INDEX GUIDE

MARKETVECTOR™ DIGITAL ASSETS INDEXES

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Contents

1   Introduction

In accordance with Art. 13 No. 1 (a) of Regulation (EU) 2016/1011 of the European Parliament and of the Council of 8 June 2016 (the "Benchmark Regulation"), this document provides the rules for calculating and maintaining the MarketVector™ Digital Assets Index family (the "Indexes").

MarketVector Indexes GmbH (the "Index Owner") makes no warranties or representations as to the accuracy and/or completeness of the Indexes and does not guarantee the results obtained by persons using the Indexes in connection with trading funds or securities. The Index Owner makes no representations regarding the advisability of investing in any fund or security.

The Index Owner reserves the right to update the rules in this Index Guide at any time. The Index Owner also reserves the right to make, in exceptional cases or in temporary situations, exceptions to the rules in this Index Guide. The Indexes are the property of MarketVector Indexes GmbH. The Index Owner has selected an index calculator to calculate the Indexes.

MarketVector™ is a registered trademark of Van Eck Associates Corporation and therefore protected against unlawful usage. The use of MarketVector™ Indexes in connection with any financial products or for benchmarking purposes requires a license. Please contact MarketVector Indexes GmbH for more details.

1.1   Approval of Index Methodologies

The Index Owner has established the Indexes and their individual methodology covered in this Index Guide. A detailed written "Procedure for Index Development" describes the steps and approvals required to develop, document and approve an Index and its methodology. The intention of the Procedure for Index Development is to ensure that the methodology of an Index meets the requirements of Art. 12 of the Benchmark Regulation and is approved and implemented according to a robust and reliable process.

The methodology for each index and its methodology covered in this Index Guide has been analysed by the Index Owner's Index Operations department in order to ensure that it is robust and reliable, has clear rules on use of discretion, allows sustainable validation (based on reasonable back testing) and is traceable and verifiable. Furthermore, the size, liquidity and transparence of the underlying market for each methodology has been tested and particular circumstances for each relevant market have been taken into account.

Each index methodology and the related detailed analysis was presented by the Index Operations Department to the Independent Oversight Function for its approval. Based on the aforementioned approval process and its documentation each Index Methodology was presented to the Management Board (Geschäftsführer) of the Index Owner for final approval.

1.2   Review of this Index Guide

According to Art. 13 No. 1 (b) of the Benchmark Regulation, the Index Owner reviews this Index Guide on an annual basis and immediately in case of special circumstances that require a review. The review takes place in meetings attended by the Independent Oversight Function and the Management Board of the Index Owner. If changes to this Index Guide are considered necessary, the process described in Section 5.5 applies.

2   Index Universe

2.1   Index Universe

The index universe of the MarketVector™ index family includes all crypto currencies (excl. security tokens and financial instruments) covered by the respective calculation agent. A detailed list of these crypto currencies is available on request.

In addition, the universe might be restricted based on applicable regulatory jurisdictions of the client.

3   General Definitions

3.1   Weighting Schemes

Most MarketVector™ Digital Assets Indexes use cap-factors to guarantee diversification and avoid over-weighting. Please refer to the individual index description in section 4 for the capping scheme used. Index weightings are reviewed on a monthly basis.

Weighting Scheme: 50%-Cap

The 50%-cap ensures diversification by assigning weights to components which cannot exceed 50% but still ensures bigger sizes of bigger components.
All components are ranked by their market capitalization. The maximum weight for any component is 50%. If a constituent exceeds the maximum weight, the weight will be reduced to the maximum weight and the excess weight shall be redistributed proportionally across all other index components. This process is repeated until no components have weights exceeding the respective maximum weight.

Weighting Scheme: 35%-Cap

The 35%-cap ensures diversification by assigning weights to components which cannot exceed 35% but still ensures bigger sizes of bigger components.
All components are ranked by their market capitalization. The maximum weight for any component is 35%. If a constituent exceeds the maximum weight, the weight will be reduced to the maximum weight and the excess weight shall be redistributed proportionally across all other index components. This process is repeated until no components have weights exceeding the respective maximum weight.

Weighting Scheme: 30%-Cap, 3% Floor

The cap and floor are used to guarantee diversification and avoid over-/ underweighting of any component.
All components are ranked by their market capitalization. The maximum weight for any component is 30% and the minimum weight for any component is 3%. First, the cap is applied: If a constituent exceeds the maximum weight, the weight will be reduced to the maximum weight and the excess weight shall be redistributed proportionally across all other index components. This process is repeated until no component has a weight exceeding the respective maximum weight.

Afterwards, the floor is applied: If a constituent falls below the minimum weight, the weight will be reduced to the maximum weight and the excess weight shall be redistributed proportionally across all other index components (except the capped one). This process is repeated until the weight of no components is lower than the minimum weight.

Weighting Scheme: 30%-Cap

The 30%-cap ensures diversification by assigning weights to components which cannot exceed 30% but still ensures bigger sizes of bigger components.
All components are ranked by their market capitalization. The maximum weight for any component is 30%. If a constituent exceeds the maximum weight, the weight will be reduced to the maximum weight and the excess weight shall be redistributed proportionally across all other index components. This process is repeated until no components have weights exceeding the respective maximum weight.

Weighting Scheme: 15%-Cap

The 15%-cap ensures diversification by assigning weights to components which cannot exceed 15% but still ensures bigger sizes of bigger components.
All components are ranked by their market capitalization. The maximum weight for any component is 15%. If a constituent exceeds the maximum weight, the weight will be reduced to the maximum weight and the excess weight shall be redistributed proportionally across all other index components. This process is repeated until no components have weights exceeding the respective maximum weight.

Weighting Scheme: 4.5%/20%/50%-Cap

This weighting scheme ensures diversification by assigning weights to constituents which cannot exceed 20% but still ensures bigger sizes of bigger components.

1. All index components are weighted by their market capitalization.

2. All components exceeding 4.5% but at least the largest 5 components are grouped together (so called "Large-Weights") and all other components are grouped together as well (so called "Small-Weights").

3. The aggregated weighting of the Large-Weights is capped at 50%:

   • Large-Weights: If the aggregated weighting of all components in Large-Weight exceeds 50%, then a capping factor is calculated to bring the weighting down to 50% - at the same time a second capping factor for the Small-Weights is calculated to increase the aggregated weight to 50%. These two factors are then applied to all components in the Large-Weights or the Small-Weights respectively. Then

   • Large-Weights: The maximum weight for any component is 20% and the minimum weighting is 5%. If a component is above the maximum or below the minimum weight, then the weight will be reduced to the maximum weight or increased to the minimum weight and the excess weight shall be redistributed proportionally across all other remaining index constituents in the Large-Weights. Then

   • Small-Weights: The maximum weight for any component is 4.5%. If a component is above the maximum weight, then the weight will be reduced to the maximum weight and the excess weight shall be redistributed proportionally across all other remaining index constituents in the Small-Weights.

Weighting Scheme: Uncapped

An uncapped index reflects the real market capitalization of its components.
All components are ranked by their market capitalization without a capping. All weighting cap factors are fixed at 1.

Weighting Scheme: Equal Weighted

An equal weighting overweight smaller companies compared to a market capitalization weighted index.

Let "N" be the number of companies in the index. The weight for any single stock is 1/N.

Weighting Scheme: Factor-based Weighting

The component weights are calculated based on factors that can be adjusted by factor weights.

Firstly, the component weights are calculated within each factor using the following formula:

$$w_{factor_{k_i}} = \frac{k_i}{\sum_{i=1}^{N} k_i}$$

where:

$w_{factor_{k_i}}$ = factor-based weight of a digital asset,
k_i = factor value of a digital asset
N = number of constituents in the Index.

Secondly, the weights of all factors are consolidated and adjusted by weight factors for the final weight allocation:

$$w_i = \sum_{i=1}^{N} a_{factor_k} \cdot w_{factor_{k_i}}$$

where:

$$\sum_{i=1}^{N} a_{factor_k} = 1$$

and

w_i = Weight of a digital asset in the index
a_{factor_k} = Factor weight of a given factor

3.2   Review Schedule

All indexes are rebalanced monthly (The "Monthly Rebalance Date"), except for MVDAMV, MVLEADV and MVSCLEV (quarterly) and BBR, EBR and SOLBR, which follows a semiannual review scheme.
The reviews for all Indexes are based on the opening data on the fourth but last business day in that month. If a security does not trade on a business day, then the last available price for this security will be used.
A "business day" means any day (other than a Saturday or Sunday) on which commercial banks and foreign exchange markets settle payments in Frankfurt.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.

Indexes are rebalanced after closing of the last trading day in each month.

3.3   Pricing Source

3.3.1   CCData

For each component price in the MarketVector™ Indexes, the respective CCIX by CCData (https://ccdata.io) is used. CCIX is a weighted average of the latest available trading price at each exchange covered. Exchanges can be added/removed by decision of CCData.
For clarification, 'respective CCIX' means

- Exchange selection might vary dependent on the respective index rules (see respective constraints per index).

- Exchanges may be excluded if they are not licensed to be added to an index.

- Exchanges are not immediately added/removed, but only on a monthly basis or if required following quality reviews from CCData.

- Values are not backadjusted.

3.3.2   DAR

For each component price in the MarketVector™ Indexes, the respective DAR pricing by DAR (https://www.digitalassetresearch.com/) is used. The DAR Close Price is a time-weighted average price (TWAP) derived from eligible, non-outlier trades that occur within a 30-minute window prior to the specified close time. Exchanges can be added/removed by decision of DAR.

For clarification, 'respective DAR' means

- Exchange selection might vary dependent on the respective index rules (see respective constraints per index).

- Exchanges may be excluded if they are not licensed to be added to an index.

- Exchanges are not immediately added or removed except for a case covered in Section 5.6. Exchange reviews are done on periodical basis by DAR.

- Values are not backadjusted.

3.4   Index Dissemination

The Indexes are calculated with the constituent prices converted to USD. Dissemination is in USD.
Real-time index values are calculated with the latest available CCIX prices.

4   Indexes

The following sections define all relevant index parameters, this includes

- Universe and selection lists,

- Review: selections and weightings,

- Dissemination: times, currencies and identifiers.

4.1 MarketVector™ Centralized Exchanges Index

The MarketVector™ Centralized Exchanges Index is designed to track the performance of assets classified as "Centralized Exchanges" by MarketVector Indexes and serve as a benchmark/universe for the respective market. A crypto exchange token is a digital asset that is native to a cryptocurrency exchange. Cryptocurrency exchanges are platforms for buying, selling, and exchanging cryptocurrencies. The weightings are uncapped as described in section 3.1.

Review procedure:

The index is derived from the MarketVector™ Digital Assets 100 Index (MVDA). Current and new components for the MarketVector™ Centralized Exchanges Index, which fulfil the following criteria, qualify for the index:

- new components of MarketVector™ Digital Assets 100 Index (MVDA).

- classified as "Centralized Exchanges" by MarketVector™ Indexes.

In case the number of components is below 10, additional assets classified as "Centralized Exchanges" are selected from the MVDA universe with an average-daily-trading value of at least 1,000,000 USD for the current month. These assets are sorted by market capitalization in descending order and selected top to bottom until the number of constituents equals 10.

If the number of eligible assets is still below 10, additional assets are added by the Index Owner's decision until the number of assets equals 10.

All qualified digital assets must not carry short term security risks (e.g. 51% attacks).

In case of a hard fork, which results in several active lines, rule 5.2.2 applies.

The index is calculated daily between 00:00 and 24:00 (GMT) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 17:00:00 GMT with fixed 17:00 GMT exchange rates.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.
The Index is rebalanced at 17:00:00 GMT of the last trading day in each month.

The MarketVector™ Centralized Exchanges Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0GBL6	BP0V643	SL0GBL	MVCEX	.MVCEX

The index was launched on 01 June 2022 with a base index value of 100.00 as of 28 February 2021.

4.2   MarketVector™ Digital Assets 5 Index

The MarketVector™ Digital Assets 5 Index is designed to track the performance of the largest and most liquid 5 digital assets (with a 3-7 buffer). All assets on the selection list must be listed on at least one of the top 15 exchanges by CCData's Centralized Exchange Benchmark. The 35% capping scheme as described in section 3.1 is applied.

Review procedure:

1. The selection list contains all current components (which fulfil the listing criteria) with an average-daily-trading value of at least 600,000 USD for the current month. Components of the MarketVector™ Digital Assets 100 Index (see section 4.5), which have an average-daily-trading value of at least 1,000,000 USD for the current month, are added to the selection list by size (top to bottom), until a count of 10 is reached. Meme and privacy tokens are not eligible for the selection list. If there are no sufficient non-components which fulfil the liquidity criteria, additional MarketVector™ Digital Assets 100 Index components are added to list by liquidity (average-daily-trading value for the current month, top to bottom) until it contains 10 digital assets.

2. The selection list is ranked in two different ways - by market capitalization in descending order (the largest constituent receives rank "1") and then by one-month average-daily-trading value in descending order (the most liquid constituent receives rank "1"). These two ranks are added up.

3. The selection list is now ranked by the sum of the two ranks in step 2 in ascending order. If two constituents have the same sum of ranks, then the larger constituent is placed on top.

4. The top 3 digital assets qualify for selection.

5. The remaining 2 components are selected from the highest ranked remaining index components ranked between 4 and 7.

6. If the number of selected components is still below 5, then the highest ranked digital assets are selected until the number of components equals 5.

