ESG Lens

March 2021

NN investment partners

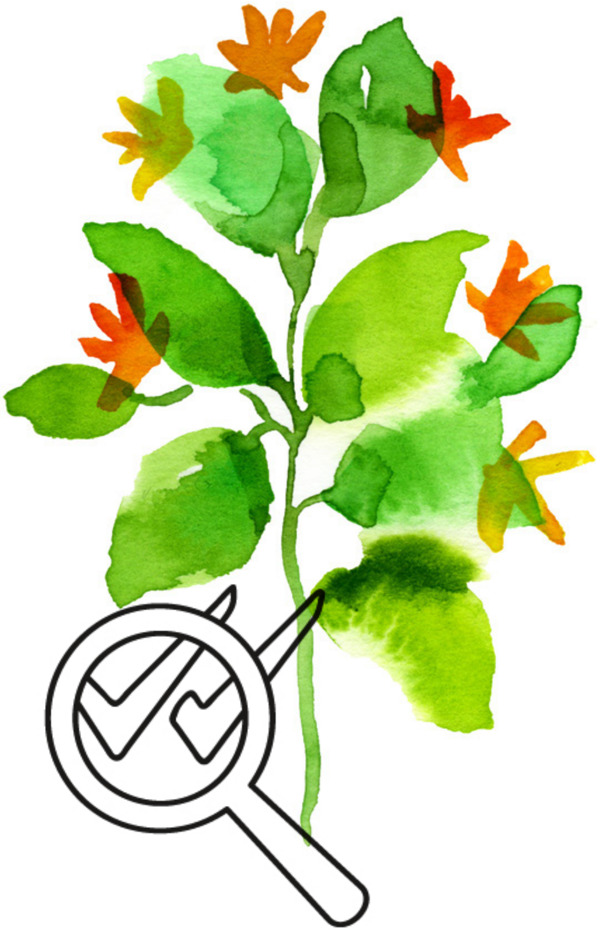
www.nnip.com

ESG Lens

NN IP's proprietary ESG Lens is a valuable tool for ESG integration across a broad spectrum of investment strategies. It provides our investment teams with a single ESG score for each company or country they assess, taking into account a wide range of data points. We use the resulting score as a key input for our overall ESG assessment of the company or country in question.

The ESG Lens can be applied across both equity and fixed income investment strategies, and across both emerging and developed markets. However, due to the different nature of the data that is used in ESG analysis of companies versus countries, there is not one single framework that provides an ESG score for both companies and countries. In addition, the way we approach the materiality of factors is tailored to the type of asset class that's being scored. This is because what is material to companies differs widely between sectors, while there are many material factors that apply to all countries.

We have therefore created two different frameworks for companies and countries, respectively. The bulk of this document explores these two frameworks and how we apply them.



The ESG Lens for corporate analysis

The below model provides a clear overview of how we apply our ESG Lens in corporate analysis. We created this model to provide our analysts with a single ESG score for each of the companies in which we invest. It combines a wide range of data inputs, including daily, big data and more traditional ESG data sources. On top of that, the ESG Lens allows for the use of our analysts' knowledge and expertise to fine-tune the data-driven score. In this way, our overarching ESG assessment process benefits from the strengths of both man and machine: human intelligence coupled with the rigours of machine learning.

On the corporate side, the initial input for the ESG Lens comes from our ESG Materiality Framework, which provides information about the material risks to which a company in a certain sector is exposed. We believe that through assessing these material risks, and how the company is managing this exposure, we can gain deep insights into a company's potential long-term economic success.

Issues pertaining to climate change, for instance, would have a different weighting for a software developer than for an energy company, whereas resource use and pollution – highly material for energy firms – is not considered material for real estate companies. In this, we do not differentiate between equity and credit, as we believe that the material factors for an industry group are the same regardless of asset class. More information about the ESG Materiality Framework and our overall approach to materiality can be found on the **RI policies page** of our website.

For the ESG Lens, we use all factors of the environmental, social and governance pillars of our materiality framework and have grouped them in six categories. We weight these factors according to their importance to the sector in question, using input from our analysts and ESG specialists. The below tables provide an example of this weighting for two of the sectors we assess. It is important to note that this is dynamic, not static; in other words, the material factors that are relevant/irrelevant today may become irrelevant/relevant in the future, depending on developing global contexts and changing priorities.

