



# INDEX GUIDE

MarketVector™ Crypto-Balanced Multi-Asset Index

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## 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 establishing, calculating and maintaining the MarketVector™ Crypto-Balanced Multi-Asset Index (“TOPMDL”).

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 index and its 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 the 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 transparency of the underlying market for the methodology has been tested and particular circumstances for each relevant market have been taken into account.

The 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 Objective of Index

MarketVector™ Crypto-Balanced Multi-Asset Index, (TOPMDL) (“The Index”), is designed to provide a balanced exposure to a diverse range of asset classes, including core equities, emerging markets and bonds. It also strategically incorporates cryptocurrencies, focusing on Bitcoin and Ethereum, to harness the growth potential of digital assets while ensuring overall portfolio stability.

### 1.3 About MarketVector Indexes GmbH

MVIS® is a registered trademark of Van Eck Associates Corporation and therefore protected globally against unlawful usage. MarketVector Indexes has selected an index calculation agent to calculate the index.

#### 1.4 Review of this Index Guide

According to Art. 13 No. 1 (b) of the Benchmark Regulation, the Index Administrator 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, the Management Board of the Index Administrator and the Index Advisory Committee. If changes to this Index Guide are considered necessary, the process described in Section 4.3 applies.

## 2 General Definitions

### 2.1 Index Dissemination and Identifiers

This index is calculated on weekdays between 09:30 and 16:00 ET and index values are disseminated to data vendors every 15 seconds on days when either the US equity market is open for trading or at least one of the index components is available for trading.

The index is disseminated in USD.

Real-time index values are calculated with the midpoint between the latest available real-time bid- and ask-prices. The closing values for this index are calculated at 16:00:00 ET with fixed 16:00 London time exchange rates from WM company.

MarketVector™ Crypto-Balanced Multi-Asset Index has the following identifiers:

<b>Index Type</b>	<b>ISIN</b>	<b>SEDOL</b>	<b>WKN</b>	<b>Bloomberg</b>	<b>Reuters</b>
Price Return Index	DE000A4AK2U1	BPNXSV7	A4AK2U	TOPMDL	.TOPMDL
Total Return Net Index	DE000A4AK2V9	BPNXSX9	A4AK2V	TOPMDLTR	.TOPMDLTR
Total Return Gross Index	DE000A4AK2W7	BPNXSY0	A4AK2W	TOPMDLTG	.TOPMDLTG

The index was launched on 20 March 2025 with a base index value of 100.00 as of 31 January 2018.

### 2.2 Review Schedule

The index composition is rebalanced quarterly in January, April, July, and October (the "Quarterly Rebalance Date").

The reviews/rebalancing for the Index are based on the opening data on the fourth from the 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.

The Index is rebalanced after the closing of the last trading day in January, April, July, and October.

## 3 Index Review

### 3.1 Index Universe

The index universe includes the following exchange traded funds:

- Vanguard Total Bond Market ETF (BND),
- Vanguard Total International Bond ETF (BNDX),
- iShares J.P. Morgan USD Emerging Markets Bond ETF (EMB),
- SPDR® S&P 500® ETF Trust (SPY),
- iShares MSCI EAFE ETF (EFA),
- iShares MSCI Emerging Markets ETF (EEM),
- VanEck Bitcoin ETF (HODL),
- VanEck Ethereum ETF (ETHV).

For back-testing purposes, the MarketVector™ Bitcoin Benchmark Rate (BBR) was used as a proxy for HODL prior to 01/11/2024, and the MarketVector™ Ethereum Benchmark Rate (EBR) was used as a proxy for ETHV prior to 07/23/2024.

### 3.2 Eligible Index Universe

All securities listed above are eligible for the index.

### 3.3 Index Selection

Index components are selected on a quarterly basis. All eligible securities are selected for inclusion into the index.

### 3.4 Weighting Scheme

Index weightings are reviewed quarterly to maintain the allocation of each component at the following predefined levels:

<b>Security Name</b>	<b>Weight</b>
Vanguard Total Bond Market ETF (BND)	19%
Vanguard Total International Bond ETF (BNDX)	13%
iShares J.P. Morgan USD Emerging Markets Bond ETF (EMB)	6%
SPDR® S&P 500® ETF Trust (SPY)	34%
iShares MSCI EAFE ETF (EFA)	19%
iShares MSCI Emerging Markets ETF (EEM)	4%
VanEck Bitcoin ETF (HODL)*	2.5%
VanEck Ethereum ETF (ETHV)*	2.5%

## 4 Ongoing Maintenance

### 4.1 Trade Suspensions and Market Distortions

There are certain circumstances which might require extraordinary adjustments to the Index. MarketVector Indexes decides whether a market distortion or trade suspension has occurred and about its treatment in the index. The Index Advisory Committee will be consulted if extraordinary adjustments to the Index might be required. These circumstances include, but are not limited to:

- Longer or recurring outages of an exchange,
- Misconduct of an exchange or with a security has been noticed,
- Implementation of investment restrictions for international investors in certain countries or for certain exchanges,
- A security does not trade anymore permanently or for an extended period of time.