For all events that result in a deletion from the index, the deleted component will be replaced with the highest ranked non-component at the latest review. The replacement will be added with the same weight as the deleted component. In case of a hard fork, which results in several active lines, rule 5.2.1 applies. If an event causes the number of components to be greater than 5, the smallest components by market capitalization will be removed one day after the increase is effective (when a price and the main net is available), until the number of components is 5 again.

The index is calculated daily between 00:00 and 24:00 (GMT) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 17:00:00 GMT with fixed 17:00 GMT exchange rates.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.
The Index is rebalanced at 17:00:00 GMT of the last trading day of each month.

The MarketVector™ Digital Assets 5 Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000A2GGQM9	BYX8644	A2GGQM	MVDA5	.MVDA5

The index was launched on 23 October 2017 with a base index value of 100.00 as of 31 December 2014.

4.3   MarketVector™ Digital Assets 10 Index

The MarketVector™ Digital Assets 10 Index is designed to track the performance of the largest and most liquid 10 digital assets (with a 7-13 buffer). All assets on the selection list must be listed on at least one of the top 15 exchanges by CCData's Centralized Exchange Benchmark. The 30% capping scheme as described in section 3.1 is applied.

Review procedure:

1. The selection list contains all current components (which fulfil the listing criteria) with an average-daily-trading value of at least 600,000 USD for the current month. Components of the MarketVec-tor™ Digital Assets 100 Index (see section 4.5), which have an average-daily-trading value of at least 1,000,000 USD for the current month, are added to the selection list by size (top to bottom), until a count of 20 is reached. Meme and privacy tokens are not eligible for the selection list. If there are no sufficient non-components which fulfil the liquidity criteria, additional MarketVector™ Digital Assets 100 Index components are added to list by liquidity (average-daily-trading value for the current month, top to bottom) until it contains 20 digital assets.

2. The selection list is ranked in two different ways - by market capitalization in descending order (the largest constituent receives rank "1") and then by one-month average-daily-trading value in descending order (the most liquid constituent receives rank "1"). These two ranks are added up.

3. The selection list is now ranked by the sum of the two ranks in step 2 in ascending order. If two constituents have the same sum of ranks, then the larger constituent is placed on top.

4. The top 7 digital assets qualify for selection.

5. The remaining 3 components are selected from the highest ranked remaining index components ranked between 8 and 13.

6. If the number of selected components is still below 10, then the highest ranked digital assets are selected until the number of components equals 10.

For all events that result in a deletion from the index, the deleted component will be replaced with the highest ranked non-component at the latest review. The replacement will be added with the same weight as the deleted component. In case of a hard fork, which results in several active lines, rule 5.2.1 applies. If an event causes the number of components to be greater than 10, the smallest components by market capitalization will be removed one day after the increase is effective (when a price and the main net is available), until the number of components is 10 again.

The index is calculated daily between 00:00 and 24:00 (GMT) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 17:00:00 GMT with fixed 17:00 GMT exchange rates.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.
The Index is rebalanced at 17:00:00 GMT of the last trading day of each month.

The MarketVector™ Digital Assets 10 Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000A2GGQF3	BYX85Y7	A2GGQF	MVDA10	.MVDA10

The index was launched on 23 October 2017 with a base index value of 100.00 as of 31 December 2014.

4.4   MarketVector™ Digital Assets 25 Index

The MarketVector™ Digital Assets 25 Index is designed to track the performance of the largest and most liquid 25 digital assets (with a 20-30 buffer). All assets on the selection list must be listed on at least one of the top 15 exchanges by CCData's Centralized Exchange Benchmark. The 4.5%/20%/50% capping scheme as described in section 3.1 is applied.

Review procedure:

1. The selection list contains all current components (which fulfil the listing criteria) with an average-daily-trading value of at least 600,000 USD for the current month. Components of the MarketVector™ Digital Assets 100 Index (see section 4.5), which have an average-daily-trading value of at least 1,000,000 USD for the current month, are added to the selection list by size (top to bottom), until a count of 50 is reached. Meme and privacy tokens are not eligible for the selection list. If there are no sufficient non-components which fulfil the liquidity criteria, additional MarketVector™ Digital Assets 100 Index components are added to list by liquidity (average-daily-trading value for the current month, top to bottom) until it contains 50 digital assets.

2. The selection list is ranked in two different ways - by market capitalization in descending order (the largest constituent receives rank "1") and then by one-month average-daily-trading value in descending order (the most liquid constituent receives rank "1"). These two ranks are added up.

3. The selection list is now ranked by the sum of the two ranks in step 2 in ascending order. If two constituents have the same sum of ranks, then the larger constituent is placed on top.

4. The top 20 digital assets qualify for selection.

5. The remaining 5 components are selected from the highest ranked remaining index components ranked between 21 and 30.

6. If the number of selected components is still below 25, then the highest ranked digital assets are selected until the number of components equals 25.

For all events that result in a deletion from the index, the deleted component will be replaced with the highest ranked non-component at the latest review. The replacement will be added with the same weight as the deleted component. In case of a hard fork, which results in several active lines, rule 5.2.1 applies. If an event causes the number of components to be greater than 25, the smallest components by market capitalization will be removed one day after the increase is effective (when a price and the main net is available), until the number of components is 25 again.

The index is calculated daily between 00:00 and 24:00 (GMT) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 17:00:00 GMT with fixed 17:00 GMT exchange rates.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.
The Index is rebalanced at 17:00:00 GMT of the last trading day of each month.

The MarketVector™ Digital Assets 25 Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000A2GGQL1	BYX8633	A2GGQL	MVDA25	.MVDA25

The index was launched on 23 October 2017 with a base index value of 100.00 as of 31 December 2014.

4.5   MarketVector™ Digital Assets 100 Index

The MarketVector™ Digital Assets 100 Index is designed to track the performance of the largest 100 digital assets (with an 80-120 buffer) and serve as a benchmark/universe for the market. The weightings are uncapped as described in section 3.1.

Review procedure:

1. The selection list is defined as all digital assets with an average-daily-trading value of at least 1,000,000 USD for the current month, and current components with an average-daily-trading value of at least 600,000 USD. Stablecoins (also called 'price stable currencies') which are fiat collateralized, digital assets pegged to a currency or any other asset and wrapped tokens which are digital assets or cryptocurrency tokens that represent another token but exist on a different blockchain are not eligible for the selection list. It is sorted in terms of market capitalization in descending order.

2. The top 80 digital assets qualify for selection.

3. The remaining 20 components are selected from the highest ranked remaining index components ranked between 81 and 120.

4. If the number of selected components is still below 100, then the highest ranked digital assets are selected until the number of components equals 100.

From this composite index (MVDA), three sub-indexes are derived by size:

- A Large-Cap Index (MVDALC) with 20 components and a 15-25 buffer within the composite:

  1. The top 15 digital assets qualify for selection.
  2. The remaining 5 components are selected from the highest ranked remaining index components ranked between 16 and 25.
  3. If the number of selected components is still below 20, then the highest ranked digital assets are selected until the number of components equals 20.

- a Mid-Cap Index (MVDAMC) with 30 components and a 15-25 upper and a 40-60 lower buffer within the composite:

  1. The top 20 digital assets, which did not qualify for the Large-Cap Index, qualify for selection.
  2. The remaining 10 components are selected from the highest ranked remaining index components and current large-cap components ranked between 41 and 60.
  3. If the number of selected components is still below 30, then the highest ranked digital assets, which are not reclassified as large-caps, are selected until the number of components equals 30.

- a Small-Cap Index (MVDASC) with 50 components and a 40-60 buffer within the composite:

  1. All components of the composite index, which did neither qualify for the Large-Cap nor the Mid-Cap index, qualify for selection.

In case of a hard fork, which results in several active lines, rule 5.2.1 applies. For all events that result in a component number not being equal to 100, the index will be set back to 100 components at the next review.

The index is calculated daily between 00:00 and 24:00 (GMT) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 17:00:00 GMT with fixed 17:00 GMT exchange rates.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.
The Index is rebalanced at 17:00:00 GMT of the last trading day of each month.

The MarketVector™ Digital Assets 100 Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000A2GGQG1	BYX85Z8	A2GGQG	MVDA	.MVDA
Price Return Index	DE000A2GGQH9	BYX8600	A2GGQH	MVDALC	.MVDALC
Price Return Index	DE000A2GGQJ5	BYX8611	A2GGQJ	MVDAMC	.MVDAMC
Price Return Index	DE000A2GGQK3	BYX8622	A2GGQK	MVDASC	.MVDASC

The indexes were launched on 23 October 2017 with a base index value of 100.00 as of 31 December 2014.

4.6   MarketVector™ Digital Asset Broad 100 Equal Weight Index

The MarketVector™ Digital Asset Broad 100 Equal Weight Index is designed to track the performance of the largest 100 digital assets (with an 80-120 buffer). All assets on the selection list must be listed on at least one of the vetted exchanges from the DAR Exchange Vetting. The weightings are equal weighted as described in section 3.1.

Review procedure:

1. The selection list is defined as all digital assets which are being traded on at least one of the vetted exchanges from the DAR Exchange Vetting.

2. The top 80 digital assets qualify for selection.

3. The remaining 20 components are selected from the highest ranked remaining index components ranked between 81 and 120.

4. If the number of selected components is still below 100, then the highest ranked digital assets are selected until the number of components equals 100.

In case of a hard fork, which results in several active lines, rule 5.2.2 applies. For all events that result in a component number not being equal to 100, the index will be set back to 100 components at the next review.

The index is calculated daily between 00:00 and 24:00 (ET) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 16:00:00 ET with fixed 16:00 ET exchange rates.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.
The Index is rebalanced at 16:00:00 ET of the last trading day of each year.

The MarketVector™ Digital Asset Broad 100 Equal Weight Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000A3ERU77	BM99ZY0	A3ERU7	MVB100EW	.MVB100EW

The indexes were launched on 14 July 2023 with a base index value of 100.00 as of 31 December 2021.

4.7 MarketVector™ Crypto Leaders VWAP Close Index

The MarketVector™ Crypto Leaders VWAP Close Index is designed to track the performance of the largest and most liquid digital assets. All assets must be listed on at least one of the top 15 exchanges by CC-Data's Centralized Exchange Benchmark and are screened for investability. The 30% capping scheme as described in section 3.1 is applied.

Review procedure:

The index universe is defined as the components of the MarketVector™ Digital Assets 10 Index (MVDA10). The components of the MVDA10 are screened in accordance with the custodian specifications applicable to the client and the approvals by the relevant stock exchanges. (The index does not include crypto assets that are not accepted by the Swiss Stock Exchange (SIX) and Deutsche Börse AG as an underlying.) Information is provided by the respective 3rd party partners of the client. All constituents of the MVDA10 which pass these screens qualify as index components.

In case of a hard fork, which results in several active lines, rule 5.2.2 applies.

The index is calculated daily between 00:00 and 24:00 (CET/CEST) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 16:00:00 CET/CEST based on 1h volume weighted average prices (VWAPs) between 15:00 and 16:00 CET/CEST. The VWAPs are calculated with CCIX prices.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.

The components of this index are reviewed on a quarterly basis and rebalanced at 16:00:00 CET/CEST of the last trading day of February, May, August and November.

The MarketVector™ Crypto Leaders VWAP Close Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0EAN9	BMHYR29	SL0EAN	MVLEADV	.MVLEADV

The index was launched on 7 December 2021 with a base index value of 100.00 as of 31 December 2018.

4.8 MarketVector™ Decentralized Finance Index

The MarketVector™ Decentralized Finance Index is designed to track the performance of assets classified as "decentralized finance" by MarketVector Indexes and serve as a benchmark/universe for the respective market. This covers financial services built on top of distributed networks with no central intermediaries. The weightings are uncapped as described in section 3.1.

Review procedure:

The index is derived from the MarketVector™ Digital Assets 100 Index (MVDA). Current and new components for the MarketVector™ Decentralized Finance Index, which fulfil the following criteria, qualify for the index:

- new components of MarketVector™ Digital Assets 100 Index (MVDA).

- classified as "decentralized finance" by MarketVector™ Indexes.

In case the number of components is below 10, additional assets classified as "decentralized finance" are selected from the MVDA universe with an average-daily-trading value of at least 1,000,000 USD for the current month. These assets are sorted by market capitalization in descending order and selected top to bottom until the number of constituents equals 10.

If the number of eligible assets is still below 10, additional assets are added by the Index Owner's decision until the number of assets equals 10.

All qualified digital assets must not carry short term security risks (e.g. 51% attacks).

In case of a hard fork, which results in several active lines, rule 5.2.2 applies.

The index is calculated daily between 00:00 and 24:00 (GMT) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 17:00:00 GMT with fixed 17:00 GMT exchange rates.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.
The Index is rebalanced at 17:00:00 GMT of the last trading day in each month.

The MarketVector™ Decentralized Finance Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0D7T5	BPG67B6	SL0D7T	MVDF	.MVDF

The index was launched on 8 October 2021 with a base index value of 100.00 as of 31 January 2021.

4.9   MarketVector™ Decentralized Finance Leaders Index

The MarketVector™ Decentralized Finance Leaders Index is designed to track the performance of the largest and most liquid decentralized finance assets, and is an investable subset of MarketVector™ Decentralized Finance Index (see section 4.8). The 30% capping scheme as described in section 3.1 is applied.

