

# INDEX GUIDE

BlueStar® Global Logistics Index

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## Regulation and Disclosures

### Regulation

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™ Equity Index family, which is comprised of MVIS®, MarketVector™ and BlueStar® Indexes (together 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.

MVIS® and BlueStar® are registered trademarks of Van Eck Associates Corporation and therefore protected globally against unlawful usage. The use of Indexes from the MarketVector Index family in connection with any financial products or for benchmarking purposes requires a license. Please contact MarketVector Indexes GmbH for more details.

For all indexes composed of data of BM&FBOVESPA please reference to the document “Terms and Conditions BM&FBOVESPA” available on <http://www.solactive.com>.

### 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 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 Owner for final approval.

### 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.

# 1 Index Description

The BlueStar® Global Logistics Index is a thematic index tracking the performance of companies within the global logistics industry.

## 1.1 Index Universe

### 1.1.1 Pure-Play/Thematic Screening

The index only includes companies with at least 50% (25% for current components) of their revenues or operating assets from either the Logistics Services or Logistics Technology themes through the following sub-themes, also referred to as "themes" and "sub-themes" in the sections 2.2 and 2.3.

- Logistics Services
  - Third Party Logistics Services ("3PLs")
  - Express Couriers
  - Real Estate Investment Trusts ("REITs")
    - \* For REITs, if revenue data is unavailable, companies qualify if logistics or warehouse/fulfillment centers represent 50% (25% for current components) of the value of real estate properties owned or managed.
- Logistics Technology
  - Automation Equipment
  - Software
    - \* Software companies qualify if they generate at least 50% (25% for current components) of their revenues from online retail with integrated logistics operations.

### 1.1.2 Exclusion Criteria

The index universe will include only common securities and securities with similar characteristics from financial markets that are freely investable for foreign investors and that provide real-time and historical component and currency pricing, excluding:

- Limited Partnerships (LPs).

### 1.1.3 Exchange Eligibility

Due to investment restrictions securities listed on exchanges in the following countries do not qualify for the index universe: Bahrain, China (domestic market), India, Oman, Russia, Saudi Arabia, and Vietnam.

Companies from financial markets that are not freely investable for foreign investors or that do not provide real-time and historical component and currency pricing may still be eligible if they have a listing on an eligible exchange and if they meet all the size and liquidity requirements on this exchange.

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### 1.2 Investable Universe

#### 1.2.1 Market Capitalization and Liquidity Criteria

Securities must meet the following size and liquidity requirements to be included in the investable universe. If composite country volume data exists, it will be used to identify the investable universe.

All of the following applies for securities that are currently not included in the index:

- free-float of at least 10%,
- float-adjusted market capitalization exceeding 2.00 billion USD (500.00 million USD for logistics technology companies),
- a three-month average daily trading volume of at least 1.00 million USD at the current quarter and at the previous two quarters, and
- at least 0.25 million shares traded per month over the last six months at the current quarter and at the previous two quarters.

All of the following applies for securities already in the index:

- free-float of at least 5%,
- a float-adjusted market capitalization exceeding 2.00 billion USD (500.00 million USD for logistics technology companies), and
- a three-month average daily trading volume of at least 0.20 million USD in at least two of the latest three quarters (current quarter and at the previous two quarters).

In addition, at least one of the following applies for securities already in the index:

- a three-month average daily trading volume of at least 0.60 million USD at the current quarter or at one of the previous two quarters, or
- at least 0.20 million shares traded per month over the last six months at the current quarter or at one of the previous two quarters.

#### 1.2.2 Initial Public Offerings, Special Purpose Acquisition Companies, and Spin-Offs

Modified investability rules are applied for recent Initial Public Offerings (IPOs), spin-offs and post-merger/acquisition Special Purpose Acquisition Companies (SPACs). Such companies qualify for fast-track addition to the investable universe once; either at the next regularly scheduled review if it has been trading since at least the last trading day of the month two months prior to the review month or else at the following regularly scheduled review. In order to be added to the index the IPO security has to meet all of the following size and liquidity requirements:

- the IPO must have a free-float factor of at least 10%,
- the IPO must have a full market capitalization exceeding 2.00 billion USD (500.00 million USD for logistics technology companies),
- the IPO must have an average daily trading volume of at least 1.00 million USD, and
- the IPO must have traded at least 0.25 million shares per month (or per 22 days).

This rule is applicable for newly spun-off companies and post-merger/acquisition SPACs (using the merger/acquisition date like an IPO date) as well.

