SMI Indices

Methodology Rulebook Governing Equity and Real Estate Indices
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1 Introduction

This document is an integral part of the Swiss Index Rules. The Swiss Index Rules are outlined in a Methodology Rulebook for Equity and Real Estate Indices, Bond Indices, Strategy Indices and Swiss Reference Rates. This is the Methodology Rulebook governing Equity and Real Estate Indices. The initial section ‘General principles’ outlines the guiding principles underlying the rulebook and the application of the rules. The next section provides an overview of the definitions used in this rulebook. It is followed by a theoretical section on the calculation of indices and the description of the maintenance procedures of index components and index composition. Subsequently, the rulebook is structured by the indices offered by SIX. More detailed information about each index is given in the following sections.

Each index-specific section is divided into four sections. The ‘Overview’ section provides a brief explanation of the market which is measured by the index. The ‘Calculation method’ section describes the factors that are used in the calculation of the index values. The section ‘Index composition’ explains with which periodicity and according to which specific rules instruments are selected to be components of an index. Lastly, the section ‘Component weighting’ describes the weighting rules for the index components.

The document closes with sections on correction policy, governance, external communication and trademark protection.

2 General Principles

This rulebook is based on the general principles stated below. SIX uses the principles as an orientation and guiding principles for unforeseen circumstances that are not covered by the rulebook or in case of doubt.

- Representative: The development of the market is represented by the index.
- Tradable: The index components are tradable in terms of issuer size and market.
- Replicable: The development of the index can be replicated in practice with a portfolio.
- Stable: High index continuity.
- Rules-based: Index changes and calculations are rule-based.
- Projectable: Changes in rules are applied with appropriate notification period (usually at least 2 trading days) – no retrospective rule changes.
- Transparent: Decisions are based on public information.

3 Definitions

3.1 Instrument Definitions

SIX offers indices which replicate the development of a weighted group of instruments. Since the underlying instruments of the indices described in this rulebook are mainly equity shares, their attributes are defined underneath:

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bearer shares</td>
<td>Bearer shares are an equity instrument with which its holder owns a part of the issuers company. The issuer of bearer shares does not register its shareholders nor does it track ownership transfers. The rights of the share are transferred once the ownership of the share is transferred from the seller to the buyer.</td>
</tr>
<tr>
<td>Cap factor</td>
<td>A cap factor is used to limit the weight of an index component. If an index foresees a predefined weighting of its components it is described in the section “Component Weighting” of the respective index section.</td>
</tr>
<tr>
<td>Candidate</td>
<td>Candidates form the universe of an index. The index is selected from its universe. For indices with a fixed number of components the candidates which can be selected form the selection list.</td>
</tr>
</tbody>
</table>
### Term Definition

**Corporate Action**
A corporation uses a corporate action to amend its shareholder capital. Corporate actions may be but are not limited to dividends, stock splits or rights issues. Corporate actions which have an effect on index calculation parameters are considered within the index calculation process.

**Ex-date (ex-dividend date)**
The ex-date is the first trading date when a share is trading without the entitlement for a dividend or corporate action. The shareholder who holds the share prior to the ex-date is entitled to take part in the Corporate Action.

**Freefloat factor**
The freefloat factor indicates which fraction of shares is not in firm hands and therefore freely tradable. Usually only the freely tradable shares are used for the calculation of the market capitalization. The freefloat factor sets the freely tradable shares in relation to the number of shares of a share line. The rules to determine the Freefloat factor are described in section 5.1.

**Freefloat market capitalization**
The freefloat market capitalization is calculated by multiplying the price with the number of shares and the freefloat factor. It therefore measures the size of an instrument.

**Instrument currency**
Each instrument is listed in one currency in which its shares are bought and sold. The majority of index components are listed in Swiss Francs (CHF). However, an index component can be listed in a foreign currency. The treatment of those is further explained in section 5.2.

**Number of shares**
The number of shares are the shares issued and outstanding forming the total amount of equity capital. The equity capital has to be fully subscribed, wholly or partially paid in and to be documented in the Commercial Registry. Conditional or authorized capital does not count as issued and outstanding equity capital. The shares number of shares is the basis to calculate the freefloat market capitalization. This number is reviewed on a regular basis to ensure the most recent data. The reviewed number of shares is presented in the Review List which is explained in section 5.1.

**On order book turnover**
The on order book turnover is the total traded volume in trading currency of an index component over a defined period of time.

**Participation shares**
Participation shares is an equity instrument which entitles its holder to receive a dividend but does not come along with a voting right. By issuing participation shares an issuer can raise capital without changing its ownership structure.

**Primary listing**
The primary listing is the main stock exchange where the issuer is traded. An issuer can have more than one primary listing.

**Registered shares**
Registered shares is an equity instrument of which the owner is registered in the share register of the issuer. Therefore, the issuer knows its shareholders and their number of shares purchased and keeps track of ownership changes.

**Sector classification**
Every issuer is assigned to an industrial sector. SIX uses the Industry Classification Benchmark (ICB) where a four digit code space expresses the sector membership. In that code the first letter stands for Industry and the second letter for Supersector. The second two digits are not relevant for SIX.

### 3.2 Equity Index Definitions

Regarding equity indices, this document is using the following definitions:

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffer</td>
<td>Fixed component indices use a ranking scheme to decide whether a candidate is included into or a component is excluded from the index. For some Indices there is a buffer in place which aims to stabilize the component turnover in the index. If the ranking of an existing index component is within that buffer, the component continues to be a part of the index. Candidates which are not part of the index become part of the index if they rank above the buffer. The detailed application of buffers can be found in the respective sections of the index.</td>
</tr>
<tr>
<td>Calculation method</td>
<td>The Calculation method defines how the index value of an index is calculated. For each index the ‘Calculation method’ is briefly outlined in the respective section. In most cases a Laspeyres formula as described in section 4.1.</td>
</tr>
<tr>
<td>Cut-off date</td>
<td>The data to select the index composition from its universe is fixed at the cut-off date. Changes to the data that occur after the close of that trading day are considered at the subsequent index review. For indices that do not follow the standard SPI process the specific cut-off date is mentioned in the individual index description.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Effective date</td>
<td>Ordinary and extraordinary index adjustments are considered in the index calculation from the effective date onward.</td>
</tr>
<tr>
<td>Fixed or variable number of components</td>
<td>Each index consists of either a fixed or variable number of components. The number of components of a fixed component index constant. The number of components in a variable component index is not fixed and can vary with any ordinary index review or with extraordinary Corporate Actions between two ordinary index reviews. In the section ‘Overview’ of each index it is stated whether the index is a fixed or variable component index.</td>
</tr>
<tr>
<td>Index</td>
<td>An index measures the development of a defined market. The section ‘Overview’ states for each index which market is measured.</td>
</tr>
<tr>
<td>Index candidate</td>
<td>A candidate is an instrument of the index universe. As such it can be selected for the index. All candidates form the index universe.</td>
</tr>
<tr>
<td>Index component</td>
<td>All components of an index are the instruments forming the index composition.</td>
</tr>
<tr>
<td>Index composition</td>
<td>The index composition consists of the index components. The components are selected by applying the selection rules of the index.</td>
</tr>
<tr>
<td>Index currency</td>
<td>An Index has a currency. Index components which are listed in another currency have to be converted to the Index Currency in order to calculate the index value.</td>
</tr>
<tr>
<td>Index standardization</td>
<td>Indices are usually standardized to a meaningful Index value (mostly 100 or 1’000) at their base date. From this date on, the index value is constantly updated reflecting market movements and index changes.</td>
</tr>
<tr>
<td>Index type</td>
<td>SIX provides three types of equity indices. The gross return index type assumes the reinvestment of dividends and the price return index does not. The net return index type takes into account dividends after deduction of withholding tax.</td>
</tr>
<tr>
<td>Index universe</td>
<td>A defined index universe exists for each index. The index universe is a group of instruments that share common characteristics and from which the index components are selected. The universe consists of index candidates and is explained in the section ‘Index composition’ of the respective index.</td>
</tr>
<tr>
<td>Instrument</td>
<td>An instrument is issued by an issuer in order to raise capital. Different kinds of instruments can be issued including Equities, Bonds or Funds. In this rulebook the term ‘instrument’ refers to equities and real estate funds.</td>
</tr>
<tr>
<td>Selection list</td>
<td>A selection list is generated on the basis of the index universe to select the index components from the candidates. The selection list is based on figures which are explained in the ‘Index composition’ section of the respective index section.</td>
</tr>
<tr>
<td>Weight</td>
<td>Each component of an index has a weight. For most indices the weight is based on the freefloat market capitalization of the instrument. If there is a divergent weight determination for the index components it is described in the section ‘Component weighting’ of the respective index section.</td>
</tr>
</tbody>
</table>
4 Calculation of Index Values

4.1 Laspeyres Formula

SIX measures most of its indices based on a formula which goes back to Prof. Etienne Laspeyres who was ordinarius for Political Economy at the University of Basel from 1864 to 1866. Prof. Laspeyres invention measures the change of value in a basket of goods relative to its value at inception.

Conceptionally, the index formula to calculate an index level \( I \) at a given point in time \( t \) divides a market value \( M \) by a divisor \( D \) looks as follows:

\[
I_t = \frac{M_t}{D_t}
\]

Legend:
- \( I \) 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. And second it is used to outbalance external effects that lead to shifts in market value \( \Delta M \) throughout the life of the index.

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

Legend:
- \( \Delta M \) Change in market value

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.

4.1.1 Freefloat Market Capitalization Weighted Index

The most common form of the Laspeyres index formula at SIX is the one to calculate an index on the basis of a freefloat market capitalization based component weighting. The large majority of the equity indices are calculated that way:

\[
I_t = \frac{M_t}{D_t} = \sum_{i=1}^{n} \frac{s_i f_i c_i p_i x_i}{D_t}
\]

Legend:
- \( s \) Number of shares
- \( f \) Freefloat factor
- \( c \) Capping factor
- \( p \) Price
- \( x \) Exchange rate
- \( i \) Specific component in the index
- \( n \) Number of index components

The weight of a specific index component is determined by the fraction of its total shares that is available in the market which is defined as the product of the listed shares \( s_i \) and the Freefloat factor \( f_i \). Depending on the index concept, a cap factor \( c_i \) can be used to scale the relative weight of an index component. To receive the Freefloat Market Capitalization of the component, the weight is multiplied by the price \( p_i \) in index currency \( x_i \).

4.1.2 Weightfactor Weighted Index

Another form of the Laspeyres index formula is used by SIX in order to weight index components by another weightfactor than freefloat market capitalization. Compared to the freefloat market capitalization only a few indices are calculated by this method:

\[
I_t = \frac{M_t}{D_t} = \sum_{i=1}^{n} \frac{w_i p_i x_i}{D_t}
\]

Legend:
- \( w \) Weightfactor

The weight of an instrument in the index is determined by the rules of the specific index and is expressed in the weightfactor \( w \). The weightfactor is usually held constant within a trading day. As for the freefloat market.
capitalization weighted index the weights of the components are multiplied by the price \( p_{i,t} \) in index currency \( x_{i,t} \) to receive the market value.

### 4.1.3 Adjustments of Corporate Actions

Depending whether the components are weighted by freefloat market capitalization or their weight is determined otherwise and expressed as a weightfactor, a corporate action may affect the Market value of an instrument. This leads to an adjustment in the divisor as stated in equation in section 4.1 in terms of \( M_{t-1} + \Delta M_t = M_t \). Those effects are usually predictable and must be accounted for at their effective date in the sense of a market expectation. The change of market value in the index is the sum of the changes in the index components:

\[
\Delta M_t = \sum_{i=1}^{n} \Delta M_{i,t}
\]

In order to comply with the market expectation different adjustments are applied to come up with \( \Delta M_i \) depending on the weighting method. More details on and examples of corporate actions are explained in section 4.3.