Review procedure:

Components of the MarketVector™ Decentralized Finance Index (see section 4.8) with approved availability of custodians by the Index Owner qualify for the selection.

Afterwards, the selection for the index is as follows:

- The selection list is ranked in two different ways - by market capitalization in descending order (the largest constituent receives rank "1") and then by one-month average-daily-trading value in descending order (the most liquid constituent receives rank "1"). These two ranks are added up.

- The selection list is now ranked by the sum of the two ranks in ascending order. If two assets have the same sum of ranks, then the larger asset by market capitalization receives the higher rank.

- The target coverage of the selection is the lower whole rank of the 50th percentile of the number of assets in the eligible universe.

- Assets below the lower whole rank of the 40th percentile by final rank qualify for the index.

- The remaining assets are selected from the highest-ranked remaining index components ranked between the lower whole rank of the 40th percentile and the higher whole rank of the 60th percentile until the target coverage is reached.

- If the number of selected new components is still below the number of assets in the lower whole rank of the 50th percentile from the eligible universe, then the next highest-ranked digital assets are selected until the number of components reaches the target coverage.

- In case the number of new components is still below 5, the highest-ranked assets are added until the number of new components equals 5.

In case of a hard fork, which results in several active lines, rule 5.2.2 applies.

The index is calculated daily between 00:00 and 24:00 (GMT) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 17:00:00 GMT with fixed 17:00 GMT exchange rates.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.
The Index is rebalanced at 17:00:00 GMT of the last trading day in each month.

The MarketVector™ Decentralized Finance Leaders Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0D7U3	BPG67C7	SL0D7U	MVDFLE	.MVDFLE

The index was launched on 8 October 2021 with a base index value of 100.00 as of 31 January 2021.

4.10 MarketVector™ Digital Assets Max 10 VWAP Close Index

The MarketVector™ Digital Assets Max 10 VWAP Close Index is designed to track the performance of the largest and most liquid digital assets. All assets must be listed on at least one of the top 15 exchanges by CCData's Centralized Exchange Benchmark and are screened for investability. The weightings are uncapped as described in section 3.1.

Review procedure:

The index universe is defined as the components of the MarketVector™ Digital Assets 10 Index (MVDA10). The components of the MVDA10 are screened in accordance with the custodian specifications applicable to the client and the approvals by the relevant stock exchanges. All constituents of the MVDA10 which pass these screens qualify as index components.

In case of a hard fork, which results in several active lines, rule 5.2.2 applies.

The index is calculated daily between 00:00 and 24:00 (CET/CEST) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 17:00:00 CET/CEST based on 1h volume weighted average prices (VWAPs) between 16:00 and 17:00 CET/CEST. The VWAPs are calculated with CCIX prices.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.

The components of this index are reviewed on a quarterly basis and rebalanced at 17:00:00 CET/CEST of the last business day of February, May, August and November.

The MarketVector™ Digital Assets Max 10 VWAP Close Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0HD51	BMWGFC6	SL0HD5	MVDAMV	.MVDAMV

The index was launched on 11 May 2023 with a base index value of 100.00 as of 31 December 2018.

4.11   MarketVector™ Infrastructure Application Index

The MarketVector™ Infrastructure Application Index is designed to track the performance of assets classified as "infrastructure application" by MarketVector Indexes and serve as a benchmark/universe for the respective market. This covers decentralized computer programs designed to perform specific tasks. The weightings are uncapped as described in section 3.1.

Review procedure:

The index is derived from the MarketVector™ Digital Assets 100 Index (MVDA). Current and new components for the MarketVector™ Infrastructure Application Index, which fulfil the following criteria, qualify for the index:

- new components of MarketVector™ Digital Assets 100 Index (MVDA).

- classified as "infrastructure application" by MarketVector™ Indexes.

In case the number of components is below 10, additional assets classified as "infrastructure application" are selected from the MVDA universe with an average-daily-trading value of at least 1,000,000 USD for the current month. These assets are sorted by market capitalization in descending order and selected top to bottom until the number of constituents equals 10.

If the number of eligible assets is still below 10, additional assets are added by the Index Owner's decision until the number of assets equals 10.

All qualified digital assets must not carry short term security risks (e.g. 51% attacks).

In case of a hard fork, which results in several active lines, rule 5.2.2 applies.

The index is calculated daily between 00:00 and 24:00 (GMT) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 17:00:00 GMT with fixed 17:00 GMT exchange rates.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.
The Index is rebalanced at 17:00:00 GMT of the last trading day in each month.

The MarketVector™ Infrastructure Application Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0D7V1	BPG67D8	SL0D7V	MVIAP	.MVIAP

The index was launched on 8 October 2021 with a base index value of 100.00 as of 31 December 2020.

4.12   MarketVector™ Infrastructure Application Leaders Index

The MarketVector™ Infrastructure Application Leaders Index is designed to track the performance of the largest and most liquid infrastructure application assets, and is an investable subset of MarketVector™ Infrastructure Application Index (see section 4.11). The 30% capping scheme as described in section 3.1 is applied.

Review procedure:

Components of the MarketVector™ Infrastructure Application Index (see section 4.11) with approved availability of custodians by the Index Owner qualify for the selection.

Afterwards, the selection for the index is as follows:

- The selection list is ranked in two different ways - by market capitalization in descending order (the largest constituent receives rank "1") and then by one-month average-daily-trading value in descending order (the most liquid constituent receives rank "1"). These two ranks are added up.

- The selection list is now ranked by the sum of the two ranks in ascending order. If two assets have the same sum of ranks, then the larger asset by market capitalization receives the higher rank.

- The target coverage of the selection is the lower whole rank of the 50th percentile of the number of assets in the eligible universe.

- Assets below the lower whole rank of the 40th percentile by final rank qualify for the index.

- The remaining assets are selected from the highest-ranked remaining index components ranked between the lower whole rank of the 40th percentile and the higher whole rank of the 60th percentile until the target coverage is reached.

- If the number of selected new components is still below the number of assets in the lower whole rank of the 50th percentile from the eligible universe, then the next highest-ranked digital assets are selected until the number of components reaches the target coverage.

- In case the number of new components is still below 5, the highest-ranked assets are added until the number of new components equals 5.

In case of a hard fork, which results in several active lines, rule 5.2.2 applies.

The index is calculated daily between 00:00 and 24:00 (GMT) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 17:00:00 GMT with fixed 17:00 GMT exchange rates.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.
The Index is rebalanced at 17:00:00 GMT of the last trading day in each month.

The MarketVector™ Infrastructure Application Leaders Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0D7W9	BPG67F0	SL0D7W	MVIALE	.MVIALE

The index was launched on 8 October 2021 with a base index value of 100.00 as of 31 December 2020.

4.13   MarketVector™ Media & Entertainment Index

The MarketVector™ Media and Entertainment Index is designed to track the performance of assets classified as "media & entertainment" by MarketVector Indexes and serve as a benchmark/universe for the respective market. This covers coins used to reward users for content, games, gambling or social media. The weightings are uncapped as described in section 3.1.

Review procedure:

The index is derived from the MarketVector™ Digital Assets 100 Index (MVDA). Current and new components for the MarketVector™ Media and Entertainment Index, which fulfil the following criteria, qualify for the index:

- new components of MarketVector™ Digital Assets 100 Index (MVDA).

- classified as "media & entertainment" by MarketVector™ Indexes.

In case the number of components is below 10, additional assets classified as "media & entertainment" are selected from the MVDA universe with an average-daily-trading value of at least 1,000,000 USD for the current month. These assets are sorted by market capitalization in descending order and selected top to bottom until the number of constituents equals 10.

If the number of eligible assets is still below 10, additional assets are added by the Index Owner's decision until the number of assets equals 10.

All qualified digital assets must not carry short term security risks (e.g. 51% attacks).

In case of a hard fork, which results in several active lines, rule 5.2.2 applies.

The index is calculated daily between 00:00 and 24:00 (GMT) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 17:00:00 GMT with fixed 17:00 GMT exchange rates.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.
The Index is rebalanced at 17:00:00 GMT of the last trading day in each month.

The MarketVector™ Media and Entertainment Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0D7X7	BPG67G1	SL0D7X	MVME	.MVME

The index was launched on 8 October 2021 with a base index value of 100.00 as of 31 March 2021.

4.14   MarketVector™ Media & Entertainment Leaders Index

The MarketVector™ Media and Entertainment Leaders Index is designed to track the performance of the largest and most liquid media & entertainment assets, and is an investable subset of MarketVector™ Media & Entertainment Index (see section 4.13). The 30% capping scheme as described in section 3.1 is applied.

Review procedure:

Components of the MarketVector™ Media & Entertainment Index (see section 4.13) with approved availability of custodians by the Index Owner qualify for the selection.

Afterwards, the selection for the index is as follows:

- The selection list is ranked in two different ways - by market capitalization in descending order (the largest constituent receives rank "1") and then by one-month average-daily-trading value in descending order (the most liquid constituent receives rank "1"). These two ranks are added up.

- The selection list is now ranked by the sum of the two ranks in ascending order. If two assets have the same sum of ranks, then the larger asset by market capitalization receives the higher rank.

- The target coverage of the selection is the lower whole rank of the 50th percentile of the number of assets in the eligible universe.

- Assets below the lower whole rank of the 40th percentile by final rank qualify for the index.

- The remaining assets are selected from the highest-ranked remaining index components ranked between the lower whole rank of the 40th percentile and the higher whole rank of the 60th percentile until the target coverage is reached.

- If the number of selected new components is still below the number of assets in the lower whole rank of the 50th percentile from the eligible universe, then the next highest-ranked digital assets are selected until the number of components reaches the target coverage.

- In case the number of new components is still below 5, the highest-ranked assets are added until the number of new components equals 5.

In case of a hard fork, which results in several active lines, rule 5.2.2 applies.

The index is calculated daily between 00:00 and 24:00 (GMT) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 17:00:00 GMT with fixed 17:00 GMT exchange rates.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.
The Index is rebalanced at 17:00:00 GMT of the last trading day in each month.

The MarketVector™ Media and Entertainment Leaders Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0D7Y5	BPG67H2	SL0D7Y	MVMELE	.MVMELE

The index was launched on 8 October 2021 with a base index value of 100.00 as of 31 March 2021.

4.15   MarketVector™ Media & Entertainment Leaders Brazil Index

The MarketVector™ Media and Entertainment Leaders Brazil Index is designed to track the performance of the largest and most liquid media & entertainment assets, and is an investable subset of MarketVector™ Media & Entertainment Index (see section 4.13). The 30% capping scheme as described in section 3.1 is applied.

Review procedure:

Components of the MarketVector™ Media & Entertainment Index (see section 4.13) with approved availability of custodians by the Index Owner qualify for the selection.

Afterwards, the selection for the index is as follows:

- The selection list is ranked in two different ways - by market capitalization in descending order (the largest constituent receives rank "1") and then by one-month average-daily-trading value in descending order (the most liquid constituent receives rank "1"). These two ranks are added up.

- The selection list is now ranked by the sum of the two ranks in ascending order. If two assets have the same sum of ranks, then the larger asset by market capitalization receives the higher rank.

- The target coverage of the selection is the lower whole rank of the 50th percentile of the number of assets in the eligible universe.

- Assets below the lower whole rank of the 40th percentile by final rank qualify for the index.

- The remaining assets are selected from the highest-ranked remaining index components ranked between the lower whole rank of the 40th percentile and the higher whole rank of the 60th percentile until the target coverage is reached.

- If the number of selected new components is still below the number of assets in the lower whole rank of the 50th percentile from the eligible universe, then the next highest-ranked digital assets are selected until the number of components reaches the target coverage.

- In case the number of new components is still below 5, the highest-ranked assets are added until the number of new components equals 5.

In case of a hard fork, which results in several active lines, rule 5.2.2 applies.

The index is calculated daily between 00:00 and 24:00 (ET) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 16:00:00 ET with fixed 16:00 ET exchange rates.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.
The Index is rebalanced at 16:00:00 ET of the last business day in Brazil in each month.

The MarketVector™ Media and Entertainment Leaders Brazil Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0FEM0	BPSJLG6	SL0FEM	MVMEBR	.MVMEBR

The index was launched on 03 March 2022 with a base index value of 100.00 as of 31 March 2021.

4.16   MarketVector™ Meme Coin Index

The MarketVector™ Meme Coin Index is a modified market cap-weighted index which tracks the performance of the 6 largest meme coins. "Meme coin" refers to crypto assets often named after characters, individuals, animals, artworks, or other memetic elements. Initially supported by enthusiastic online traders and communities, these coins are intended for entertainment purposes. Although they start as internet memes, some crypto assets can evolve into meme coins due to growing popularity or cultural relevance. The 30% capping scheme as described in section 3.1 is applied.

Review procedure:

1. Components classified as "Meme Coins" by the client with approved availability of custodians qualify for the selection.

2. The selection list is ranked in by market capitalization in descending order (the largest constituent receives rank "1").

3. The top 6 digital assets qualify for selection.

4. If the eligible list of digital assets approved by the client does not contain 6 digital assets, the index will comprise of fewer than 6 components.

For all events that result in a deletion from the index, the deleted component will be replaced with the highest ranked non-component at the latest review. The replacement will be added with the same weight as the deleted component. In case of a hard fork, which results in several active lines, rule 5.2.1 applies. If an event causes the number of components to be greater than 6, the smallest components by market capitalization will be removed one day after the increase is effective (when a price and the main net is available), until the number of components is 6 again.

