

INDEX HANDBOOK

MULTI-FAKTOR STRATEGIE IP

Version history

#1	25 March 2024	Index launch and document release
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1. Overview

The **Multi Faktor Strategie IP** (the “**Index**”) is a risk controlled excess return index denominated in EUR. The **Index** consists of 2 sub-indices (the “**Sub-Indices**”). The first **Sub-Index** (the “**Faktor Strategie Traditionell**” or “**FST**”) represents a global equity beta exposure. The second **Sub-Index** (the “**Faktor Strategie Alternativ**” or “**FSA**”) represents an investment strategy based on alternative risk premia using liquid exchange-listed instruments.

“**Index Calculation Days**” are all weekdays except Munich¹ holidays. In case of a holiday on a relevant exchange which is not a Munich holiday, the stale price from the prior available **Index Business Day** is used for the respective constituent (“**Index Component**”) and the price of the Index is indicative. “**Index Business Days**” are all **Index Calculation Days**, on which all underlying instrument markets are fully open for business. *In the case a contract payoff is partially or fully linked to the Index, the related contract exposure can only be adjusted on Index Business Days. On all remaining Index Calculation Days, the index level is published for information purposes only.*

The value of the **Index** is calculated on each **Index Calculation Day** t and shall reflect constituent futures prices as of market close in Japan. Hence, for non-Japan listed **Index Components**, the futures price as of **Index Calculation Day** t is actually the settlement price of the relevant futures exchange as of the respective previous futures trading day.

The “**Index Live Date**”, which is the date the **Index Administrator** began calculating the **Index**, is 25 March 2024. The **Index** time series starts on 1 April 2008 (the “**Index Start Date**”) with an initial value of 100 EUR on its **Index Live Date**.

The level of the **Index**, as determined by the **Index Administrator** in its function as **Index Calculation Agent**, will be reported on Bloomberg via the page **MFSTIPVC <Index>** or any successor financial information service as defined by the **Index Administrator** in its sole and absolute discretion.

2. Index Calculation

This sections explains how the **Multi Faktor Strategie IP** and the included **Sub-Indices** are calculated.

2.1. Index Structure

The **Multi Faktor Strategie IP** combines two **Sub-Indices** into one portfolio. Furthermore, the **Index** applies a target volatility risk management strategy to the portfolio. If applicable, all funded **Index Components** are transformed into unfunded exposure and an excess return perspective.

While the **FST** is exposed to the excess performance of a global equity index, the **FSA** is an aggregation of different alternative risk premia investment strategies.

¹ New Year’s Day, Epiphany, Shrove Tuesday, Good Friday, Easter Monday, Labour Day, Ascension Day, Whit Monday, Corpus Christi Day, Assumption Day, Day of German Unity, All Saints’ Day, Christmas Eve, Christmas Day, Christmas Holiday (St. Stephen’s Day), New Year’s Eve.

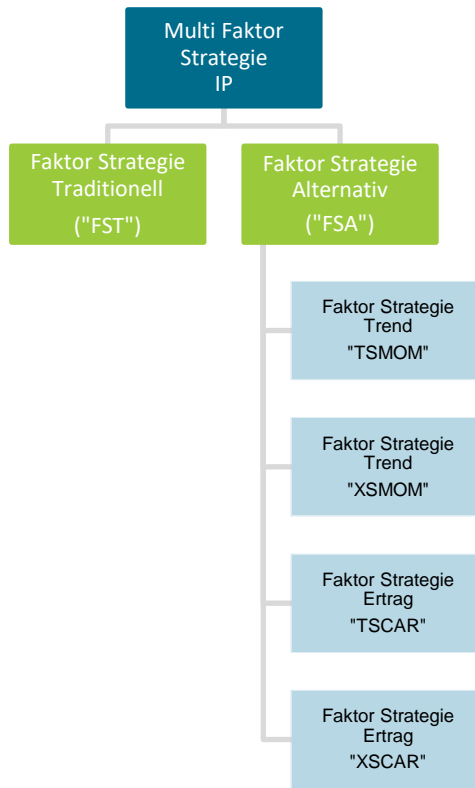


Figure 1: Index-structure MFSTIPVC

The Index Handbook starts with the description of **Multi Faktor Strategie IP**. Afterwards, the **Faktor Strategie Traditionell** and the **Faktor Strategie Alternativ** (including its four strategy indices, two belonging to “**Faktor Strategie Trend**” and “**Faktor Strategie Ertrag**”, respectively; where TSMOM = time-series momentum, TSCAR = time-series carry, XSMOM = cross-sectional momentum, XSCAR = cross-sectional carry) are explained.

2.2. Index Composition

The table below lists all individual markets used in the **Index** and its **Sub-Indices**. The last five columns express which markets are used in each **Sub-Index** (Y: yes, N: no).

INDEX COMPONENT	ASSET CLASS	INDEX COMPONENT NAME	TICKER PREFIX ⁱⁱ	TICKER EXTENSION ²	FX RATE	TC ³	FST	FSA			
								TSMOM	XSMOM	TSCAR	XSCAR
#1	CO	NYMEX WTI Light Sweet Crude Oil	CL	Comdty	USD/EUR	1 tick	N	Y	Y	Y	Y
#2	CO	ICE Brent Crude Oil	CO	Comdty	USD/EUR	1 tick	N	Y	Y	Y	Y

² Ticker as currently available on the market information service by Bloomberg L.P.

