On the basis of the Guidelines, we also added two common topics, corporate governance information and risk management, under the governance dimension. Based on the above ideas, the ESG factor library of Xingzheng Financial Engineering will be divided into three dimensions of environmental, social, and sustainable development-related governance information, 11 key topics and a total of 38 key indicators. The number of underlying indicators covered by the ESG factor library as a whole reached 500. In addition, in terms of special indicators, we provide special indicator factors such as green revenue and penalty impact level.

* Building upon the Guidelines, we incorporated two essential topics – corporate governance information and risk management – within the governance dimension. The ESG factor library of Xingzheng Financial Engineering is thus categorized into three distinct dimensions: environmental, social, and governance-oriented towards sustainable development, with 11 key topics and 38 corresponding indicators. The comprehensive ESG factor library now encompasses 500 underlying indicators. Furthermore, we introduced customized indicator factors, including green revenue and penalty impact level, to provide additional granularity.

In terms of ESG factor coverage and industry distribution, large listed companies attach more importance to the disclosure of sustainable information. The coverage of pollution prevention and control, ecosystem protection, employee-related issues, business behavior and corporate governance information is relatively high; In addition, the disclosure of ESG information has shown industry heterogeneity. Overall, the banking and non-bank financial industries have performed outstandingly in multiple ESG information disclosure areas, especially in social contributions, suppliers and customers, employees and sustainable development-related governance mechanisms.

* Large listed companies prioritize the disclosure of sustainable information, particularly in regards to pollution prevention and control, ecosystem protection, employee-related issues, business behavior, and corporate governance. Notably, the coverage of these subjects is relatively extensive. Meanwhile, the disclosure of ESG information exhibits industry heterogeneity. Specifically, the banking and non-bank financial industries excel in multiple ESG disclosure areas, including social contributions, suppliers and customers, employees, and sustainable development-related governance mechanisms.

The results of the correlation calculation between ESG factors and Barra factors show that the positive correlation between ESG factors and large-cap, mid-cap, value, and leverage factors is more obvious. Listed companies with larger market capitalization, more attractive valuations, and lower leverage ratios perform better in ESG performance; at the same time, since ESG is a medium- to long-term indicator, the correlation with short-term, technical indicators, such as momentum, growth, liquidity, and Beta factors, is relatively weak. From a specific perspective, ESG factors can provide incremental information from a long-term perspective.

* The correlation analysis between ESG factors and Barra factors reveals a more pronounced positive correlation between ESG factors and large-cap, mid-cap, value, and leverage factors. Companies with larger market capitalization, attractive valuations, and lower leverage ratios tend to perform better in ESG terms, whereas ESG is a medium- to long-term indicator. Consequently, the correlation with short-term technical indicators, such as momentum, growth, liquidity, and beta factors, is relatively weak. From a longer-term perspective, ESG factors offer incremental information that supplements existing indicators.

The statistical results of the relationship between ESG factors and fundamental performance show that, overall, the positive correlation between ESG factors and value indicators is more obvious. This shows the inherent fit between ESG investment and long-term value investment: the positive correlation between ESG factors and value factors shows that companies with good ESG performance tend to have better financial conditions and profitability, which enables them to provide stable dividend payments; secondly, they are more efficient in resource management and cost control, thereby generating stronger cash flow; making their stock prices reflect higher expected returns, thereby attracting value investors seeking stable returns.

* The statistical analysis reveals a notable positive correlation between environmental, social, and governance (ESG) factors and fundamental performance indicators. This finding underscores the inherent alignment between ESG investment and long-term value investment. The correlation between ESG factors and value factors suggests that companies with strong ESG performance tend to exhibit stronger financial profiles and profitability, allowing them to deliver reliable dividend payments. Furthermore, they demonstrate greater resource management and cost control efficiency, generating robust cash flow and driving stock prices to reflect higher expected returns, making them appealing to value investors seeking stable returns.

In terms of stock selection effectiveness, the environmental dimension of addressing climate change, pollutant prevention and control, and ecosystem protection; the social dimension of innovation-driven and technological ethics, and employees have strong stock selection effectiveness in multiple important broad-based index sample pools, with IC averages above 0.02; the governance dimension focuses on the stock selection effectiveness of corporate governance information. At the same time, the ESG stock selection factors of the issue dimension we constructed have excellent stock selection effectiveness in the CSI 800 sample stocks. On multiple issues, the factor score has a strong positive correlation with the next period of individual stock returns.

* When examining the effectiveness of stock selection in addressing climate change, pollution prevention, and ecosystem protection, as well as innovation-driven and technological ethics among employees, we find that these factors have a significant positive impact on investment performance in broad-based index samples, with average IC scores exceeding 0.02. Furthermore, our analysis suggests that the governance dimension, focusing on corporate governance information, also plays a crucial role in shaping stock selection effectiveness. Notably, the ESG factors we constructed, categorized under the issue dimension, exhibit excellent stock selection effectiveness in a sample of 800 CSI stocks. Moreover, across multiple issues, the factor scores demonstrate a strong positive correlation with subsequent individual stock returns.

In addition, based on the SASB (Sustainability Accounting Standards Board) standards and combined with the exchange disclosure "Guidelines", this article maps and organizes the substantive ESG scoring system under the Shenwan Secondary Industry Dimension. Taking the non-ferrous metals industry as an example, we counted and calculated the IC effectiveness performance of the substantive topic indicators under the Shenwan Secondary Industry Classification. It can be seen that the substantive sustainable indicators related to industry operations are more effective in stock selection, focusing on indicators such as greenhouse gas emissions, energy efficiency and water resources management, social relations and labor management.

* Building on the SASB standards and exchange disclosure guidelines, this article develops and structures a comprehensive ESG scoring system under the Shenwan Secondary Industry Dimension. Using the non-ferrous metals industry as a case study, we compiled and analyzed the performance indicators under Shenwan's secondary classification, revealing that sustainable operational indicators, such as greenhouse gas emissions, energy efficiency, and water resources management, are most effective for stock selection, followed by social relations and labor management indicators.

Considering the dynamic changes in the market and corporate behavior, the factor library model needs to be continuously optimized and adjusted to ensure its applicability and effectiveness in different periods and market environments. In the future, with the standardization and mandatory disclosure of ESG information by more companies, the data coverage and accuracy of the factor library will continue to improve, further supporting investors' in-depth analysis and decision-making in the ESG dimension.

* Given the ever-changing market dynamics and corporate behavior, the factor library model necessitates ongoing optimization and adjustments to maintain its relevance and effectiveness across varying market conditions and time periods. As ESG reporting becomes increasingly standardized and mandatory, more companies will disclose ESG information, resulting in enhanced data coverage and accuracy within the factor library. This, in turn, will reinforce investors' ability to conduct in-depth analysis and informed decision-making within the ESG space.