The index is calculated daily between 00:00 and 24:00 (CET/CEST) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 17:00:00 CET/CEST with fixed 17:00 CET/CEST exchange rates.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.
The Index is rebalanced at 17:00:00 CET/CEST of the last trading day of each month.

The MarketVector™ Meme Coin Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0K625	BRBQZR7	SL0K62	MEMECOIN	.MEMECOIN

The index was launched on 22 April 2024 with a base index value of 100.00 as of 31 October 2021.

4.17 MarketVector™ Smart Contract Index

The MarketVector™ Smart Contract Index is designed to track the performance of assets classified as "smart contract" by MarketVector Indexes and serve as a benchmark/universe for the respective market. This covers blockchain protocols designed to host variety of self-developed and 3rd party applications. The weightings are uncapped as described in section 3.1.

Review procedure:

The index is derived from the MarketVector™ Digital Assets 100 Index (MVDA). Current and new components for the MarketVector™ Smart Contract Index, which fulfil the following criteria, qualify for the index:

- new components of MarketVector™ Digital Assets 100 Index (MVDA).

- classified as "smart contract" by MarketVector™ Indexes.

In case the number of components is below 10, additional assets classified as "smart contract" are selected from the MVDA universe with an average-daily-trading value of at least 1,000,000 USD for the current month. These assets are sorted by market capitalization in descending order and selected top to bottom until the number of constituents equals 10.

If the number of eligible assets is still below 10, additional assets are added by the Index Owner's decision until the number of assets equals 10.

All qualified digital assets must not carry short term security risks (e.g. 51% attacks).

In case of a hard fork, which results in several active lines, rule 5.2.2 applies.

The index is calculated daily between 00:00 and 24:00 (GMT) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 17:00:00 GMT with fixed 17:00 GMT exchange rates.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.
The Index is rebalanced at 17:00:00 GMT of the last trading day in each month.

The MarketVector™ Smart Contract Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0D7Z2	BPG67J4	SL0D7Z	MVSC	.MVSC

The index was launched on 8 October 2021 with a base index value of 100.00 as of 31 December 2017.

4.18 MarketVector™ Smart Contract Leaders Index

The MarketVector™ Smart Contract Leaders Index is designed to track the performance of the largest and most liquid smart contract assets, and is an investable subset of MarketVector™ Smart Contract Index (see section 4.17). The 30% capping scheme as described in section 3.1 is applied.

Review procedure:

Components of the MarketVector™ Smart Contract Index (see section 4.17) with approved availability of custodians by the Index Owner qualify for the selection.

Afterwards, the selection for the index is as follows:

- The selection list is ranked in two different ways - by market capitalization in descending order (the largest constituent receives rank "1") and then by one-month average-daily-trading value in descending order (the most liquid constituent receives rank "1"). These two ranks are added up.

- The selection list is now ranked by the sum of the two ranks in ascending order. If two assets have the same sum of ranks, then the larger asset by market capitalization receives the higher rank.

- The target coverage of the selection is the lower whole rank of the 50th percentile of the number of assets in the eligible universe.

- Assets below the lower whole rank of the 40th percentile by final rank qualify for the index.

- The remaining assets are selected from the highest-ranked remaining index components ranked between the lower whole rank of the 40th percentile and the higher whole rank of the 60th percentile until the target coverage is reached.

- If the number of selected new components is still below the number of assets in the lower whole rank of the 50th percentile from the eligible universe, then the next highest-ranked digital assets are selected until the number of components reaches the target coverage.

- In case the number of new components is still below 5, the highest-ranked assets are added until the number of new components equals 5.

In case of a hard fork, which results in several active lines, rule 5.2.2 applies.

The index is calculated daily between 00:00 and 24:00 (GMT) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 17:00:00 GMT with fixed 17:00 GMT exchange rates.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.
The Index is rebalanced at 17:00:00 GMT of the last trading day in each month.

The MarketVector™ Smart Contract Leaders Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0D703	BPG67K5	SL0D70	MVSCLE	.MVSCLE

The index was launched on 8 October 2021 with a base index value of 100.00 as of 31 December 2017.

4.19   MarketVector™ Smart Contract Leaders Brazil Index

The MarketVector™ Smart Contract Leaders Brazil Index is designed to track the performance of the largest and most liquid smart contract assets, and is an investable subset of MarketVector™ Smart Contract Index (see section 4.17). The 30% capping scheme as described in section 3.1 is applied.

Review procedure:

Components of the MarketVector™ Smart Contract Index (see section 4.17) with approved availability of custodians by the Index Owner qualify for the selection.

Afterwards, the selection for the index is as follows:

- The selection list is ranked in two different ways - by market capitalization in descending order (the largest constituent receives rank "1") and then by one-month average-daily-trading value in descending order (the most liquid constituent receives rank "1"). These two ranks are added up.

- The selection list is now ranked by the sum of the two ranks in ascending order. If two assets have the same sum of ranks, then the larger asset by market capitalization receives the higher rank.

- The target coverage of the selection is the lower whole rank of the 50th percentile of the number of assets in the eligible universe.

- Assets below the lower whole rank of the 40th percentile by final rank qualify for the index.

- The remaining assets are selected from the highest-ranked remaining index components ranked between the lower whole rank of the 40th percentile and the higher whole rank of the 60th percentile until the target coverage is reached.

- If the number of selected new components is still below the number of assets in the lower whole rank of the 50th percentile from the eligible universe, then the next highest-ranked digital assets are selected until the number of components reaches the target coverage.

- In case the number of new components is still below 5, the highest-ranked assets are added until the number of new components equals 5.

In case of a hard fork, which results in several active lines, rule 5.2.2 applies.

The index is calculated daily between 00:00 and 24:00 (ET) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 16:00:00 ET with fixed 16:00 ET exchange rates.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.
The Index is rebalanced at 16:00:00 ET of the last business day in Brazil in each month.

The MarketVector™ Smart Contract Leaders Brazil Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0FEN8	BPSJLH7	SL0FEN	MVSCBR	.MVSCBR

The index was launched on 03 March 2022 with a base index value of 100.00 as of 31 December 2017.

4.20 MarketVector™ Smart Contract Leaders VWAP Close Index

The MarketVector™ Smart Contract Leaders VWAP Close Index is designed to track the performance of the largest and most liquid smart contract assets, and is an investable subset of MarketVector™ Smart Contract Index (see section 4.17). All assets on the selection list must be listed on at least one of the top 15 exchanges by CCData's Centralized Exchange Benchmark. The 30% capping scheme as described in section 3.1 is applied.

The components of the MarketVector™ Smart Contract Index (see section 4.17) are screened in accordance with the custodian specifications applicable to the client and the index does not include crypto assets that are not accepted by Deutsche Börse AG as an underlying. Information is provided by the respective 3rd party partners of the client.

Current components, which fulfill the listing criteria, qualify for the selection list with:

- a market capitalization of at least 800,000,000 USD,

- an average daily-trading value of at least 20,000,000 USD.

Components of the MarketVector™ Smart Contract Index qualify for the selection list with:

- a market capitalization of at least 1,000,000,000 USD,

- an average-daily-trading value of at least 25,000,000 USD,

- Approved availability of custodians by the Index Owner.

Review procedure:

1. The selection list contains all current components and components of the MarketVector™ Smart Contract Index (see section 4.17), which fulfill listing criteria as described above. Stablecoins (also called 'price stable currencies') which are fiat collateralized and digital assets pegged to a currency or any other asset are not eligible for the selection list. If there are no sufficient non-components which fulfill the custodian specifications, market capitalization and liquidity criteria, then only the components that fulfill these criteria will be considered.

2. The selection list is ranked by market capitalization in descending order (the largest constituent receives rank "1").

3. The top 7 digital assets qualify for selection.

4. The remaining 3 components are selected from the highest ranked remaining index components ranked between 8 and 13.

5. If the number of selected components is below 10, then the highest ranked digital assets are selected until the number of components equals 10. If there are no sufficient non-components which fulfill the custodian specifications, market capitalization and liquidity criteria, then only the components that fulfill these criteria will be considered. In this case, number of components can be less than 10.

In case of a hard fork, which results in several active lines, rule 5.2.2 applies.

4   INDEXES

The index is calculated daily between 00:00 and 24:00 (CET/CEST) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 16:00:00 CET/CEST based on 1h volume weighted average prices (VWAPs) between 15:00 and 16:00 CET/CEST. The VWAPs are calculated with CCIX prices.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.

The components of this index are reviewed on a quarterly basis and rebalanced at 16:00:00 CET/CEST of the last trading day of February, May, August and November.

The MarketVector™ Smart Contract Leaders VWAP Close Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0FCY9	BPLFDZ4	SL0FCY	MVSCLEV	.MVSCLEV

The index was launched on 07 March 2022 with a base index value of 100.00 as of 31 December 2018.

4.21 MarketVector™ Token Terminal Fundamental Index

The MarketVector™ Token Terminal Fundamental Index is designed to track the performance of the largest and most liquid digital assets that meet the fundamental criteria of daily average fees and daily average active users. Fundamental data is provided by Token Terminal. The index is weighted based on fundamental on-chain data following the section 3.1. The data used are the mean of the square roots of daily fees on a monthly basis, where the factor weight is 80% and the mean of the square roots of daily active users on a monthly basis, where the factor weight is 20%.

Review procedure:

1. The selection list contains all current components (which fulfil the listing criteria) with an average-daily-trading value of at least 600,000 USD for the current month. Components of the MarketVector™ Digital Assets 100 Large-Cap Index and MarketVector™ Digital Assets 100 Mid-Cap Index (see section 4.5), which have an average-daily-trading value of at least 1,000,000 USD for the current month, are added to the selection list by size (top to bottom). Meme and privacy tokens are not eligible for the selection list. For all the digital assets in the selection list, daily fee and daily average users data are collected.

2. The selection list is ranked in two different ways - by the monthly average of the square roots of daily fees in descending order (the constituent with highest figure receives rank "1") and then by the monthly average of the square roots of daily active users in descending order (the constituent with highest figure receives rank "1"). These two ranks are added up where the rank based on daily fees is weighted by 80% and the rank based on daily active users is weighted by 20%.

3. The selection list is now ranked by the sum of the two ranks in step 2 in ascending order. If two constituents have the same sum of ranks, then the larger constituent (i.e. constituent with higher market capitalization) is placed on top.

4. The top 7 digital assets qualify for selection.

5. The remaining 3 components are selected from the highest ranked remaining index components ranked between 8 and 13.

6. If the number of selected components is still below 10, then the highest ranked digital assets are selected until the number of components equals 10.

For all events that result in a deletion from the index, the deleted component will be replaced with the highest ranked non-component at the latest review. The replacement will be added with the same weight as the deleted component. In case of a hard fork, which results in several active lines, rule 5.2.1 applies. If an event causes the number of components to be greater than 10, the smallest components by market capitalization will be removed one day after the increase is effective (when a price and the main net is available), until the number of components is 10 again.

The index is calculated daily between 00:00 and 24:00 (GMT) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 17:00:00 GMT with fixed 17:00 GMT exchange rates.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.
The Index is rebalanced at 17:00:00 GMT of the last trading day of each month.

4   INDEXES

The MarketVector™ Token Terminal Fundamental Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0KCV5	BP0VP35	SL0KCV	MVTT10F	.MVTT10F

The index was launched on 05 December 2023 with a base index value of 100.00 as of 31 December 2020.

4.22   MarketVector™ Token Terminal Fundamental Cap-Weighted Strategy Index

The MarketVector™ Token Terminal Fundamental Index is designed to track the performance of the largest and most liquid digital assets that meet the fundamental criteria of daily average fees and daily average active users. Fundamental data is provided by Token Terminal. The 30% cap 3% floor weighting scheme as described in section 3.1 is applied.

Review procedure:

1. The selection list contains all current components (which fulfil the listing criteria) with an average-daily-trading value of at least 600,000 USD for the current month. Components of the MarketVec-tor™ Digital Assets 100 Large-Cap Index and MarketVector™ Digital Assets 100 Mid-Cap Index (see section 4.5), which have an average-daily-trading value of at least 1,000,000 USD for the current month, are added to the selection list by size (top to bottom). Meme and privacy tokens are not eligible for the selection list. For all the digital assets in the selection list, daily fee and daily average users data are collected.

2. The selection list is ranked in two different ways - by the monthly average of the square roots of daily fees in descending order (the constituent with highest figure receives rank "1") and then by the monthly average of the square roots of daily active users in descending order (the constituent with highest figure receives rank "1"). These two ranks are added up where the rank based on daily fees is weighted by 80% and the rank based on daily active users is weighted by 20%.

3. The selection list is now ranked by the sum of the two ranks in step 2 in ascending order. If two constituents have the same sum of ranks, then the larger constituent (i.e. constituent with higher market capitalization) is placed on top.

4. The top 7 digital assets qualify for selection.

5. The remaining 3 components are selected from the highest ranked remaining index components ranked between 8 and 13.

6. If the number of selected components is still below 10, then the highest ranked digital assets are selected until the number of components equals 10.

For all events that result in a deletion from the index, the deleted component will be replaced with the highest ranked non-component at the latest review. The replacement will be added with the same weight as the deleted component. In case of a hard fork, which results in several active lines, rule 5.2.1 applies. If an event causes the number of components to be greater than 10, the smallest components by market capitalization will be removed one day after the increase is effective (when a price and the main net is available), until the number of components is 10 again.