### 4.2 Performance Attribution Formula

Apart from the widely spread Laspeyres formula SIX also calculates indices which follow a performance attribution approach where returns are reinvested over the index components in two defined ways. In principle it does not deviate from the standard Laspeyres formula and the Laspeyres formula can probably be converted into the Performance attribution representation. However because the interpretation of the formula is slightly different it is worth to be treated separately.

#### 4.2.1 Performance Attribution by Relative Weight

An index value is calculated by weighting the daily instrument performance with a weight according to the index methodology. All weights must sum up to 100%. The sum of those weighted returns is then multiplied with the previous day’s index value and added to the same in order to receive the current Index value.

\[
I_t = I_{t-1} + I_{t-1} \sum_{i=1}^{n} \left( \frac{p_{i,t}}{p_{i,t-1}a_{i,t}} - 1 \right) \cdot g_{i,t}
\]

Legend:

- \( g \) normalized Weightfactor
- \( a \) price adjustment factor for corporate actions
- \( t \) Calculation time

Where

\[
\sum_{i=1}^{n} g_{i,t} = 1
\]

#### 4.2.2 Performance Attribution by Equal Weight

An index value is calculated by weighting the daily instrument performance in equal parts according to the number of components within the index. Similar to the case with relative weights above, the sum of those weighted returns is then multiplied with the previous day’s index value and added to the same in order to receive the current Index value.

\[
I_t = I_{t-1} + I_{t-1} \sum_{i=1}^{n} \left( \frac{p_{i,t}}{p_{i,t-1}a_{i,t}} - 1 \right) / n
\]

#### 4.2.3 Adjustments of Corporate Actions

Price Changes based on corporate actions are adjusted in the following form:

\[
a_{i,t} = \frac{p - p'}{p} + 1
\]

\( p \) Price adjusted for a Corporate Action

Compared to the Laspeyres formula described above there is no need to adjust any weights because only the previous close is considered in the adjustment.
4.3 Corporate Actions

4.3.1 Dividend Payments

Unless otherwise stated, SIX calculates for all indices the price return and gross return type as a standard. For selected indices the net return index type is calculated. The gross return type assumes the full reinvestment of all dividends into the index. The net return index type takes into account dividend distributions after deduction of withholding tax. The price return type does not consider dividend reinvestment.

Depending on the form and nature of the distribution, the gross dividend may be applied to the Price index. Such extraordinary distributions are distributions like special dividends, anniversary bonuses or extraordinary dividends. But also distributions of shares of another company fall into this category. Explicitly treated as a regular cash dividend are repayments of capital through the reduction of a share’s par value, which can take the place of a regular cash dividend or constitute a component of the regular distribution.

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

\[ p'_i = p_i - d_i \]

Legend:
\[ d \] Dividend amount (gross or net)

To receive the adjusted close \( p'_i \) for a dividend payment the respective dividend amount must be deducted from the close in the listing currency because a part of the market capitalization moves from the share market into the pocket of the shareholder.

Practitioner’s Tip:
It depends on the nature of a dividend if it is adjusted only in Gross and Net Return indices or as well in the Price Return indices. Any adjustment leads to a change in the divisor. The following table describes the necessary adjustments for a regular dividend:

<table>
<thead>
<tr>
<th>Adjustments for a regular Dividend</th>
<th>Divisor Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>( Adjusted\ Price = Price - Dividend\ Amount )</td>
<td>Gross Return</td>
</tr>
</tbody>
</table>

4.3.2 Share Split

Share Splits, Reverse Share Splits and Share dividends from newly issued instruments of the same share line lead to a change in the instrument price. This is offset by the change in number of shares. The same assets are distributed on more or less shares. The adjusted price \( p'_i \) of a share split and the like is therefore given by the relationship \( p'_i s'_i = p_i s_i \). To receive the adjusted close of a share the close must be multiplied with the current number of shares and the product be divided by the number of shares after the effective date:

\[ p'_i = \frac{p_i s_i}{s'_i} \]

Legend:
\[ s' \] Number of adjusted shares

Because the same relationship holds for the adjusted shares, they can be calculated by the same formula:

\[ s'_i = \frac{p'_i s_i}{p_i} \]

And the same applies for an adjusted weightfactor:

\[ w'_i = \frac{p'_i w_i}{p_i} = \frac{s'_i w_i}{s_i} \]

Legend:
\[ w' \] Adjusted weightfactor
Practitioner’s Tip:

Normally the ratio of adjusted shares vs. shares is not expressed on the level of all shares in the market but on much smaller – usually integer – denomination. For a split this may be expressed in a form like:

“Every shareholder receives B new shares of every A shares held”.

The subsequent table describes the necessary adjustments to consider a share split or a reverse share split:

<table>
<thead>
<tr>
<th>Adjustments for Share Splits and Reverse Share Splits</th>
<th>Divisor Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjusted Price = ( \frac{\text{Price} \times A}{B} )</td>
<td></td>
</tr>
<tr>
<td>Freefloat Market Capitalization weighted Index:</td>
<td></td>
</tr>
<tr>
<td>Adjusted Number of Shares = Number of Shares ( \frac{B}{A} )</td>
<td></td>
</tr>
<tr>
<td>Weightfactor weighted index:</td>
<td></td>
</tr>
<tr>
<td>Adjusted Weightfactor = Weightfactor ( \frac{B}{A} )</td>
<td></td>
</tr>
</tbody>
</table>

To communicate a share dividends the ratio may be expressed in another form where adjusted shares are a combination of shares held and shares received together:

“Every shareholder receives an additional B shares for every A shares held”.

In such a case the index adjustments would be described as in the table below:

<table>
<thead>
<tr>
<th>Adjustments for Share Splits and Reverse Share Splits</th>
<th>Divisor Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjusted Price = ( \frac{\text{Price} \times A}{A + B} )</td>
<td></td>
</tr>
<tr>
<td>Freefloat Market Capitalization weighted Index</td>
<td></td>
</tr>
<tr>
<td>Adjusted Number of Shares = Number of Shares ( \frac{A + B}{A} )</td>
<td></td>
</tr>
<tr>
<td>Weightfactor weighted index:</td>
<td></td>
</tr>
<tr>
<td>Adjusted Weightfactor = Weightfactor ( \frac{A + B}{A} )</td>
<td></td>
</tr>
</tbody>
</table>

4.3.3 Rights Issue

The rights issue is either used to raise capital by the company or to return capital to the shareholders. The company issues rights to shareholders, so they can buy/sell shares at a discount/mark-up.

The adjusted price (\( p_i' \)) of a rights issue is given by the dilution/increase of the share price as long as shares can be bought/sold by the shareholder at a discount. I.E. \( p_i'^* < p_i \) for the case of a capital increase and \( p_i'^* > p_i \) for the case of a return of capital. To receive the adjusted close, the weighted price is calculated based on the existing number of shares and the rights (\( s^* \)) to be distributed at the ex-date:

\[
p_i' = p_i s_i + p_i'^* s_i^* \quad \frac{s_i + s_i^*}{s_i + s_i^*} \quad \text{Legend:}
\]

\[
p^* \quad \text{Subscription price of the rights issued}
\]

\[
s^* \quad \text{Rights issued per shares s}
\]

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:

\[
s_i' = s_i + s_i^* \quad s' \quad \text{Number of adjusted shares}
\]
The weightfactor weighted index determines its weights independent of market capitalization. The rights issue must not have an effect on the market value. This is the reason why the weightfactor weighted indices limit their adjustment to offset the expected movement in price. From that point of view the treatment is the same as for the share split:

$$w_i' = \frac{p_i w_i}{p_i'}$$

Contrary to the case of the Stock Split the weightfactor is explicitly dependent on the price. Therefore the price used to adjust the weightfactor is the close two trading days before the effective date. With this handling it is possible for portfolios to track the index in a more accurate way.

**Practitioner’s Tip:**

Like in the case of the split, the ratio of adjusted shares vs. shares is usually not expressed on the level of all shares in the market but on much smaller – usually integer – denomination. For a rights issue to increase the share capital this may be expressed in a form like:

“Every shareholder can buy B new shares for every A shares held at the subscription price”.

In the case of a capital return to shareholders the communication could be expressed like:

<table>
<thead>
<tr>
<th>Adjustments for a Regular Dividend</th>
<th>Divisor Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjusted Price = Price × A ± Subscription Price × B</td>
<td>Capital Increase</td>
</tr>
<tr>
<td>Freefloat Market Capitalization weighted Index:</td>
<td></td>
</tr>
<tr>
<td>Adjusted Number of Shares = Number of Shares A ± B = A</td>
<td></td>
</tr>
<tr>
<td>Weightfactor weighted index:</td>
<td></td>
</tr>
<tr>
<td>Adjusted Weightfactor = Weightfactor × Price(^1)</td>
<td></td>
</tr>
</tbody>
</table>

4.3.4 Extraordinary Corporate Actions

4.3.4.1 Initial Public Offering (IPO)

A company of which the share capital is privately owned or available on another stock exchange can be listed at SIX and offer its shares through an IPO. The shares are offered at an offering price and the company decides whether the shares should be primary listed or secondary listed. A primary listing means that SIX is the main stock exchange. For the IPO the number of shares, freefloat factor and opening price are determined. If a new listing fulfils the selection rules of an index, the new listing is included in the index. Index specific treatments are described in section 6.4.

4.3.4.2 Merger & Acquisition Activities

Mergers and acquisitions are corporate actions that go along with a change to the ownership structure of one or more companies. This can result in the disappearance of the involved companies and in the creation of a new company (merger) or in the integration of one company into the other (acquisition). Therefore, the corporate action may lead to a new listing or to a delisting which results in an adjustment of the index composition. In both cases a

\(^1\) For the calculation of the adjusted Weightfactor the close of two trading days before the effective date is used to give index tracking portfolios enough lead time for the respective adjustments.
change in the number of shares or the freefloat factor are to be considered which result in a change of the components weight. Index specific treatments are described in section 6.4.

4.3.4.3 **Spinoff**

A spinoff takes place if a company divests parts of its business into a new company and lists its shares. The shares of this newly created company are equally distributed to the shareholders of the existing company. Therefore in principle a spinoff is treated like an extraordinary payment. However, there is no market price available at the ex-date of the spinoff. In order to receive such a market price, the company spun off is kept in the index during the ex-date. The instrument is added to the index at the ex-date with a reference price. The adjustments using the market value are effective the trading day after the ex-date based on the closing values of the ex-date. Estimations may be considered to assign the spun off company to baskets like Size or Industry. Index specific treatments are described in section 6.4.

4.3.4.4 **Adjustments of Share Buybacks and Ordinary Capital Increases**

Extraordinary corporate actions may lead to an adjustment outside of the ordinary index review to both, number of shares and freefloat factor, if one of the following conditions is met:

- The corporate action leads to a change in number of shares of at least 10%
- The change in shareholder structure leads to a change in the freefloat factor of at least 5%
- Such an adjustment takes effect after a notification period of 2 trading days based on the information available.

Considered are corporate actions which are reported to SIX by the issuer of the instrument. Freefloat amendments are made on the same information basis.
5 Maintenance of Components

5.1 Review of Number of Shares and Freefloat

5.1.1 Overview

The reviewed number of shares and freefloat factors are communicated to the market with the Review List. It presents the number of shares and the freefloat factor for each index component. It serves as the basis to calculate the freefloat market capitalization.

