



# Nordic Index

Index Calculation Rulebook – SIX Sweden SSE and First North  
Index (SIXSEFN)

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# 1 Introduction

SIX Financial Information (SIX) is the Owner and Index Provider of the SIX Sweden SSE and First North Index (SIXSEFN). SIXSEFN has been constructed to reflect the market performance of companies listed on the Nasdaq Stockholm Stock Exchange Main list and First North Stockholm. Constituent shares are weighted in accordance with their total market capitalization.

Two dividend variants of the SIXSEFN are calculated:

- SIXSEFNPI: Price Index. Dividends are not reinvested in the index
- SIXSEFNGI: Gross Index. The total dividend is reinvested in the index

The start value for SIXSEFN is 100 with base date 30<sup>th</sup> of December 2016.

The base currency for SIXSEFN is SEK.

The methodology used in SIXSEFN is designed to measure the market or economic reality described in this section. The methodology is validated based on appropriate back testing and is traceable and verifiable.

## 1.1 Definitions

*Index Company* – A company issuing an Index Share.

*Index Share* – A constituent share of SIXSEFN. The largest share class of an Index Company.

*Index Provider* - The Index Calculator and Distributor of index values and reports.

# 2 Index Population

## 2.1 Selection of Index Shares

The SIXSEFN index population encompasses the largest share class of every company represented and listed on the Nasdaq Stockholm Stock Exchange Main list and First North Stockholm. Only listings traded in SEK is included in the index.

## 2.2 Extraordinary Changes in the Index Population

In the event of bankruptcy of an Index Company, the Index Share will be excluded from SIXSEFN. On its final day as SIXSEFN constituent the price of the Index Share will be set at zero.

If an Index Company is subject to a public offer for acquisition of shares or an Index Company approves a merger agreement, the Index Provider may decide that the share will no longer be considered an Index Share or that it must be replaced by the share of the offerer/predator company. In the event of any such change the Index Provider, based on the conditions of the offer or merger in question, will establish the number of shares used in the index calculation. The Index Provider will establish the date for the change as follows:

- I. If the new Index Share is listed before the existing Index Shares last listing day, the change to the new Index Share will take place from its second listing day
- II. If the existing Index Share is delisted before the new Index Shares first listing day, the existing Index Share will be removed from the index calculation the day after its last listing day. The new Index Share will be included in the index calculation from its second listing day

As soon as SIX has received information that an offerer/predator company owns greater than 90% of the target company's share capital, the target company will be excluded from the index population.

## 3 Calculating the Index Value

### 3.1 Calculation of Market Capitalization

Market capitalization is calculated for each Index Company by multiplying the total number of ordinary shares by the last traded price of the company's largest share class, where the largest share class is defined as the share that accounts for the largest proportion of the company's share capital. In the event a company has more than one class of share and the Index Provider considers the largest share class illiquidity or in the event, a company has more than one class of share and each class accounts for the same proportion of the share capital, then the most traded share class will be used.

For certificates of deposit (SDB), market capitalization is calculated by multiplying the total number of registered SDBs by the last traded price. The number of registered SDBs is updated and implemented on the first trading day of every month.

### 3.2 About Laspeyres Formula

The Laspeyres formula to calculate an index level ( $I$ ) at a given point in time ( $t$ ) divides a market value ( $M$ ) by a divisor ( $D$ ) and looks as follows:

$$I_t = \frac{M_t}{D_t}$$

With:

$I$	Index value
$M$	Market value
$D$	Divisor
$t$	Time

The Divisor is used twofold: First, it is used to standardize the Index value to a meaningful size at inception of the index. It is carried forward over time from the day when the base value of the index was set. Second, it is used to outbalance external effects that lead to shifts in market value ( $\Delta M$ ) throughout the life of the index.

$$D_t = \frac{M_{t-1} + \Delta M_t}{I_{t-1}}$$

With:

$\Delta M$	Change in market value
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Those effects usually have the form of corporate actions and have a defined effective date. Therefore the divisor is adjusted on a day to day basis and held constant within a day. The new divisor is calculated on the evening of the day before the corporate action takes effect.