The index is calculated daily between 00:00 and 24:00 (GMT) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 17:00:00 GMT with fixed 17:00 GMT exchange rates.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.
The Index is rebalanced at 17:00:00 GMT of the last trading day of each month.

The MarketVector™ Token Terminal Fundamental Cap-Weighted Strategy Index has the following identi-fiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0KCU7	BP0VP24	SL0KCU	MVTT10M	.MVTT10M

The index was launched on 05 December 2023 with a base index value of 100.00 as of 31 December 2020.

4.23 MarketVector™ Coinbase Bitcoin Benchmark Rate

The MarketVector™ Coinbase Bitcoin Benchmark Rate is designed to be a robust price for Bitcoin in USD traded in the exchange Coinbase. There is no component other than Bitcoin in the index and no other exchange is included other than Coinbase.

In case of a hard fork, which results in several active lines, rule 5.2.2 applies.
In the unlikely event a spun-off coin is larger than Bitcoin (by market capitalization) and is in general accepted as the successor of the original chain, the index owner might decide to keep it as the only index component.

The index is calculated daily between 00:00 and 24:00 London time (BST/GMT) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 16:00:00 London time (BST/GMT) with fixed 16:00 London time (BST/GMT) exchange rates.

The MarketVector™ Coinbase Bitcoin Benchmark Rate has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0F971	BN7TB18	SL0F97	CBBR	.CBBR

The index was launched on 16 May 2022 with a base index value of 425.31 as of 31 December 2015.

4.24 MarketVector™ Coinbase Bitcoin Cash Benchmark Rate

The MarketVector™ Coinbase Bitcoin Cash Benchmark Rate is designed to be a robust price for Bitcoin Cash in USD traded in the exchange Coinbase. There is no component other than Bitcoin Cash in the index and no other exchange is included other than Coinbase.

In case of a hard fork, which results in several active lines, rule 5.2.2 applies.
In the unlikely event a spun-off coin is larger than Bitcoin Cash (by market capitalization) and is in general accepted as the successor of the original chain, the index owner might decide to keep it as the only index component.

The index is calculated daily between 00:00 and 24:00 London time (BST/GMT) and the index values are disseminated to data vendors every 15 seconds.
The index is disseminated in USD and the closing value is calculated at 16:00:00 London time (BST/GMT) with fixed 16:00 London time (BST/GMT) exchange rates.

The MarketVector™ Coinbase Bitcoin Cash Benchmark Rate has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0K5G7	BM8VB83	SL0K5G	CBCHBR	.CBCHBR

The index was launched on 12 March 2024 with a base index value of 2361.48 as of 31 December 2017.

4.25   MarketVector™ Coinbase Dogecoin Benchmark Rate

The MarketVector™ Coinbase Dogecoin Benchmark Rate is designed to be a robust price for Dogecoin in USD traded in the exchange Coinbase. There is no component other than Dogecoin in the index and no other exchange is included other than Coinbase.

In case of a hard fork, which results in several active lines, rule 5.2.2 applies.
In the unlikely event a spun-off coin is larger than Dogecoin (by market capitalization) and is in general accepted as the successor of the original chain, the index owner might decide to keep it as the only index component.

The index is calculated daily between 00:00 and 24:00 London time (BST/GMT) and the index values are disseminated to data vendors every 15 seconds.
The index is disseminated in USD and the closing value is calculated at 16:00:00 London time (BST/GMT) with fixed 16:00 London time (BST/GMT) exchange rates.

The MarketVector™ Coinbase Dogecoin Benchmark Rate has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0K5J1	BM8VBB6	SL0K5J	CDOGEBR	.CDOGEBR

The index was launched on 12 March 2024 with a base index value of 0.24 as of 30 June 2021.

4.26   MarketVector™ Coinbase Ethereum Benchmark Rate

The MarketVector™ Coinbase Ethereum Benchmark Rate is designed to be a robust price for Ethereum in USD traded in the exchange Coinbase. There is no component other than Ethereum in the index and no other exchange is included other than Coinbase.

In case of a hard fork, which results in several active lines, rule 5.2.2 applies.
In the unlikely event a spun-off coin is larger than Ethereum (by market capitalization) and is in general accepted as the successor of the original chain, the index owner might decide to keep it as the only index component.

The index is calculated daily between 00:00 and 24:00 London time (BST/GMT) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 16:00:00 London time (BST/GMT) with fixed 16:00 London time (BST/GMT) exchange rates.

The MarketVector™ Coinbase Ethereum Benchmark Rate has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0GAV7	BMH6394	SL0GAV	CETBR	.CETBR

The index was launched on 16 May 2022 with a base index value of 724.49 as of 31 December 2017.

4.27 MarketVector™ Coinbase Litecoin Benchmark Rate

The MarketVector™ Coinbase Litecoin Benchmark Rate is designed to be a robust price for Litecoin in USD traded in the exchange Coinbase. There is no component other than Litecoin in the index and no other exchange is included other than Coinbase.

In case of a hard fork, which results in several active lines, rule 5.2.2 applies.
In the unlikely event a spun-off coin is larger than Litecoin (by market capitalization) and is in general accepted as the successor of the original chain, the index owner might decide to keep it as the only index component.

The index is calculated daily between 00:00 and 24:00 London time (BST/GMT) and the index values are disseminated to data vendors every 15 seconds.
The index is disseminated in USD and the closing value is calculated at 16:00:00 London time (BST/GMT) with fixed 16:00 London time (BST/GMT) exchange rates.

The MarketVector™ Coinbase Litecoin Benchmark Rate has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0K5J1	BM8VBB6	SL0K5J	CLTCBR	.CLTCBR

The index was launched on 12 March 2024 with a base index value of 3.79 as of 31 August 2016.

4.28 MarketVector™ Coinbase XRP Benchmark Rate

The MarketVector™ Coinbase XRP Benchmark Rate is designed to be a robust price for XRP in USD traded in the exchange Coinbase. There is no component other than XRP in the index and no other exchange is included other than Coinbase.

In case of a hard fork, which results in several active lines, rule 5.2.2 applies.
In the unlikely event a spun-off coin is larger than XRP (by market capitalization) and is in general accepted as the successor of the original chain, the index owner might decide to keep it as the only index component.

The index is calculated daily between 00:00 and 24:00 London time (BST/GMT) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 16:00:00 London time (BST/GMT) with fixed 16:00 London time (BST/GMT) exchange rates.

The MarketVector™ Coinbase XRP Benchmark Rate has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0HPJ8	BQ80092	SL0HPJ	CXBR	.CXBR

The index was launched on 19 July 2023 with a base index value of 0.76 as of 18 July 2023.

4.29   MarketVector™ Algorand VWAP Close Index

The MarketVector™ Algorand VWAP Close Index is designed to track the performance of a Algorand digital asset. There is no component other than Algorand in the index.

In case of a hard fork, which results in several active lines, rule 5.2.1 applies. The spun-off coin will be removed one day after the effective date (when a price and the main net is available) until the number of components is 1 again. In the unlikely event a spun-off coin is larger than Algorand (by market capitalization) and is in general accepted as the successor of the original chain, the index owner might decide to keep it as the only index component.

The index is calculated daily between 00:00 and 24:00 (CET/CEST) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 16:00:00 CET/CEST based on 1h volume weighted average prices (VWAPs) between 15:00 and 16:00 CET/CEST. The VWAPs are calculated with CCIX prices.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.
The Index is rebalanced at 16:00:00 CET/CEST of the last trading day of each month.

The MarketVector™ Algorand VWAP Close Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0EYV2	BNZHQL9	SL0EYV	MVALGOV	.MVALGOV

The index was launched on 22 December 2021 with a base index value of 100.00 as of 30 June 2019.

4.30 MarketVector™ Avalanche VWAP Close Index

The MarketVector™ Avalanche VWAP Close Index is designed to track the performance of an Avalanche digital asset. There is no component other than Avalanche in the index.

In case of a hard fork, which results in several active lines, rule 5.2.1 applies. The spun-off coin will be removed one day after the effective date (when a price and the main net is available) until the number of components is 1 again. In the unlikely event a spun-off coin is larger than Avalanche (by market capitalization) and is in general accepted as the successor of the original chain, the index owner might decide to keep it as the only index component.

The index is calculated daily between 00:00 and 24:00 (CET/CEST) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 16:00:00 CET/CEST based on 1h volume weighted average prices (VWAPs) between 15:00 and 16:00 CET/CEST. The VWAPs are calculated with CCIX prices.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.
The Index is rebalanced at 16:00:00 CET/CEST of the last trading day of each month.

The MarketVector™ Avalanche VWAP Close Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0D976	BLH3DH6	SL0D97	MVAVAXV	.MVAVAXV

The index was launched on 18 November 2021 with a base index value of 10.00 as of 30 September 2020.

4.31 MarketVector™ Bitcoin Index

The MarketVector™ Bitcoin Index is designed to track the performance of a Bitcoin digital asset. There is no component other than Bitcoin in the index.

In case of a hard fork, which results in several active lines, rule 5.2.1 applies. The spun-off coin will be removed one day after the effective date (when a price and the main net is available) until the number of components is 1 again. In the unlikely event a spun-off coin is larger than Bitcoin (by market capitalization) and is in general accepted as the successor of the original chain, the index owner might decide to keep it as the only index component.

The index is calculated daily between 00:00 and 24:00 (GMT) and the index values are disseminated to data vendors every 15 seconds.The index is disseminated in USD and the closing value is calculated at 17:00:00 GMT with fixed 17:00 GMT exchange rates.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.
The Index is rebalanced at 17:00:00 GMT of the last trading day of each month.

The MarketVector™ Bitcoin Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000A2GGQD8	BYX85W5	A2GGQD	MVBTC	.MVBTC

The index was launched on 23 October 2017 with a base index value of 10.00 as of 31 January 2012.

4.32   MarketVector™ Bitcoin VWAP Close Index

The MarketVector™ Bitcoin VWAP Close Index is designed to track the performance of a Bitcoin digital asset. There is no component other than Bitcoin in the index.

In case of a hard fork, which results in several active lines, rule 5.2.1 applies. The spun-off coin will be removed one day after the effective date (when a price and the main net is available) until the number of components is 1 again. In the unlikely event a spun-off coin is larger than Bitcoin (by market capitalization) and is in general accepted as the successor of the original chain, the index owner might decide to keep it as the only index component.

The index is calculated daily between 00:00 and 24:00 (CET/CEST) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 16:00:00 CET/CEST based on 1h volume weighted average prices (VWAPs) between 15:00 and 16:00 CET/CEST. The VWAPs are calculated with CCIX prices.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.
The Index is rebalanced at 16:00:00 CET/CEST of the last trading day of each month.

The MarketVector™ Bitcoin VWAP Close Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0BER8	BLD0Z19	SL0BER	MVBTCV	.MVBTCV

The index was launched on 06 August 2020 with a base index value of 100.00 as of 31 December 2014.

4.33 MarketVector™ Bitcoin Benchmark Rate

The MarketVector™ Bitcoin Benchmark Rate is designed to be a robust price for Bitcoin in USD (see section 6.1.2). There is no component other than Bitcoin in the index.

Review procedure (for eligible exchanges with USD pair/agreement):

- If an eligible exchange is in the top 5 by rank based on the CCData's Centralized Exchange Benchmark table for two consecutive semiannual reviews, it replaces the lowest ranked exchange.

- If an eligible exchange is downgraded by two or more notches in a semiannual review and is not in the top 5 by rank anymore, it is replaced by the highest ranked non-component exchange.

Adjustments to exchange coverage will be announced four business days prior to the first business day of June/December at 23:00 CET/CEST; the indexes are rebalanced at 16:00:00 ET on the last business day of May/November.

In case of a hard fork, which results in several active lines, rule 5.2.2 applies.
In the unlikely event a spun-off coin is larger than Bitcoin (by market capitalization) and is in general accepted as the successor of the original chain, the index owner might decide to keep it as the only index component.

The index is calculated daily between 00:00 and 24:00 (ET) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 16:00:00 ET with fixed 16:00 ET exchange rates.

The MarketVector™ Bitcoin Benchmark Rate has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0A0E5	BMFXWZ6	SL0A0E	BBR	.BBR

The index was launched on 3 June 2020 with a base index value of 425.23 as of 31 December 2015. The list below summarises the exchange composition up to the launch.

- Bitstamp,

- Coinbase,

- Gemini,

- itBit,

- Kraken.

In addition, the BBR London Settlement Price is calculated at 16:00:00 London time and has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0HDJ4	BMBR2R4	SL0HDJ	BBRLDN	.BBRLDN

In addition, the BBR Hong Kong Settlement Price is calculated at 17:00:00 Hong Kong time and has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0HDT3	BPK5QZ6	SL0HDT	BBRHKG	.BBRHKG

In addition, the BBR New York Settlement Price is calculated at 16:00:00 ET and has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0KQP7	BQPG5B0	SL0KQP	SATOSHI	.SATOSHI

4.34   MarketVector™ Chainlink VWAP Close Index

The MarketVector™ Chainlink VWAP Close Index is designed to track the performance of a Chainlink digital asset. There is no component other than Chainlink in the index.

In case of a hard fork, which results in several active lines, rule 5.2.1 applies. The spun-off coin will be removed one day after the effective date (when a price and the main net is available) until the number of components is 1 again. In the unlikely event a spun-off coin is larger than Chainlink (by market capitalization) and is in general accepted as the successor of the original chain, the index owner might decide to keep it as the only index component.