The communication and implementation of the reviewed shares and freefloat factors follow the schedules shown below:

<table>
<thead>
<tr>
<th></th>
<th>1st Quarter</th>
<th>2nd Quarter</th>
<th>3rd Quarter</th>
<th>4th Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication of</td>
<td>Monday, one month before</td>
<td>Monday before</td>
<td>3rd Friday March</td>
<td>3rd Friday December</td>
</tr>
<tr>
<td>provisional figures</td>
<td>effective date</td>
<td>Implementation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data cut-off</td>
<td>Friday before communication</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication of</td>
<td>Monday before</td>
<td>3rd Friday June</td>
<td>3rd Friday September</td>
<td>3rd Friday December</td>
</tr>
<tr>
<td>definitive figures</td>
<td>Implementation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Implementation</td>
<td>3rd Friday March</td>
<td>3rd Friday June</td>
<td>3rd Friday September</td>
<td>3rd Friday December</td>
</tr>
<tr>
<td>Effective</td>
<td>Monday after implementation</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SIX produces a provisional and a definite Review List. The provisional Review List is published one month before implementation and has an informative character. The definitive figures are published 5 trading days before implementation to ensure most recent data. SIX may update the figures up until implementation to react on not foreseen market developments, to correct mistakes or to adjust corporate actions.

5.1.2 Determination of the Freefloat Factor

The freefloat factor is a relative fraction multiplied with the number of shares in order to ensure that only shares that are available for trading are considered in the index calculation. The freefloat factor is only calculated for shares with voting rights. Large stakes that reach or exceed the threshold of 5% and are held in firm hands are subtracted from the total market capitalization.

The following stakes are deemed to be held in firm hands:

- Shareholding that have been acquired by one person or a group of persons who are subject to a shareholder or lockup agreement.
- Shareholding that have been acquired by one person or a group of persons who according to publicly known facts, have a long-term interest in a company.

Independent from the above, the stakes held by institutions of the following kind are deemed free-floating:

- Custodian nominees
- Trustee companies
- Investment funds
- Pension funds
- Investment companies

SIX classifies at its own discretion persons and groups of persons who cannot be clearly assigned because of their area of activity or the absence of important information. In order to calculate the size of a stake SIX uses the reports submitted under Art. 120 FinfraG. In addition SIX may use data gained from issuer surveys that it conducts itself.

Where an issuer has different categories of shares listed, these are considered separately for the freefloat calculation. Fund instruments are set to be freely tradable and therefore the freefloat factor is defined to be 100%.
5.2 **Priority of Prices Used in Reference Values**

All prices for instruments to calculate the index values are unfiltered and received from the SIX trading platforms during the official trading hours. For the calculation of the indices, the last paid price is taken into account. There are two opening procedures in place accounting for the liquidity of the index components in order to determine meaningful ‘open’ value. The closing procedure to calculate the ‘close’ is the same for all indices described in this rulebook.

**Opening Procedures**

**Standard Opening**

If no price has been paid on the day of calculation, the bid price is used. In the absence of a bid price, the price is used with which the previous day’s closing value was calculated. Only the prices sourced via the electronic order book of SIX are used. Since the opening phase may cause price fluctuations, the index is first calculated 3 minutes after the start of trading.

**Liquid Opening**

If no price has been paid on the day of calculation, the price is used with which the previous day’s closing value was calculated. Only the prices achieved via the electronic order book of SIX are used. Since the opening phase may causes price fluctuations, the index is first calculated 2 minutes after the start of on order book trading.

**Closing Procedure**

For the closing value of the index the individual component closing prices from the closing auction are used. If no closing price is available, the price is used which was used in the calculation of the previous index tick.

**Final Settlement Value (FSV)**

A Final Settlement Value (FSV) is calculated for the indices which serve as the basis for derivatives. The FSV is calculated using the first-paid price between 9:00:00 CET and 9:02:15 CET on each business day. If no price is available during this period for a component the last available price is used. If there is a FSV for an index this is mentioned in the section ‘Calculation Method’ of the respective index.

**Components in a Non-Index Currency**

If an index component is primary listed at SIX in another currency than the index currency its price is converted to the index currency for the index calculation. The component price is converted in realtime (tick-by-tick) with the last available currency Mid-price. For the end of day calculation the last available Mid-price of the trading day is used. The data is sourced from SIX Financial Information.
6 Maintenance of Index Composition

6.1 Index Dependencies

Each index is created by applying its selection rules to the index universe. As the universe of an index is often another index, the index composition does not only depend on the selection rules of the index itself but as well on the selection rules of its universe. The resulting index dependencies are shown in the following graph:
6.2 **Ordinary Index Review**

The ordinary index review is carried out on a periodic basis (quarterly, semi-annual or annual as defined per individual index rule) to update the index composition and reflect market developments.

During the index review the changes are implemented on the 3rd Friday of March, June, September and December based on the last available selection list to adjust the index compositions and the component weights. The selection lists are created with the last trading date of the respective month as the cut-off date. If not stated otherwise, the new index compositions are communicated to the market with a notification period of at least 2 months.

The rules to select the index composition are outlined in the section ‘Index composition’ and those to determine the weights are shown in the section ‘Component weighting’ of the respective index.

Some indices use cap factors to influence the component weight. The adjustment of the cap factors follows the following schedule. If the timing for the index reviews or cap factor calculations does not follow the below quarterly schedule the process is mentioned in the specific section of the individual index:

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Data cut-off</th>
<th>Communication of Cap factor</th>
<th>Implementation</th>
<th>Effective</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Quarter</td>
<td>Thursday, 8 days before Implementation</td>
<td>Monday before Implementation</td>
<td>3rd Friday March</td>
<td>Monday after implementation</td>
</tr>
<tr>
<td>2nd Quarter</td>
<td>3rd Friday June</td>
<td></td>
<td>3rd Friday September</td>
<td></td>
</tr>
<tr>
<td>3rd Quarter</td>
<td>3rd Friday September</td>
<td></td>
<td>3rd Friday December</td>
<td></td>
</tr>
<tr>
<td>4th Quarter</td>
<td>3rd Friday December</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The calculation of the cap factors is based on the definite new numbers of shares and freefloat factors for the next ordinary index review.

6.3 **Index Selection List**

The index composition of most fixed component indices is determined by using the index selection list. The index selection list for the SPI and the derived fixed component indices is compiled four times a year with the cut-off dates on 31 March, 30 June, 30 September and 31 December. To compile the list the following figures are calculated for all the components of the SPI (see section 7.2) over a period of 12 months:

- Average freefloat market capitalization relative to the capitalization of the entire index universe SPI
- Cumulated on order book turnover relative to the total turnover of the index universe SPI

Both figures are each given a weighting of 50% and the result is ranked in descending order.

The index composition for indices which are based on the index selection list is determined based on the index selection list of June using yearly data from 1 July to 30 June. For the other three cut-off dates the selection list is of provisional nature.

For components that have been listed within the 12 months period considered, the cumulated on order book turnover is extrapolated, whereby the first 5 trading days after listing are excluded in the calculation. The index selection list is published the latest 2 weeks after the cut-off date on the SIX website.

6.4 **Extraordinary Corporate Actions: Mergers & Acquisition, IPO and Spin-Off**

As described in section 4.3 an extraordinary corporate action is either an IPO, M&A activity, spin-off, insolvency or any other event which leads to a listing or delisting. An extraordinary corporate action has an ex-date, but its effect can usually not be calculated by a generic predefined formula. As in most cases the effect of an extraordinary Corporate Action leads to a new listing or delisting and subsequently there is a change in the index composition and in the component weights of the index composition.

Newly listed instruments that fulfill the selection rules of an index, are extraordinarily included into the respective index on their second trading day and the index is adjusted with the freefloat market capitalization at the close of the first trading day. The extraordinary inclusion of a newly listed instrument to a fixed component index can lead to an extraordinary replacement of an existing index component. Extraordinary inclusions are implemented after a notification period of 5 trading days. The adjusted cap factors are implemented after a notification period of
generally 5 trading days, but no less than one trading day. Specific details are mentioned in the respective section of the index.

If an IPO of a Real Estate instrument leads to an extraordinary inclusion, it is included to all indices in three equal stages. This is achieved by the gradual increase of the number of shares or the freefloat factor over three trading days starting on the second trading day.

In case of a delisting, the exclusion of an index component is made, if possible, on the next ordinary index review date at the 3rd Friday of March, June, September or December. However, if the delisting would be effective before the ordinary index review, the component is excluded from the respective index on the effective date of the delisting. If a component is excluded from a fixed component index outside of the ordinary index review, it is replaced by the best ranked candidate on the respective selection list which is not yet part of the index composition in order to maintain a stable number of components within the index composition. Extraordinary exclusions are implemented after a notification period of 5 trading days. Adjusted cap factors are implemented after a notification period of generally 5 trading days, but no less than one trading day. Specific details are mentioned in the respective section of the index.

Extraordinary inclusions into the SMI (section 7.6), SMIM (section 7.10) and SLI (section 7.11) take place if the selection rules for the index are fulfilled after a 3 month period, this on a quarterly basis after the close of trading on the 3rd Friday of March, June, September and December as follows:

<table>
<thead>
<tr>
<th>Latest Listing Date</th>
<th>Earliest Extraordinary Acceptance Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 trading days prior to the end of November</td>
<td>March</td>
</tr>
<tr>
<td>5 trading days prior to the end of February</td>
<td>June</td>
</tr>
<tr>
<td>5 trading days prior to the end of May</td>
<td>September</td>
</tr>
<tr>
<td>5 trading days prior to the end of August</td>
<td>December</td>
</tr>
</tbody>
</table>

In the case of major market changes as a result of corporate action, the Management Committee of SIX Financial Information can decide at the request of the Index Commission that an instrument should be admitted to an index outside of the accepted admission period as long as it clearly fulfills the index selection rules. For the same reasons, a component can be excluded if the requirements for admission to the index are no longer fulfilled.

### 7 Indices

#### 7.1 Swiss All Share Index

##### 7.1.1 Overview

The Swiss All Share Index measures the development of the foreign and domestic equity instruments traded on SIX. As such it is the broadest diversified index calculated by SIX. The Swiss All Share Index is a variable components index.

##### 7.1.2 Calculation Method

The Swiss All Share Index is calculated as a freefloat market capitalization weighted index using the Laspeyres method. The Laspeyres method and the weighting method are described in detail in section 4.1. For the Swiss All Share Index the rules for ‘Standard opening’ are applied as described in section 5.2.

##### 7.1.3 Index Composition

#### 7.1.3.1 Ordinary Index Review Frequency and Cut-Off Date

All instruments of companies domiciled in Switzerland are automatically selected as index components.
7.1.3.2 Component Selection Rules

The Swiss All Share Index universe consists of all instruments with a primary listing on SIX. Instruments of companies domiciled outside of Switzerland are added upon request of the issuer whereby the issuer agrees to commit to fulfil the Directive Regular Reporting Obligations requirement as defined by SIX Exchange Regulations. If an issuer fails to comply with the reporting requirement, its instruments are excluded from the Swiss All Share Index and therefore its subindices after a prior warning.

7.1.4 Component Weighting

The Swiss All Share Index is weighted by the freefloat market capitalization of its components. The number of shares and the freefloat factor are reviewed on a quarterly basis as described in section 5.1.

7.2 Swiss Performance Index – SPI

7.2.1 Overview

The SPI measures the development of the more liquid and therefore tradable equity instruments listed on SIX. It serves as a benchmark for the overall Swiss equity market and it serves as the index universe for the majority of the indices as outlined in section 6.1. The SPI is a variable components index.

7.2.2 Calculation Method

The SPI is calculated as a freefloat market capitalization weighted index using the Laspeyres method. The Laspeyres method and the weighting method are described in detail in section 4.1. For the SPI the rules for ‘Standard opening’ are applied as described in section 5.2.

7.2.3 Index Composition

7.2.3.1 Ordinary Index Review Frequency and Cut-Off Date

The SPI is reviewed on a continuous basis. If an instrument fulfills the component selection rules, it is included into the index. If a component violates the component selection rules, it is removed from the index.

7.2.3.2 Component Selection Rules

The index universe of the SPI is the Swiss All Share Index. Instruments are added to the SPI if they have a freefloat factor of 20% or above. To do so an announcement period of 10 trading days is considered from the date the instrument fulfills the criterion over 3 consecutive months. If the freefloat factor falls below this minimum and does not reach or surpass it within 3 months, the component in question is removed from the SPI after an announcement period of 10 trading days.