	Climate change	Resource use & pollution	Human rights & human capital	Product responsibility	Corporate governance	Corporate behaviour
Energy	✓	✓	✓		✓	✓
Financials	✓		✓	✓	✓	✓

	E	S	G
Energy	42%	35%	23%
Financials	16%	35%	49%

We next use input from three data providers – Sustainalytics, Refinitiv, and TruValue Labs – to derive a score for each ESG pillar. Sustainalytics and Refinitiv provide medium- and longer-term data on a company's ESG standing, collected from company policies and annual reports, among others. Sustainalytics also aggregates and analyses data on controversies. These insights are augmented by timely and dynamic insights from TruValue Labs, which analyses and quantifies the news flow around companies in near real-time fashion by applying big data analysis and natural language processing.

We have set standards of minimum data availability for a company in order to calculate a score. When building the ESG Lens, we encountered many cases of missing values. We therefore constructed a missing value algorithm to compute these missing data points. This algorithm uses correlations between other data fields and company characteristics to make an educated guess at a reasonable value.

To arrive at the E, S and G scores, we rank all companies on their performance relative to their peers in their sector. This is because the materiality framework assigns material issues for different sectors, and companies are scored based on these material factors. Since these scores are based on intra-sector comparison, it is difficult to compare companies from different sectors with each other. However, being able to make inter-sector comparisons is vital, as portfolios include companies from many different sectors. In order to make these comparisons, we apply two additional aspects of ESG performance: how a company behaves (controversies) and what it does (activities).

We first adjust the E, S and G scores for controversies, such as malpractice and other questionable behaviour, and incorporate an outlook (negative, neutral or positive) for each controversy. Within this step, we assess a wide variety of controversies, including topics such as the carbon impact of products, labour relations, and animal welfare. After making the controversy adjustments to the E, S and G scores, we arrive at an initial ESG score.

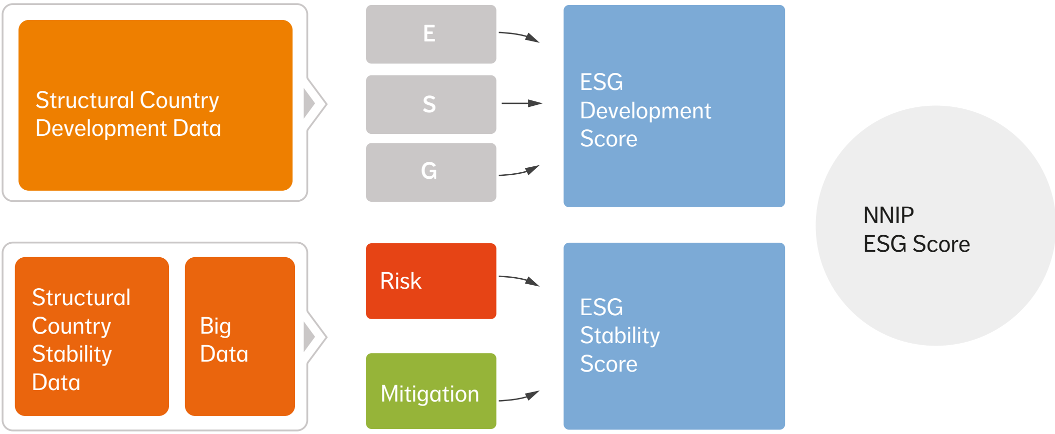
Next, we adjust this score for the impact of a company's business activities, measured in terms of how much revenue it makes from certain types of products and services. By incorporating this data, we take into account not only the company's internal ESG performance but also the ESG impact of what it produces or provides as a service. For example, we consider business activities linked to providing green transportation or affordable housing to be sustainable, while activities linked to thermal coal or gambling would be considered unsustainable.

The final data input for which the ESG Lens allows is the analyst's expert opinion on the company. It offers the option for analysts to suggest an increase/decrease in a company's score at the level of material factors, which also affects the total score. Analysts could also submit qualitative comments if they believe that the score or its underlying components do not yet capture certain information. The decision of whether to incorporate this input into the score would then lie with a neutral committee (the RI Leadership Team), which would periodically decide whether to accept, reject or request more information about the suggested changes. If accepted, the change would be reflected in the score for a period of six months, after which the PM/analyst would review it to determine whether it still applies.

