recent research**
 - Robert Stambaugh, University of Pennsylvania: “Green Tilts”
 - Geert Rouwenhorst, Yale University: “Commodities and ESG”

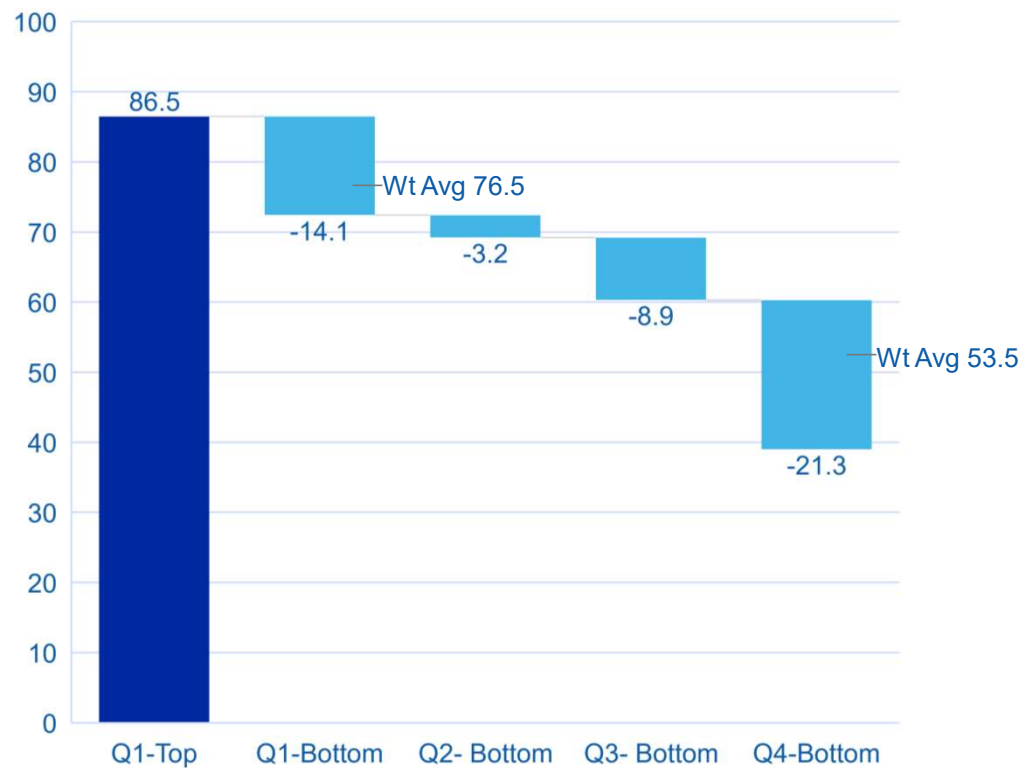
Country SDG Index Score

Quartiles 2022- Population Weighted



Country SDG Index Score

Distribution Breakpoints




- **Single Taxonomy**

- Procedures
- Data Sources
- Reference Years
- Units of Measure
 - Observable variables measured in some units
 - Magnitudes have well-defined meanings