³ TC means “transaction costs”; “tick(s)” means “number of ticks” for the respective futures market, “bps” means “number of basis points” for the respective instrument

#3	CO	COMEX Gold	GC	Comdty	USD/EUR	1 tick	N	Y	Y	Y	Y
#4	CO	COMEX Copper	HG	Comdty	USD/EUR	2 ticks	N	Y	Y	Y	Y
#5	CO	NYMEX NY Harbor ULSD	HO	Comdty	USD/EUR	2 ticks	N	Y	Y	Y	Y
#6	CO	NYMEX Natural Gas	NG	Comdty	USD/EUR	2 ticks	N	Y	Y	Y	Y
#7	CO	NYMEX Platinum	PL	Comdty	USD/EUR	2 ticks	N	Y	Y	Y	Y
#8	CO	ICE Low Sulphur Gasoil	QS	Comdty	USD/EUR	2 ticks	N	Y	Y	Y	Y
#9	CO	COMEX Silver	SI	Comdty	USD/EUR	2 ticks	N	Y	Y	Y	Y
#10	CO	NYMEX RBOB Gasoline	XB	Comdty	USD/EUR	2 ticks	N	Y	Y	Y	Y
#11	EQ	Euronext CAC 40	CF	Index	1	2 ticks	N	Y	Y	Y	Y
#12	EQ	CME E-mini DJIA	DM	Index	USD/EUR	1 tick	N	Y	Y	N	N
#13	EQ	CME E-mini S&P 500	ES	Index	USD/EUR	1 tick	N	Y	Y	Y	Y
#14	EQ	CME E-mini S&P MidCap 400	FA	Index	USD/EUR	2 ticks	N	Y	Y	Y	Y
#15	EQ	Eurex DAX	GX	Index	1	1 tick	N	Y	Y	Y	Y
#16	EQ	HKFE Hang Seng	HI	Index	HKD/EUR	1 tick	N	Y	Y	Y	Y
#17	EQ	Munich Re ESG Optimized NTR Index	MRESGO	Index	1	5 bps	Y	N	N	N	N
#18	EQ	CME E-mini NASDAQ-100	NQ	Index	USD/EUR	1 tick	N	Y	Y	Y	Y

#19	EQ	CME E-mini Russell 2000	RTY	Index	USD/EUR	2 ticks	N	Y	Y	Y	Y
#20	EQ	Eurex SMI	SM	Index	CHF/EUR	2 ticks	N	Y	Y	Y	Y
#21	EQ	OSE Topix	TP	Index	JPY/EUR	1 tick	N	Y	Y	Y	Y
#22	EQ	Eurex EURO STOXX 50	VG	Index	1	1 tick	N	Y	Y	Y	Y
#23	EQ	ICE FTSE 100	Z	Index	GBP/EUR	1 tick	N	Y	Y	Y	Y
#24	FI	MX 10Y CGB	CN	Comdty	CAD/EUR	2 ticks	N	Y	Y	Y	Y
#25	FI	ICE Long Gilt	G	Comdty	GBP/EUR	1 tick	N	Y	Y	Y	Y
#26	FI	OSE 10Y JGB	JB	Comdty	JPY/EUR	1 tick	N	Y	Y	Y	Y
#27	FI	Eurex Euro-OAT	OAT	Comdty	1	1 tick	N	Y	Y	Y	Y
#28	FI	Eurex Euro-Bund	RX	Comdty	1	1 tick	N	Y	Y	Y	Y
#29	FI	CBOT 10Y US T-Note	TY	Comdty	USD/EUR	1 tick	N	Y	Y	Y	Y
#30	FI	Eurex Euro-Buxl	UB	Comdty	1	2 ticks	N	Y	Y	N	N
#31	FI	CBOT 30Y US T-Bond	US	Comdty	USD/EUR	1 tick	N	Y	Y	N	N
#32	FX	CME AUD/USD	AD	Curncy	USD/EUR	2 ticks	N	Y	Y	Y	Y
#33	FX	CME GBP/USD	BP	Curncy	USD/EUR	2 ticks	N	Y	Y	Y	Y
#34	FX	CME CAD/USD	CD	Curncy	USD/EUR	2 ticks	N	Y	Y	Y	Y
#35	FX	CME EUR/USD	EC	Curncy	USD/EUR	1 tick	N	Y	Y	Y	Y

#36	FX	CME JPY/USD	JY	Currency	USD/EUR	1 tick	N	Y	Y	Y	Y
#37	FX	CME NOK/USD	NO	Currency	USD/EUR	2 ticks	N	Y	Y	Y	Y
#38	FX	CME NZD/USD	NV	Currency	USD/EUR	2 ticks	N	Y	Y	Y	Y
#39	FX	CME SEK/USD	SE	Currency	USD/EUR	2 ticks	N	Y	Y	Y	Y
#40	FX	CME CHF/USD	SF	Currency	USD/EUR	2 ticks	N	Y	Y	Y	Y

Table 1: Investment universe

Unfunded Index Components

Futures Roll Indices

Index Components which are futures markets are represented as Futures Roll Strategies. These provide a continued exposure to the underlying. A standard futures roll from the front contract into the next contract is performed two **Index Business Days** before the futures contract's last trade or first notice date, respectively. Each Futures Roll Strategy is denominated in the underlying futures currency. Daily settlement prices of the corresponding futures contracts are used to calculate the daily levels of the Futures Roll Strategies.

Funded Index Components

Equity Indices

An Equity Index is a continuously held position in the respective Equity Index portfolio. Each Equity Index is denominated in the underlying Equity Index currency. Funded Equity Index instruments may require adding a funding spread, which is applied on the nominal the final **Index** is exposed to the Equity **Index Component**.

Funded **Index Components** enter the calculation of the **Index** on an excess return basis. Funding costs for those **Index Components** may vary for different components as well as over time.

