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**Version 1.0**

**Index Guide**  
**as to**  
**4X Short Index linked to Nikkei 225 Index**  
**(ISIN CH0238268491)**

**Bank Vontobel AG**

**Gotthardstrasse 43**

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This Index Guide describes the composition and calculation of the *Factor Index* specified below. The *Index Calculation Agent* makes the Index Guide available on the *Information Page*. The Index Guide constitutes the basis for calculating and publishing the *Factor Index*.

Index Name: 4X Short Index linked to Nikkei 225 Index (the "**Factor Index**")

Reference Instrument: Nikkei 225 Index

Index Calculation Agent: Bank Vontobel AG, Gotthardstrasse 43, 8002 Zurich, Switzerland

Information Page: <https://indices.vontobel.com>

ISIN: CH0238268491

Valor: 23826849

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The original version of the Index Guide is in German; foreign-language versions constitute non-binding translations.

## A) Index description

The *Factor Index* reflects price movements of the *Reference Instrument* to a factor of 4. A decrease in the price of the *Reference Instrument* since the most recent calculation of an *Index Closing Value* results in a positive change of the *Factor Index* as compared to the previous price of the *Factor Index* and vice-versa. The *Factor Index* therefore reflects a "short" strategy.

The *Factor Index* consists of a leverage component and a financing component.

### **Leverage component**

The leverage component inversely tracks an investment in the *Reference Instrument* (or constituents thereof and in accordance with its rules and regulations), whereby movements in the price of the *Reference Instrument* are multiplied by the (Leverage) *Factor*. This leverage effect occurs with either positive or negative movements in the price of the *Reference Instrument*, having a disproportionate effect on the value of the *Factor Index*.

For example (leaving aside the financing component):

- An increase in the price of the *Reference Instrument* (as compared to the most recent adjustment) by 2% results in an decrease in the *Factor Index* by  $4 \times 2\%$ ;
- a decrease in the price of the *Reference Instrument* (as compared to the most recent adjustment) by 2% results in a increase in the *Factor Index* by  $4 \times 2\%$ .

### **Financing component**

The financing component emulates the expenses and earnings that would arise in acquiring and selling the *Reference Instrument* (or constituents thereof), and the risk-free investments of the proceeds. Additionally, a fee charged by the *Index Calculation Agent* for the calculation and administration of the *Factor Index* is added (*Index Fee* which reduces the value of the index).

If the acquisition costs and the *Index Fee* exceed the interest income based on the relevant *Interest Rate* on one day, the value of the *Factor Index* is reduced on such a day.

## B) Index definitions

The definitions below shall apply for the purposes of this index description.

"**Adjustment Day**" is the first *Index Calculation Day* of each calendar month.

"**Extraordinary Adjustment Event**" is any of the following events as they relate to the *Reference Instrument*:

- (a) Change, adjustment or other measure affecting the relevant concept and calculation of the *Reference Instrument*, resulting, in the opinion of the *Index Calculation Agent* in the relevant concept or calculation of the *Reference Instrument* no longer being comparable to those as at the *Index Start Day*. These factors are no longer comparable if, in particular, a change, adjustment or other measure results in a material change in the *Reference Instrument* despite the fact that the prices of the individual securities included in the *Reference Instrument* and their weighting remain the same;
- (b) Cancellation of the *Reference Instrument* and/or replacement by a different index concept; or

- (c) any other event which the *Index Calculation Agent* may at its reasonable discretion deem to have a comparable or similar impact on the calculation of the *Factor Index* in the event no adjustment were made.

**"Valuation Price"** of the *Reference Instrument* for an *Index Calculation Day* is the closing price of the *Reference Instrument*, as determined and published for that day by the *Reference Exchange*. If an *Index Calculation Day* falls on a day which is not a *Trading Day*, the *Valuation Price* of the immediately preceding *Index Calculation Day* shall continue to apply. If no *Valuation Price* for the *Reference Instrument* is determined or published on a *Trading Day*, the *Index Calculation Agent* shall determine the *Valuation Price* of the *Reference Instrument* for that day on the basis of the most recent prices set for the *Reference Instrument* at its due discretion.

