

Sino-Securities Index ESG Ratings Methodology

V 2.1

2024.05

Effective Date	Version Number	Version Description
2022.03	V1.0	Published Sino-Securities Index (SNSI) ESG Ratings Methodology, discussed by the first ESG Expert Committee in 2022
2022.05	V1.1	Revised the 3rd tier indicator "Poverty Alleviation" to "Rural Revitalization"
2022.11	V2.0	Upgraded SNSI ESG ratings Methodology, discussed by the second ESG Expert Committee in 2022
2024.05	V2.1	(1) Introduced an ESG rating industry adjustment mechanism; (2) Optimized specific indicators and the weight of certain industries in line with the sustainability report disclosure guidelines of domestic stock exchanges

With the development of society, investors' judgments on listed companies are not limited to traditional financial indicators such as market value, operating income and profitability, but whether they have positive environmental and social external effects are also important considerations. Driven by the new investment concept, ESG investment came into being and has developed rapidly. ESG has gradually developed from a niche investment concept to a mainstream investment field. More and more funds around the world are investing in the ESG field. ESG is taken from the English acronym of Environmental, Social and Governance ("ESG"), which includes the company's impact on the environment, social responsibility and internal governance. It is also the basis for investors to measure the sustainability of the companies or assets they invest in.

Sino-Securities Index (hereafter as 'SNSI') refers to the latest ESG reporting guideline published by Hong Kong Exchange and other international standards, and combines China's national conditions into SNSI ESG Ratings Methodology. The methodology is explained as follows.

1. Scope of ESG application

ESG evaluation is a corporate evaluation standard that focuses on corporate environment, society, and governance. Theoretical research and practice at home and abroad have shown that ESG is closely related to corporate performance and long-term development, and is an effective supplement to investors' traditional financial analysis of companies. With the maturity of China's capital market, the demand for multi-dimensional risk management of market participants is increasing, and the ESG evaluation of listed companies or bond issuers has attracted more and more attention. Earlier in April 2006, with the support of the financial initiative of the United Nations Environment Programme, Annan, the General Secretary of the United Nations, put forward the 'principles of responsible investment' on the New York Stock Exchange, advocating that the environment, society and governance should be included in the investment decision-making process, and list 6 categories and 35 feasible plans, provide institutional investors as investment reference, and establish the United Nations Principles for Responsible Investment (UN PRI), thus ESG investment has become an important investment strategy. In 2015, world leaders attended the United Nations Sustainable Development Summit and formulated a series of sustainable development goals (SDGs). The summit jointly adopted the "2030 Agenda

for Sustainable Development" as a programmatic agenda to guide global development in the next 15 years. The Agenda advocates efficient international cooperation and coordinated actions to promote social development, economic development and ecological environment protection, solve global development sustainability issues and emerging challenges, and ensure the life and future of all human beings.

SNSI combines the international mainstream ESG evaluation framework, considers Chinese characteristics and specific practical experience, and fully absorbs the opinions of external market experts to formulate the SNSI ESG evaluation methodology (hereinafter as this methodology). This methodology uses public information and company reports and announcement to evaluate listed company entities. It is applicable to issuers in the Chinese securities market other than treasury bonds, central bank bills, local government bonds, and asset-backed securities, and will be continuously updated and optimized according to market development and market feedback.

2. Principle of ESG rating methodology

SNSI ESG ratings is composed of three pillars: environmental (E), social (S) and governance (G). Each pillar is composed of several related topics, which are further subdivided into several key indicators. The ratings principle and the selection of topics and indicators are described as follows:

(1) Environmental

The environmental indicators mainly measure the efforts and achievements of enterprises to reduce the negative impact of enterprise operations when exposed to a given environmental risk exposure. Its purpose is to evaluate whether the enterprise has achieved the established environmental goals. The environmental performance of enterprises mainly involves two aspects. The first is environmental risk exposure, which mainly refers to the risk that the overall operating characteristics of the industry cause enterprises to have relatively large cost constraints or regulatory constraints on the environment; the second is environmental risk management capabilities, which mainly refers to the enterprises' response environmental risk measures and corresponding performance. The environmental evaluation indicators of SNSI include climate change, resource utilization, environmental pollution, environmental friendly and environmental management.