3. Multi Faktor Strategie IP

The Multi Faktor Strategie IP (the “**MFSTIPVC Index**”) aggregates the two **Sub-Indices**, the **Faktor Strategie Traditionell** and the **Faktor Strategie Alternativ**, using notional weights of 60% and 40%. The portfolio is rebalanced and reweighted on a monthly basis. On top, there is a risk control overlay which is updated on a daily basis.

SUB-INDEX	SUB-INDEX NAME	CURRENCY	INDEX TYPE	WEIGHT
#1	Faktor Strategie Traditionell („FST“)	EUR	Excess Return	60%
#2	Faktor Strategie Alternativ („FSA“)	EUR	Excess Return	40%

Table 2: Sub-Indices of Multi Faktor Strategie IP

While the **FST** portfolio maintains exposure to a global equity index, the **FSA** portfolio aggregates four different investment strategies based on alternative risk premia. For all these indices, the rebalancing process is carried out at the beginning of each calendar month. All non-EUR components are hedged into EUR on a daily basis. Transaction costs are taken into account for each individual market on a per-trade basis, i.e. each weight change triggers transaction costs.

The **Multi Faktor Strategie IP** aims to realize a target volatility of less than 5% per annum. The theoretical leverage is capped at a factor of 5. An EWMA based volatility estimator is used to realize the aforementioned volatility level, where lambda equals 0.98 and either uses 19 or 89 return observations, whichever measures the higher volatility.

3.1 Faktor Strategie Traditionell

The **Faktor Strategie Traditionell** tracks global developed equity markets while aiming to keep a constant volatility level over time. While the long-only portfolio can hold more than one position, it is initially exposed to one global equity index. The target weights are provided in Table 1. Rebalancing and reweighting events occur on a monthly basis. The rebalancing process is carried out at the beginning of each calendar month.



Figure 2: Structure of Faktor Strategie Traditionell

The FST is risk-controlled and aims to realize a target volatility of 5% per annum using a theoretical maximum leverage of 1 (i.e. no leverage). An EWMA based volatility estimator is used to realize the aforementioned volatility level, where lambda equals 0.98 and either uses 19 or 89 return observations, whichever measures the higher volatility.

INDEX COMPONENT ⁴	INDEX COMPONENT NAME	TICKER PREFIX ⁱⁱ	TICKER EXTENSION ⁵	% NOTIONAL WEIGHT
#17	Munich Re ESG Optimized NTR Index	MRESGO	Index	100%

Table 3: FST Sub-Index Allocation

3.2. Faktor Strategie Alternativ

The **Faktor Strategie Alternativ** is tracking a basket of four long/short investment strategies based on alternative risk premia (each a “**FSA Sub-Index**”) while aiming at keeping a constant volatility level over time.

SUB-INDEX	SUB-INDEX NAME	RETURN TYPE	CURRENCY
#1	Faktor Strategie Trend (TSMOM)	Excess Return	EUR
#2	Faktor Strategie Trend (XSMOM)	Excess Return	EUR
#3	Faktor Strategie Ertrag (TSCAR)	Excess Return	EUR
#4	Faktor Strategie Ertrag (XSCAR)	Excess Return	EUR

Table 4: Components of Faktor Strategie Alternativ

The four **FSA Sub-Indices** are all long/short portfolios, of which two are driven by momentum- and two by carry-signals. The momentum and carry strategies are both implemented on a cross-sectional and a time-series basis. The **FSA Sub-Indices** are the following:

- Time-series momentum (“TSMOM”),
- Time-series carry (“TSCAR”),
- Cross-sectional momentum (“XSMOM”),
- Cross-sectional carry (“XSCAR”).

The **FSA Sub-Indices** are weighted inversely proportional to their volatility and the weightings are implemented in the course of the monthly rebalancing process. Portfolio rebalancings (i.e. portfolio reweightings and repositionings) occur on each monthly “**Rebalancing Day**”. A **Rebalancing Day** is defined as the first **Index Business Day** of each calendar month,

⁴ See Table 1.

⁵ Ticker as currently available on the market information service by Bloomberg L.P.

assuming all **Index Components** are open for business. If this is not the case, the prior **Index Business Day** fulfilling this condition is used. Rebalancings induced by the overlaid risk control mechanism may occur on a daily basis. All non-EUR constituents are hedged into EUR on a daily basis.