Instruments of investment companies which invest into Swiss companies cannot qualify for the index in order to prevent double representation of the same assets. Instruments of investment companies which invest in companies which do not have a primary listing at SIX may be included upon request of the issuer.

If an issuer domiciled abroad is not exclusively primarily listed on SIX, the following criteria must be fulfilled cumulatively:

– The issuer’s shares are not already included in an internationally significant foreign benchmark index.
– At least 50% of the total turnover in the shares is generated on SIX or the liquidity ratio (turnover as a percentage of free float capitalization) is at least 50%.

Foreign-domiciled companies which exist due to an IPO and fulfil the reporting requirement (see section 7.1.3.2), at the request of the given issuer, can also be included in the SPI as of the second trading day, as well as in sector-specific and sub-indices.

7.2.4 Component Weighting

The SPI is weighted by the freefloat market capitalization of its components. The number of shares and the freefloat factor are reviewed on a quarterly basis as described in section 5.1.

7.3 SPI Sector Indices

7.3.1 Overview

The SPI Sector Indices measures the development of a specific industrial sector. The sector definition is based on the sector classification standard of ICB. The SPI Sector Indices are variable components indices.

7.3.2 Calculation Method

SPI Sector Indices are calculated as a freefloat market capitalization weighted index using the Laspeyres method. The Laspeyres method and the weighting method are described in detail in section 4.1. For the SPI Sector Indices the rules for ‘Standard opening’ are applied as described in section 5.2.

7.3.3 Index Composition

7.3.3.1 Ordinary Index Review Frequency and Cut-Off Date

The quarterly index Review is conducted at the ordinary index review dates on the 3rd Friday in March, June, September and December.

7.3.3.2 Component Selection Rules

The index universe of the SPI Sector Indices is the SPI. The SPI components are assigned to a sector code based on the classification standard of ICB which groups shares based on the business activity of the issuer. The standard foresees 10 Industries and 18 Supersectors. The interdependencies between Industries and Supersectors are illustrated in the following table:

<table>
<thead>
<tr>
<th>Code</th>
<th>Industry</th>
<th>Code</th>
<th>Supersector</th>
</tr>
</thead>
<tbody>
<tr>
<td>0001</td>
<td>Oil &amp; Gas</td>
<td>0500</td>
<td>Oil &amp; Gas</td>
</tr>
<tr>
<td>1000</td>
<td>Basic Materials</td>
<td>1300</td>
<td>Chemicals</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1700</td>
<td>Basic Resources</td>
</tr>
<tr>
<td>2000</td>
<td>Industrials</td>
<td>2300</td>
<td>Construction &amp; Materials</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2700</td>
<td>Industrial Goods &amp; Services</td>
</tr>
<tr>
<td>3000</td>
<td>Consumer Goods</td>
<td>3300</td>
<td>Automobiles &amp; Parts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3500</td>
<td>Food &amp; Beverages</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3700</td>
<td>Personal &amp; Household Goods</td>
</tr>
<tr>
<td>4000</td>
<td>Health Care</td>
<td>4500</td>
<td>Health Care</td>
</tr>
<tr>
<td>5000</td>
<td>Consumer Services</td>
<td>5300</td>
<td>Retail</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5500</td>
<td>Media</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5700</td>
<td>Travel &amp; Leisure</td>
</tr>
<tr>
<td>6000</td>
<td>Telecommunications</td>
<td>6500</td>
<td>Telecommunications</td>
</tr>
<tr>
<td>7000</td>
<td>Utilities</td>
<td>7500</td>
<td>Utilities</td>
</tr>
</tbody>
</table>

More details can be found on the following website: [www.icbenchmark.com](http://www.icbenchmark.com)
### 7.3.4 Component Weighting

The SPI Sector Indices are weighted by the freefloat market capitalization of its components. The number of shares and the freefloat factor are reviewed on a quarterly basis as described in section 5.1.

### 7.4 SPI Size Indices

#### 7.4.1 Overview

The SPI Size Indices aim to measure the development of instruments of the same magnitude. Therefore, the components of the SPI are grouped in three subindices (SPI Large, SPI Mid and SPI Small) and two combinations (SPI Mid & Large, SPI Small & Mid). However, the size of the components of the SPI Size Indices is based on their freefloat market capitalization only and not on the overall index selection list. The SPI Large, SPI Mid as well as the SPI Mid & Large are fixed component indices. The SPI Small and the SPI Small & Mid are variable components index.

#### 7.4.2 Calculation Method

SPI Size Indices are calculated as a freefloat market capitalization weighted index using the Laspeyres method. The Laspeyres method and the weighting method are described in detail in section 4.1. For the SPI Size Indices the rules for ‘Standard opening’ are applied as described in section 5.2.

#### 7.4.3 Index Composition

##### 7.4.3.1 Ordinary Index Review Frequency and Cut-Off Date

Each year on the 3rd Friday of September, the index composition is updated in the ordinary index review based on the selection list of June. With the cut-off dates on 31 March, 30 September and 31 December a provisional selection list is created. It is the basis for the adjustment of extraordinary Corporate Actions.

##### 7.4.3.2 Component Selection Rules

The index universe of the SPI Size Indices is the SPI. The selection list ranks the SPI components based on their freefloat market capitalization over 12 months relative to the capitalization of the entire index universe. In the annual review, the approximately 200 components of the SPI are distributed to the three subindices and the two combinations according to the following graph:

<table>
<thead>
<tr>
<th>Code</th>
<th>Industry</th>
<th>Code</th>
<th>Supersector</th>
</tr>
</thead>
<tbody>
<tr>
<td>8000</td>
<td>Financials</td>
<td>8300</td>
<td>Banks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8500</td>
<td>Insurance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8700</td>
<td>Financial Services</td>
</tr>
<tr>
<td>9000</td>
<td>Technology</td>
<td>9500</td>
<td>Technology</td>
</tr>
</tbody>
</table>
The component selection of the SPI Large, SPI Mid and SPI Small is shown in the following table:

<table>
<thead>
<tr>
<th>Index</th>
<th>Number of Components</th>
<th>Direct Selection</th>
<th>Buffer</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPI Large</td>
<td>20</td>
<td>Rank 1-18</td>
<td>Rank 19-22</td>
</tr>
<tr>
<td>SPI Mid</td>
<td>80</td>
<td>Rank 21-92</td>
<td>Rank 93-108</td>
</tr>
<tr>
<td>SPI Small</td>
<td>Variable</td>
<td>All remaining instruments</td>
<td>-</td>
</tr>
</tbody>
</table>

The 20 components of the SPI Large are selected from the selection list. To reduce fluctuations in the index a buffer is applied for the ranks 19 to 22. I.E. the first 18 candidates are selected directly into the index. Out of the candidates on the ranks 19 to 22 current components are selected with priority over the other candidates. New components out of the buffer are selected until 20 components have been reached. Compared to the SMI (see section 7.6) the SPI Large does not have any liquidity constraints.

The following 80 components for the SPI Mid are selected the same way. The remaining components of the SPI constitute the SPI Small consisting of approximately 100 instruments. Since this index contains the remaining components of the SPI it does not come with a buffer.

The SPI Mid & Large combines the components of the SPI Mid and of the SPI Large and therefore represents 100 components and the SPI Small & Mid combines the components of the SPI Small and of the SPI Mid and therefore represents approximately 180 components.

As a consequence of the inclusion of new instruments into the SPI there may be changes to the SPI Size indices. As an orientation the last available selection list is used. For IPOs the assignment to the size indices is based on the freefloat market capitalization at which the instrument is included to the SPI. For normal additions to SPI Size the size is assigned based on the freefloat market capitalization of the day the SPI inclusion criterion is fulfilled.

Deleted components of Large or Mid indices are replaced with the highest ranked Mid or Small component of the latest selection list to maintain the number of components.

### 7.4.4 Component Weighting

The SPI Size Indices are weighted by the freefloat market capitalization of its components. The number of shares and the freefloat factor are reviewed on a quarterly basis as described in section 5.1.

### 7.5 UBS 100 Index

#### 7.5.1 Overview

The UBS 100 Index measures the development of a broad part of the large and mid Swiss equity market. The 100 largest Swiss instruments listed on SIX based on their freefloat market capitalization are selected for the index. The UBS 100 Index is a fixed component index.
7.5.2 Calculation Method

The UBS 100 Index is calculated as a freefloat market capitalization weighted index using the Laspeyres method. The Laspeyres method and the weighting method are described in detail in section 4.1. For the UBS 100 Index the rules for ‘Standard opening’ are applied as described in section 5.2.

7.5.3 Index Composition

7.5.3.1 Ordinary Index Review Frequency and Cut-Off Date

Each year on the 3rd Friday of September, the index composition is updated in the ordinary index review based on the selection list of June. With the cut-off dates on 31 March, 30 September and 31 December a provisional selection list is created. It is the basis for the adjustment of extraordinary Corporate Actions.

7.5.3.2 Component Selection Rules

The index universe of the UBS 100 Index is the SPI. The selection list ranks the SPI components based on their freefloat market capitalization over 12 months relative to the capitalization of the entire index universe. In the annual review the 100 largest instruments are selected as index components. Index components which are no longer ranked in the top 100 are removed from the index.

7.5.4 Component Weighting

The UBS 100 Index is weighted by the freefloat market capitalization of its components. The number of shares and the freefloat factor are reviewed on a quarterly basis as described in section 5.1.

7.6 Swiss Market Index – SMI

7.6.1 Overview

The SMI measures the development of the Swiss Blue Chip equity market. The 20 largest and most liquid equity instruments traded on SIX are selected as components. The index represents more than 75% of the freefloat market capitalization of the entire Swiss market. Compared to the SPI 20 the SMI is calculated with a cap factor to limit the maximum weight of its components and is therefore sufficiently diversified in terms of the UCITS (Undertakings for Collective Investments in Transferable Instruments) guidelines. The SMI is a fixed component index.

7.6.2 Calculation Method

The SMI is calculated as a freefloat market capitalization weighted index using the Laspeyres method. The Laspeyres method and the weighting method are described in detail in section 4.1. For the SMI the rules for ‘Liquid opening’ are applied as described in section 5.2. SIX calculates a Final Settlement Value for the SMI.

In addition to the price and the gross return index, the following indices are calculated:

<table>
<thead>
<tr>
<th>Additional SMI Indices</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMI Ask Index</td>
<td>Measures the development of the SMI components using the lowest ask quotes.</td>
</tr>
<tr>
<td>SMI Bid Index</td>
<td>Measures the development of the SMI components using the highest bid quotes.</td>
</tr>
<tr>
<td>SMI Current Spread</td>
<td>Outlines the spread between the SMI Ask Index and the SMI Bid Index.</td>
</tr>
<tr>
<td>SMI Average Spread</td>
<td>Outlines the arithmetic mean of the SMI Current Spread quotes at the end of each trading day</td>
</tr>
<tr>
<td>SMI Monthly Average Spread</td>
<td>Outlines the arithmetic mean of the SMI Average Spread quotes at the end of each month</td>
</tr>
</tbody>
</table>
7.6.3 Index Composition

7.6.3.1 Ordinary Index Review Frequency and Cut-Off Date

Each year on the 3rd Friday of September, the index composition is updated in the ordinary index review based on the selection list of June. With the cut-off dates on 31 March, 30 September and 31 December a provisional selection list is created. It is the basis for the adjustment of extraordinary Corporate Actions.

7.6.3.2 Component Selection Rules

The index universe of the SMI is the SPI.

