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Index Guide
as to
7X Short Index linked to Gold (Troy Ounce)
(ISIN CH0327141427)

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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: 7X Short Index linked to Gold (Troy Ounce) (the "**Factor Index**")
Reference Instrument: Gold (Troy Ounce)
Index Calculation Agent: Bank Vontobel AG, Gotthardstrasse 43, 8002 Zurich, Switzerland
Information Page: <https://indices.vontobel.com>
ISIN: CH0327141427
Valor: 32714142
WKN: A2BLP9

This Index is part of the family of Vontobel Leveraged Long and Short indices ("**Factor Indices**").

The Factor Indices are not recognized financial indices but are customized indices conceived by Bank Vontobel AG in its capacity as Index Calculation Agent, their sole function being to act as underlying for a certain type of security (so-called Factor Certificates).

The Index Calculation Agent will perform the calculation and composition of the Factor Index with the utmost care. However, the Index Calculation Agent does not guarantee that the calculation of the indices or of any other parameters required for the composition and calculation, as in accordance with this Index Guide, will be free from error.

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A) Index description

The *Factor Index* reflects price movements in the *Reference Instrument* with a leverage factor of 7. A decrease in the price of the *Reference Instrument* since the most recent calculation of an *Index Closing Value* results in a positive change in the *Factor Index* compared with the previous price of the *Factor Index* and vice versa. The *Factor Index* therefore replicates 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*, 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 $7 \times 2\%$;
- A decrease in the price of the *Reference Instrument* (as compared to the most recent adjustment) by 2% results in an increase in the *Factor Index* by $7 \times 2\%$.

Financing component

The financing component emulates the expenses and earnings that would arise from acquiring the *Reference Instrument*, selling it and investing the proceeds at the risk-free rate. 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 applicable *Interest Rate* on a particular day, the value of the *Factor Index* is reduced on such day.

B) Index definitions

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

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

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

- (a) a change in the quality, composition (e.g. a different degree of purity or different place of origin) or the standard unit of measurement by or on the *Reference Exchange* responsible for determining the *Valuation Price* of the *Reference Instrument*; or
- (b) any other event which in the reasonable discretion of the *Index Calculation Agent* would have a comparable or similar impact on the calculation of the *Factor Index* in the event that no adjustment were to be made.

"**Valuation Price**" of the *Reference Instrument* for an *Index Calculation Day* means – subject to an extraordinary adjustment of the index calculation pursuant to section D) – the price of the *Reference Instrument*, as determined for that day on the *Reference Exchange* as LBMA Gold Price PM. 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 Instru-*

ment 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* in the international interbank market in its due discretion.

"**Financing Spread**" reflects the current annual cost on an *Index Calculation Day* of acquiring the *Reference Instrument* via a securities lending and repurchase ("repo") transaction.

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

"**Initial Financing Spread**" is 0.4% per annum.

"**Trading Day**" means every day on which a *Valuation Price* for the *Reference Instrument* is normally determined on the *Reference Exchange*.

"**Leverage**" is -7. It describes the effect of a change in the *Reference Instrument* on the respective *Factor Index*. The negative sign for the *Leverage* indicates that the *Short Factor Index* participates inversely in, i.e. in the opposite of, the performance of the *Reference Instrument*.

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

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

"**Index Calculation Period**" means from Monday 0:00 to Friday 21:00 (London time in each case).

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

"**Index Closing Value**" is calculated for 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 that *Index Calculation Day* and published in accordance with section E) of this index description.

"**Index Start Date**" means 14 June 2016.

"**Index Start Value**" is 1'000 index points and represents the *Index Closing Value* on *Index Calculation Day* T=0 for the purposes of calculating the index in accordance with C).

"**Index Currency**" means USD.

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

"**Reference Instrument Price**" means at any time during the *Index Calculation Period* the price of the *Reference Instrument* in the international interbank market, as determined by the *Index Calculation Agent* in its reasonable discretion.

"**Reference Exchange**" means ICE Benchmark Administration Limited.

"**Reference Instrument**" means Gold (Troy Ounce).

Currency:	USD
ISIN:	XC0009655157 / XD0002747026

"**Barrier**" is 12%. It indicates the maximum permitted positive change in price of the *Reference Instrument* compared with its most recent *Valuation Price* before an *Intraday Index Adjustment* takes place.

"**Derivatives Exchange**" means COMEX (CME Group).

"**Interest Rate**" means USD LIBOR O/N (overnight).