### 3.3 Formula for Calculating the Index Value

SIX uses the Laspeyres formula to calculate an index as follow:

$$I_t = \frac{M_t}{D_t} = \frac{\sum_{i=1}^n s_{i,t} p_{i,t}}{D_t}$$

With:

$s$	Number of shares
$p$	Price
$i$	Specific component in the index

$n$  Number of index components

### 3.4 Share Prices (p)

Share prices are sourced directly from the respective stock exchange(s) on which the Index Shares are traded (as mentioned in section 2.1). As a rule, the last-paid price is used in the index calculation. If a share has not traded on a certain day, the last available last-paid price is used. This also includes situations when trading is suspended.

- Last-paid price: The last traded price on the exchange
- Closing price: The last-paid price of a trading day from an exchange. This includes trades made in a closing call or auction if used by the exchange in question
- Adjusted price: Both the opening and closing price may be subject to adjustments in accordance with the index methodology. Certain adjustments may require the share price to be fixed during an entire day's trading or longer

The liquidity of the underlying market impacts how frequently last-paid prices update. If liquidity is poor, the index value will update less often, yet still reflect the underlying market at that point in time.

### 3.5 Number of Index Shares in Index (s)

A current list of Index Shares is maintained by the Index Provider and available via index reports.

### 3.6 Dividends Payments

The change in the share price of an instrument distributing a dividend at the ex-date is handled as:

$$p'_i = p_i - d_i$$

With:

- $p'$  Price adjusted for a corporate action
- $p$  Price
- $d$  Dividend amount (gross or net)

#### 3.6.1 Gross Indices (GI)

Dividends are reinvested in the index by reducing the input share price on the ex-dividend date by the dividend amount. In this way, dividends are reinvested in Index Companies in relation to their weights. Dividends are based on declared dividends by the Index Company.

#### 3.6.2 Price Indices (PI)

Ordinary dividends are not reinvested in price indices.

#### 3.6.3 Dividends in Foreign Currency

If the dividend declared by the Index Company is not quoted in SEK then the dividend value is converted to SEK using the 17:00 CET WMC currency fixing on the day before ex-date.

### 3.7 Equity Corporate Actions

#### 3.7.1 Sources

Corporate action information is collected from public information sources, listed companies, Stock Exchanges and regulatory agencies.

### 3.7.2 Stock Split and Reverse Split

Stock splits and reverse stock splits in an Index Share result in an adjustment of the share price, in accordance with the conditions of the split, from the day on which the Index Share is traded ex-split on the Stock Exchange. The share price adjustment is offset by a change in number of shares.

### 3.7.3 Bonus Issue

In the event of a bonus issue of an Index Share, the number of shares in the index calculation for the Index Share is increased by the number of new shares from the day on which the bonus issue of the Index Share is listed excluding fractional rights on the Stock Exchange. If a bonus issue involves the issue of a new type of share that deviates from the Index Share, the Fixed Price Method described in section 3.7.4.6 will be used.

### 3.7.4 Adjustments for Rights Issue, etc.

SIX use the following index methods to ensure that SIXSEFN accurately reflects the market performance of its constituents.

#### 3.7.4.1 Standard Method

When a rights issue with precedence for existing shareholders takes place for an Index Share and the newly issued share does not significantly deviate from the ordinary share, the number of Index Shares will be increased according to the so-called Standard Method with effect from the day the share is listed ex-rights on the Stock Exchange (ex-date). To receive the adjusted close, the price is calculated based on the existing number of shares and the rights ( $s^*$ ) to be distributed at the ex-date:

$$p_i' = \frac{p_i s_i + p_i^* s_i^*}{s_i + s_i^*}$$

With:

$p^*$  Subscription price of the rights issued

$s^*$  Rights issued per shares  $s$

It is assumed that a rights issue is always fully executed and therefore the calculation of the adjusted number of shares can be achieved as the sum of existing number of shares and rights offered for subscription:

$$s_i' = s_i + s_i^*$$

With:

$s'$  Number of shares adjusted

#### 3.7.4.2 Valuation Method, Inclusion Method and Fixed Price Method

If the Index Company to which the Index Share relates adopts any of the measures listed below in any circumstances other than those described in section 3.7.4.1 above – where the company's shareholders have a preferential right to participate, then the Valuation Method, the Inclusion Method or the Fixed Price Method will be used. The following measures may form the basis for an adjustment in accordance with this section 3.7.4.2:

- Issue of convertible debt certificates, debt certificates associated with warrants to subscribe for new issues or similar securities that affect the Index Share
- Offer to acquire securities or rights of any kind or to acquire such securities or rights without payment
- New issue involving a new type of share that is not an ordinary share and that deviates from the Index Share

In the index, the event will be handled according to the following order of priority, depending on information available and communicated to the market:

- I. Valuation, if a market value is available and can be calculated

- II. Inclusion, in the event of spin-offs and that the spin-off company is listed on a relevant marketplace
- III. Fixed price, if no relevant price is available

### 3.7.4.3 Valuation Method

The Valuation Method can be used if the rights are listed on a Stock Exchange or other regulated market place. The valuation is based on the price for the rights on the day before the ex-rights day. If the rights can be valued according to the Valuation Method, the input share price of the Index Share on the ex-rights day is equal to the previous trading day's last traded price with a deduction for the calculated value of the rights. The intra-day index calculation is carried out thereafter using the last traded prices from the Stock Exchange or other regulated market place.

### 3.7.4.4 Inclusion Method

When available an external valuation will be processed in the following way:

On the ex-date, the input share price for the Index Company carrying out the spin-off (Parent Company) is reduced by the external valuation and the calculation is then carried out using the last traded price. For the Index Company subject to the spin-off (Subsidiary Company), the input and output share prices are equal to the valuation. This value remains until the company is listed or removed from the index population.

### 3.7.4.5 Lack of External Valuation

If there is no external valuation, the index will be processed as follows:

On the ex-date, the input share price for the Index Company carrying out the spin-off is the previous day's closing price and the output share price is the present day's closing price. For the Index Company subject to the spin-off (Subsidiary Company), the input share price is equal to zero and the output share price is equal to the reduction in base currency for the first transaction by the company carrying out the spin-off, in relation to the condition. This value remains until the company is listed or removed from the index population.

If the Subsidiary Company is not listed on the Stock Exchange within three months, it will be excluded from the index calculation. If the Subsidiary Company is listed on the Stock Exchange within three months, the input share price on the listing day is equal to the valuation and the output share price is equal to the official closing price for the company.

### 3.7.4.6 Fixed Price Method

On the day the Index Share is traded exclusive of a subscription right (or similar right) at the Stock Exchange, the index is calculated by using the last traded price from the previous day's trading. This price will be used in the index calculation up to and including the day when the first traded price exclusive of a subscription right (or corresponding right) was listed at the Stock Exchange. A new base value will be calculated for the following day using the last traded price from the previous day.

### 3.7.4.7 Redemption of Index Shares

When shares are redeemed, aimed at all shareholders, the valuation method described in section 3.7.4.3 will be used. If a subscription period extends over more than two weeks from the day the Index Share is listed ex-rights to participate in the redemption, the number of shares will be reduced, down-weighted, the day after the Index Provider has received the information on the number of shares redeemed. The number of shares today ( $s_t$ ) and the number of shares yesterday ( $s_{t-1}$ ) is reduced by the number of redeemed shares. If the subscription period is less than two weeks, the down-weighting will take place on the day the Index Share is listed ex-rights to participate in the redemption.