The index is calculated daily between 00:00 and 24:00 (CET/CEST) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 16:00:00 CET/CEST based on 1h volume weighted average prices (VWAPs) between 15:00 and 16:00 CET/CEST. The VWAPs are calculated with CCIX prices.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.
The Index is rebalanced at 16:00:00 CET/CEST of the last trading day of each month.

The MarketVector™ Chainlink VWAP Close Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0FCZ6	BPLFF03	SL0FCZ	MVLINKV	.MVLINKV

The index was launched on 07 March 2022 with a base index value of 100.00 as of 31 October 2019.

4.35   MarketVector™ Ethereum Index

The MarketVector™ Ethereum Index is designed to track the performance of an Ethereum digital asset. There is no component other than Ethereum in the index.

In case of a hard fork, which results in several active lines, rule 5.2.1 applies. The spun-off coin will be removed one day after the effective date (when a price and the main net is available) until the number of components is 1 again. In the unlikely event a spun-off coin is larger than Ethereum (by market capitalization) and is in general accepted as the successor of the original chain, the index owner might decide to keep it as the only index component.

The index is calculated daily between 00:00 and 24:00 (GMT) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 17:00:00 GMT with fixed 17:00 GMT exchange rates.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.
The Index is rebalanced at 17:00:00 GMT of the last trading day of each month.

The MarketVector™ Ethereum Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000A2GGQP2	BYX8666	A2GGQP	MVETH	.MVETH

The index was launched on 23 October 2017 with a base index value of 10.00 as of 31 August 2015.

4.36   MarketVector™ Ethereum VWAP Close Index

The MarketVector™ Ethereum VWAP Close Index is designed to track the performance of an Ethereum digital asset. There is no component other than Ethereum in the index.

In case of a hard fork, which results in several active lines, rule 5.2.1 applies. The spun-off coin will be removed one day after the effective date (when a price and the main net is available) until the number of components is 1 again. In the unlikely event a spun-off coin is larger than Ethereum (by market capitalization) and is in general accepted as the successor of the original chain, the index owner might decide to keep it as the only index component.

The index is calculated daily between 00:00 and 24:00 (CET/CEST) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 16:00:00 CET/CEST based on 1h volume weighted average prices (VWAPs) between 15:00 and 16:00 CET/CEST. The VWAPs are calculated with CCIX prices.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.
The Index is rebalanced at 16:00:00 CET/CEST of the last trading day of each month.

The MarketVector™ Ethereum VWAP Close Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0CAC6	BN6HR93	SL0CAC	MVETHV	.MVETHV

The index was launched on 13 January 2021 with a base index value of 10.00 as of 31 December 2015.

4.37   MarketVector™ Ethereum Benchmark Rate

The MarketVector™ Ethereum Benchmark Rate is designed to be a robust price for Ethereum in USD (see section 6.1.2). There is no component other than Ethereum in the index.

Review procedure (for eligible exchanges with USD pair/agreement):

- If an eligible exchange is in the top 5 by rank based on the CCData's Centralized Exchange Benchmark table for two consecutive semiannual reviews, it replaces the lowest ranked exchange.

- If an eligible exchange is downgraded by two or more notches in a semiannual review and is not in the top 5 by rank anymore, it is replaced by the highest ranked non-component exchange.

Adjustments to exchange coverage will be announced four business days prior to the first business day of June/December at 23:00 CET/CEST; the indexes are rebalanced at 16:00:00 ET on the last business day of May/November.

In case of a hard fork, which results in several active lines, rule 5.2.2 applies.
In the unlikely event a spun-off coin is larger than Ethereum (by market capitalization) and is in general accepted as the successor of the original chain, the index owner might decide to keep it as the only index component.

The index is calculated daily between 00:00 and 24:00 (ET) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 16:00:00 ET with fixed 16:00 ET exchange rates.

The MarketVector™ Ethereum Benchmark Rate has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0C7Q2	BNTJBB6	SL0C7Q	EBR	.EBR

The index was launched on 24 March 2021 with a base index value of 745.36 as of 31 December 2017. The list below summarises the exchange composition up to the launch.

- Bitstamp,

- Coinbase,

- Gemini,

- itBit,

- Kraken.

In addition, the EBR London Settlement Price is calculated at 16:00:00 London time and has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0HDK2	BMBR2S5	SL0HDK	EBRLDN	.EBRLDN

In addition, the EBR Hong Kong Settlement Price is calculated at 17:00:00 Hong Kong time and has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0HDU1	BPK5R20	SL0HDU	EBRHKG	.EBRHKG

4.38 MarketVector™ FTX Token VWAP Close Index

The MarketVector™ FTX Token VWAP Close Index is designed to track the performance of the FTX Token digital asset. There is no component other than the FTX Token in the index.

In case of a hard fork, which results in several active lines, rule 5.2.1 applies. The spun-off coin will be removed one day after the effective date (when a price and the main net is available) until the number of components is 1 again. In the unlikely event a spun-off coin is larger than the FTX Token (by market capitalization) and is in general accepted as the successor of the original chain, the index owner might decide to keep it as the only index component.

The index is calculated daily between 00:00 and 24:00 (CET/CEST) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 16:00:00 CET/CEST based on 1h volume weighted average prices (VWAPs) between 15:00 and 16:00 CET/CEST. The VWAPs are calculated with CCIX prices.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.
The Index is rebalanced at 16:00:00 CET/CEST of the last trading day of each month.

The MarketVector™ FTX Token VWAP Close Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0EYW0	BNZHQN1	SL0EYW	MVFTTV	.MVFTTV

The index was launched on 22 December 2021 with a base index value of 100.00 as of 29 February 2020.

4.39 MarketVector™ Polkadot VWAP Close Index

The MarketVector™ Polkadot VWAP Close Index is designed to track the performance of a Polkadot digital asset. There is no component other than Polkadot in the index.

In case of a hard fork, which results in several active lines, rule 5.2.1 applies. The spun-off coin will be removed one day after the effective date (when a price and the main net is available) until the number of components is 1 again. In the unlikely event a spun-off coin is larger than Polkadot (by market capitalization) and is in general accepted as the successor of the original chain, the index owner might decide to keep it as the only index component.

The index is calculated daily between 00:00 and 24:00 (CET/CEST) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 16:00:00 CET/CEST based on 1h volume weighted average prices (VWAPs) between 15:00 and 16:00 CET/CEST. The VWAPs are calculated with CCIX prices.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.
The Index is rebalanced at 16:00:00 CET/CEST of the last trading day of each month.

The MarketVector™ Polkadot VWAP Close Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0DMZ0	BMC2PJ1	SL0DMZ	MVDOTV	.MVDOTV

The index was launched on 30 June 2021 with a base index value of 100.00 as of 30 September 2020.

4.40 MarketVector™ Polygon VWAP Close Index

The MarketVector™ Polygon VWAP Close Index is designed to track the performance of a Polygon digital asset. There is no component other than Polygon in the index.

In case of a hard fork, which results in several active lines, rule 5.2.1 applies. The spun-off coin will be removed one day after the effective date (when a price and the main net is available) until the number of components is 1 again. In the unlikely event a spun-off coin is larger than Polygon (by market capitalization) and is in general accepted as the successor of the original chain, the index owner might decide to keep it as the only index component.

The index is calculated daily between 00:00 and 24:00 (CET/CEST) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 16:00:00 CET/CEST based on 1h volume weighted average prices (VWAPs) between 15:00 and 16:00 CET/CEST. The VWAPs are calculated with CCIX prices.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.
The Index is rebalanced at 16:00:00 CET/CEST of the last trading day of each month.

The MarketVector™ Polygon VWAP Close Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0D984	BLH3DM1	SL0D98	MVMATICV	.MVMATICV

The index was launched on 18 November 2021 with a base index value of 100.00 as of 30 September 2020.

4.41   MarketVector™ Solana Benchmark Rate

The MarketVector™ Solana Benchmark Rate is designed to be a robust price for Solana in USD (see section 6.1.2). There is no component other than Solana in the index.

Review procedure (for eligible exchanges with USD pair/agreement):

- If an eligible exchange is in the top 5 by rank based on the CCData's Centralized Exchange Benchmark table for two consecutive semiannual reviews, it replaces the lowest ranked exchange.

- If an eligible exchange is downgraded by two or more notches in a semiannual review and is not in the top 5 by rank anymore, it is replaced by the highest ranked non-component exchange.

Adjustments to exchange coverage will be announced four business days prior to the first business day of June/December at 23:00 CET/CEST; the indexes are rebalanced at 16:00:00 ET on the last business day of May/November.

In case of a hard fork, which results in several active lines, rule 5.2.2 applies.
In the unlikely event a spun-off coin is larger than Solana (by market capitalization) and is in general accepted as the successor of the original chain, the index owner might decide to keep it as the only index component.

The index is calculated daily between 00:00 and 24:00 (ET) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 16:00:00 ET with fixed 16:00 ET exchange rates.

The MarketVector™ Solana Benchmark Rate has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0KS26	BRQNHX3	SL0KS2	SOLBR	.SOLBR

The index was launched on 16 February 2024 with a base index value of 33.50 as of 30 June 2021. The list below summarises the exchange composition up to the launch.

- Bitfinex,
- Coinbase,
- Kraken.

In addition, the SOLBR Zurich Settlement Price is calculated at 16:00:00 CET and has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0KS34	BSHRDQ6	SL0KS3	SOLBRZRH	.SOLBRZRH

4.42   MarketVector™ Solana VWAP Close Index

The MarketVector™ Solana VWAP Close Index is designed to track the performance of a Solana digital asset. There is no component other than Solana in the index.

In case of a hard fork, which results in several active lines, rule 5.2.1 applies. The spun-off coin will be removed one day after the effective date (when a price and the main net is available) until the number of

components is 1 again. In the unlikely event a spun-off coin is larger than Solana (by market capitalization) and is in general accepted as the successor of the original chain, the index owner might decide to keep it as the only index component.

The index is calculated daily between 00:00 and 24:00 (CET/CEST) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 16:00:00 CET/CEST based on 1h volume weighted average prices (VWAPs) between 15:00 and 16:00 CET/CEST. The VWAPs are calculated with CCIX prices.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.
The Index is rebalanced at 16:00:00 CET/CEST of the last trading day of each month.

The MarketVector™ Solana VWAP Close Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0DMY3	BMC2P79	SL0DMY	MVSOLV	.MVSOLV

The index was launched on 30 June 2021 with a base index value of 10.00 as of 31 July 2020.

4.43   MarketVector™ TRON VWAP Close Index

The MarketVector™ TRON VWAP Close Index is designed to track the performance of a TRON digital asset. There is no component other than TRON in the index.

In case of a hard fork, which results in several active lines, rule 5.2.1 applies. The spun-off coin will be removed one day after the effective date (when a price and the main net is available) until the number of components is 1 again. In the unlikely event a spun-off coin is larger than TRON (by market capitalization) and is in general accepted as the successor of the original chain, the index owner might decide to keep it as the only index component.

The index is calculated daily between 00:00 and 24:00 (CET/CEST) and the index values are disseminated to data vendors every 15 seconds. The index is disseminated in USD and the closing value is calculated at 16:00:00 CET/CEST based on 1h volume weighted average prices (VWAPs) between 15:00 and 16:00 CET/CEST. The VWAPs are calculated with CCIX prices.

Adjustments to constituents will be announced four business days prior to the first business day of the next month at 23:00 CET/CEST.
The Index is rebalanced at 16:00:00 CET/CEST of the last trading day of each month.

The MarketVector™ TRON VWAP Close Index has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0DM05	BMC2PK2	SL0DM0	MVTRXV	.MVTRXV

The index was launched on 30 June 2021 with a base index value of 100.00 as of 31 December 2018.

5   Ongoing Maintenance

Events are announced at least four days prior to implementation.

5.1   Changes in Amount Outstanding

Changes in the amount outstanding will not be adjusted during the month, but with the next monthly review.

5.2   Changes due to Forks

A hard fork occurs when a blockchain protocol is radically changed, such that it becomes incompatible with older versions. In effect, participants taking part in transactions on the old blockchain must upgrade to the new one in order to continue validating transactions. However, participants that do not upgrade may continue to support and validate transactions on the older blockchain protocol separately.
The result of this is that a blockchain splits into two - hence the name 'hard fork'. If there are nodes permanently supporting the new chain, then the two chains will co-exist.
Users that once held digital assets on an older blockchain before the protocol change at a pre-specified blockchain length will now also hold an amount of new coins on the altered blockchain. This new asset has essentially been derived from an older token as well as its associated blockchain's transaction history.

5.2.1   Addition of Forks

Where a constituent blockchain undergoes a hard fork, the newly created coin will be added to the index, as long as it is available for trading on one or more of eligible top tier exchanges (as defined by CCData's Centralized Exchange Benchmark: must be rated AA or A / eligible exchanges for respective index or DAR exchange vetting), such available price(s) contributing to the CCIX/DAR pricing, prior to the following review announcement. In addition to the exchange classification, the following criteria are taken into account if the forked coin is added to the index:

- Twitter followers: qualitative and quantitative measure of the community support level for the forked chain,

- Public developer: indicates that there are people that can be held accountable for any liability,

- Open source code: makes code auditing and vulnerability check possible,

- Premine: transparency in terms of the total supply of the Forked Coin and intentions,

- Announcement: the forked Chain will have to be announced a significant time prior to its activation, in doing so this would demonstrate the seriousness of the intended fork.