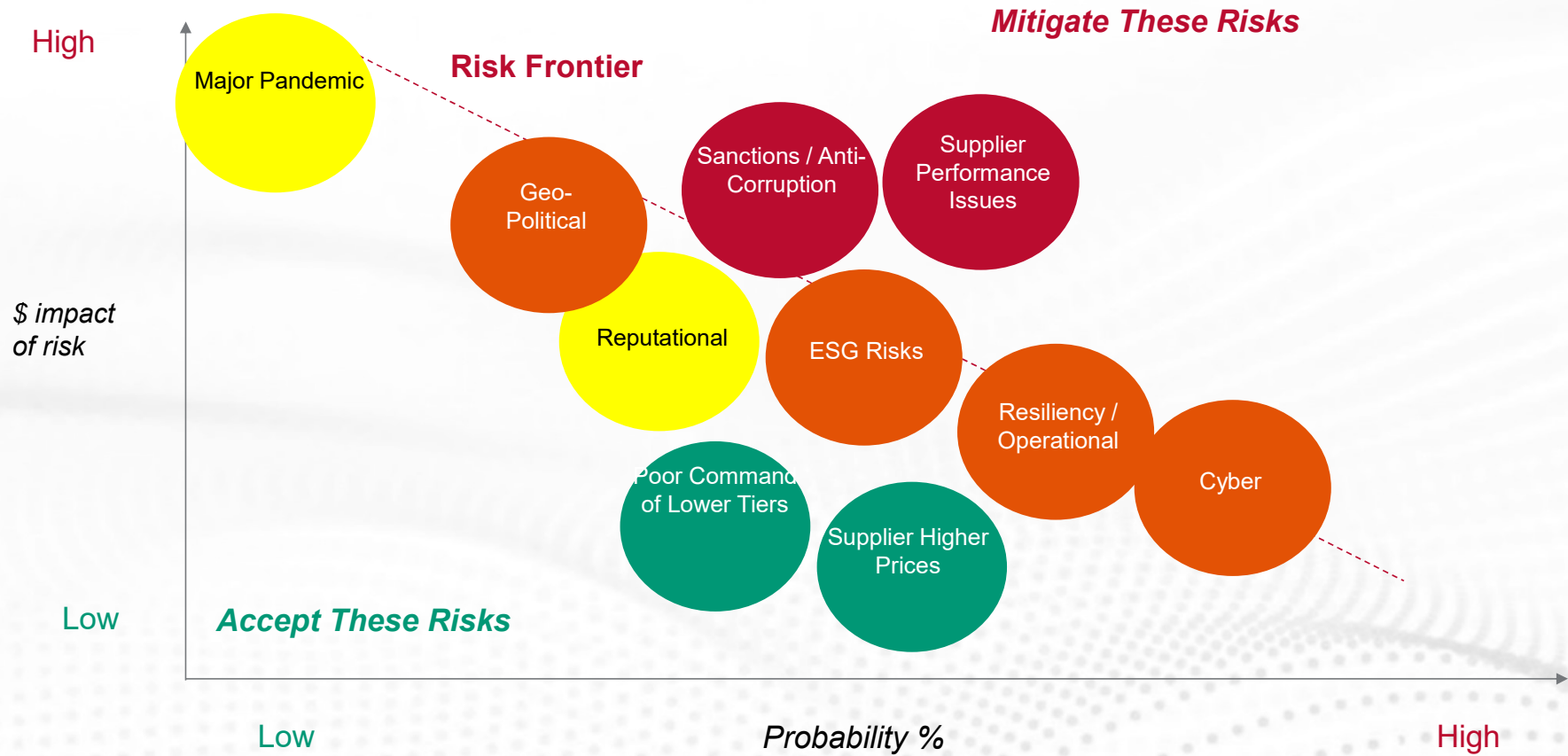
- **Data Providers**

- Missing data: India ~ 1%, US/Canada ~2%, Russia ~4% and China ~6%
- 30 Countries no data; 0.57% of total population

Action- vs Outcome-Based Debt Contracts

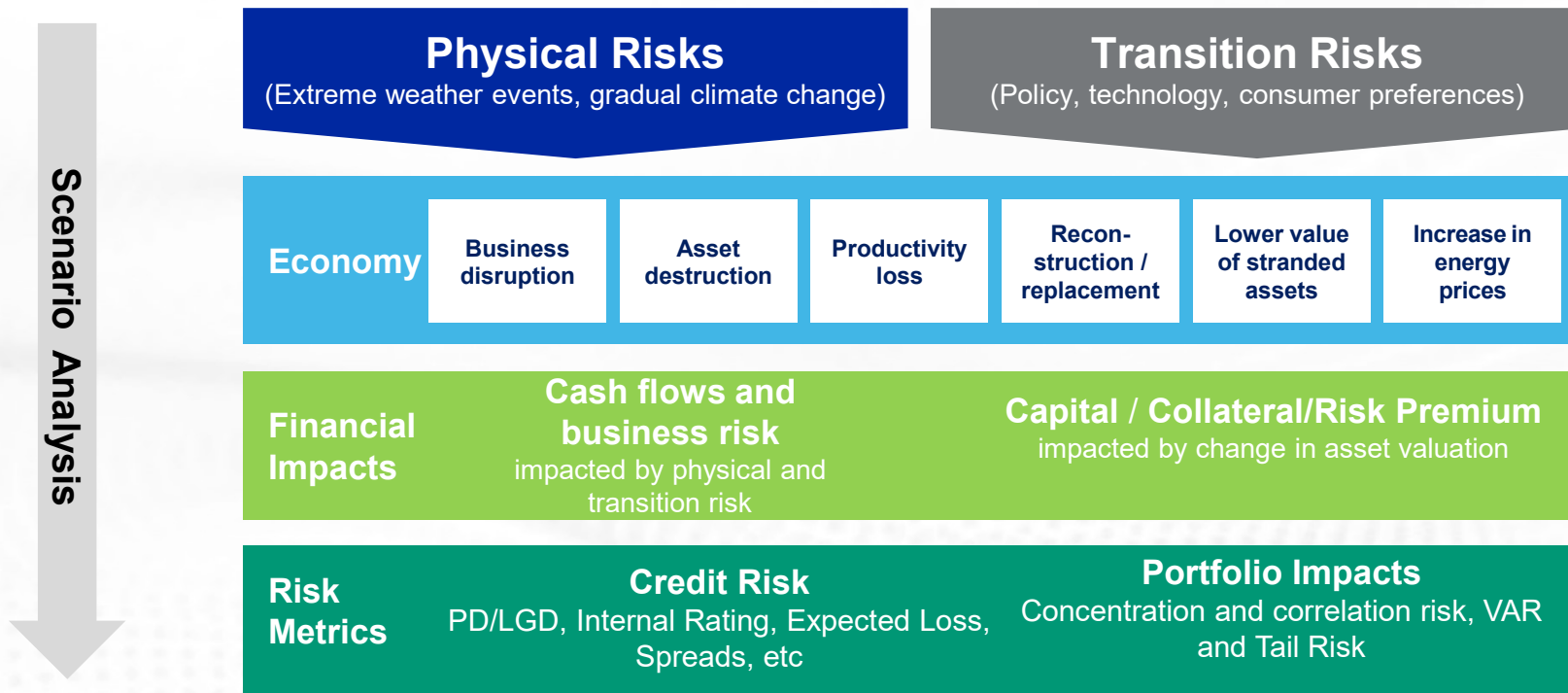
Action- Based: Green Bonds	 Capital Market	Outcome-Based Sustainability-Linked Loans & Bonds
Specify the projects that the borrower can allocate the proceeds to, but it does not target, nor it incentivizes commitment to green outcomes.	Contract Terms	Does not specify projects that the proceeds can be allocated to but makes the cost of debt contingent on realized green outcomes.
Creates an opportunity cost of committing to projects before learning the green outcome potential.	View of Risk	No commitment cost, but to the extent that the measurement systems on which contingencies are based can be manipulated, a distortion discount is created.
Projects likely to be financed with either very high or very low green outcome uncertainty.	Outcome	Interest rate increases depends on reliable measurement systems.

Prioritizing Supply Chain Risk



From Climate to Financial Risks

Analyzing climate risk for corporate supply chains requires multiple steps of analysis:



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