(2) Social

The social indicators of an enterprise mainly measure the fulfillment of social responsibilities to employees, customers, communities, rural revitalization, and other stakeholders in the production and operation activities of the enterprise. The fulfillment of corporate social responsibility should cover the multi-party subjects involved in the production and operation activities of the enterprise, mainly including enterprise employees involved in production, upstream and downstream suppliers and customers, and the communities where they are located. According to the theoretical connotation of social responsibility, this methodology refers to relevant international rules and documents and the information disclosure situation of domestic listed companies and other subjects, analyzes the performance of corporate social responsibility, and comprehensively builds a corporate social responsibility evaluation system. The social responsibility evaluation indicators of SNSI include five themes of human capital, product responsibility, suppliers, social contribution, and data security and privacy.

(3) Governance

Corporate governance mainly measures the influence of corporate decision-making mechanism and check and balance mechanism on its sustainable operation. Its connotation includes two levels. One is the distribution of responsibilities and rights among the main participants in corporate business decision-making. The second is the mechanism for coordinating the interest relationship between the enterprise and all stakeholders, mainly including institutional arrangements for protecting shareholder rights, optimizing the structure and functions of the board of directors, and improving information disclosure. The above two levels together constitute the institutional framework to ensure the long-term sustainable operation of enterprises. Empirical research also shows that factors involved in corporate governance, such as the ability of enterprise managers and organizational structure, will have an important impact on the sustainable operation of enterprises. Based on the theoretical connotation and practical experience of corporate governance and the actual situation of information disclosure of domestic listed companies, this methodology constructs the corporate governance evaluation system of listed companies from the perspective of affecting the sustainable development of enterprises, based on the dimensions of governance structure, operational risk, and information disclosure. The corporate governance evaluation indicators of SNSI include six themes of shareholders' interests, governance structure, quality of

information disclosure, governance risk, external punishment and business ethics.

3. ESG Ratings system

SNSI ESG ratings system fully draws on the core of international ESG experience and combines China's characteristics to build ESG rating system, including 3 first tier pillar, 16 second tier themes, 44 third tier key issues, 80 fourth tier indicators and 300+ underlying data point. It integrates AI such as semantic analysis and NLP to build an ESG big data platform, covering all A-share listed companies and investable Hong Kong-listed companies with cumulative market value coverage at 95%.

Table 1: SNSI ESG ratings indicators

3 pillars	16 themes	40+ key issues
Environment (E)	Climate Change	Greenhouse gas emissions, GHG emissions reduction roadmap, Response to climate change
	Resource Utilization	Water consumption, Land use and biodiversity, Material consumption
	Environmental Pollution	Industrial emissions, Electronic waste, Hazardous waste
	Environmentally Friendly	Renewable energy, Green buildings, Green factories
	Environmental Management	Sustainable certification, Environment penalty, Supply chain management - E
Social (S)	Human Capital	Employee health and safety, Employee inspiration and development, Employee relations
	Product Liability	Quality certification, Recall and complaints
	Supply Chain	Supplier risk and management, Supply chain relationship
	Community investment	Inclusion, Community investment, Employment, technology innovation
	Data Security and Privacy	Data Security and Privacy
Governance (G)	Shareholders' interest	Protection of shareholder's interests
	Governance Structure	ESG governance, Risk control, Board structure, Executive turnover
	Information Disclosure Quality	ESG external assurance, Credibility of information disclosure
	Governance Risk	Major shareholder behavior, Solvency, Litigation, Tax transparency
	External Punishment	Various external punishments
	Business Ethics	Business ethics, Anti-corruption

4. Value assignment

To ensure the objectivity and comparability of SNSI ESG ratings, we assign values to each indicator according to the quantitative and objective principles.