Each additional component resulting from a fork is immediately added to the index at least for one day according to the terms, if traded. In case it does not trade, it will be kept with a 0 price until the first price is retrieved (it will then be kept in the index for at least one day) or the next review becomes effective. Implementation is effective with the change in the respective block.
The same treatment applies to soft forks if the process results in a division or split into multiple non-fungible assets.

5.2.2   No Addition of Forks

In case of a hard fork, the forked coin is not added to the index. Only in case it is significant enough to replace the old line in terms of market capitalization and acceptance, MarketVector Indexes may decide for a different treatment.

5.3   Initial Coin Offerings (ICOs)

An ICO coin is eligible for fast-track addition to the investable index universe even if there is no full month of traded values. In order to be added to the index the ICO coin has to meet the liquidity requirements:

- the ICO must have an average-daily-trading volume of at least 1.0m USD, and
- must have traded for at least 10 days.

This rule is applicable for newly forked non-component coins as well.

5.4   Changes to Pricing (CCIX)

In case an exchange is added to CCIX or removed from it, the index divisor will not be adjusted.

5.5   Changes to the Index Guide

Any changes to the Index Guide will be reviewed and approved by the Legal and Compliance Department. Legal and Compliance may also request a conclusive description and further information on any change and may consult the operations department on such changes. The key elements to be analysed in this phase of the change process are robustness, transparency, reliability and integrity. The result of the review will be communicated to the operations department. The email will be archived by the operations department.

In case of changes that might immediately change the composition of an index or must be considered material for any other reason also need to be approved by the Independent Oversight Function ("IOF") prior to their publication and implementation.

In case of material changes an advance notice will be published and provided to users. MarketVector Indexes will generally disseminate a notification related to an Index Guide change 30 days prior to the change. A shorter period of time may be applied at MarketVector Indexes's discretion if the relevant index has not been licensed for a financial product to a third party. The notice will describe a clear time frame that gives the opportunity to analyse and comment upon the impact of such proposed material change. Any material comments received in relation to the Index Guide change and MarketVector Indexes's response to those comments will be made publicly accessible after any consultation, except where confidentiality has been requested by the originator of the comments.

5.6   Discretion regarding the Use of Input Data and Extraordinary Events

Pursuant to Art. 12 No.1. (b), MarketVector Indexes has established the following rules identifying how and when discretion may be exercised in the administration of an index.
In case input data are or appear to be qualitatively inferior or different sources provide different data, an extraordinary event, or a situation is not covered by the index rules, MarketVector Indexes may use or change data/index composition at its own discretion according to the following discretion policy after a plausibility check. Regarding input data, this may include:

- Liquidity and size data,

- Event information,

- Other secondary data.

Regarding extraordinary events, this may include:

- Trading stops,

- Regulatory actions (depending on the applicable jurisdiction),

- Hacks,

- Detection of fraud,

- Changes in custodian coverage,

- Etc.

Any changes must subject to reasonable discretion. The decision on any change must be required, appropriate, commensurable and in line with the respective index scope and objective and must reasonably consider in a balance weight the interest of Users, investors in related products and the integrity of the market.

Index operations ensures consistency in the use of discretion in its judgement and decision. Employees involved in the operations team must have shown the respective experience and skills. Significant decisions are subject to sign-off by a supervisor. In case of material changes to data the relevant situation will be analyzed in detail, described and presented to the IOF and discussed and reviewed with the IOF.

The broad range of possible data quality problems does not allow to define specific steps for each possible instance. MarketVector Indexes will always weight the different interest of the index users, the integrity of the market and other involved parties and determine the least disadvantageous measure that equally considers the relevant interests best.

In order to avoid individual decisions in similar cases for the future an update of the index rules can be taken into consideration if applicable. Regarding the use of data, other possible mitigation measures are the change of input data sources or providers and/or own data research where possible and reasonable.

Records are kept about material judgement or discretion by MarketVector Indexes and will include the reasoning for said judgement or discretion.

5.7   Input Data and Contributor Selection

According to the input data requirements under Art. 11 of the Benchmark Regulation, the following shall apply with regard to the input data used for the management and provision of an index and the relevant input data providers ("Contributors"):

- the input data shall be sufficient to represent accurately and reliably the market or economic reality that the benchmark is intended to measure;

- the input data shall be transaction data, if available and appropriate. If transaction data is not sufficient or is not appropriate to represent accurately and reliably the market or economic reality that the index is intended to measure, input data which is not transaction data may be used, including estimated prices, quotes and committed quotes, or other values;

- the input data shall be verifiable;

- clear guidelines regarding the types of input data, the priority of use of the different types of input data and the exercise of expert judgement, to ensure compliance with the Index Guide and index methodology and the aforementioned requirements are defined in the Code of Conduct for Contributors; and

- where an index is based on input data from Contributors, MarketVector Indexes will obtain, where appropriate, the input data from a reliable and representative panel or sample of Contributors so as to ensure that the resulting index is reliable and representative of the market or economic reality that the index is intended to measure.

In order to control the quality of contributors, MarketVector Indexes will conduct the following controls:

- Evaluate market share, reputation, quality and cost of possible input data sources and providers before selecting them on the basis of the gathered information and data;

- Compare the input data of one Contributor with the input data from one or more other Contributors in order to ensure the integrity and accuracy of the input data and in case of bad quality replace a Contributor with another Contributor.

MarketVector Indexes will not use input data from a contributor if it has any indication that the Contributor does not adhere to its Code of Conduct for Contributors and in such a case shall obtain representative publicly available data.

6   Calculation

6.1   Index Formula

6.1.1   Standard Indexes

The Indexes are calculated using the Laspeyres' formula:

$$Index\ Value = \frac{\sum_{i=1}^{n} p_i * q_i * cf_i * fx_i}{D} = \frac{M}{D}.$$

Where (for all tokens (i) in the Index):

p_i = price,
q_i = amount outstanding,
cf_i = weighting cap factor (if applicable, otherwise set to 1),
fx_i = exchange rate (index currency to USD),
M = market capitalization of the index,
D = divisor.

6.1.2   MarketVector™ Benchmark Rates

This section applies to the BBR, EBR, CBBR, CETBR, CXBR and SOLBR. The indexes are calculated as an average of 1-hour quantity weighted median prices, which are calculated for 20 3-minute intervals.

The indexes CLTCBR, CDOGEBR and CBCHBR are calculated as an average of 2-hour quantity weighted median prices, which are calculated for 40 3-minute intervals.

$$Index\ Value = \frac{1}{n} \sum_{i=1}^{n} M(i).$$

where the quantity weighted median price for each interval i is

$$M(i) = \begin{cases} p_{i,k} & \text{if } k \text{ satisfies } \sum_{j=1}^{k-1} q_{i,j} < \frac{1}{2} \sum_{j=1}^{J_i} q_{i,j} \text{ and } \sum_{j=k+1}^{J_i} q_{i,j} < \frac{1}{2} \sum_{j=1}^{J_i} q_{i,j}, \\ p_{i,1} & \text{if } q_{i,1} > \frac{1}{2} \sum_{j=1}^{J_i} q_{i,j}, \\ \frac{p_{i,k} + p_{i,k+1}}{2} & \text{if } \sum_{j=k+1}^{J_i} q_{i,j} = \frac{1}{2} \sum_{j=1}^{J_i} q_{i,j}, \end{cases}$$

with the number of intervals calculated as the total index time window divided by the interval window:

$$n = \frac{T}{b},$$

and

$p_{i,j}$ = jth price in ith interval,
$q_{i,j}$ = jth quantity/volume traded in ith interval,
J_i = number of trades in ith interval,
b = interval window for the calculation of the median prices,
n = number of intervals,
T = total index time window for the calculation of an index price.

The set of trades for the total index calculation consists of transactions occurring within the total index time window as follows:

$$\theta_t = \{a_{i,j}(s_{i,j}, p_{i,j}, q_{i,j})|t - T \leq s < t\},$$

with
θ_t = set of trades for the calculation of the index price at time t,
$a_{i,j}$ = trade j in trade set A_i,
$s_{i,j}$ = time of trade $a_{i,j}$.
Each interval consists of a subset of trades of θ_t:

$$A_i \subset \theta_t$$

A_i being the set of trades for the calculation of the median price in interval i, where each trade $a_{i,j}$ within A_i is sorted by price $p_{i,j}$ in ascending order and it holds that trades occur within the interval window as follows:

$$A_i = \{a_{i,j}(s_{i,j}, p_{i,j}, q_{i,j})|(t - T) + (i - 1)b \leq s < (t - T) + ib\}.$$

Index Parameters

Parameter	Value
Total time window of index (T)	1 hour
Interval window (b)	3 minutes
Number of intervals (n)	20 (given available transactions)

6.2   Input Data

The following rounding procedures are used for the index calculation:

- Rounding to 2 decimal places:

  - index values,

- Rounding to 6 decimal places:

  - divisors (D),

- Rounding to 18 decimal places:

  - prices (p_i),
  - exchange rates (fx_i),
  - weighting cap factors (cf_i).

6.3   Divisor Adjustments

Index maintenance - reflecting changes in amount outstanding, events, addition or deletion of tokens to the Index - should not change the level of the index. This is accomplished with an adjustment to the divisor. Any change to the tokens in the index that alters the total market value of the index while holding token prices constant will require a divisor adjustment.

$$Divisor_{new} = Divisor_{old} * \frac{\sum_{i=1}^{n} p_i * q_i * cf_i * fx_i \pm \Delta MC}{\sum_{i=1}^{n} p_i * q_i * cf_i * fx_i}.$$

$\Delta MC = $ Difference between closing and adjusted closing market capitalization of the index.

6.4   Event Related Adjustments

Events range widely from routine coin issuances to unusual events like forks. These are listed on the table below with notes about the necessary changes and whether the divisor will be adjusted.
p_i = token price.

- *Hard Fork*   Divisor change: No.

  Investors receive 'B' new coins for every 'A' coin held.

  $$p_{(i,adjusted)} = ((p_i * A) - (price\ of\ forked\ coin * B))/A$$

  Coin B is added to the index according to the terms.

- *Addition/Deletion of a component*   Divisor change: Yes.

  Net change in market value determines the divisor adjustment.

- *Other*   Divisor change: TBD.

  Net change in market value determines the divisor adjustment. In case of no change, the divisor change is 0.

6.5   Data Correction and Disruptions

MarketVector Indexes will usually receive information about errors or disruption from calculation agent, client, internal systems (IT) or by monitoring the respective output.
The following list of errors does not affect the indexes, as data are not considered in the calculation process:

- Bad data such as non-numerical price, volume or timestamp,

- Late/delayed transactions,

- Non-reporting exchanges.

- For BBR/EBR only: Full exchange exclusion when weighted median price of an exchange within the total index window deviates more than 10% from the median of the rest of the exchanges' median price.

Incorrect or missing input data will be corrected immediately:

- The error is immediately communicated to the calculation agent, if applicable.

- Calculation agent will be asked to investigate the reason for the error.

- An email will be sent to all affected clients to inform them about the error; this includes the reason for the issue and an estimate on when the issue will be solved.

- MarketVector Indexes recalculates missing EOD data points and disseminates to vendors and clients.

In case of a material error,

- Legal and Compliance to check the relevant agreements for liability of the calculation agent.

- If MarketVector Indexes identifies any conduct that may involve manipulation or attempted manipulation of an index by calculation agent it will report this to the regulator.

- Where possible and economically reasonable MarketVector Indexes will try to use another calculation agent.

Investigations and communication regarding disruptions with calculation agents will be handled by Compliance and Senior Management. They are either caused by disruptions in calculation or dissemination, which might affect different servicers.

- The disruption is immediately communicated to the calculation/dissemination agent, if applicable.

- Calculation/dissemination agent will be asked to investigate the reason for the disruption.

- An email will be sent to all affected clients to inform them about the disruption; this includes the reason for the issue and an estimate on when the issue will be solved.

- MarketVector Indexes prompts calculation agent to make all efforts to restart index calculation.

- MarketVector Indexes prompts Dissemination agent to make all efforts to restart index dissemination.

- MarketVector Indexes recalculates missing EOD data points and disseminates to vendors and clients.

- Legal and Compliance to check the relevant agreements for liability of the calculation/dissemination agent.

- If MarketVector Indexes identifies any conduct that may involve manipulation or attempted manipulation of an index by calculation/dissemination agent it will report this to BaFin.

- Where possible and economically reasonable MarketVector Indexes will try use another calculation and/or dissemination agent.