LIBOR stands for London InterBank Offered Rate. LIBOR is an average interest rate based on information submitted by the contributing banks. The panel banks indicate the interest rates at which they are able to refinance their own interbank activities in the relevant currency for the relevant term on an unsecured basis. To calculate the reference interest rate, the highest and lowest quartiles of these interest rates are eliminated, and the remaining interest rates are averaged. LIBOR is calculated for 7 different terms and 5 different currencies. The LIBOR interest rates (ICE Libor) are administered by ICE Benchmark Administration Limited (IBA) and determined each business day at 11 a.m. (London time). LIBOR O/N (overnight) stands for terms of 1 day.

If the *Interest Rate* is not set or published on an *Index Calculation Day*, the *Interest Rate* applied on the immediately preceding *Index Calculation Day* is used to calculate the index in accordance with section C).

If the *Interest Rate* has neither been set nor published for ten consecutive *Index Calculation Days*, the *Index Calculation Agent* has the right and obligation to stipulate in its reasonable discretion an alternative relevant *Interest Rate* which has functions comparable to the previous *Interest Rate*.

C) Index calculation

The *Factor Index* shall be calculated for the first time on the *Index Start Date*. The initial level of the Index on the *Index Start Date* corresponds to the *Index Start Value*. The respective current index level is calculated by the *Index Calculation Agent* on a continuous basis during the trading period of the *Reference Instrument* on the *Reference Exchange* on each *Index Calculation Date*, rounded to two decimal places 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:

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

where:

- T = current Index Calculation Day
- IDX_t = Index Value at time t on Index Calculation Day T
- IDX_{T-1} = Index Closing Value on Index Calculation Day $T-1$ which immediately precedes the current Index Calculation Day T
- L = Leverage (Factor): -7
- R_t = Reference Instrument Price at time t
- R_{T-1} = Valuation Price on Index Calculation Day $T-1$
- IR_{T-1} = Interest Rate on Index Calculation Day $T-1$
- FS_T = 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* exceeds the most recent *Valuation Price* of the *Reference Instrument* by more than 12% (*Barrier*), an "**Intraday Index Adjustment**" takes place, simulating a new day:

$$\begin{aligned} s &= T, \text{ i.e. } IDX_{T-1} (\text{new}) = IDX_s \\ R_{T-1} (\text{new}) &= R_{T-1} (\text{old}) \times 1.12 \\ d &= 0 \end{aligned}$$

A new *Valuation Price* valid after time s (R_{T-1} (new)) is calculated by multiplying the previous *Valuation Price* (R_{T-1} (old)) by 1.12. The *financing component* remains unchanged. No additional costs are incurred for the newly simulated day.

D) Extraordinary adjustment of the 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). In doing so, the *Index Calculation Agent* will endeavour – as far as possible – to calculate the *leverage component* as if no *Extraordinary Adjustment Event* had occurred.

The *Index Calculation Agent* will generally adjust the index calculation by correcting the relevant *Valuation Price* for the *Reference Instrument* on *Index Calculation Day* $T-1$ on the *Reference Date*, in its due discretion. The *Index Calculation Agent* may, in exercising its discretion, base the timing and substance of the adjustment on the manner in which the *Reference Exchange* or the *Derivatives Exchange*, respectively, make corresponding adjustments to the *Reference Instrument* itself or to futures or options contracts on the *Reference Instrument*, but shall not be obliged to do so. In cases of doubt about the application of the adjustment rules of the *Derivatives Exchange*, the *Index Calculation Agent* shall decide such questions in its reasonable discretion.

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 reflect differences between this Index and the futures and options traded on the *Derivatives Exchange*.

The list of *Extraordinary Adjustment Events* listed in section B) is not exhaustive. The deciding factor is whether the *Derivatives Exchange* deems an adjustments of the contract size, an underlying or the involvement of relevant *Reference Exchange* determining the price of the *Reference Instrument* to be necessary. If neither futures nor options linked to the *Reference Instrument* are traded on the *Derivatives Exchange*, the adjustment shall be made in a manner in which the *Derivatives Exchange* would do so if corresponding futures or options were traded there. In cases of doubt about the application of the adjustment rules of the *Derivatives Exchange*, the *Index Calculation Agent* shall decide such questions in its reasonable discretion. The rules and regulations of the *Derivatives Exchange* shall apply in addition to the provisions set out above.

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

Adjustments relating to the *Factor Index* and all other measures taken under this section will be published by the *Index Calculation Agent* in accordance with section E).

E) Notices

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

Notices are given for information purposes only and do not represent a precondition for legal effectiveness.