**"Dividend Method"** is either *individual* or *flattened* (as described below).

In case of the **"individual"** *Dividend Method* the distributions of the constituents of the *Reference Instrument* are taken into account individually for the index calculation. The **"Dividend"** relevant for the index calculation according to section C) corresponds to the dividend of the company, exclusive of which a constituent of the *Reference Instrument* is traded on the *Ex-dividend Day* on the *Trading Facility* which is – according to the *Reference Exchange's* concept – relevant for the calculation of the *Reference Instrument* (**"Trading Facility"**). The *Index Calculation Agent* thereby takes into account the respective constituent's weight in the *Reference Instrument*. **"Ex-dividend Day"** is the *Index Calculation Day* on which the respective constituent of the *Reference Instrument* trades "ex-dividend" on the *Trading Facility* for the first time.

The **"flattened"** *Dividend Method* means that the distributions of the constituents of the *Reference Instrument* are not taken into account individually for the index calculation. Instead, they are considered by means of a flattened amount which is taken into account for the index calculation continuously. Therefore, with this *Dividend Method* the **"Dividend"** relevant for the index calculation according to section C) corresponds to an amount which is determined by the *Index Calculation Agent* at its due discretion to take into account the expected distributions of the *Reference Instrument's* constituents pro rata on each *Index Calculation Day* for the index calculation. In the course of this, the *Index Calculation Agent* considers in particular its expectations regarding the distributions of the *Reference Instrument's* constituents for the next, up to three, months following each *Index Calculation Day*. The *Index Calculation Agent* may adjust such *Dividend* at its due discretion on any *Index Calculation Day*, in particular in case of modified dividend expectations.

On the *Index Start Day* the individual *Dividend Method* is applicable. The *Index Calculation Agent* may change the *Dividend Method* at its due discretion on each *Adjustment Day*. The changed *Dividend Method* is applicable immediately on that respective *Adjustment Day*. Such a change of the *Dividend Method* is published by the *Index Calculation Agent* in accordance with section E).

**"Dividend Tax Factor"** shall be 1.0 on the *Index Start Day*. The *Index Calculation Agent* may change the *Dividend Tax Factor* at its due discretion on any *Index Calculation Day* with prospective effect if the relevant tax law applicable to the *Index Calculation Agent* changes, resulting in a change in the amount of the – after tax – *Dividend* virtually accruing to it.

**"Financing Spread"** reflects the current annual costs for acquiring the *Reference Instrument* (or constituents thereof) as at the *Index Calculation Day* via a securities lending ("repo") transaction.

The *Financing Spread* on the *Index Start Day* corresponds to the *Initial Financing Spread*. The *Index Calculation Agent* then adjusts the **"Current Financing Spread"** at its due discretion on each *Adjustment Day* to reflect current market conditions and publishes it in accordance with section E) of this index description. The adjusted *Financing Spread* becomes applicable beginning immediately on each *Adjustment Day*.

**"Initial Financing Spread"** is 0.1% per annum.

"**Trading Day**" is any day on which the *Reference Instrument* is calculated by the *Reference Exchange*.

"**Factor**" is -4. It describes the impact that a change in the price of the *Reference Instrument* has on the relevant *Factor Index*. The negative sign for the *Factor* indicates that the *Short Factor Index* participates inversely in the performance of the *Reference Instrument*.

"**Index Calculation Agent**" is Bank Vontobel AG, Gotthardstrasse 43, 8002 Zurich, Switzerland

"**Index Calculation Day**" is every day from Monday to Friday.

"**Index Fee**" is 1.0% per annum. The *Index Fee* is charged each calendar day, beginning on the *Index Start Day*. It is calculated on the basis of a 360-day year and the most recently calculated *Index Closing Value*.

"**Index Closing Value**" is calculated each *Index Calculation Day* by the *Index Calculation Agent* in accordance with section C) 1) of this index description on the basis of the *Valuation Price* of the *Reference Instrument* for this *Index Calculation Day* and published in accordance with section E) of this index description.

"**Index Start Day**" is 28 February 2014.

"**Index Start Value**" is 100 points and represents the *Index Closing Value* on the *Index Calculation Day T=0* for purposes of index calculation in accordance with C).

"**Index Currency**" is JPY.

"**Information Page**" is <https://indices.vontobel.com>.