First, we set the theoretical benchmark of each indicator according to literature research, practical experience, and national standards, and then standardize the values.

Secondly, we divide the underlying data into structured data and unstructured data. For unstructured data, SNSI uses algorithms based on NLP technology, semantic analysis, and other technologies.

Finally, as ESG information disclosure of listed companies has not yet been established in China, statistical methods are used to fill in the missing values in the data during the evaluation process.

5. Weight setting

After a key issue has been selected for a industry, the weighting is set based on its impact on the industry and expected timeline for the risk/opportunity to materialize. The principle of value assignment is that the weight of the higher degree of influence is higher, and the weight of the shorter influence time is higher. For indicators that are not relevant issues to the industry, the weight is directly set to 0.

Table 2: SNSI ESG Rating Industry Weight Setting

		Impact time		
		short term	medium term	long term
Influence level	high	highest weight	→ decrease	
	higher			
	middle	↓ decrease		
	lower			
	low			minimum weight
	none	weight is 0		

6. Industry adjustments

After calculating the ESG weighted score using a bottom-up weighted approach based on the indicator system, the SNSI further adjusted the ESG weighted scores by industry. The scores were standardized within each industry, ensuring that the ranking of companies within each industry remained unchanged. The industry adjustment formula is as follows:

$$x_{adjusted} = 50 \times \frac{x_{weighted} - x_{min}}{x_{max} - x_{min}} + 50$$

where:

$x_{adjusted}$ represents the final ESG score of the company after industry adjustment;

$x_{weighted}$ represents the weighted ESG score of the company before industry adjustment;

x_{max} represents the highest score in the company's industry, within the top 5% of the industry's ESG ratings;

x_{min} represents the lowest score in the company's industry, within the bottom 5% of the industry's ESG ratings.

Since the SNSI continuously covers newly listed companies, which typically have lower levels of ESG disclosure and generally poorer ESG scores, newly listed companies covered in the past two years are excluded from the calculation of industry maximum and minimum scores to prevent these companies from lowering the industry benchmark.

To avoid excessive adjustments in industries with narrow score ranges and to ensure that the ESG ratings provide consistent and reliable information, the SNSI appropriately expands the range of industry benchmark scores for industries with low maximum scores and high minimum scores, specifically:

(1) If the industry minimum score is greater than 70, the industry minimum value is set at 70 to ensure that companies within the industry do not receive the worst rating as much as possible;

(2) If the industry maximum score is less than 90, the industry maximum value is set at 90 to ensure that companies within the industry do not receive the highest rating as much as possible.

7. Description of ratings results

SNSI ESG ratings give a nine-grade rating of "AAA-C". The total score of ESG, first-level indicators, second-level indicators, and third-level indicators are all standard scores ranging from 0 to 100. The higher the score, the better the performance of the indicator. The industry-adjusted ESG scores will be used to evaluate the ESG ratings of companies based on the following ranges.

Table 3: Correspondence between ESG rating and ESG score

ESG rating	Adjusted ESG score
AAA	score \geq 95
AA	$90 \leq \text{score} < 95$
A	$85 \leq \text{score} < 90$
BBB	$80 \leq \text{score} < 85$
BB	$75 \leq \text{score} < 80$
B	$70 \leq \text{score} < 75$
CCC	$65 \leq \text{score} < 70$
CC	$60 \leq \text{score} < 65$
C	score < 60

8. Regular review by ESG committee

To strengthen the standardized management of SNSI ESG rating business, improve the scientific nature, authority and consistency of SNSI ESG rating data, and improve the independence and impartiality of SNSI ESG rating work, SNSI has established an ESG expert committee to regularly provide advice on the ESG rating including methodology and data.

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