The component selection of the SMI is shown in the following table:

<table>
<thead>
<tr>
<th>Index</th>
<th>Number of Components</th>
<th>Direct Selection</th>
<th>Buffer</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMI</td>
<td>20</td>
<td>Rank 1-18</td>
<td>Rank 19-22</td>
</tr>
</tbody>
</table>

The 20 components of the SMI are selected from the selection list. To reduce fluctuations in the index a buffer is applied for the ranks 19 to 22. I.E. the first 18 candidates are selected directly into the index. Out of the candidates on the ranks 19 to 22 current components are selected with priority over the other candidates. New components out of the buffer are selected until 20 components have been reached.

Instruments which are primary listed at more than one stock exchange and generate less than 50% of their total turnover at SIX, need to fulfill additional liquidity criteria in order to be selectable for the SMI. For this purpose all the components of the SPI are ranked based on their cumulated on order book turnover over the past 12 months relative to the total turnover of the index universe. For this list only turnovers of stock exchanges are considered where the instrument is primary listed. Such an instrument with several primary listings must rank amongst the first 18 components of the on order book turnover list in order to be selectable for the index. Such an instrument is excluded from the index once it ranks 23 or lower.

7.6.4 Component Weighting

The SMI is weighted by the freefloat market capitalization of its components. The number of shares and the freefloat factor are reviewed on a quarterly basis as described in section 5.1. In the same context each component of the SMI with a freefloat market capitalization larger than 18% of the total market capitalization of the index is capped to that weight of 18%.

Additionally, the components of the index are capped to 18% between two ordinary index reviews as soon as two components exceed a weight of 20% each. If such an intra quarter breach is observed after the close of markets, the new cap factors are calculated so that any component has a maximum weight of 18%. This cap factor is set to be effective after the close of the following trading day.

If an issuer has issued more than one equity instrument (e.g. registered shares, bearer shares, participation certificates, bonus certificates) it is possible that one issuer is represented in the index with more than one instrument. In this case, the freefloat market capitalization of those instruments is cumulated for the calculation of the cap factors. If the cumulated index weight exceeds the 18% threshold, the weight is capped accordingly. The cumulated, capped index weight is distributed proportionally based on the freefloat market capitalization of those instruments.

7.7 SPI 20

7.7.1 Overview

The SPI 20 measures the development of the Swiss Blue Chip equity market. It is a parallel index to the SMI. Therefore the 20 largest and most liquid instruments traded on SIX are selected as components. The index represents between 80 and 85% of the freefloat market capitalization of the entire Swiss market volume. The SPI 20 is a fixed component index.
7.7.2 Calculation Method
The SPI 20 is calculated as a freefloat market capitalization weighted index using the Laspeyres method. The Laspeyres method and the weighting method are described in detail in section 4.1. For the SPI 20 the rules for ‘Standard opening’ are applied as described in section 5.2.

7.7.3 Index Composition

7.7.3.1 Ordinary Index Review Frequency and Cut-Off Date
The component selection procedure and the communication follow the schedule of the SMI (see section 7.6).

7.7.3.2 Component Selection Rules
The index universe of the SPI 20 is the SMI. At all times the components of SPI 20 are identical with the components of the SMI.

7.7.4 Component Weighting
The SPI 20 is weighted by the freefloat market capitalization of its components. The number of shares and the freefloat factor are reviewed on a quarterly basis as described in section 5.1. Compared to the SMI, none of the components within the SPI 20 is capped.

7.8 SPI Extra

7.8.1 Overview
The SPI Extra measures the development of small and medium-sized Swiss enterprises outside of the SMI (see section 7.6). The index represents the SPI universe without the components of the SMI and can therefore be used as an alternative to the SPI Small & Mid in order to preclude any overlap with SMI. The index consists of around 180 components and is a variable components index.

7.8.2 Calculation Method
The SPI Extra is calculated as a freefloat market capitalization weighted index using the Laspeyres method. The Laspeyres method and the weighting method are described in detail in section 4.1. For the SPI Extra the rules for ‘Standard opening’ are applied as described in section 5.2.

7.8.3 Index Composition

7.8.3.1 Ordinary Index Review Frequency and Cut-Off Date
The component selection procedure and the communication follow the schedule of the SPI (see section 7.2) and the SMI (see section 7.6).

7.8.3.2 Component Selection Rules
The index universe of the SPI Extra is the SPI. To select SPI Extra, the components of SMI are removed from the SPI.

7.8.4 Component Weighting
The SPI Extra is weighted by the freefloat market capitalization of its components. The number of shares and the freefloat factor are reviewed on a quarterly basis as described in section 5.1.
7.9 SMI Expanded

7.9.1 Overview
The SMI Expanded measures the development of the 50 largest and most liquid instruments of the Swiss Equity Market. The SMI Expanded represents more than 90% of the freefloat market capitalization of the entire Swiss market. It is a fixed component index.

7.9.2 Calculation Method
The SMI Expanded is calculated as a freefloat market capitalization weighted index using the Laspeyres method. The Laspeyres method and the weighting method are described in detail in section 4.1. For the SMI Expanded the rules for ‘Liquid opening’ are applied as described in section 5.2.

7.9.3 Index Composition

7.9.3.1 Ordinary Index Review Frequency and Cut-Off Date
Each year on the 3rd Friday of September, the index composition is updated in the ordinary index review based on the selection list of June. With the cut-off dates on 31 March, 30 September and 31 December a provisional selection list is created. It is the basis for the adjustment of extraordinary Corporate Actions.

7.9.3.2 Component Selection Rules
The index universe of the SMI Expanded is the SPI. The following table gives an overview on how the SMI Expanded is selected from the SPI based on the index selection list:

<table>
<thead>
<tr>
<th>Index</th>
<th>Number of Components</th>
<th>Direct Selection</th>
<th>Buffer</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMI Expanded</td>
<td>50</td>
<td>Rank 1-47</td>
<td>Rank 48-53</td>
</tr>
</tbody>
</table>

The 50 components of the SMI Expanded are selected from the selection list. To reduce fluctuations in the index a buffer is applied for the ranks 48 to 53. I.E. the first 47 candidates are selected directly into the index. Out of the candidates on the ranks 48 to 53 current components are selected with priority over the other candidates. New components out of the buffer are selected until 50 components have been reached.

Instruments which are primary listed at more than one stock exchange and generate less than 50% of their total turnover at SIX, need to fulfill additional liquidity criteria in order to be selectable for the SMI. For this purpose all the components of the SPI are ranked based on their cumulated on order book turnover over the past 12 months relative to the total turnover of the index universe. For this list only turnovers of stock exchanges are considered where the instrument is primary listed. Such an instrument with several primary listings must rank amongst the first 47 components of the on order book turnover list in order to be selectable for the index. Such an instrument is excluded from the index once it ranks 54 or lower.

7.9.4 Component Weighting
The SMI Expanded is weighted by the freefloat market capitalization of its components. The number of shares and the freefloat factor are reviewed on a quarterly basis as described in section 5.1.

7.10 SMI Mid - SMIM

7.10.1 Overview
The SMIM measures the development the mid sized Swiss equity market of the 30 components of the SMI Expanded that are not in SMI. SMIM is a fixed component index.
7.10.2 Calculation Method

The SMIM is calculated as a freefloat market capitalization weighted index using the Laspeyres method. The Laspeyres method and the weighting method are described in detail in section 4.1. For the SMIM the rules for ‘Liquid opening’ are applied as described in section 5.2. SIX calculates a Final Settlement Value for the SMIM.

7.10.3 Index Composition

7.10.3.1 Ordinary Index Review Frequency and Cut-Off Date

The component selection procedure and the communication follow the schedule of the SMI Expanded (see section 7.6).

7.10.3.2 Component Selection Rules

The index universe of SMIM is SMI Expanded. To select SMIM only those candidates are selected from SMI Expanded that are not in SMI.

7.10.4 Component Weighting

The SMIM is weighted by the freefloat market capitalization of its components. The number of shares and the freefloat factor are reviewed on a quarterly basis as described in section 5.1.

7.11 Swiss Leader Index – SLI

7.11.1 Overview

The SLI measures the development the Swiss equity market of the 30 largest and most liquid instruments of the SPI. The SLI can be considered as an alternative to the SMI with differences in selected key aspects. By including 10 additional instruments and due to the cap factors, the SLI increases the weight of smaller components and distributes the exposure to price movement more equally among all components. The SLI is a fixed component index.

7.11.2 Calculation Method

The SLI is calculated as a freefloat market capitalization weighted index using the Laspeyres method. The Laspeyres method and the weighting method are described in detail in section 4.1. For the SLI the rules for ‘Liquid opening’ are applied as described in section 5.2. SIX calculates a Final Settlement Value for the SLI.

7.11.3 Index Composition

7.11.3.1 Ordinary Index Review Frequency and Cut-Off Date

Each year on the 3rd Friday of September, the index composition is updated in the ordinary index review based on the selection list of June. With the cut-off dates on 31 March, 30 September and 31 December a provisional selection list is created. It is the basis for the adjustment of extraordinary Corporate Actions.

7.11.3.2 Component Selection Rules

The index universe of the SLI is the SPI.

The component selection of the SLI is shown in the following table:

<table>
<thead>
<tr>
<th>Index</th>
<th>Number of Components</th>
<th>Direct Selection</th>
<th>Buffer</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLI</td>
<td>30</td>
<td>Rank 1-27</td>
<td>Rank 28-33</td>
</tr>
</tbody>
</table>

The 30 components of the SLI are selected from the selection list. To reduce fluctuations in the index a buffer is applied for the ranks 28 to 33. I.E. the first 27 candidates are selected directly into the index. Out of the candidates on
the ranks 28 to 33 current components are selected with priority over the other candidates. New components out of the buffer are selected until 30 components have been reached.

Instruments which are primary listed at more than one stock exchange and generate less than 50% of their total turnover at SIX, need to fulfill additional liquidity criteria in order to be selectable for the SMI. For this purpose all the components of the SPI are ranked based on their cumulated on order book turnover over the past 12 months relative to the total turnover of the index universe. For this list only turnovers of stock exchanges are considered where the instrument is primary listed. Such an instrument with several primary listings must rank amongst the first 27 components of the on order book turnover list in order to be selectable for the index. Such an instrument is excluded from the index once it ranks 34 or lower.

7.11.4 Component Weighting

The SLI is weighted by the freefloat market capitalization of its components. The number of shares and the freefloat factor are reviewed on a quarterly basis as described in section 5.1. In the same context the 9%/4.5% capping model is calculated i.e. the four components with the largest freefloat market capitalization are capped to a maximum weight of 9%. The subsequent largest components have are capped of 4.5%.

The four components to be capped at 9% are determined as a part of the September review by means of the half-year rankings, which are based on the average daily capitalization of the previous two quarters (01.01 - 30.06). The calculation follows the timing as outlined in the table of section 6.2. The calculation is based on the definite number of new shares and freefloat factor figures for the upcoming adjustment date.

If a single issuer has issued more than one equity instrument (e.g. registered shares, bearer shares, participation certificates, bonus certificates) it is possible that one issuer is represented in the index with more than one instrument. In this case, the freefloat market capitalization of all instruments is cumulated for the calculation of the cap factors. If the cumulated component weight exceeds the 9% and 4.5% threshold respectively, the weight is capped. The cumulated component weight is distributed proportionally based on the freefloat market capitalization of those instruments.

7.12 SPI ex SLI

7.12.1 Overview

The SPI ex SLI measures the market development of small and medium-sized Swiss enterprises outside of the SLI (see section 7.11) in order to use the index as a benchmark for the SLI. The SPI ex SLI consists of the SPI universe without the components of the SLI and represents approximately 170 components. The SPI ex SLI is a variable components index.

7.12.2 Calculation Method

The SPI ex SLI is calculated as a freefloat market capitalization weighted index using the Laspeyres method. The Laspeyres method and the weighting method are described in detail in section 4.1. For the SPI ex SLI the rules for ‘Standard opening’ are applied as described in section 5.2.

7.12.3 Index Composition

7.12.3.1 Ordinary Index Review Frequency and Cut-Off Date

The component selection procedure and the communication follow the schedule of the SPI (see section 7.2) and SLI (see section 7.11).

