

Sino-Securities Index Bond ESG Ratings Methodology

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2023.03	V1.0	Published Sino-Securities Index (SNSI) Bond ESG Ratings Methodology

With the development of society, investors' judgments on listed bond issuers 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 assets they invest.

Sino-Securities Index (hereafter as 'SNSI') refers to the latest international ESG standards and practical experience, and combines China's national conditions into SNSI Bond 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 Bond ESG evaluation methodology (hereinafter as this methodology). This methodology uses public market information and official documents provided by issuers to evaluate bond issuers, and is applicable to issuers of public bonds and LGFV bonds other than rates bonds, and will be continuously updated and optimized according to market development and market feedback.

2. Principle of ESG rating methodology

SNSI Bond 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) Environment

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, 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 bond issuers, 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, supply chain, social contribution, and investor protection.

(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 bond issuers, this methodology constructs the corporate governance evaluation system of listed bond issuers 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. Bond ESG Ratings system

SNSI Bond ESG ratings system fully draws on the core of international ESG

experience and combines bond issuer's characteristics to build Bond ESG rating system, including 3 first tier pillar, 16 second tier themes, 38 third tier key issues and 300+ underlying data point. It integrates AI such as semantic analysis and NLP to build an Bond ESG big data platform, basically covers the issuers of public bonds and LGFV bonds.

Table 1: SNSI Bond ESG ratings indicators

3 pillars	16 themes	38 key issues
Environment (E)	Climate Change	GHG Emission, Green Finance
	Resource Utilization	Energy Management, Water Utilization, Land Using & Biodiversity
	Environmental Pollution	Waste Emission, Environmental Credit, Pollution Control
	Environmentally Friendly	Green Building, Green Factory
	Environmental Management	Sustainability Cert, Green Supply Chain, Environmental Penalties
Social (S)	Human Capital	Per Capita Salary, Labor Relations, Employee Rights Protection, Employee Safety
	Product Responsibility	Product Quality, Product Safety, After Sale Service
	Supply Chain	Supplier Management, Distributor Management
	Social Contribution	Tax Contribution, Employment Contribution, Technology Contribution
	Investor Protection	Bond Rollover and Default, Investor Protection
Governance (G)	Shareholders Interests	Actual Controller Shareholder
	Governance Structure	Independent Director, Management Stability, Relative Size Of Management
	Quality Of Info Disclosure	Audit Opinion, Disclosure Penalty
	Governance Risk	Major Shareholders Behavior, Debt Servicing Ability, Litigation Risk
	External Sanctions	External Penalty
	Business Ethics	Business Ethics

4. Value assignment

To ensure the objectivity and comparability of SNSI Bond 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 bond issuers 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 an 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.

Each company receives a final ESG score based on the weighted average score of three pillars.

Table 2: SNSI ESG Rating Industry Weight Setting

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

6. Description of ratings results

SNSI Bond 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.

Table 3: Correspondence between Bond ESG rating and Bond ESG score

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

7. 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 Advisory Committee to regularly provide advice on the ESG rating including methodology and data.

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