## 3.8 Issues without Precedence for Existing Shareholders

Issues without precedence for existing holders of Index Shares and conversion of convertible debt certificates, exercise of warrants, etc. are updated on a daily basis.



When the Index Provider receives information of the above events, the number of shares ( $S_t$ ) is updated and may affect the Market value of an instrument. This leads to an adjustment in the divisor as stated in equation in section 3.2.

### **3.9 Other Adjustments**

With regard to adjustments in accordance with this rulebook, SIX may carry out an adjustment other than that referred to above or may decide to change a provision on adjustment in order to maintain the purpose of the Index.

## **4 Introduction of New Companies**

A company listed on an approved Stock Exchange is included in the index calculation from the first Trading Day after the listing day, where the last traded price ( $p_{t-1}$ ) for the company on the listing day is used.

## **5 Trading Day**

The index is calculated every day the Nasdaq Stockholm Stock Exchange is open for trade.

## **6 Data Sources**

The Nasdaq Stockholm Stock Exchange is the source for stock prices. There are no alternative sources.

## **7 Correction Policy**

An index-related correction is made if the necessary input data is not available or is incorrect.

### **7.1 Unavailable Data**

If data that is necessary to determine the price or weight of an index component is not available to SIX due to trade suspensions or market distortions the latest available data is used. Such cases may lead to a deviation from the principles of an index defined in this rulebook. These changes may be related to review schedules, ordinary reviews and extraordinary component changes and are announced with a minimal lead-time of two trading days to customers.

### **7.2 Incorrect Data**

Errors in the necessary data can be caused by calculation errors or by incorrect input data.

Calculation errors that are detected within a trading day are corrected immediately. Intraday data is not corrected retrospectively. Calculation errors older than one trading day are only corrected when technically feasible and appropriate. If the correction leads to a significant difference in the index values, the index values can be corrected retrospectively.

## **8 Minimum Data Needed to Calculate the Index**

In case of market distortion, updated prices for constituents corresponding to at least 30% of the index market cap value is needed to calculate a new index value.

## **9 Changes to the Methodology**

### **9.1 Methodology Changes**

The validity of the index methodology is reviewed on a regular basis. SIX follows structured processes to ensure compliance with a regulatory framework. SIX has a right to stipulate changes to the rules if necessary to maintain the

purpose of the index or if any law, regulation or decision by an authority makes this necessary, or if such a change is considered appropriate due to a change in market practice. In exceptional cases, a broad market consultation can be conducted. The market consultation will provide advance notice and a clear timeframe that gives stakeholders sufficient opportunity to analyze and comment on the impact of such proposed material changes. The changes to the index methodology are publicly announced with an appropriate lead-time and shall contain information describing the key elements of the methodology that would be affected by the proposed change, enabling stakeholder to assess the impact of the coming changes.

A material methodology change comprises a change that significantly modifies the procedures applied to the determination of an index and, therefore, the index value compared to an unchanged scenario. Examples of changes that are considered material in their nature include changes in: index objective and the market it seeks to measure (e.g., market leader components vs. mid cap companies), index component count, periodical review (determination) frequency, component universe and selection rules, weighting rules, introduction or removal of fast exit/entry rules, component replacement procedures, corporate actions treatments including merger and takeover treatments, and/or rebalancing rules.

## 9.2 Cessation of Calculation

A decision to discontinue the calculation of the index will be publicly announced by SIX with an appropriate lead-time.

In the event existing financial products are linked to the index, of which the Index Provider is aware, a market consultation will be conducted in advance and a transition period introduced before the definitive termination.