The ESG Lens ultimately provides a comprehensive score between 1 and 100 that reflects our proprietary view on a company's ESG performance and helps guide our investment decision-making. This score is not just an absolute number; rather, it is a tool to help our investment teams calibrate a company's valuation and attractiveness. It incorporates the company's strengths and weaknesses and aids with positioning it versus its peers. As the underlying data is dynamic, the score also demonstrates the company's momentum and ESG sustainability efforts. As a result, it is forward-looking and helps our analysts and portfolio managers decide whether to apply a discount or premium to a stock's valuation.

The ESG Lens for sovereign analysis

The ESG Lens is a crucial input for ESG integration used in our sovereign investment strategies, across both developed and emerging markets. This tool enables us to identify where future risks and opportunities could arise, as well as how countries are equipped to respond. It also helps us standardize data between countries and increases consistency and measurability in our investment process.



The ESG Lens for sovereign analysis comprises two fundamental pillars: the ESG Development Score and the ESG Stability Score. The combined input from these two pillars provides the overarching ESG score for a country, as shown in the model above.

On the sovereign side, the ESG Lens captures over 80 different data points from a variety of sources. With one exception, all our sources are publicly accessible. Most importantly, this includes the World Bank's Governance data and third-party data accessible through the World Bank website. In total, we use these World Bank tools for over 60% of the data we incorporate into the sovereign ESG analysis of our ESG Lens. Other publicly available sources include data provided by NGOs like Transparency International or Harvard University.

Given the slow-moving nature of most ESG factors in the sovereign space (for example, social data, environmental changes, and so on), we complement the ESG Lens with a big data overlay to amend the ESG score for each country on a daily basis. We use data from MarketPsych here as input. MarketPsych uses text recognition and natural language processing and scours the world's news media for relevant ESG information on the countries covered by the ESG Lens. Subject to minor changes, approximately 12 data points come from MarketPsych and are therefore not publicly accessible.

Unlike on the corporate side, when looking at countries the ESG Lens does not differentiate between the materiality of factors based on geography or other differentiating factors. Although the degree to which material factors impact a country financially may differ, most ESG factors tend to be material for every country. Examples include the quality and availability of education and healthcare, political stability and the energy sources a country relies on. We therefore score all countries using the same factors to determine how they compare to each other from an ESG perspective.

The below sections explain the ESG Development Score and ESG Stability Score in more detail: their purpose, the underlying themes and how they are applied.

ESG Development Score

The ESG Development Score assesses a country's level of development, including commonly acknowledged criteria like education levels, poverty rates, good governance, and so on. We also include criteria that reflect NN IP's values, such as gender equality and GHG emissions. The Development Score is geared towards the long term and does not necessarily reflect short-term investment risks. Its primary purpose is to determine a country's general level of ESG development, to compare it with other countries in the universe, and to determine its structural improvement or deterioration over time.

We separate the ESG Development Score into three pillars: environmental (25% weight), social (25%) and governance (50%) factors. The higher weight for governance data reflects conclusions from academic literature that countries need good governance for strong performance on environmental and social criteria, not the other way around.

Each pillar is based on several investment themes, which are in turn based on a selection of raw data points. For example, the social pillar includes the theme of gender inequality, which in turn consists of data points on female labour force participation and school enrolment disparity. The chart on the following page provides an overview of all themes and the included data points.

Components of ESG Development Score

Category	Theme	Raw Data Points		
Environmental	Climate change	CO_2 emissions/GDP	Renewable energy consumption	
		Energy efficiency		
	Environmental concerns	Biodiversity & habitat	Air pollution	
		Tree cover loss	Nitrogen management	
Social	Gender equality	Female entrepreneurs	Female labour force participation	
		Percentage of women MPs	School enrollment disparity	
	Education & research	Years of compulsory education	R&D expenses as % of GDP	
		School enrollment rate		
	Unemployment	Unemployment rate	Poverty rate	
	Health & demographics	Life expectancy	Child mortality rate	
		Immunisation rates	Replacement fertility rate	
	Basic services	Access to drinking water	Internet usage	
		Access to basic sanitation	Mobile phone usage	
		Access to electricity		
Governance	Rule of law & democracy	Government effectiveness	Voice & accountability	Rule of law
	Good governance	Corruption	Ease of doing business	

Within the E, S and G pillars, we weight all raw data points equally. We normalize all scores to a scale ranging from 0 to 100. This is an absolute scale and should not be confused with a percentile ranking. The best possible score for every raw data point is 100. This does not mean that such a top score is achieved in practice by any particular country in a given category as it may be that no country is “perfect” in this category.