7.12.3.2 Component Selection Rules

The index universe of the SPI ex SLI is the SPI. To select the SPI ex SLI, the components of the SLI are removed from the SPI.
7.12.4 Component Weighting

The SPI ex SLI is weighted by the freefloat market capitalization of its components. The number of shares and the freefloat factor are reviewed on a quarterly basis as described in section 5.1.

7.13 SPI Select Dividend 20 Index

7.13.1 Overview

The SPI Select Dividend 20 Index measures the development of the highest-yielding instruments of the SPI. In order to do so, it includes the 20 instruments with the highest dividend paying record and a solid profitability (Return on invested capital (ROIC)) of the SPI. The SPI Select Dividend 20 Index is a fixed component index.

7.13.2 Calculation Method

The SPI Select Dividend 20 Index is calculated as a freefloat market capitalization weighted index using the Laspeyres method. The Laspeyres method and the weighting method are described in detail in section 4.1. For the SPI Select Dividend 20 Index the rules for ‘Standard opening’ are applied as described in section 5.2.

7.13.3 Index Composition

7.13.3.1 Ordinary Index Review Frequency and Cut-Off Date

Once a year, the index review is implemented on the 3rd Friday of March. A pre-selection list is created for the annual review in March based on the last trading date of February as the cut-off date. Only ordinary dividends which are officially submitted to SIX by the issuer of the instrument at the data cut-off end of February are considered for the annual review.

7.13.3.2 Component Selection Rules

The index universe of the SPI Select Dividend 20 Index is the SPI. To be included to the pre selection list candidates need to fulfil the following 3 criteria:

- Minimum average daily traded volume (ADTV) of CHF 2 million over the last 12 months.
- The issuer must have distributed a dividend in at least 4 out of the last 5 years. This includes the dividend announcement or payment of the current year and the dividend payments of the previous 4 years.
- A positive pay-out ratio \( \frac{\text{Gross dividend per share}}{\text{Earnings per share}} \). Instruments with a positive pay-out ratio qualify for the pre-selection list if they are not among the largest 10% of all instruments with the highest pay-out ratio.

The instruments on the pre-selection list are ranked by their dividend yield \( \frac{\text{Gross dividend per share}}{\text{Price of the share}} \) in a descending order. If an issuer has more than one share line which fulfils the preselection rules, only the line with the highest dividend is chosen for the final list.

The 30 best-ranked instruments are selected to the final selection list. If there are less than 30 instruments which fulfil the stated criteria all of them are selected to the final selection list. On the final selection list, the instruments are ranked based on their profitability (ROIC) in descending order. The 20 highest ranked instruments are selected as the index components.

Components which are removed from the index due to extraordinary corporate actions between two ordinary reviews are always replaced at the next ordinary index review. Those candidates are selected based on the latest selection list. The highest ranked non-components are added to the index composition until there are again 20 components in the index. The new index components are weighted based on their current freefloat market capitalization and the normalized dividend yield as of the last annual index review.

7.13.4 Component Weighting

The components of the index are weighted by their Dividend Yield. Therefore the freefloat market capitalization is multiplied with a capping factor. The normalized Dividend Yield is calculated at the annual index review. The cut-off
7.14 SPI Multi Premia Indices

7.14.1 Overview

The SPI Multi Premia Indices follow a smart beta strategy to outperform the Swiss equity market based on statistical patterns. Seven single-premium indices and one multi-premia index are calculated on the basis of the SPI.

The following single-premium indices are offered:

<table>
<thead>
<tr>
<th>Index</th>
<th>Factor Premium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value premium</td>
<td>Undervalued instruments</td>
</tr>
<tr>
<td>Size premium</td>
<td>Small instruments</td>
</tr>
<tr>
<td>Momentum premium</td>
<td>Systematic trends</td>
</tr>
<tr>
<td>Residual momentum premium</td>
<td>Instrument-specific trends</td>
</tr>
<tr>
<td>Reversal premium</td>
<td>Trend reversal</td>
</tr>
<tr>
<td>Low-risk premium</td>
<td>Low risk instruments</td>
</tr>
<tr>
<td>Quality premium</td>
<td>Profitable instruments</td>
</tr>
</tbody>
</table>

The SPI Multi Premia Index is constructed by first selecting and weighting the constituents of the single-premium indices. The SPI Multi Premia Index is then arrived at by aggregating the seven SPI single-premium indices.

7.14.2 Calculation Method

All SPI Multi Premia Indices are calculated as a weightfactor weighted index using the Laspeyres method. The Laspeyres method and the weighting method are described in detail in section 4.1. For the SPI Multi Premia indices the rules for ‘Standard opening’ are applied as described in section 5.2.

7.14.3 Index Composition

7.14.3.1 Ordinary Index Review Frequency and Cut-Off Date

In the sections that follow, the cut-off date for data collection is the Friday four weeks prior to the quarterly ordinary adjustment date. At this point in time all data to allocate the index is fixed. The SPI Multi Premia Indices are variable component indices.

The 60 candidates are determined on the cut-off date each year in September.

The index composition of each SPI Single Premia and the SPI Multi Premia Index are updated on a quarterly basis on the 3rd Friday of March, June, September and December.

7.14.3.2 Component Selection Rules

The index universe of the SPI Single Premia Indices is the SPI. Once a year 60 candidates are selected from the index selection list to be eligible for the Single Premia indices fulfilling the following conditions:

1. The instruments must have a pricing history that goes back at least 3 years.
2. In cases of multiple listings for the same issuer, only the best-ranked listing is taken into consideration.

Current components of the SPI Single Premia Indices ranked up to position 66 are considered first. Out of those 60 candidates, the maximal 30 components of each SPI Single Premia Index are selected on a quarterly basis as described in the following sections. The SPI Multi Premia Index compromises all the components of the seven SPI Single Premia Indices.
Removed index components are only replaced on the next ordinary index review with eligible instruments out of the eligible candidates.

**7.14.3.2.1 Selection for Single-Premium Indices**

The 60 candidates are tested for specific properties for each of the seven single-premium indices in sequence. This is done combining various indicators that reflect the relevant factor premium in each case.

They are standardized as follows in order to ensure that the individual indicators can be compared and combined:

\[
z_i = \frac{S_i - \bar{S}}{\sigma(S)}
\]

In this case \(S_i\) represents one of the indicators for the instrument \(i\), such as its price-to-book-value ratio, \(\bar{S}\) is the mean and \(\sigma(S)\) is the standard deviation of the same indicator for all instruments for which the corresponding indicator is available.

In order to reduce sensitivity to statistical outliers, the figures for each indicator that lie below the 5th percentile or above the 95th percentile are adjusted to be equivalent to the 5th and 95th percentiles respectively before the standardization.

In the next step, the recorded indicators are used to arrive at an aggregated factor score for each of the seven single-premium indices that reflect the factor-specific properties of the share in question. The aggregated factor scores are calculated by adding the standardized indicators together as follows:

\[
Aggregated \text{ Factor Score}_i = \sum_{k=1}^{m} \psi^k z_i^k
\]

In this case \(m\) represents the number of indicators recorded for the factor premium \(j\), \(z_i^k\) is the standardized indicator \(k\) for the instrument \(i\), \(\psi^k\) is the weight for the indicator \(z_i^k\), with all weights adding up to 1, \(\sum_{k=1}^{m} \psi^k = 1\).

In order for an eligible instrument to be included in a single-premium index, all of the indicators described in the following sections of this section must be available.

**7.14.3.2.2 Value Premium**

Two groups of underlying value indicators are used to select the components of the SPI Value Premium Index:

**Indicator of Net Asset Value:**

- Ratio of book to price value (B/P): The recorded book value per share is divided by the price on the cut-off date.

**Indicators of Earnings Power:**

- Ratio of earnings to price (E/P): The recorded earnings per share are divided by the price on the cut-off date.
- Dividend yield (D/P): The recorded gross dividend per share is divided by the price on the cut-off date.

Both of these groups of indicators are assigned a weight of 50% in order to arrive at the aggregated value score. The indicators that make up the earnings value group are also assigned equal weighting. This gives us the following formula for calculating the aggregated value score (see section 7.14.3.2.1):

\[
Aggregated \text{ Factor Score}_i^{Value} = \frac{1}{2} z_i^{B/P} + \frac{1}{4} z_i^{E/P} + \frac{1}{4} z_i^{D/P}
\]

**7.14.3.2.3 Size Premium**

Two indicators are used to select the components of the SPI Size Premium Index:

- The average logarithmized free-float market capitalization (MCAP) on the cut-off date.
- The issuer’s logarithmized total assets (TotalAssets)
Both of the indicators are assigned equal weight in order to arrive at the aggregated Size score (see section 7.14.3.2.1):

\[ Aggregated \text{ Factor} - \text{Score}^\text{Size}_i = \frac{1}{2} \sum MCAP_i + \frac{1}{2} \sum TotalAssets_i \]

### 7.14.3.2.4 Momentum Premium

Two indicators are used to select the components of the SPI Momentum Premium Index:

- the 52 minus 4 weeks total return (52-4 TR)
- the 26 minus 4 weeks total return (26-4 TR)

X minus 4 weeks total return means that the return on the ordinary adjustment date minus X weeks is calculated by the adjustment date minus 4 weeks.

Both of the indicators are assigned equal weight in order to arrive at the aggregated momentum score (see section 7.14.3.2.1):

\[ Aggregated \text{ Factor} - \text{Score}^\text{Momentum}_i = \frac{1}{2} \sum 52-4TR_i + \frac{1}{2} \sum 26-4TR_i \]

### 7.14.3.2.5 Residual Momentum Premium

Two indicators are used to select the components of the SPI Residual Momentum Premium Index:

- the 52 minus 4 weeks residual return (52-4 RR)
- the 26 minus 4 weeks residual return (26-4 RR)

Residual returns (RR) represent the excess returns at the component level, irrespective of the reference market\(^4\).

X minus 4 weeks residual return means that the residual return on the ordinary adjustment date minus X weeks is calculated by the adjustment date minus 4 weeks (cut-off date).

Both of the indicators are assigned equal weight in order to arrive at the aggregated residual momentum score (see section 7.14.3.2.1):

\[ Aggregated \text{ Factor} - \text{Score}^\text{ResidualMomentum}_i = \frac{1}{2} \sum 52-4RR_i + \frac{1}{2} \sum 26-4RR_i \]

### 7.14.3.2.6 Reversal Premium

Two indicators are used to select the components of the SPI Reversal Premium Index:

- 260 minus 52 weeks total return (260-52 TR)
- 156 minus 52 weeks total return (156-52 TR)

X minus 52 weeks total return means that the return on the ordinary adjustment date minus X weeks is calculated by the adjustment date minus 52 weeks. Both of the indicators are assigned equal weight in order to arrive at the aggregated reversal score (see section 7.14.3.2.1):

\[ Aggregated \text{ Factor} - \text{Score}^\text{Reversal}_i = \frac{1}{2} \sum 260-52TR_i + \frac{1}{2} \sum 156-52TR_i \]

### 7.14.3.2.7 Low-Risk Premium

Three indicators are used to select the components of the SPI Low Risk Premium Index:

- Volatility of the total return (Vola)
- 90% value-at-risk for the total returns (VaR)

---

\(^4\) For the calculation a CAPM regression over 156 weeks on SPI returns is used.
Correlation coefficient between the total returns of the share and the total return for the SPI (Correl).

All indicators are calculated on the basis of the same weekly data covering a period of 156 weeks. All three indicators are assigned equal weight in order to arrive at the aggregated low-risk score (see section 7.14.3.2.1):

\[ Aggregated \text{ Factor Score}_i^{LowRisk} = \frac{1}{3} z_i^{Volatility} + \frac{1}{3} z_i^{Valuation} + \frac{1}{3} z_i^{Correl} \]

### 7.14.3.2.8 Quality Premium

Two indicators are used to select the components of the SPI Quality Premium Index:

- Return on assets (RoA): The gross income recorded for the issuer is divided by the recorded value of its assets.
- Net profit margin (NetMargin): The recorded earnings per share are divided by the recorded revenue per share.