## 10 Expert Judgement and Discretion

SIXSEFN is calculated using readily available input data. SIX has implemented a robust and reliable index methodology including clear rules how and when discretion or expert judgement may be exercised for the determination of an index. Such methodology ensures that the index can be calculated in the widest set of possible circumstances. However, there might be unexpected events that require actions that are not described in the methodology rulebooks. Such events can materialize in situations including:

- Complex corporate actions
- Determination of materiality of changes to the index methodology
- Index/benchmark termination
- Exclusion of stocks from rankings
- Determination of prices in case of subscription rights
- Non-rule-based Correction (treatment of calculation error)
- Limitations
- Deviation from standard consultation period in case of material changes of the index methodology
- Review and approval of special cases identified during index review
- Decisions with respect to complaints

In such (unexpected) cases, a pre-defined Expert Judgement Management process has been established. SIX will evaluate and document the use of discretion or expert judgement as part of the Expert Judgement Management process. The goal will always be to update the respective methodology rulebook to capture these unexpected cases with a new transparent rule. In addition, any feedback from market participants about the use of discretion or expert judgement will usually be discussed in the upcoming Index Management and Local Leadership Team meeting.

SIX ensures that the rules of the indices are applied correctly and fulfil the required quality standards. SIX follows structured processes to ensure compliance with a regulatory framework. Further documentation on regulation and processes can be found at: [www.six-group.com](http://www.six-group.com)

## 11 Limitations

A potential limitation of the index can occur from circumstances when the accuracy and reliability of methodology no longer can be ensured, and may lead to a deviation from the general principles of the indices as defined in the respective methodology rulebooks. Potential limitations of the methodology can materialize in situations including:

- Data insufficiency, meaning a scenario in which the calculation of an index is no longer possible due to insufficient data quantity or quality
- Failure to produce index values as intended
- Market disruption which results in the performance of the index being unable to be tracked
- Unexpected events, such as complex corporate actions
- Technical reasons, for example the inability of a stock exchange to provide a close price due to a computer outage
- Where a rule allows for several interpretations (“unclear rule”)
- The absence of a rule in the methodology which potentially leads to an index value which does not properly reflect the nature of the index (“insufficient rule”)

If data, which is necessary to determine the price or weight of an index component, is not available to SIX due to trade suspensions or market distortions, the latest available data is used. Where SIX considers that the input data does not represent the market or economic reality that an index is intended to measure, SIX will, within a reasonable time period, either change the input data or the methodology in order that the input data does represent such market or economic reality, or else cease to provide that index.

In case of structural changes of the market or economic reality or in cases where the interest in a market has diminished or is non-functioning, the reliability of a methodology can no longer be ensured. SIX reviews the methodology rulebooks at least annually to anticipate any such changes and mitigate its consequences by adjusting the methodology accordingly.

## 12 General Information on SIX Indices

### 12.1 Calculation Interval and Publication

SIX calculates index values end of day for all the indices and intra-day for the most common indices. Index values can be found via different data vendors and index reports can be subscribed on a daily basis.

### 12.2 Notification Service

Customers are notified via e-mail or via index reports for index trigger events such as:

- Changes in corporate actions and dividends
- IPOs and delisting of companies
- Updates to the periodic index reviews
- Problems and errors in the index calculation
- Launch of new indices

The index methodology and index related information can be found at: [www.six-group.com](http://www.six-group.com)

## 13 Limitation of Liability

SIX Financial Information Nordic AB is not liable for damage caused by the enactment of Swedish or foreign laws, measures adopted by Swedish or foreign authorities, acts of war, power cuts, interruptions in telecommunications, fire, water damage, strikes, blockades, lockouts, boycotts or other similar circumstances beyond the Index Owner's

control. The reservation applying to strikes, blockades, lockouts and boycotts applies even if the Index Owner itself is subject to or adopts any such conflict measure.

Under no circumstances is the Index Owner liable for any loss of data, loss of earnings or indirect damage.

The Index Owner gives no express or implied guarantee with regard to the results to which use of indices provided by SIX Financial Information Nordic AB may give rise or with regard to the value of the indices at any given moment.

## 14 Contact

If you are interested in signing license subscriptions, index reports or other index-related products, please contact:

[NordicsSalesNordic@six-group.com](mailto:NordicsSalesNordic@six-group.com)

Any other requests linked to index are directed to the following address:

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