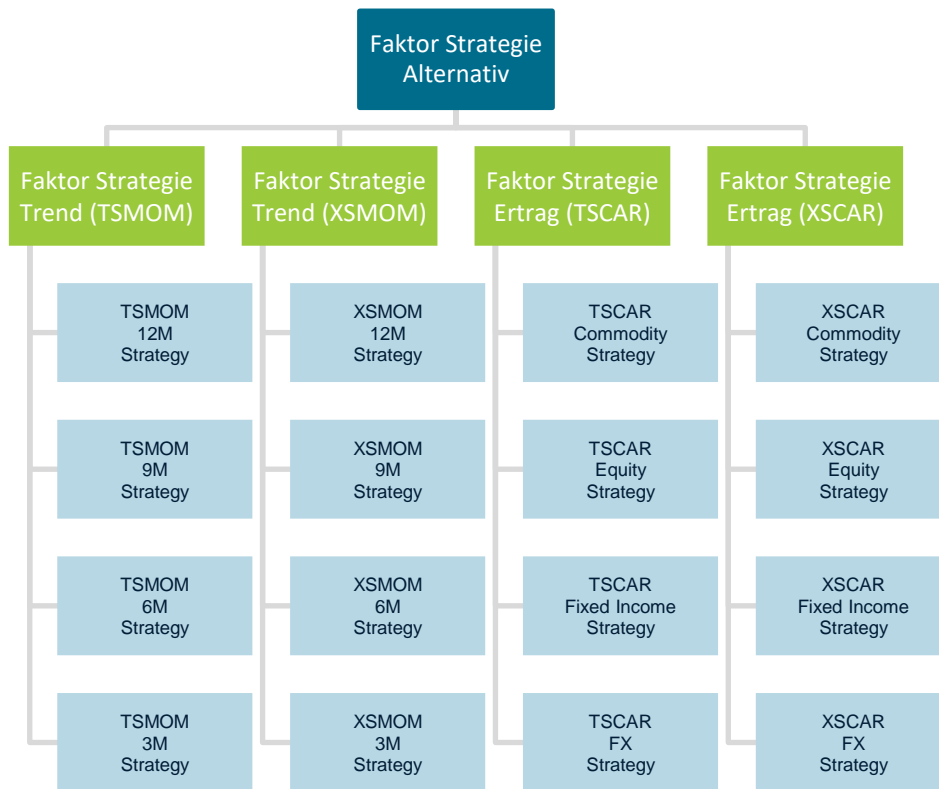


Figure 3: Structure of Faktor Strategie Alternativ

The FSA is risk-controlled and aims to realize a target volatility of 5% per annum. The theoretical leverage is capped at a factor of 5. An EWMA based volatility estimator is used to realize the aforementioned volatility level, where lambda equals 0.98 and either uses 19 or 89 return observations, whichever measures the higher volatility.

3.2.1. Metric Definitions

The following sections describe the momentum and carry metric used to derive investment signals in the cross-asset investment universe. As momentum is based on past performance it can be applied identically to all assets and asset-classes. While carry is also defined universally across asset classes, it needs data input specific to the individual asset classes.

Momentum

Definition

Price momentum is defined as the past excess performance of a market over a certain period of time. The applied lookback lengths are 3, 6, 9 and 12 months. Local Exchange Futures Roll Indices (“LEFRIs”) are used to calculate price momentum. The risk-adjusted momentum is defined as the ratio of price momentum divided by the asset’s annualized volatility (measured as standard deviation) over the respective lookback period.

Local Exchange Futures Roll Indices

A Local Exchange Futures Roll Index (“LEFRI”) is a futures position continuously rolled in the Active Contract using the holiday calendar of the relevant futures exchange. Local Exchange Futures Roll Indices are calculated for all covered futures markets.

Carry

Definition

The carry (or “Carry Yield”) is defined as the expected return of an asset assuming its price does not change. Using the term structure of futures curves it is possible to derive a universal definition of carry across different asset classes. Depending on the major (spot and futures) price determinants in each asset class, simplified proxies for the Carry Yield can be derived.

A generalized, cross-asset approach to the calculation of the Carry Yield for futures markets can be applied, provided the markets being sufficiently liquid over several different maturity dates. If this liquidity condition is fulfilled, the carry signals can be derived by analyzing the shape of the futures market’s term structure.

A negative term structure slope translates into a positive Carry Yield, a positive slope means the Carry Yield is negative. The actual input variables to calculate the Carry Yield vary from asset class to asset class.

Commodities

In order to be able to calculate a standardized set of carry signals for commodity futures, Constant Maturity Futures Indices (“CMFI”) are introduced. Commodity futures term structures are typically sufficiently liquid to be able to perform this task. For the purpose of deriving a carry value for a commodities futures market, a longer-term CMFI with a constant maturity of 13 months and a shorter-term CMFI with a constant maturity of 1 month is calculated using the two nearest neighboring live futures contract (listed on the respective derivatives exchange) around the respective CMFI maturity date on the considered day.

The standardization is achieved by fitting the weight of the futures contract having nearest shorter maturity date and the weight of the futures contract having the nearest longer maturity date such that the combined time to maturity is identical to the CMFI term, and the combined weighted price yields the CMFI level.

In the next step, the Carry Yield for the respective commodities market can be determined by using the ratio of the 13 months CMFI and the 1 month CMFI.

Equity Indices

Equity index carry is proxied by using equity index (12 month forward) dividend estimates and (12 month) interest rates. This step is necessary, as equity index futures markets are typically only liquid in their front contract. Thus a Carry Yield cannot directly be obtained using the futures curve. To arrive at a proxy Carry Yield for an individual equity index, an appropriate 1 year funding rate in the respective equity index currency is deducted from the aggregated analyst dividend yield estimates for a 1 year forward looking time window, assuming these are the main factors responsible for the shape of the equity index futures curve.

Fixed Income

Fixed income carry is proxied by using the slope of the considered yield curve plus its roll-down effect. This step is necessary, as government bond futures markets are typically only liquid in their front contract. Thus a Carry Yield cannot directly be obtained using the futures curve. To determine the slope of the yield curve, the duration-adjusted difference of a longer-term (10 years) government bond and a shorter-term (3 months) yield is used.

Roll-down is defined as the duration-adjusted difference of a longer-term (10 years) government bond and a medium-term (5 years) government bond.

The fixed income carry value is derived summing up the slope and the roll-down term, assuming these are the main factors responsible for the shape of the equity index futures curve.

Foreign Exchange

For FX carry, FX spot and forward levels are necessary for the relevant currency pairs. After standardizing all FX inputs (FX spot and FX forward points) to reflect a uniform quotation (American terms, USD as base currency), comparable carry levels can be derived.

The proxy used for FX carry is defined as the ratio of FX spot to FX forward level (3 months forwards).