Both of the indicators are assigned a weight of 50% in order to arrive at the aggregated quality score (see section 7.14.3.2.1):

\[ Aggregated \text{ Factor Score}_i^{Quality} = \frac{1}{2} z_i^{RoA} + \frac{1}{2} z_i^{NetMargin} \]

### 7.14.3.2.9 Single Premia Selection Process

The components of the single-premium indices are determined on the basis of the corresponding aggregated factor scores. This involves listing the aggregated factor scores for the value, momentum, residual momentum and quality indices in descending order and the score for the size, reversal and low-risk indices in ascending order. The best 30 eligible instruments in each case are then selected.

In order to reduce turnover, preference is given to existing components in that they are only removed from the index if their ranking falls below 33. Any components that are removed are replaced by the next-best eligible instrument that was not previously included in the index.

### 7.14.4 Component Weighting

Unlike most other indices, the SPI Multi Premia indices use a risk-based weighting pattern.

#### 7.14.4.1 Risk Parity

Risk parity is when a portfolio’s risks are divided evenly between the various different sources of risk (e.g. index components or sub-indices). The relative contribution to risk from a particular risk source is defined as follows in cases of risk-parity weighting:

\[ r_{ci} = w_i \frac{\partial \sigma(w)}{\partial w_i} \frac{1}{\sigma(w)} \]

In this case \( w_i \) represents the weight of the risk source \( i \) and \( \sigma(w) \) the measure of risk (e.g. volatility or tracking error) in relation to the index weights \( w \). The risk contributions add up to 1, i.e. \( \sum_{i=1}^{n} r_{ci} = 1 \)

The following optimization problem is solved in order to arrive at the weights in accordance with the principle of risk parity:

\[ w^* = \arg \min_w \sum_{i=1}^{n} (r_{ci} - \frac{1}{n})^2 \]

This optimization problem minimizes the total of the squared deviations between the risk contributions of the individual risk sources \( r_{ci} \) and the desired risk contribution of \( 1/n \). This gives us a balanced, individual risk contribution for each risk source.
7.14.4.2 Weighting of the SPI Single-Premia Indices

The weight of the components in the SPI Single Premia Indices (single-factor indices) is determined in accordance with the principle of risk parity. The procedure is described in section 7.14.4.1 above.

The index components serve as the risk sources, while volatility is used as the measure of risk.

The covariance is determined on the basis of the weekly total return time series for the single-premium index components over a period of 156 weeks.

The secondary conditions for risk parity optimization are:

- The index is always fully invested \( \sum_{i=1}^{n} w_i = 1 \).
- The weight of a single component amounts to between 0% and 8%: \( 0 \leq w_i \leq 0.08 \).
- The weight of a given component is limited to three times a reference weight comprising a combination of free-float market capitalization and an on-order-book-based reference weight \( w_i^{ref} \): \( w_i \leq 3 \times w_i^{ref} \). The reference weight of a component is calculated as the theoretical market capitalization weighting in a portfolio consisting of the same components and a maximum weighting for individual shares of 8%.

As part of the optimization process, the squared deviations between the new and previous weights are also penalized in order to further reduce the index’s turnover.

7.14.4.3 Weighting of Equities in the SPI Multi Premia Index

The weighting of the components in the SPI Multi Premia Index (multi-factor index) is determined in accordance with the principle of risk parity. The procedure is described in section 7.14.4.1 above.

In contrast to the single-factor indices, the single-factor indices themselves are used as risk sources for the multi-factor index. The tracking error with respect to the SPI over a period of 156 weeks is used as the measure of risk.

The secondary conditions for risk parity optimization are:

- The index is always fully invested \( \sum_{i=1}^{7} w_i = 1 \)
- The weight of a single-premium index amounts to between 11% and 17.5%: \( 0.11 \leq w_i \leq 0.175 \)

7.15 Investment Index

7.15.1 Overview

The Investment Index measures the development of the market of equity investment vehicles. Therefore the components are selected if the issuer pursues a collective investment scheme to generate return on invested capital without engaging in any actual entrepreneurial activity as such. The Investment Index is a variable components index.

7.15.2 Calculation Method

The Investment Index is calculated as a freefloat market capitalization weighted index using the Laspeyres method. The Laspeyres method and the weighting method are described in detail in section 4.1. For the Investment Index the rules for ‘Standard opening’ are applied as described in section 5.2.

7.15.3 Index Composition

7.15.3.1 Ordinary Index Review Frequency and Cut-Off Date

The Investment Index is continually reviewed.
7.15.3.2 Component Selection Rules

The index universe of the Investment Index is the Swiss All Share Index.

Generally, only Swiss domiciled companies which are primary listed on SIX in the ‘investment companies’ segment\(^5\) are in scope of the Investment Index. However, upon its request a foreign-domiciled investment issuer with a primary listing on SIX may be added to the Investment Index if it commits to fulfil the reporting requirement.

If an issuer domiciled abroad is not exclusively listed on SIX, the following criteria must be fulfilled cumulatively:

- The issuer’s shares are not already included in an internationally significant foreign benchmark index.
- At least 50% of the total turnover in the shares is generated on SIX or the liquidity ratio (turnover as a percentage of free float capitalization) is at least 50%.

In order to be admitted to the Investment Index an instrument needs a minimum freefloat factor of 20% of its total shares. If the freefloat factor of a component falls below 20% and does not reach or surpass it within 3 months, the component is removed from the Investment Index. An instrument which is not yet part of the Investment Index is included to it if it reaches or exceeds the freefloat factor threshold of 20% continuously during a time period of 3 months. The adjustments are implemented after a notification period of 10 trading days.

The freefloat factor of the index components is updated as described in section 5.1. If the listing segment of an index component changes, the component is excluded from the Investment Index.

7.15.4 Component Weighting

The Investment Index is weighted by the freefloat market capitalization of its components. The number of shares and the freefloat factor are reviewed on a quarterly basis as described in section 5.1.

7.16 SXI Switzerland Sustainability 25 Index

7.16.1 Overview

The SXI Switzerland Sustainability 25 Index measures the development of Swiss companies which are considered sustainable according to a measurement framework provided by Sustainalytics. The 25 best-ranked companies that fulfil the criteria are selected for the index. The SXI Switzerland Sustainability 25 Index is a fixed component index.

7.16.2 Calculation Method

The SXI Switzerland Sustainability 25 Index is calculated as a freefloat market capitalization weighted index using the Laspeyres method. The Laspeyres method and the weighting method are described in detail in section 4.1. For the SXI Switzerland Sustainability 25 Index the rules for ‘Standard opening’ are applied as described in section 5.2.

7.16.3 Index Composition

7.16.3.1 Ordinary Index Review Frequency and Cut-Off Date

Each year on the 3\(^{rd}\) Friday of September, the index composition is updated in the ordinary index review based on information provided by Sustainalytics\(^6\).

7.16.3.2 Component Selection Rules

The index universe of the SXI Switzerland Sustainability 25 Index is the SMI Expanded. The components of the SMI Expanded which do not fulfil the sustainability criteria defined by Sustainalytics are excluded from the index universe. The remaining instruments are then ranked based on a set of criteria and given a sustainability score. The

\(^5\) According to Art. 3 of the additional rules for the listing of investment companies in the SIX Listing Rules.

\(^6\) www.sustainalytics.com
25 instruments with the highest sustainability score are selected for the index composition. If an issuer has more than one instruments on the selection list, the one with the larger freefloat market capitalization is taken.

The new index composition is communicated to the market with a notification period of at least 2 weeks.

7.16.4 Component Weighting

The SXI Switzerland Sustainability 25 Index is weighted by the freefloat market capitalization of its components. The number of shares and the freefloat factor are reviewed on a quarterly basis as described in section 5.1. On the quarterly ordinary index review, each component of the SXI Switzerland Sustainability 25 Index with a freefloat market capitalization larger than 15% of the total market capitalization of the index is capped to a weight of 15%.

7.17 SXI Special Industry: Life Sciences

7.17.1 Overview

The SXI Life Sciences Index measures the development of the Swiss Life Science equity market. Therefore the index contains shares of issuers with a business activity in the Life Science sector. The SXI Life Sciences Index is a variable component index.

7.17.2 Calculation Method

SXI Special Industry Indices are calculated as a freefloat market capitalization weighted index using the Laspeyres method. The Laspeyres method and the weighting method are described in detail in section 4.1. For the SXI Special Industry Indices the rules for ‘Standard opening’ are applied as described in section 5.2.

7.17.3 Index Composition

7.17.3.1 Ordinary Index Review Frequency and Cut-Off Date

Each year on the 3rd Friday of September, the index composition is updated in the ordinary index review based on the selection list of June.

7.17.3.2 Component Selection Rules

The SXI Life Sciences Index includes instruments which have an average freefloat market capitalization of at least CHF 100 million measured over a period of 12 months. The index universe of the SXI Life Sciences Index is the SPI (see section 7.2) as well as the Investment Index (see section –). However, investment companies are only included into the index if no more than 50% of their investment portfolio consists of SXI index components. The structure of the investment companies is reviewed and implemented at the ordinary index review. If no reliable information on the structure of an investment issuer’s shareholdings can be determined, the investment issuer in question is not included in the index or excluded from the index at the ordinary index review.

The index components are selected in the selection list by their sector classification. Eligible for the index is the Supersector ‘4500 Health Care’.

An instrument that has not yet been classified can be included in the index if the business activities of the issuer are clearly related to one of the predefined subsectors.

7.17.4 Component Weighting

The SXI Life Sciences Index is weighted by the freefloat market capitalization of its components. The number of shares and the freefloat factor are reviewed at a quarterly basis as described in section 5.1. In the same context capping factors are calculated to fulfill the following conditions. In the case that the index consists of 10 components or less on the ordinary index review those are equally weighted. If the index consists of more than 10 components the weight of a component is capped at 10% on the ordinary index review.

If a single issuer has issued more than one equity instrument (e.g. registered shares, bearer shares, participation certificates, bonus certificates) it is possible that one issuer is represented with more than one instrument in the
index. In this case the freefloat market capitalization of all instruments is cumulated for the calculation of the cap factors. If the cumulated component weight exceeds the 10% threshold, the weight is capped to that value. The cap is applied to the smallest of the issuers index components. If there are several instruments from an issuer and one of those already has a weight exceeding 10%, the smaller instruments are not included in the index at all.

7.18 **SXI Special Industry: Bio+Medtech**

7.18.1 **Overview**

The SXI Bio+Medtech index is a sub-index of the SXI Life Sciences index and measures the development of the Swiss Bio and Medtech equity market. Therefore, those components are selected for the index which are listed at SIX and have an issuer with a business activity in Life Science but not Pharmaceuticals. The SXI Bio+Medtech Index is a variable component index.

7.18.2 **Calculation Method**

SXI Special Industry Indices are calculated as a freefloat market capitalization weighted index using the Laspeyres method. The Laspeyres method and the weighting method are described in detail in section 4.1. For the SXI Special Industry Indices the rules for ‘Standard opening’ are applied as described in section 5.2.

7.18.3 **Index Composition**

7.18.3.1 **Ordinary Index Review Frequency and Cut-Off Date**

Each year on the 3rd Friday of September, the index composition is updated in the ordinary index review based on the selection list of June.

7.18.3.2 **Component Selection Rules**

The index universe of the SXI Bio+Medtech Index is the SXI Life Science Index (7.17). The index composition consists of all the components of the SXI Life Sciences Index without the components of the Pharmaceuticals sector.

An instrument that has not yet been classified can be included in the index if the business activities of the issuer are clearly related to one of the predefined subsectors.