ESG Stability Score

The ESG Stability Score reflects a country’s level of stability regarding political events, natural disasters, socioeconomic tensions, and so on. Its primary purpose is to provide an overview of the structural investment risks a country faces that are not primarily of an economic or financial nature. The Stability Score allows users to place current political or social events into context and is meant to inspire further research on topics that are flagged by the score.

It is based on five broadly defined themes, each scored separately: violence & terrorism, fractionalization, socio-economic tensions, political unrest, and natural disasters. Each theme is further subdivided into several data inputs; for example, the political unrest theme includes data points on political stability and the level of corruption. The figure on the following page provides an overview of the data inputs for each theme.

Components of ESG Stability Score

Stability Score

Violence & Terrorism	Fractionalisation	Socio-Economic Tensions	Political Unrest	Natural Disaster
Global Terrorism Index	Ethnic fractionalisation	Income inequality	BTI governance (democracy)	Number of occurrences
Domestic and internal conflict	Linguistic fractionalisation	GDP growth (5 yrs)	Corruption	Affected people/population
Homicide rate	Fractionalised elites	Population share in largest city	Electoral process & pluralism	Economic resilience
Tourism % of GDP	Justice system	Youth unemployment	Civil liberties	Deaths/affected people
Economic complexity	Political stability & absence of violence	Changes in blue-collar jobs	Political stability	
Political stability & absence of violence	Inter-group relations	Security apparatus	Demographics	
Received remittances	State legitimacy	Government spending as % of GDP	Strength of anti-democratic Institutions	
	State identity	Demographics	Decentralisation	
	Conflict management & mitigation			

For each theme, the indicator seeks to answer two questions: What is the probability of an event happening (Risk)? How prepared is the country and what courses of action can it take to reduce that risk (Mitigation)? Countries with comparable risk levels might respond very differently to the same risk event because they have different tools at their disposal to limit the economic or political impact of that risk. The indicator also includes a big data overlay that can flag current risk events such as protests or strikes. Meanwhile, the risk levels and mitigating factors help us put these events into the context of the structural issues a country might face.

Conclusion

The ESG Lens supports our investment teams across a wide range of investing strategies, from sovereign to corporate, equity to fixed income, and emerging to developed markets. It enables our analysts and portfolio managers to better assess the present and future risks to a country or company, as well as the tools that can be deployed to mitigate these risks.

Disclaimer

This communication is a promotional material and is not intended for the general public. It is intended for professional investors, semi-professionals, eligible counterparties, Swiss qualified investors, and/or institutional investors within the meaning of MiFID and/or the local applicable law. This publication is not directed at residents of jurisdictions where the distribution of such material is prohibited by law. If made available to a broader audience by a third party this communication may only be distributed to the audience for which it was conceived. This communication is issued by NN Investment Partners B.V., which has a license as manager of Undertakings for Collective Investment in Transferable Securities (UCITS) and as Alternative Investment Fund Manager (AIFM) from the Dutch Authority for the Financial Markets (AFM) in Amsterdam, the Netherlands. This communication has been prepared solely for the purpose of information and does not constitute an offer, in particular a prospectus or any invitation to treat, or contractual basis to buy or sell any security, or to participate in any trading strategy, or to provide investment or ancillary services, investment research, or investment advice within the meaning of MiFID and/or the local applicable law. The content of this communication cannot and should not be the basis for making any investment decisions, nor does it constitute legal, tax or fiscal advice. It is recommended that investors seek specific and specialized advice from their advisors. No rights can be derived from the information in this communication. While particular attention has been paid to the contents of this communication, the reliability and validity of the sources on which this communication is based, no guarantee, warranty or representation, express or implied, is given to the accuracy, correctness or completeness thereof. Any information given in this communication may be subject to change or update without notice. Neither NN Investment Partners B.V., NN Investment Partners Holdings N.V. nor any other company or unit belonging to the NN Group, nor any of its directors or employees can be held directly or indirectly liable or responsible with respect to this communication. Use of the information contained in this communication is at your own risk. Investments sustain risk. This communication and information contained herein must not be copied, reproduced, distributed or passed to any person other than the recipient without NN Investment Partners B.V.'s prior written consent. This communication is not directed at and must not be acted upon by US Persons as defined in Rule 902 of Regulation S of the United States Securities Act of 1933, and is not intended and may not be used to solicit sales of investments or subscription of securities in countries where this is prohibited by the relevant authorities or legislation. Any claims arising out of or in connection with the terms and conditions of this disclaimer are governed by Dutch law. For more information please refer to www.nnip.com.