3.2.2. Faktor Strategie Trend (TSMOM) Sub-Index

The **Faktor Strategie Trend (TSMOM) Sub-Index** consists of 4 **Strategy Sub-Indices**.

The **Strategy Sub-Indices** are named **Asset Class Sub-Indices ("ACSI")**, as these are using different investment universes depending on their asset class membership; there is a **Commodity**, an **Equity**, a **Fixed Income** and an **FX Sub-Index**.

Each of the four **ACSIs** consists of four different **Trend Strategy Sub-Indices ("TSSIs")**. The trend strategies implemented in the **Sub-Index** are based on time-series momentum, taking into account the univariate trend behavior of the respective assets and deriving investment decision solely by assessing an asset's own trend signal. **TSSIs** are using the same asset class universe, but a different lookback period in the momentum metric.

Trend Strategy Sub-Indices ("TSSIs")

There are four **TSSIs** in one **ACSI**, whose asset universe is determined by its asset class.

Step 1: Classification into Long or Short Positions

Inside each **TSSI**, in order to determine the position of each individual market, on each **Rebalancing Day** the price momentum is checked. In case of a positive momentum value, a long position is established in the respective futures market. In case of a negative momentum value, a short position is established in the respective futures market. Otherwise it is given a zero weight.

Step 2: Weight Determination

On a **Rebalancing Day** the **Index Components'** notional percentage weights are reset so that all positions in the respective **TSSI** contribute the same amount of risk, expressed as standard deviation of daily log-returns over 90 **Index Business Days**. The weights are rounded to four decimal places. These weights are transformed into number of futures, which are fixed until the next monthly Rebalancing Day.

Asset Class Sub-Indices ("ACSIs")

Each **ACSI** aggregates its four **TSSIs** into one portfolio. The **TSSIs** are weighted inversely proportional to their volatility and the weightings are also implemented in the course of the monthly rebalancing process. Each **ACSI** consists of a certain number of units of each **TSSI**, which are calculated using the **TSSIs** notional percentage weights.

Each **ACSI** is the sum of the daily USD profit/loss numbers of the four **TSSIs**, which can be derived using the daily USD profit/loss numbers for all relevant Futures Roll Indices inside the asset class portfolios. Futures Roll Index daily profit/loss is transferred into USD, in case these are not denominated in USD.

Calculation of the TSMOM Sub-Index

The **TSMOM Sub-Index** aggregates its four **ACSI**s into one portfolio. The **ACSI**s are weighted inversely proportional to their volatility and the weightings are also implemented in the course of the monthly rebalancing process. The **XSCAR Sub-Index** consists of a certain number of units of each **ACSI**, which are calculated using the **ACSI**s notional percentage weights.

The **TSMOM Sub-Index** is the sum of the daily USD profit/loss numbers of the four **ACSI**s, which can be derived using the daily USD profit/loss numbers for all relevant Futures Roll Indices inside the asset class portfolios.

3.2.3. Faktor Strategie Ertrag (TSCAR) Sub-Index

The **Faktor Strategie Ertrag (TSCAR) Sub-Index** consists of 4 **Strategy Sub-Indices**.

The **Strategy Sub-Indices** are named **Asset Class Sub-Indices** (“**ACSI**”), as these are using different investment universes depending on their asset class membership; there is a **Commodity**, an **Equity**, a **Fixed Income** and an **FX Sub-Index**.

The carry strategies implemented in the **Sub-Index** are based on time-series carry, taking into account the univariate carry of the respective assets and deriving investment decision solely by assessing an asset’s own carry signal.

Asset Class Sub-Indices (“ACSI”)

All relevant Carry Yields are determined on each Rebalancing Day of the **Index**. Afterwards, these results are translated into long, short or flat positions for each **ACSI** and its components.

Step 1: Classification into Long or Short Positions

Inside each **ACSI**, in order to determine the position of each individual market, on each Rebalancing Day the Carry Yield is checked. In case of a positive Carry Yield, a long position is established in the respective futures market. In case of a negative Carry Yield, a short position is established in the respective futures market. Otherwise it is given a zero weight.

Step 2: Weight Determination

On a Rebalancing Day the **Index Components’** notional percentage weights are reset so that all positions in the respective **ACSI** contribute the same amount of risk, expressed as standard deviation of daily log-returns over 90 **Index Business Days**, to the **ACSI**. The weights are rounded to four decimal places. These weights are transformed into number of futures, which are fixed until the next monthly Rebalancing Day.

Calculation of the TSCAR Sub-Index

The **TSCAR Sub-Index** aggregates its four **ACSI**s into one portfolio. The **ACSI**s are weighted inversely proportional to their volatility and the weightings are also implemented in the course of the monthly rebalancing process. The **TSCAR Sub-Index** consists of a certain number of units of each **ACSI**, which are calculated using the **ACSI**s notional percentage weights.

The **TSCAR Sub-Index** is the sum of the daily USD profit/loss numbers of the four **ACSI**s, which can be derived using the daily USD profit/loss numbers for all relevant Futures Roll Indices inside the asset class portfolios.

3.2.4. Faktor Strategie Trend (XSMOM) Sub-Index

The **Faktor Strategie Trend (XSMOM) Sub-Index** consists of 4 **Strategy Sub-Indices**.

The **Strategy Sub-Indices** are named **Asset Class Sub-Indices** (“**ACSI**”), as these are using different investment universes depending on their asset class membership; there is a **Commodity**, an **Equity**, a **Fixed Income** and an **FX Sub-Index**.

Each of the four **ACSI**s consists of four different **Trend Strategy Sub-Indices** (“**TSSI**”). The momentum strategies implemented in this index are based on cross-sectional momentum, ranking the respective assets according to a momentum

signal and deriving investment decisions from a relative perspective. **TSSIs** are using the same asset class universe, but a different lookback period in the momentum metric.