7 Appendix

7.1 Names and Tickers

Long Name	Short Name	Symbol
MarketVector™ Centralized Exchanges Index	MV Cen Exc Idx	MVCEX
MarketVector™ Digital Assets 5 Index	MV Dig Assets 5 Idx	MVDA5
MarketVector™ Digital Assets 10 Index	MV Dig Assets 10 Idx	MVDA10
MarketVector™ Digital Assets 25 Index	MV Dig Assets 25 Idx	MVDA25
MarketVector™ Digital Assets 100 Index	MV Dig Assets 100 Idx	MVDA
MarketVector™ Digital Assets 100 Large-Cap Index	MV Dig Assets 100 Lrg Idx	MVDALC
MarketVector™ Digital Assets 100 Mid-Cap Index	MV Dig Assets 100 Mid Idx	MVDAMC
MarketVector™ Digital Assets 100 Small-Cap Index	MV Dig Assets 100 Sml Idx	MVDASC
MarketVector™ Digital Asset Broad 100 Equal Weight Index	MV Dig Assets 100 Broad EW Idx	MVB100EW
MarketVector™ Crypto Leaders VWAP Close Index	MV Crypto Leaders Idx	MVLEADV
MarketVector™ Decentralized Finance Index	MV DeFi Idx	MVDF
MarketVector™ Decentralized Finance Leaders Index	MV DeFi Lead Idx	MVDFLE
MarketVector™ Digital Assets Max 10 VWAP Close Index	MV DA MAX10 Idx	MVDAMV
MarketVector™ Infrastructure Application Index	MV Infra Idx	MVIAP
MarketVector™ Infrastructure Application Leaders Index	MV Infra Lead Idx	MVIALE
MarketVector™ Media and Entertainment Index	MV Meta Idx	MVME
MarketVector™ Media and Entertainment Leaders Index	MV Meta Lead Idx	MVMELE
MarketVector™ Media and Entertainment Leaders Brazil Index	MV Meta Lead Bra Idx	MVMEBR
MarketVector™ Meme Coin Index	Meme Idx	MEMECOIN
MarketVector™ Smart Contract Index	MV Smart Idx	MVSC
MarketVector™ Smart Contract Leaders Index	MV Smart Lead Idx	MVSCLE
MarketVector™ Smart Contract Leaders Brazil Index	MV Smart Lead Bra Idx	MVSCBR
MarketVector™ Smart Contract Leaders VWAP Close Index	MV Smart Lead VWAP Idx	MVSCLEV
MarketVector™ MarketVector Token Terminal Fundamental Index	MV TT Fun Idx	MVTT10F
MarketVector™ MarketVector Token Terminal Fundamental Cap-Weighted Strategy Index	MV TT Fun-Cap Wgt Str Idx	MVTT10M
MarketVector™ Coinbase Bitcoin Benchmark Rate	MV Coinbase Bitcoin BR	CBBR
MarketVector™ Coinbase Bitcoin Cash Benchmark Rate	MV Coinbase Bitcoin Cash BR	CBCHBR
MarketVector™ Coinbase Dogecoin Benchmark Rate	MV Coinbase Dogecoin BR	BDOGEBR
MarketVector™ Coinbase Ethereum Benchmark Rate	MV Coinbase Ethereum BR	CETBR
MarketVector™ Coinbase Litecoin Benchmark Rate	MV Coinbase Litecoin BR	CLTCBR
MarketVector™ Coinbase XRP Benchmark Rate	MV Coinbase XRP BR	CXBR
MarketVector™ Algorand VWAP Close Index	MV Algorand VWAP Idx	MVALGOV
MarketVector™ Avalanche VWAP Close Index	MV Avalanche VWAP Idx	MVAVAXV
MarketVector™ Bitcoin Index	MV Bitcoin Idx	MVBTC
MarketVector™ Bitcoin VWAP Close Index	MV Bitcoin VWAP Idx	MVBTCV
MarketVector™ Bitcoin Benchmark Rate	MV Bitcoin BR	BBR
MarketVector™ Chainlink VWAP Close Index	MV Chainlink VWAP idx	MVLINKV
MarketVector™ Ethereum Index	MV Ethereum Idx	MVETH
MarketVector™ Ethereum VWAP Close Index	MV Ethereum VWAP Idx	MVETHV
MarketVector™ Ethereum Benchmark Rate	MV Ethereum BR	EBR
MarketVector™ FTX Token VWAP Close Index	MV FTX VWAP Idx	MVFTTV
MarketVector™ Polkadot VWAP Close Index	MV Polkadot VWAP Idx	MVDOTV
MarketVector™ Polygon VWAP Close Index	MV Polygon VWAP Idx	MVMATICV
MarketVector™ Solana Benchmark Rate	MV Solana BR	SOLBR
MarketVector™ Solana VWAP Close Index	MV Solana VWAP Idx	MVSOLV
MarketVector™ TRON VWAP Close Index	MV TRON VWAP Idx	MVTRXV

7.2 Launch Dates and Base Values

Name	Launch Date	Base Value	Base Date
MarketVector™ Centralized Exchanges Index	01 June 2022	100.00	28 February 2021
MarketVector™ Digital Assets 5 Index	23 October 2017	100.00	31 December 2014
MarketVector™ Digital Assets 10 Index	23 October 2017	100.00	31 December 2014
MarketVector™ Digital Assets 25 Index	23 October 2017	100.00	31 December 2014
MarketVector™ Digital Assets 100 Index	23 October 2017	100.00	31 December 2014
MarketVector™ Digital Assets 100 Large-Cap Index	23 October 2017	100.00	31 December 2014
MarketVector™ Digital Assets 100 Mid-Cap Index	23 October 2017	100.00	31 December 2014

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MarketVector™ Digital Assets 100 Small-Cap Index	23 October 2017	100.00	31 December 2014
MarketVector™ Digital Asset Broad 100 Equal Weight Index	14 July 2023	100.00	31 December 2021
MarketVector™ Crypto Leaders VWAP Close Index	07 December 2021	100.00	31 December 2021
MarketVector™ Decentralized Finance Index	08 October 2021	100.00	31 January 2021
MarketVector™ Decentralized Finance Leaders Index	08 October 2021	100.00	31 January 2021
MarketVector™ Digital Assets Max 10 VWAP Close Index	11 May 2023	100.00	31 December 2018
MarketVector™ Infrastructure Application Index	08 October 2021	100.00	31 December 2020
MarketVector™ Infrastructure Application Leaders Index	08 October 2021	100.00	31 December 2020
MarketVector™ Media and Entertainment Index	08 October 2021	100.00	31 March 2021
MarketVector™ Media and Entertainment Leaders Index	08 October 2021	100.00	31 March 2021
MarketVector™ Media and Entertainment Leaders Brazil Index	03 March 2022	100.00	31 March 2021
MarketVector™ Meme Coin Index	22 April 2024	100.00	31 October 2021
MarketVector™ Smart Contract Index	08 October 2021	100.00	31 December 2017
MarketVector™ Smart Contract Leaders Index	08 October 2021	100.00	31 December 2017
MarketVector™ Smart Contract Leaders Brazil Index	03 March 2022	100.00	31 December 2017
MarketVector™ Smart Contract Leaders VWAP Close Index	07 March 2022	100.00	31 December 2018
MarketVector™ Token Terminal Fundamental Index	05 December 2023	100.00	31 December 2020
MarketVector™ Token Terminal Fundamental Cap-Weighted Strategy Index	05 December 2023	100.00	31 December 2020
MarketVector™ Coinbase Bitcoin Benchmark Rate	16 May 2022	8777.91	01 May 2020
MarketVector™ Coinbase Bitcoin Cash Benchmark Rate	12 March 2024	2361.48	31 December 2017
MarketVector™ Coinbase Dogecoin Benchmark Rate	12 March 2024	0.24	30 July 2021
MarketVector™ Coinbase Ethereum Benchmark Rate	16 May 2022	211.19	01 May 2020
MarketVector™ Coinbase Litecoin Benchmark Rate	12 March 2024	3.79	31 August 2016
MarketVector™ Coinbase XRP Benchmark Rate	19 July 2023	0.76	18 July 2023
MarketVector™ Algorand VWAP Close Index	22 December 2021	100.00	30 June 2019
MarketVector™ Avalanche Close Index	18 November 2021	100.00	30 September 2020
MarketVector™ Bitcoin Index	23 October 2017	10.00	31 January 2012
MarketVector™ Bitcoin VWAP Close Index	06 August 2020	100.00	31 December 2014
MarketVector™ Bitcoin Benchmark Rate	3 June 2020	425.23	31 December 2015
MarketVector™ Chainlink VWAP Close Index	07 March 2022	10.00	31 October 2019
MarketVector™ Ethereum Index	23 October 2017	10.00	31 August 2015
MarketVector™ Ethereum VWAP Close Index	13 January 2021	10.00	31 December 2015
MarketVector™ Ethereum Benchmark Rate	24 March 2021	745.363	31 December 2017
MarketVector™ FTX Token VWAP Close Index	22 December 2021	100.00	29 February 2020
MarketVector™ Polkadot Close Index	30 June 2021	100.00	30 September 2020
MarketVector™ Polygon Close Index	18 November 2021	100.00	30 September 2020
MarketVector™ Solana Benchmark Rate	16 February 2024	33.50	30 June 2021
MarketVector™ Solana Close Index	30 June 2021	10.00	31 July 2020
MarketVector™ TRON Close Index	30 June 2021	100.00	31 December 2018

7.3 Changes to the Index Guide

This table contains all changes to the index guide after 1 January 2018, when the European Benchmark Regulation became effective.

Date	IG Version	Change
12 September 2018	1.25	Inclusion of additional chapters to comply with BMR
18 October 2018	1.26	Inclusion of MVQBTC, MVSBTC, MVQETH, MVSETH, re-name MVXRP
20 November 2018	1.27	Inclusion of MVBTCO
12 July 2019	1.28	Update of top tier exchanges in fork treatment
2 September 2019	1.29	Clarification of eligibility (security tokens, financial instruments and pegged assets)
27 September 2019	1.30	Exclusion of MVQETH, MVSETH
25 November 2019	1.31	Inclusion of MVIBTC
16 March 2020	1.32	Replacement of Circle with XBTO in MVBTCO
03 June 2020	1.33	Inclusion of BBR, updated data correction process
06 August 2020	1.34	Inclusion of MVBTCV and MVIETH, clarification of pricing methodology
07 August 2020	1.35	Conversion of MVIETH to a spot price index
15 September 2020	1.36	Exclusion of MVQBTC, MVSBTC
16 December 2020	1.37	Inclusion of MVWTAR
13 January 2021	1.38	Inclusion of MVETHV
08 March 2021	1.39	New closing time for BBR
24 March 2021	1.40	Inclusion of EBR
31 March 2021	1.41	Discretion in case of extraordinary events, Real-time calculation for BBR and EBR
12 May 2021	1.42	Removal of MVBTCO, inclusion of MVDEFI
30 June 2021	1.43	Inclusion of MVDOTV, MVSOLV, MVTRXV
2 August 2021	1.44	30 days announcement period for Index Guide changes
1 September 2021	1.45	Exchange screening for MVDA5, MVDA10 and MVDA25
8 October 2021	1.46	Inclusion of MVDF, MVDFLE, MVIAP, MVIALE, MVME, MVMELE, MVSC, MVSCLE
18 November 2021	1.47	Inclusion of MVAVAXV, MVMATICV
23 November 2021	1.48	Inclusion of GBBRA, GEBRA
7 December 2021	1.49	Inclusion of MVLEADV
22 December 2021	1.50	Inclusion of MVALGOV, MVFTTV, MVLUNAV
31 January 2021	1.51	Removal of MVBCH, MVDASH, MVETC, MVIOT, MVLTC, MVXMR, MVXEM, MVNEO, MVZEC
18 February 2022	1.52	Inclusion of MVDAS, MVGCFI
03 March 2022	1.53	Inclusion of MVMEBR, MVSCBR
07 March 2022	1.54	Inclusion of MVSCLEV, MVLINKV, MVNEARV
16 May 2022	1.55	Inclusion of CBBR, CETBR
24 May 2022	1.56	Higher liquidity needed for MVDA, Minimum component count (5) for category indexes
01 June 2022	1.57	Inclusion of MVCEX
15 June 2022	1.58	Removal of MVIBTC, MVIETH

31 August 2022	1.59	Changed definition of el. exchanges in case of forks, move exchange review back to November (BBR/EBR)
25 November 2022	1.60	Removal of FTT from MVGCFI
31 January 2023	1.61	Removal of MVDEFI
01 March 2023	1.62	Removal of MVNEARV, "MVIS® / CryptoCompare" name changed to "MarketVector™"
01 April 2023	1.63	Removal of MVLUNAV, Inclusion of BBRLDN, EBRLDN, BBRHKG, EBRHKG, "Cryptocompare" name changed to "CCData", Rule change for MVDA regarding inclusion of stablecoins, pegged coins and wrapped coins
01 May 2023	1.64	Additional rules regarding client's jurisdictions (chapters 2.1 and 5.6), Removal of GBBRA, GEBRA
11 May 2023	1.65	Inclusion of MVDAMV
1 June 2023	1.66	Removal of MVDAS
19 June 2023	1.67	New closing time for BBRHKG and EBRHKG
14 July 2023	1.68	Rule Changes for the following indexes: MVDF, MVDFLE, MVIAP, MVIALE, MVSC, MVSCLE, MVSCBR, MVME, MVMELE, MVMEBR, MVCEX, Inclusion of MVB100EW
19 July 2023	1.69	Inclusion CXBR
31 July 2023	1.70	MVXRP and MVWTAR removed.
15 September 2023	1.71	Inclusion MVCBBR
01 October 2023	1.72	Rule change: Meme and privacy tokens are not eligible for the selection of MVDA5, MVDA10 and MVDA25. Removal of MVGCFI.
05 December 2023	1.73	Inclusion of MVTT10F, MVTT10M
05 January 2024	1.74	Inclusion of SATOSHI
16 February 2024	1.75	Inclusion of SOLBR
01 March 2024	1.76	removal of MVCBBR
12 March 2024	1.77	Inclusion of CBCHBR, CDOGEBR, CLTCBR
22 April 2024	1.78	Inclusion of MEMECOIN

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