7.18.4 **Component Weighting**

The SXI Bio+Medtech Index is weighted by the freefloat market capitalization of its components. The number of shares and the freefloat factor are reviewed at a quarterly basis as described in section 5.1. In the same context capping factors are calculated to fulfill the following conditions. In the case that the index consists of 10 components or less on the ordinary index review those are equally weighted. If the index consists of more than 10 components the weight of a component is capped at 10% on the ordinary index review.

If a single issuer has issued more than one equity instrument (e.g. registered shares, bearer shares, participation certificates, bonus certificates) it is possible that one issuer is represented with more than one instrument in the index. In this case the freefloat market capitalization of all instruments is cumulated for the calculation of the cap factors. If the cumulated component weight exceeds the 10% threshold, the weight is capped to that value. The cap is applied to the smallest of the issuers index components. If there are several instruments from an issuer and one of those already has a weight exceeding 10%, the smaller instruments are not included in the index at all.
7.19 **SXI Real Estate Indices**

7.19.1 **Overview**

The Real Estate Indices measure the development of the Swiss Real Estate market according to the following graph:

The SXI Swiss Real Estate Shares, SXI Swiss Real Estate Funds and SXI Swiss Real Estate are fixed component indices. The SXI Real Estate All Shares, SXI Real Estate Broad, SXI Real Estate Funds Broad and SXI Real Estate Shares Broad are variable components indices. The SXI Real Estate Selected Funds Index is calculated and weighted differently from the other SXI Real Estate Indices and is separately outlined in section 7.20.

7.19.2 **Calculation Method**

SXI Real Estate Indices are calculated as a freefloat market capitalization weighted index using the Laspeyres method. The Laspeyres method and the weighting method are described in detail in section 4.1. For the SXI Real Estate Indices the rules for “Standard opening” are applied as described in section 5.2. For the SXI Real Estate Funds Broad SIX calculates the index types gross return, net return and price return.

7.19.3 **Index Composition**

7.19.3.1 **Ordinary Index Review Frequency and Cut-Off Date**

Each year on the 3rd Friday of September, the index composition of each SXI Real Estate Index except the SXI Real Estate Selected Funds Index is updated in the ordinary index review based on the respective selection list of June. With the cut-off dates on 31 March, 30 September and 31 December a provisional selection list is created. It is the basis for adjustments caused by extraordinary corporate actions.
7.19.3.2 Component Selection Rules for SXI Real Estate All Shares

The SXI Real Estate All Shares Index includes all the real estate shares with a primary listing at SIX in accordance with the regulatory standard for real estate companies\(^7\). Adjustments in the index composition due to changes of the regulatory standard of an index component are made on the next ordinary annual index review in September.

7.19.3.3 Component Selection Rules for SXI Real Estate Broad

The SXI Real Estate Broad Index contains real estate shares with a primary listing at SIX in accordance with the regulatory standard for real estate companies\(^8\) as well as real estate funds which have a primary listing on SIX and at least 75% of their assets or fund assets invested in Switzerland. The balance sheet and the fund structure are reviewed on each ordinary annual index review in September regarding the threshold of 75%.

The SXI Real Estate Broad Index is split up in the SXI Real Estate Funds Broad Index and the SXI Real Estate Shares Broad Index which is the universes of the indices described in the following sections. The SXI Real Estate Funds Broad Index contains all Funds and the SXI Real Estate Shares Index all shares of the SXI Real Estate Broad Index.

7.19.3.4 Component Selection Rules for SXI Swiss Real Estate Fund Indices

The index universe of the SXI Swiss Real Estate Funds Index is the SXI Real Estate Funds Broad Index.

The component selection of the SXI Swiss Real Estate Funds Index is shown in the following table:

<table>
<thead>
<tr>
<th>Index</th>
<th>Number of Components</th>
<th>Direct Selection</th>
<th>Buffer</th>
</tr>
</thead>
<tbody>
<tr>
<td>SXI Swiss Real Estate Funds</td>
<td>10</td>
<td>Rank 1-9</td>
<td>Rank 10-11</td>
</tr>
</tbody>
</table>

The 10 components of the SXI Swiss Real Estate Funds Index are selected from the selection list for real estate funds. This selection list ranks the Real Estate funds based on the following two criteria:

– Average freefloat market capitalization over the past 12 months relative to the capitalization of the entire index universe

– Cumulated on order book turnover over the past 12 months relative to the total turnover of the index universe

To reduce fluctuations in the index a buffer is applied for the ranks 10 and 11. I.E. the first 9 components are set to be in the index and current index components can stay if they rank between 10 and 11. Otherwise they are replaced by the non-components at rank 10.

All listed real estate funds are considered to be freely tradable which means that their freefloat factor amounts to 100%.

7.19.3.5 Component Selection Rules for SXI Swiss Real Estate Share Indices

The index universe of the SXI Swiss Real Estate Shares Index is the SXI Real Estate Shares Broad Index. The 5 components of the SXI Swiss Real Estate Shares Index are selected from the selection list for real estate shares. This selection list weights the following two criteria with 50% each:

– Average freefloat market capitalization over the past 12 months relative to the capitalization of the entire index universe

– Cumulated on order book turnover over the past 12 months relative to the total turnover of the index universe

The resulting figure is sorted in descending order and candidates on the ranks 1 to 5 are selected.

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\(^7\) See SIX Listing Rules Art. 77 Definition
SIX Listing Rules: [www.six-exchange-regulation.com > Issuer > Admission > Listing](http://www.six-exchange-regulation.com)

\(^8\) See SIX Listing Rules Art. 77 Definition
SIX Listing Rules: [www.six-exchange-regulation.com > Issuer > Admission > Listing](http://www.six-exchange-regulation.com)
7.19.3.6 Component Selection Rules for SXI Swiss Real Estate Index

The index compositions of the SXI Swiss Real Estate Funds Index (section 7.19.3.4) and the SXI Swiss Real Estate Shares Index (section 7.19.3.5) are summarized in the SXI Swiss Real Estate Index containing 15 components.

7.19.4 Component Weighting

The SXI Real Estate Indices are weighted by the freefloat market capitalization of their components. The number of shares and the freefloat factor are reviewed on a quarterly basis as described in section 5.1.

7.20 SXI Real Estate Selected Funds Index

7.20.1 Overview

The SXI Real Estate Selected Funds Index measures the development of large Swiss real estate funds. It is a fixed component index which contains the 10 largest Swiss real estate funds. Compared to the SXI Real Estate Funds Index which is explained in section 7.19, the SXI Real Estate Selected Funds Index uses a different calculation method and has different selection rules.

7.20.2 Calculation Method

The SXI Real Estate Selected Funds Index is a performance attribution index which is either weighted by the Net Asset Value (NAV) of the components or is equal weighted by the number of components. In both cases the index is dividend-adjusted. The performance attribution formula and the weighting methods are described in detail in section 4.2. The SXI Real Estate Selected Funds Index is not calculated as a price index.

7.20.3 Index Composition

7.20.3.1 Ordinary Index Review Frequency and Cut-Off Date

The index composition and the NAV figures are reviewed on a semi-annual basis in June and December. Changes are made effective on the first trading day of July and January. The relevant cut-off date of the index universe in order to determine the index composition is 8 trading days before the effective date. The review results of the updated composition and the updated NAV values are communicated 8 trading days before effective.

7.20.3.2 Component Selection Rules

The index universe of the SXI Real Estate Selected Funds Index is the SXI Real Estate Funds Broad Index. The selection list ranks the NAV of the Real Estate Funds listed at SIX in descending order.

In order to be selected to the index, a fund has to fulfil the following criteria:

– A fund which is part of the index universe needs a NAV that exceeds the one of the smallest existing index component by at least 1.5% during two consecutive semi-annual reviews (June and December).

– A fund which is part of the universe since the last semi-annual review needs a NAV that exceeds the one of the smallest existing fund by at least 1.5%.

The 10 largest funds are selected to be index components measured by NAV. If a fund leaves the index universe, it is removed from the SXI Real Estate Selected Funds Index at the same time.

7.20.4 Component Weighting

The components of the SXI Real Estate Selected Funds Index are weighted on a semi-annual basis by their NAV on the first trading day of July and January.
8 Primary Data Sources

Structured information is used to calculate the SIX Equity indices. The following table gives an overview of the primary data sources used.

<table>
<thead>
<tr>
<th>Information</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prices and Quotes</td>
<td>SIX</td>
</tr>
<tr>
<td>Corporate Actions</td>
<td>SIX</td>
</tr>
<tr>
<td>Sustainability Scores</td>
<td>Sustainalytics</td>
</tr>
<tr>
<td>Sector Classification</td>
<td>FTSE Russell (ICB)</td>
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<tr>
<td>Multi Premia Selection</td>
<td>Thomson Reuters</td>
</tr>
<tr>
<td>Currency Rates</td>
<td>SIX</td>
</tr>
</tbody>
</table>

9 Correction Policy

An index-related correction is to be made due to two causes. Either because the necessary data is not available or because it is wrong.

9.1 Unavailable Data

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. Such cases may lead to a deviation from the general principles of the indices defined in the respective rulebooks. These changes may be related to review schedules, ordinary reviews as well as component and weighting changes outside of ordinary index reviews and are publicly announced with a notification period of at least 2 trading days.

9.2 Wrong Data

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

Calculation errors which are detected within a trading day are immediately corrected. Intraday tick data is not corrected retrospectively. Calculation errors that are older than a trading day and incorrect input data are only corrected if technically possible and economically viable. If the correction leads to a significant difference in the index levels those can be corrected retrospectively.

10 Governance

The indices are internally managed by the index team of SIX. The team ensures that the rules of the indices are applied and the indices fulfil the required quality standards. The index team works against structured processes to ensure compliance with a regulatory framework. Further documentation on regulation and processes can be found on the SIX website[^9]. Based on the general principles outlined in section 2, SIX reserves the right to adjust index compositions, component weightings or notification periods.

[^9]: [www.six-group.com/indices > Index Regulation](http://www.six-group.com/indices > Index Regulation)
11 External Communication

SIX uses the following tools in order to inform the market about index changes. Index changes are changes in index compositions, component weights as well as ordinary and extraordinary index adjustments.

Reports

SIX creates and maintains reports containing index compositions, component weights, corporate action forecasts and other index-relevant information. SIX publishes the reports on its website, the majority of the reports is only made available to license holders, however. Since the information of some reports is index-specific the number of reports which are relevant for an index varies from index to index. Depending on the recency of their information, the reports are updated with different frequencies ranging from daily to annual.

Vendor Code Sheet

Information on the actual ticker symbols, index standardizations, launch dates and calculation parameters of the indices can be found in the Vendor Code Sheet which is published under ‘Current list of all indices calculated by SIX Swiss Exchange’ on the website of SIX.

Newsletter Email Service

SIX provides the Index Service Equity to inform in depth on equity and real estate indices including corrections of historical index values, corporate actions, and information regarding the index composition. Interested parties may subscribe to the newsletter e-mail service on the website. SIX distributes all notifications regarding indices over this channel. This may include but is not limited to

- Changes in corporate actions and dividends
- Updates to the periodic index reviews
- Problems and error in the index calculation
- The launch or discontinuation of indices
- Market consultations
- Issuer surveys

Index Messages

The messages from the newsletter email service with regards to index adjustments are uploaded on the SIX website. Those index messages are publicly available and do neither need a subscription nor a licensing agreement.

Media Release

If an index message is of broad public interest, SIX can decide to publish a media release in order to inform the public about the index adjustment. Furthermore, media releases can be made for marketing purposes which do not refer to index adjustments.

12 Trademark Protection, Use of Licensing

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10 www.six-group.com/indices > Market Data > Indices > Request account

11 www.six-group.com/indices > Market Data > Indices > Index messages

12 www.six-group.com/indices > Market Data > Indices > Licensing
13 **Contact**

Any requests with respect to the indices may be directed to one of the following addresses:

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indexdata@six-group.com
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