Trend Strategy Sub-Indices (“TSSIs”)

There are four **TSSIs** in one **ACSI**, whose asset universe is determined by its asset class. All relevant risk-adjusted momentum metrics are determined on each **Rebalancing Day** of the **Index**. Afterwards, these results are translated into long, short or flat positions for each **TSSI** and its constituents.

Step 1: Ranking and Classification into Long or Short Positions

This is done by ranking the assets in each **TSSI** by their price momentum. The highest momentum asset is assigned the top-rank, the lowest momentum asset is assigned the bottom-rank, and all other assets accordingly using their momentum rank in between these two. The asset class universe is then divided into two parts (median split) with the same number of assets. If the **TSSI** consists of an uneven number of assets, this leads to one asset being left out. All assets of the top half are going to be long positions until the next **Rebalancing Day**, all assets of the bottom half are going to be short positions until the next **Rebalancing Day**.

Step 2: Weight Determination

On a **Rebalancing Day** the **Index Components’** notional percentage weights are reset so that all positions in the respective **TSSI** contribute the same amount of risk, expressed as standard deviation of daily log-returns over 90 **Index Business Days**, to the **TSSI**. The weights are rounded to four decimal places. These weights are transformed into number of futures, which are fixed until the next monthly **Rebalancing Day**.

Asset Class Sub-Indices (“ACSI”)

Each **ACSI** aggregates its four **TSSIs** into one portfolio. The **TSSIs** are weighted inversely proportional to their volatility and the weightings are also implemented in the course of the monthly rebalancing process. Each **ACSI** consists of a certain number of units of each **TSSI**, which are calculated using the **TSSIs** notional percentage weights.

Each **ACSI** is the sum of the daily USD profit/loss numbers of the four **TSSIs**, which can be derived using the daily USD profit/loss numbers for all relevant Futures Roll Indices inside the asset class portfolios. Futures Roll Index daily profit/loss is transferred into USD, in case these are not denominated in USD.

Calculation of the Faktor Strategie Trend (XSMOM) Sub-Index

The **Faktor Strategie Trend (XSMOM) Sub-Index** aggregates its four **ACSIs** into one portfolio. The **ACSIs** are weighted inversely proportional to their volatility and the weightings are also implemented in the course of the monthly rebalancing process. The **Faktor Strategie Trend (XSMOM) Sub-Index** consists of a certain number of units of each **ACSI**, which are calculated using the **ACSI’s** notional percentage weights.

The **Faktor Strategie Trend (XSMOM) Sub-Index** is the sum of the daily USD profit/loss numbers of the four **ACSIs**, which can be derived using the daily USD profit/loss numbers for all relevant Futures Roll Indices inside the asset class portfolios.

3.2.5. Faktor Strategie Ertrag (XSCAR) Sub-Index

The **Faktor Strategie Ertrag (XSCAR) Sub-Index** consists of 4 **Strategy Sub-Indices**.

The **Strategy Sub-Indices** are named **Asset Class Sub-Indices (“ACSI”)**, as these are using different investment universes depending on their asset class membership; there is a **Commodity**, an **Equity**, a **Fixed Income** and an **FX Sub-Index**.

The carry strategies implemented in the Sub-Index are based on cross-sectional carry, ranking the respective assets according to a carry signal and deriving investment decisions from a relative perspective.

Asset Class Sub-Indices (“ACSIs”)

All relevant Carry Yields are determined on each Rebalancing Day of the **Index**. Afterwards, these results are translated into long, short or flat positions for each **ACSI** and its constituents.

Step 1: Ranking and Classification into Long or Short Positions

This is done by ranking the assets in each **ACSI** by their Carry Yield. The highest carry asset is assigned the top-rank, the lowest carry asset is assigned the bottom-rank, and all other assets accordingly using their carry rank in between these two. The asset class universe is then divided into two parts with the same number of assets. If the **ACSI** consists of an uneven number of assets, this leads to one asset being left out. All assets of the top half are going to be long positions until the next Rebalancing Day, all assets of the bottom half are going to be short positions until the next Rebalancing Day.

Step 2: Weight Determination

On a Rebalancing Day the **Index Components’** notional percentage weights are reset so that all positions in the respective **ACSI** contribute the same amount of risk, expressed as standard deviation of daily log-returns over 90 **Index Business Days**, to the **ACSI**. The weights are rounded to four decimal places. These weights are transformed into number of futures, which are fixed until the next monthly Rebalancing Day.

Calculation of the Faktor Strategie Ertrag (XSCAR) Sub-Index

The **Faktor Strategie Ertrag (XSCAR) Sub-Index** aggregates its four **ACSIs** into one portfolio. The **ACSIs** are weighted inversely proportional to their volatility and the weightings are also implemented in the course of the monthly rebalancing process. The **Faktor Strategie Ertrag (XSCAR) Sub-Index** consists of a certain number of units of each **ACSI**, which are calculated using the **ACSI’s** notional percentage weights.

The **Faktor Strategie Ertrag (XSCAR) Sub-Index** is the sum of the daily USD profit/loss numbers of the four **ACSIs**, which can be derived using the daily USD profit/loss numbers for all relevant Futures Roll Indices inside the asset class portfolios.

4. Accuracy

The daily closing price of the **Index** will be rounded to two decimal places.