"**Reference Instrument Price**" corresponds – subject to an *Extraordinary Adjustment* to the calculation of the index in accordance with section D) – at any time during the calculation periods for the *Reference Instrument* to the price of the *Reference Instrument*, as calculated by the *Reference Exchange* and set by the *Index Calculation Agent*.

"**Reference Exchange**" is Nikkei Inc..

"**Reference Instrument**" is Nikkei 225 Index.

Index type:	Price Index
Currency:	JPY
ISIN:	JP9010C00002
Bloomberg symbol:	NKY Index

"**Barrier**" amounts to 21%. It represents the maximum allowable positive change in the price of the *Reference Instrument* as compared to its most recent *Valuation Price*, before an *Intraday Index Adjustment* is made.

"**Futures Exchange**" is Osaka Securities Exchange.

"**Interest Rate**" is JPY LIBOR O/N (overnight).

LIBOR stands for London InterBank Offered Rate. LIBOR is an average reference interest rate at which a selected group of banks (the "panel banks") offer each other, or are prepared to offer each other, unsecured loans on the London money market. LIBOR is calculated for 15 different maturities and 10 different currencies. The official LIBOR interest rates (bblibor) are published each business day at 11:45 a.m. London time by Thomson Reuters on behalf of the British Bankers' Association (BBA). LIBOR O/N (overnight) stands for maturities of 1 day.

If the *Interest Rate* is neither set nor published on an *Index Calculation Day*, the *Interest Rate* used on the immediately preceding *Index Calculation Day* to calculate the Index in accordance with section C) is used.

If the *Interest Rate* is not set or published for ten consecutive *Index Calculation Days*, the *Index Calculation Agent* has the right and obligation to stipulate at its due discretion a different relevant *Interest Rate* which functions similarly to the previous *Interest Rate*.

## C) Index calculation

The *Factor Index* will be calculated for the first time on the *Index Start Day*. The initial Index value on the *Index Start Day* corresponds to the *Index Start Value*. For the period during which the *Reference Instrument* is traded on the *Reference Exchange*, the relevant current index level is calculated on a continuing basis on each *Index Calculation Day* by the *Index Calculation Agent*; it is rounded to two decimal points and published in accordance with section E).

One index point corresponds to one unit of the *Index Currency*.

### C) 1) Index formula

The *Factor Index* is calculated for each time *t* during an *Index Calculation Day T* in accordance with the following formula:

$$IDX_t = IDX_{T-1} \times \left\{ 1 + L \times \left( \frac{R_t + divf \times div}{R_{T-1}} - 1 \right) + [(1 - L) \times IR_{T-1} + L \times FS_T - IG] \times \frac{d}{360} \right\}$$

where:

- T = current Index Calculation Day
- IDX<sub>t</sub> = Index Value at time *t* on Index Calculation Day T
- IDX<sub>T-1</sub> = Index Closing Value on Index Calculation Day T-1 which immediately precedes the current Index Calculation Day
- L = Factor: -4
- R<sub>t</sub> = Reference Instrument Price at time *t*
- R<sub>T-1</sub> = Valuation Price on Index Calculation Day T-1
- divf = Dividend Tax Factor
- div = Dividend on Index Calculation Day T. In case of the individual Dividend Method this amount is 0, except on the Ex-dividend Day
- IR<sub>T-1</sub> = Interest Rate on Index Calculation Day T-1
- FS<sub>T</sub> = Financing Spread on Index Calculation Day T
- IG = Index Fee
- d = Number of calendar days between Index Calculation Days T-1 and T

### C) 2) Intraday Index Adjustment

If at time *s* on *Index Calculation Day T* the *Reference Instrument Price* (plus any *Dividend* multiplied by the *Dividend Tax Factor*:  $R_s + divf \times div$ ) exceeds the most recent *Valuation Price* of the *Reference Instrument* by more than 21% (*Barrier*), an "**Intraday Index Adjustment**" takes place, simulating a new day:

$$\begin{aligned}
s &= T, \text{ i.e. } \text{IDX}_{T-1} (\text{new}) = \text{IDX}_s \\
R_{T-1} (\text{new}) &= R_{T-1} (\text{old}) \times 1.21 - \text{divf} \times \text{div} \\
d &= 0
\end{aligned}$$

A new *Valuation Price* valid after time  $s$  ( $R_{T-1}$  (new)) is calculated, whereby the previous *Valuation Price* ( $R_{T-1}$  (old)) is multiplied by 1.21.