### 4.2 Index Corrections

Index corrections distinguish between calculation errors and incorrect input data.

- Calculation errors detected within a trading day are corrected immediately. Intraday tick data are not corrected retrospectively.
- Calculation errors that are older or based on erroneous input data are corrected if technically possible and economically viable. If significant differences exist, index values can also be corrected retrospectively.

### 4.3 Changes to the Index Guide

Any changes to the Index Guide will be reviewed by the Index Advisory Committee and approved by MarketVector Indexes' 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' 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' response to those comments will be made publicly accessible after any consultation, except where confidentiality has been requested by the originator of the comments.

#### 4.4 Discretion regarding the Use of Input Data

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, or a situation is not covered by the index rules, MarketVector Indexes may use or change the data at its own discretion according to the following discretion policy after a plausibility check. This may include:

- Liquidity and size data,
- Corporate Action information,
- Other secondary data.

Regarding extraordinary events, this may include:

- Trading stops,
- Regulatory actions,
- Detection of fraud,
- Tradability,
- Etc.

Any changes to input data that MarketVector Indexes intends to apply because of missing data, different data from different sources or other information concluding the inappropriateness or incorrectness of data 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 analysed 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 on the use of data in similar cases for the future an update of the index rules can be taken into consideration if applicable. 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.

#### 4.5 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;



## 4 ONGOING MAINTENANCE

- 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.

## 5 Calculation

### 5.1 Index Formula

The Index is calculated using the Laspeyres' formula:

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

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

- $p_i$  = price,
- $w_i$  = weighting cap factor (if applicable, otherwise set to 1),
- $fx_i$  = exchange rate (trading currency to USD),
- $M$  = market capitalisation of the index,
- $D$  = divisor.

### 5.2 Input Data

The following rounding procedures are used for the index calculation:

- Rounding to 2 decimal places:
  - index values,
  - free-float factors ( $ff_i$ ),
- Rounding to 4 decimal places:
  - security prices ( $p_i$ ),
- Rounding to 6 decimal places:
  - divisors ( $D$ ),
- Rounding to 12 decimal places:
  - exchange rates ( $fx_i$ ),
- Rounding to 16 decimal places:
  - company-weighting cap factors ( $cf_i$ ).

### 5.3 Divisor Adjustments

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

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

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

## 5 CALCULATION

### 5.4 Event Related Adjustments

Events range widely from distributions or buy backs to unusual events like splits. These are listed on the table below with notes about the necessary changes and whether the divisor will be adjusted.

$p_i$  = unit price,

$w_i$  = weighting cap factor.

- *Cash distribution (for gross return only)* Divisor change: Yes  
 $p_{(i,adjusted)} = p_i - \text{distribution}$
- *Special cash distribution (for price and gross return indices)* Divisor change: Yes  
 $p_{(i,adjusted)} = p_i - \text{distribution}$
- *Split* Divisor change: No  
 Shareholders receive 'B' new shares for every 'A' share held.  
 $p_{(i,adjusted)} = p_i * A/B$   
 $w_{(i,adjusted)} = w_i * B/A$
- *Addition/Deletion of an ETF* Divisor change: Yes  
 Net change in market capitalisation determines the divisor adjustment.

With events where cash or other assets are distributed to shareholders, the price of the unit will drop on the ex-day (the first day when a new shareholder is eligible to receive the distribution.) The effect of the divisor adjustment is to prevent this price drop from causing a corresponding drop in the Index.

Events are announced at least four days prior to implementation.

### 5.5 Data Correction and Disruptions

MarketVector Indexes will usually receive information about errors or disruption from calculation agent, index owner, client, internal systems (IT) or by monitoring the respective output.

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.

## 5 CALCULATION

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 to use another calculation and/or dissemination agent.

## 6 Appendix

### 6.1 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
-	-	-

## 7 Disclaimer

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