

SSE 180 Index Methodology

SSE 180 Index is created by restructuring and renaming SSE30 Index. It selects constituents with best representation through scientific and objective method. SSE is a benchmark index reflecting Shanghai market and serving as a performance benchmark for investment and a basis for financial innovation.

1. Selection of Constituents

• **1) Index Universe:** all A shares listed at Shanghai Stock Exchange excluding stocks that are :

- a) IPOs within the last 3 months (unless the daily average negotiable market capitalization of a stock is ranked top 18 in Shanghai Market).
- b) Suspended from listing.
- c) Experiencing materially abnormal events in operation or management, or severe losses in the latest financial statements.
- d) Experiencing large price volatility that shows strong evidence of being manipulated.
- e) Considered by the Advisory Committee as inappropriate.

• **2) Number of Constituents :** 180

• **3) Selection Criteria :** Industry representation, size, and liquidity.

• **4) Industry Classification:** Listed companies are classified into 10 industries. The classification is based on Global Industry Classification System developed by Morgan Stanley and Standard & Poors, and corresponding adjustments have been made to adapt to the characteristics of listed companies in China .

Industry Group	Industry
Energy	Energy Equipment & Services, Oil & Gas
Materials	Chemicals, Construction Materials, Containers & Packaging, Metals & Mining, Paper & Forest Products
Industrials	Aerospace & Defense, Building Products, Construction & Engineering Electrical Equipment, Industrial Conglomerates, Machinery, Trading Companies & Distributors, Commercial Services & Supplies, Air Freight & Logistics, Airlines, Marine, Road & Rail, Transportation Infrastructure
Consumer Discretionary	Auto Components, Automobiles, Household Durables, Leisure Equipment & Products, Textiles, Apparel & Luxury Goods, Hotels, Restaurants & Leisure, Media, Distributors, Internet & Catalog Retail, Multiline Retail, Specialty Retail

Consumer Staples	Food & Drug Retailing, Beverages, Food Products, Tobacco, Household Products, Personal Products
Health Care	Health Care Equipment & Supplies, Health Care Providers & Services, Biotechnology, Pharmaceuticals
Financials	Banks, Diversified Financials, Insurance, Real Estate
Information Technology	Internet Software & Services, IT Consulting & Services, Software, Communications Equipment, Computers & Peripherals, Electronic Equipment & Instruments, Office Electronics, Semiconductor Equipment & Products
Telecommunication	Telecommunication Equipment, Diversified Telecommunication Services, Wireless Telecommunication Services
Utilities	Electric Utilities, Gas Utilities, Multi-Utilities & Unregulated Power, Water Utilities

Criteria for industry classification are as follows:

- a) If the revenue of one of a company's major lines of business is over 50% of its total revenue, then the company belongs to the corresponding industry.
- b) If the revenue of none of a company's major lines of business is over 50%, but revenue and profit of one business are the highest and are over 30% of its total revenue and profit, then the company belongs to the corresponding industry.
- c) If the revenue and profit of any business of a company are not over 30% of its total revenue and profit, then the Index Advisory Committee will research and decide which industry the company should belong to.

•5) Selection Method : SSE 180 Index follows the next four steps to select constituents after the index universe is defined.

- a) Produce an overall rank for the stocks based on total market capitalization, negotiable market capitalization, trading values and turnover ratio.

Method: Rank by each indicator based on daily average data for the previous year, and sum up the four ranks to get the overall rank.

- b) Allocate number of constituents for each industry based on negotiable market capitalization coverage.

Method:

Total Negotiable market
cap for all candidate
stocks of industry i

$$\text{No. of constituents for industry } i = \frac{\text{Total Negotiable market cap for all candidate stocks of industry } i}{\text{Total Negotiable market cap for all candidate stocks in Shanghai market}} \times 180$$

- c) Select top ranking stocks within each industry based on number of constituents

allocated.

d) Make adjustment to stocks selected so that the total number of constituents is 180.

2. Index Adjustment

SSE 180 Index will make constituent adjustment every 6 months following principle of Stability and Dynamic Tracking. Constituents adjusted each time will not exceed 10%. Temporary adjustment can be made under certain circumstances if necessary.

3. Index Calculation

• 1) Base Day, Base Period and Base Value

SSE 180 Index is an index continuing from SSE 30 Index. The Base Day for SSE 180 is June 28, 2002 . The Base Value is 3299.06, which is the closing value of SSE 30 Index on the Base Day. The Base Period is the adjusted market capitalization of all constituents after closing on the Base Day. The Index was launched on July 1, 2002 .

• 2) Calculation Formula

SSE 180 Index is weighted by adjusted number of shares.

The formula is

$$\text{Current index} = \frac{\text{Current adjusted market cap of constituent}}{\text{Base Period}} \times \text{Base Value}$$

Adjusted market cap = $\sum \text{Price} \times \text{Adjusted No. of shares}$. Adjusted market cap of constituents on the base day is also called divisor. SSE 180 Index uses category-weighted method (as indicated by the following chart) to adjust constituents' sharers. For example, a stock with a negotiable market share ratio (negotiable market cap /total market cap) of 7%, which is below 10%, will have a weight equals to its negotiable market capitalization ratio. A stock with a negotiable market share ratio of 35% will belong to category (30 , 40). The corresponding weight is 40%, i.e. 40% of total market share will be used for index calculation.

Negotiable Market Share Ratio (%)	≤10	(10, 20]	(20, 30]	(30, 40]	(40, 50]	(50, 60]	(60, 70]	(70, 80]	>80
Weight(%)	Negotiable Market Share Ratio	20	30	40	50	60	70	80	100

4. Index Maintenance

• 1) Maintenance formula

The “Divisor Adjustment Methodology” is used to adjust SSE 180 Index.

When changes occur to constituent list or the share structure, or constituents' market value changes due to non-trading factors, the divisor is adjusted to keep the index comparable overtime.

The formula is :

$$\frac{\text{Adjusted Market Cap before Adjustment}}{\text{Old Divisor}} = \frac{\text{Adjusted Market Cap after Adjustment}}{\text{New Divisor}}$$

Adjusted Market Cap after Adjustment = Adjusted Market Cap before adjustment + Adjusted Market Cap increased or decreased

The new divisor (also called new base period) derived from this formula is used for later index calculation.

• 2) Circumstances for index maintenance

a) New listing: newly listed stocks can't be constituents until they have been listed for 3 months. If a stock's daily average negotiable market capitalization of a stock is ranked top 18 in Shanghai Market, then it doesn't need to meet the 3-month requirement.

b) Dividend: no index adjustment is required for dividend payment and the index is allowed to fallback naturally.

c) Right issue and bonus issue: the index is adjusted the day before the issuance. Adjusted Market Cap after the Adjustment = Adjusted Price × Adjusted No. of Shares + Adjusted Market Cap before the Adjustment (excluding stocks adjusted for right issue and bonus issue)

d) Suspension from trading: Use last trading price to calculate index until trading is resumed.

e) Delisting: Adjust the index the day before the delisting.

f) Share changes: when shares of constituents change due to other reasons (e.g. re-issuance, listing of right issue, listing of employee shares), the index is adjusted the day before the changes.

g) Stop trading: The Index will be calculated as usual if some constituents stop trading; the Index will not be calculated if all constituents stop trading.