In addition, the net dividend will be deducted (in case of the *individual Dividend Method* only if the *Index Calculation Day T* is an *Ex-dividend Day*). *Dividend* and *Dividend Tax Factor* will not be considered in the index calculation in section C) 1) on the newly simulated *Index Calculation Day*.

The *financing component* remains unchanged. No additional costs are incurred for the newly simulated day.

#### D) Extraordinary Adjustment to Index Calculation

In the event of an *Extraordinary Adjustment Event* occurring in relation to the *Reference Instrument*, the *Index Calculation Agent* will adjust the index calculation on the *Reference Date* (as defined below). The *Index Calculation Agent* will – to the extent possible – endeavor to calculate the *leverage component* as if no *Extraordinary Adjustment Event* had occurred.

The *Index Calculation Agent* will generally modify the index calculation by correcting at its due discretion the relevant *Reference Instrument Price* for the *Reference Instrument* as at time  $t$  ( $R_t$ ) on the *Reference Date*, in order to factor into the index calculation the adjustments made on the *Futures Exchange* for futures and options linked to the *Reference Instrument* traded there.

The *Index Calculation Agent* may adjust the index calculation in some other manner if it deems such adjustment necessary in its due discretion in order to account for differences between this Index and the futures and options traded on the *Futures Exchange*. Such adjustments may in particular relate to the stipulation of a different *Reference Exchange*, *Futures Exchange* or *Reference Instrument Price*.

The list of *Extraordinary Adjustment Events* listed in section B) is not exhaustive. The deciding factor is whether the *Futures Exchange* considers it expedient to adjust the contract size, an underlying or involving the relevant *Reference Exchange* which determines the price of the *Reference Instrument*. If neither futures nor options linked to the *Reference Instrument* are traded on the *Futures Exchange*, the adjustment shall be made in such a manner in which the *Futures Exchange* would do so if corresponding futures or options were traded there. If doubts arise in this event relating to the application of the modification rules of the *Futures Exchange*, the *Index Calculation Agent* shall decide such questions in its reasonable discretion. The rules and regulations of the *Futures Exchange* shall apply in addition to the provisions set out above.

If the *Reference Instrument* (Index) is removed or replaced by a different index concept, or if the license agreement between the *Reference Exchange* and the *Index Calculation Agent* cannot be renewed, the *Index Calculation Agent* determines – where appropriate by applying an adjusted *Reference Instrument Price* for the *Reference Instrument* at time  $t$  ( $R_t$ ) – whether and which different index concept will be used in the future as a basis for calculating the *Factor Index*.

If the *Reference Instrument* is no longer calculated and determined and/or published by the *Reference Exchange* but by another person, company or institution that the *Index Calculation Agent* in its reasonable discretion considers to be suitable ("**Substitute Reference Exchange**"), then the *Factor Index* shall be calculated where applicable on the basis of the *Reference Instrument* calculated and published by the *Substitute Reference Exchange*. All references to the *Reference Exchange* contained in this index description shall be deemed to refer analogously to the *Substitute Reference Exchange*.

If in the opinion of the *Index Calculation Agent* it is not possible, for whatever reason, to stipulate a different relevant index concept, the *leverage component* shall remain unchanged and the index level shall be determined solely on the basis of the remaining components of the index formula.

"**Reference Date**" within the meaning of this index description is the first *Index Calculation Day*, on which the relevant futures or options are or would be traded on the *Futures Exchange* by taking into account the adjustment on the *Futures Exchange*, if corresponding futures or options would be traded on the *Futures Exchange*.

Adjustments to the *Factor Index* and all further measures set forth in this section will be announced by the *Index Calculation Agent* in accordance with section E).

## **E) Announcements**

All announcements pertaining to the *Factor Index* will be published on the *Information Page*. Such announcements shall be deemed to have been given on the date on which they are first published.

Announcements are made purely for informational purposes and do not represent a precondition for legal effectiveness.