5. Index Principles

The **Index** is intended to reflect the performance of the investment strategy as defined in this handbook. The **Index** is denominated in EUR and calculated on an excess return basis. The investment universe comprises of different markets from the following asset classes: bonds, commodities, equities and foreign exchange. The **Index** provides exposure to global developed equities, complemented by a basket of **dynamic** investment strategies based on alternative risk premia. Rebalancings and/or repositionings of the **Index** as well as its **Sub-Indices** occur on a monthly basis. The **Index** is risk controlled on a daily basis. The **Index** is aiming at realizing a volatility of less than 5% per annum.

6. Index Owner

The **Index Owner** is Munich Reinsurance Company (“**Munich Re**” or “**Index Owner**”). The **Index Owner** will retain all ownership rights, expressed or otherwise, with respect to the **Index**, including the ability to license, sell or transfer any or all of its ownership rights with respect to the **Index**.

The **Index Owner** has appointed an independent **Index Administrator** and an independent **Index Calculation Agent** to maintain and calculate the **Index**. The **Index Owner** may in the future terminate the appointment of the **Index Calculation Agent** and/or the **Index Administrator** and appoint a replacement **Index Administrator** or **Index Calculation Agent**.

7. Index Administrator / Index Calculation Agent

The **Index Owner** has entrusted the day-to-day management and maintenance of the **Index** to an benchmark administrator, who will also fulfil the function of the index calculation agent (the “**Index Administrator**” and the “**Index Calculation Agent**”).

The **Index Administrator** is currently Solactive AG.

The **Index Administrator** will maintain and employ the rules, procedures and methodology described in this document. This includes the implementation of changes to the **Index** and/or to the methodology under the instruction of the **Oversight Committee** (as defined below). The **Index Administrator** is responsible for the publication of the values of the **Index** determined by it as well as any further publication in relation to the **Index**.

Subject to the terms set out in this document, any determination by the **Index Administrator** will be made in its sole and absolute discretion by reference to such factors as it deems appropriate at such time. Any such determination by the **Index Administrator** will, in the absence of manifest error, be final, conclusive and binding.

No assurance can be given that market, regulatory, juridical or fiscal circumstances will not arise that would, in the view of the **Oversight Committee**, make a modification or change of the methodology necessary, which then would have to be implemented by the **Index Administrator**.

8. Calculation during Market Disruption Events and Index Adjustments

The **Index Administrator** may - acting in accordance with the instructions of the **Oversight Committee** and in accordance with the terms of this document – adjust the calculation of, delay or suspend the **Index**. Any such calculation adjustment, delay, suspension or non-publication may have a negative impact on any instruments linked to the **Index**.

2.1. Oversight Committee

The “**Oversight Committee**” is composed of staff from the **Index Administrator**. The **Oversight Committee** is responsible for decisions regarding any amendments to the rules of the **Index**.

Any such amendment, which may result in an amendment of the Handbook, must be submitted to the **Oversight Committee** for prior approval and will be made in compliance with the **Methodology Policy**, which is available on the **Index Administrator’s** website: <https://www.solactive.com/documents/methodology-policy/>.

2.2. Market Disruption Event

In periods of market stress the **Index Administrator** calculates its indices following predefined and exhaustive arrangements as described in the **Index Administrator’s Disruption Policy**, which is incorporated by reference and available on the **Index Administrator’s** website: <https://www.solactive.com/documents/disruption-policy/>.

Such market stress can arise due to a variety of reasons, but generally results in inaccurate or delayed prices for one or more **Index Components**. The determination of the **Index** may be limited or impaired at times of illiquid or fragmented markets and market stress.

2.3. Index Adjustments

Index Modification

The methodology of the **Index** is subject to regular review, at least annually. In this context, the **Index Owner** may make suggestions to the **Index Administrator**, which are then reviewed by the **Index Administrator**. In case a need of a **Index Modification** has been identified within such review (e.g. if the underlying market or economic reality has changed since the launch of the **Index**, i.e. if the present methodology is based on obsolete assumptions and factors and no longer reflects the reality as accurately, reliably and appropriately as before), such change will be made in accordance with the **Index Administrator's Methodology Policy**, which is incorporated by reference and available on the **Index Administrator's** website: <https://www.solactive.com/documents/methodology-policy/>.

Index Correction

The **Index Administrator** makes the greatest possible efforts to accurately calculate and maintain its indices. However, errors in the determination process may occur from time to time for variety reasons (internal or external) and therefore, cannot be completely ruled out.

The **Index Administrator** endeavors to correct all errors that have been identified within a reasonable period of time. The understanding of "a reasonable period of time" as well as the general measures to be taken are generally depending on the underlying and is specified in the **Index Administrator's Correction Policy**, which is incorporated by reference and available on the **Index Administrator's** website: <https://www.solactive.com/documents/correction-policy/>.

Publication of Index Adjustments

Any **Index Adjustments**, including changes to the **Index Components**, changes to the methodology or a cancellation of the **Index**, as decided by the **Oversight Committee** and implemented by the **Index Administrator**, will be publicly announced by the **Index Administrator** as promptly as is reasonably practicable and normally at least 60 **Index Business Days** prior to the effective date of such change(s).

All public announcements and changes in the **Index** will be reported in the Appendix of this Index Handbook and announced on the **Index Administrator's** website under the Section "Announcement", which is available at: <https://www.solactive.com/documents/methodology-policy/>.

Cancellation of the Index

The **Index Administrator** has established and maintains clear guidelines on how to identify situations in which the cessation of the **Index** is unavoidable, how stakeholders are to be informed and consulted and the procedures to be followed for a termination or the transition to an alternative index. Details are specified in the **Index Administrator's Termination Policy**, which is incorporated by reference and available on the **Index Administrator's** website: <https://www.solactive.com/documents/termination-policy/>.

