



# INDEX GUIDE

MarketVector™ - GammaRoad U.S. Equity Strategy Index

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## 1 INTRODUCTION

### 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™- GammaRoad U.S. Equity Strategy Index (“MVGMMMA”).

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.

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#### 1.1 Objective of Index

The MarketVector™- GammaRoad U.S. Equity Strategy Index (the “Index”) rotates in its exposure between US Equities and US Treasury Bills (t-bills) using US-listed exchange traded funds (ETFs) based on a methodology that was developed by GammaRoad Capital Partners, LLC. The specific composition of the index will be determined by an Aggregate Index Signal, as defined herein, which indicates the degree to which the index will be long equities or t-bills. While the index itself does not incorporate leverage, exposure to equities at the time of rebalancing can range from 0% to 125% through the use of levered ETFs.

#### 1.2 About MarketVector Indexes GmbH

MarketVector™ Indexes GmbH (hereafter referred to as the “Index Owner”) is registered as a Benchmark Administrator under the European Benchmark Regulation. MarketVector™ 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.

#### 1.3 About GammaRoad Capital Partners®

GammaRoad Capital Partners, LLC develops systematic investment strategies with the goal of improving traditional portfolios. The firm’s objective and rules-based strategies aim to reduce drawdowns while capitalizing on the most favorable market environments. GammaRoad Capital Partners® is a federally registered trademark of GammaRoad Capital Partners, LLC.

#### 1.4 Approval of Index Methodologies

The Index Owner has established the Index and its methodology covered in this Index Guide. A detailed written “Procedure for Index Development” describes the steps and approvals required to develop, docu-

## 1 INTRODUCTION

ment 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 Administrator'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 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 Administrator for final approval.

### 1.5 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 3.1 applies.

## 2 INDEX REVIEWS AND GENERAL DEFINITIONS

### 2 Index Reviews and General Definitions

#### 2.1 Aggregate Index Signal

The Aggregate Index Signal is calculated on a daily basis and is used to determine index components and weights per the rules outlined in section 2.2. The Aggregate Index Signal can only have a value of 0, 1, 2, or 3, and is found by summing the following underlying measures each day, each of which can only have a value of 0 or 1.

- Consumer Confidence Measure
  - A measure that considers a sub-component of a publicly available survey on U.S. consumer confidence compared to its long-term and short-term quantitative directional trends.
  - This signal is updated on a monthly basis, typically on the last Tuesday of each month.
- Price Direction Measure
  - A measure that considers the trend in weekly opening and closing prices of the SPY ETF.
  - This signal is updated on a weekly basis on the last trading day of each week.
- Cross Asset Measure
  - A measure that compares the performance of economically sensitive commodities to the performance of gold.
  - This signal is updated on a daily basis each day that US markets are open for trading.

If data for a particular measure is not updated on a given day, the value for that signal will remain unchanged from the previous day's value.

## 2 INDEX REVIEWS AND GENERAL DEFINITIONS

### 2.2 Index Composition

The index contains the US-ETFs listed in the table below along with the ETF rebalance weights for each of the four possible levels of the Aggregate Index Signal (AIS).

ETF Ticker	Asset Class Covered	AIS=0	AIS=1	AIS=2	AIS=3
BIL	US Treasury Bills	100.00%	66.67%	33.33%	0.00%
SPY	Large Cap US Equities	0.00%	33.33%	66.67%	75.00%
SSO	Large Cap US Equities	0.00%	0.00%	0.00%	25.00%

### 2.3 Rebalancing Schedule

The components of this index are reviewed on a daily basis. The Aggregate Index Signal is calculated on a daily basis after the close of US markets (if a particular date is a full market holiday, no signal will be taken). Index changes are implemented after the close of US markets on the following day that US markets are open.

### 2.4 Pricing Source

For each ETF the pricing from the respective home market (USA) is used.

### 2.5 Index Currency

The index is calculated weekdays between 01:00 and 22:40 (CET) and the index values are disseminated to data vendors every 15 seconds on days when the US equity market is open for trading.

Real-time USD index values are calculated with the latest available traded price. The USD closing values for the index are calculated at 16:50:00 EST with fixed 16:00 London time exchange rates from WM company.

The Index is disseminated in USD.

### 2.6 Identifiers

The MarketVector™ - GammaRoad U.S. Equity Strategy Index is calculated as a price index, total return net index and total return gross index, and has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SL0KQC5	BS3BLX5	SL0KQC	MVGMMAPR	.MVGMMAPR
Total Return Net Index	DE000SL0KQD3	BS3BLY6	SL0KQD	MVGMMATR	.MVGMMATR
Total Return Gross Index	DE000SL0KQE1	BS3BLZ7	SL0KQE	MVGMMMA	.MVGMMMA

The index was launched on 22 December 2023 with a base index value of 100.00 as of 29 January 1993.

## 3 ONGOING MAINTENANCE

### 3 Ongoing Maintenance

#### 3.1 Changes to the Index Guide

Any changes to the Index Guide will be reviewed and approved by the index owner and 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.

#### 3.2 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,
- Event information,
- Other secondary data.

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.

### 3 ONGOING MAINTENANCE

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.

#### 3.3 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.



## 4 CALCULATION

### 4 Calculation

#### 4.1 Index Formula

The indexes are calculated using the Laspeyres' formula:

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

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

- $p_i$  = stock price,
- $q_i$  = number of shares,
- $ff_i$  = free float factor,
- $fx_i$  = exchange rate (USD=1),
- $cf_i$  = weighting cap factor (if applicable, otherwise set to 1),
- $M$  = free-float market capitalization of the index,
- $D$  = divisor.

#### 4.2 Input Data

The following rounding procedures are used for the index calculation:

- Rounding to 2 decimal places:
  - free-float factors ( $ff_i$ ),
- Rounding to 4 decimal places:
  - stock 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 ( $cf_i$ ).

#### 4.3 Divisor Adjustments

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

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### 4.4 Corporate Action Related Adjustments

Corporate actions are cash dividends and stock splits. These are listed on the table below with notes about the necessary changes and whether the divisor will be adjusted.

$p_i$  = stock price,

- Cash dividend (for total return indexes only) Divisor change: Yes

$$p_{(i,adjusted)} = p_i - (Dividend * (1 - Withholding Tax))$$

(In total return gross indexes the withholding tax is 0.)

- Split Divisor change: No

Shareholders receive 'B' new shares for every 'A' share held.

$$p_{(i,adjusted)} = p_i * A/B$$

$$q_{(i,adjusted)} = q_i * B/A$$

With corporate actions where cash dividends or other corporate assets are distributed to shareholders, the price of the stock will drop on the ex-dividend 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.

Corporate actions are announced at least four days prior to implementation.

### 4.5 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.

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 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.

## 4 CALCULATION

- 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.

5 APPENDIX

## 5 Appendix

### 5.1 Changes to the Index Guide

Date	IG Version	Change
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**6 DISCLAIMER**

## 6 Disclaimer

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