9. Historical Data

The values of the **Index** between the **Index Start Date** and the **Index Live Date** have been determined by reference to historical data and must be considered as simulated and thus purely hypothetical. It is provided as an illustration of how the **Index**

would have performed during the period had the **Index Calculation Agent** began calculating the **Index** on the **Index Start Date** using the methodology described in this document. This data does not reflect actual performance, nor was a contemporaneous investment model run of the **Index**. Whilst any such methodology or assumption is, in the view of the **Index Owner**, reasonable, the use of historical data may result in material differences between the simulated performance of the **Index**, prior to the **Index Live Date**, and any subsequent actual performance. The price history of the **Index** before the **Index Live Date** has been determined by the **Index Owner** and has only partially been verified by the **Index Calculation Agent**.

Historical levels of the **Index** for the period from and after the **Index Live Date** are calculated with reference to the official closing levels of the **Index Components** determined based on the latest available data published by the relevant futures exchanges and/or benchmark administrators and/or as delivered via the employed information systems.

Past performance of the **Index** is not a reliable guide to future performance and the past performance of the **Index** may have been determined on terms different to those described in this Index Handbook. No assurance, representation or warranty is given of the future performance of the **Index** or that it will achieve its objective. Instruments linked to the **Index** can fluctuate in price or value and prices, values or income may fall against the interests of any investor exposed to the performance of the **Index**. Changes in rates of exchange, rates of interest and prices of any **Index Components**, among other things, may have an adverse effect on the value of the **Index**.

10. Contact

10.2. Index Owner

The **Index Owner** can be contacted at the following address:

Munich Reinsurance Company
Financial Solutions
Königinstrasse 107
80802 Munich
Germany
Internet: <http://www.munichre.com>

10.3. Index Administrator

The **Index Administrator** can be contacted at the following address:

Solactive AG
Platz der Einheit 1
60327 Frankfurt am Main
Germany
Internet: <http://www.solactive.com>

10.4. Index Calculation Agent

The **Index Calculation Agent** can be contacted at the following address:

Solactive AG
Platz der Einheit 1
60327 Frankfurt am Main
Germany
Internet: <http://www.solactive.com>

11. Risk Provisions

Without prejudice to the Disclaimer in Section 9, regard should be had to the non-exhaustive risk factors below which describe events or circumstances that may affect the calculation and/or the performance of the **Index** and may be material for the purposes of assessing the risks associated with any investment related to the **Index**.

11.2. Nature of the Index

The **Index** is a rules-based formula that enables the value of the **Index** to be calculated from time to time. Although instruments may be issued or entered into whose return is linked to the performance of the **Index**, the **Index** is not itself an investment or instrument and does not give any person any entitlement to, or ownership interest in, any **Index Components** or any other obligation or asset referenced (directly or indirectly) by the **Index**.

11.3. Potential Conflicts of Interest

Potential conflicts of interest may exist in the internal teams, divisions or entities of the Munich Re Group. For example, one team may make determinations and take actions in relation to the **Index** in its capacity as **Index Owner**, while another team within the organisation may issue or promote/sell products linked to the **Index**.

In addition, a further team within the organisation may have trading positions in or relation to instruments and assets to which the performance of the **Index** is directly or indirectly linked (including any **Index Component**). No entity within the Munich Re Group shall have any duty or obligation to take into account any impact in the performance of the **Index** when effecting transactions in such instruments and assets.

11.4. Risks associated with an investment in instruments linked to the Index

Counterparty Risk

Instruments linked to the **Index** may be exposed to counterparty credit risk. If an entity trades, enters into or issues any such instruments and becomes insolvent it may not be able to meet all of its payment obligations.

Interaction Risk

The value of the **Index** is based on the performance of different investment types. Different types of financial risk may interact unpredictably on these investments, particularly in times of market stress.

Tax

The value of the **Index** may be reduced to account for certain taxes and other deductions and therefore, may impact the performance of the **Index** and returns on any instruments linked to the **Index**.

Duty of Care

Subject always to their regulatory obligations and except as may be required by applicable law, neither the **Index Owner**, the **Index Administrator** (including where it acts through the **Oversight Committee**) nor the **Index Calculation Agent** shall have a duty of care or any fiduciary duty to any person in respect of the **Index** including any investor in any instrument linked to the **Index**. Neither the **Index Owner**, the **Index Administrator** nor the **Index Calculation Agent** is acting as an investment adviser or manager or providing advice of any nature in relation to the **Index** or any instrument linked to the **Index**.

Other Risks

There is no guarantee, warranty or assurance that this document discloses all possible factors that may affect the performance of the **Index** and the risks of investing in any instrument that is linked to the **Index**.

Before investing in any such instrument, you must satisfy yourself that you fully understand the risks of such investment and you are solely responsible for making an independent appraisal of and investigation into the **Index** and should not rely on this document as constituting investment advice.

12. DISCLAIMER

THE INDEX OWNER, THE INDEX ADMINISTRATOR AND THE INDEX CALCULATION AGENT MAY EACH BE SUBJECT TO A NUMBER OF CONFLICTS OF INTEREST IN CONNECTION WITH THEIR ROLE AND SERVICES PERFORMED WITH RESPECT TO THE INDEX. IN THE EVENT THAT SUCH CONFLICTS ARISE, THE INDEX OWNER, THE INDEX CALCULATION AGENT AND THE INDEX ADMINISTRATOR SHALL USE THEIR REASONABLE ENDEAVOURS TO RESOLVE SUCH CONFLICTS OF INTEREST FAIRLY (HAVING REGARD TO THEIR RESPECTIVE OBLIGATIONS AND DUTIES).

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