## 1 INDEX DESCRIPTION

### 1.3 Eligible Universe

#### 1.3.1 Share Class

One share class of each company in the investable universe is included in the eligible universe. In case more than one share class fulfills the above specified market capitalization and liquidity rules, only the largest share class by free-float market capitalization qualifies for the eligible universe. In exceptional cases (e.g. significantly higher liquidity), the Index Owner can decide for a different share class.

In case the free-float market capitalization of a currently not included share class of an index component

- exceeds the free-float market capitalization of the currently selected share class by at least 25%, and
- fulfills all market capitalization and liquidity eligibility criteria for non-components

the currently selected share class will be replaced by the larger one.

In exceptional cases (e.g. significantly higher liquidity), the Index Owner can decide to keep the current share class instead.

#### 1.3.2 Pricing Source

For each company in the investable universe one pricing source qualifies for the eligible universe. In cases where a company has multiple listings (e.g. ADRs, GDRs, or listings on markets other than in the home country), the price sources will be selected to the eligible universe in the following order:

1. US price source,
2. UK price source - London Stock Exchange International Order Book (IOB) only,
3. Home-market price source,
4. Most liquid foreign-market price source.

Once a company has qualified for the investable universe, only the most liquid single exchange price source within the country qualifies for the eligible universe.

In exceptional cases, the Index Owner can assign alternative pricing sources.

## 2 Index Review

### 2.1 Review Schedule

Components of the index are reconstituted and rebalanced on a semi-annual basis in June and December and during reviews in March and September, new float factors and shares are applied, but an adjustment factor will account for a constant component weight and divisor at implementation according to the following schedule:

1. The eligible universe and component selection is determined based on the closing data on the last business day in May and November. If a security does not trade on the last business day in May or November, the last available price for this security will be used.
2. Component weights are determined based on closing data as of the Wednesday prior to the second Friday of June and December. If a security does not trade on the Wednesday prior to the second Friday of June and December, the last available closing data for this security will be used.
3. The underlying review and rebalance data (i.e. weights, shares outstanding, free-float factors, and new weighting cap factors) is announced on the second Friday of June and December.
4. Changes will be implemented and based on the closing prices as of the third Friday of March, June, September, and December. If the third Friday is not a business day, the review will take place on the last business day before the third Friday. If a security does not trade on the third Friday of March, June, September, and December, then the last available price for this security will be used. Changes become effective on the next index dissemination day.

### 2.2 Selection Procedure

Upon an index reconstitution all securities included in the eligible universe are selected to the index. Existing components that fail to meet the eligible index universe criteria for two rebalance periods in a row will not qualify for the index. In case the number of eligible components in a sub-theme falls below the minimum number of components defined below, then the largest remaining securities in the respective sub-theme are selected until the minimum number of components for that sub-theme is reached.

- 3PLs= 15
- REITs= 15
- Express Couriers= 5
- Automation Equipment= 5
- Software= 5

### 2.3 Weighting Scheme

Components of this index are rebalanced both on a semi-annual and ad hoc basis.

#### **Semi-Annual Review/Rebalance**

Upon a semi-annual index review/rebalance, components selected to the index will be weighted according to a tiered equal weight strategy where the weights of Logistics Technology sub-themes are set to 10% and the weights of Logistics Services sub-themes are based on their prevailing weights within the Logistics Services theme.

## 2 INDEX REVIEW

- Tier weights are as follows:
  - The weight of 3PLs, REITs, and Express Couriers is based on its index market capitalization weight within the Logistics sub-theme at the time of each semi-annual review following multiplied by 80%.
  - 10% : Automation Equipment
  - 10% : Software
- Components receive a weight equal to 1/number of components in the same tier then multiplied by the tier weight.

### Ad Hoc Rebalance

The sub-theme weights for this index are reviewed on a weekly basis. A sub-theme rebalance will occur if a Trigger Event occurs. The Ad-hoc rebalance will be based on the closing data on the date when trigger event (Confirmation trigger) occurs. The underlying index data based on the ad-hoc rebalance will be announced three work days after the ad-hoc rebalance date. The changes will be implemented ten work days after the ad-hoc rebalance date. As an exception, rebalances due to Trigger Event signals received between two and four Mondays before the effective date of a June or December review will be implemented along with the June and December review.

- Trigger Event: Trigger Events for eligible sub-themes are based on a quantitative model using Bollinger bands. A Trigger Event occurs when a confirmation trigger, as defined below, takes place.
- Review frequency of the Trigger Events: The Trigger Events are reviewed on a weekly basis, namely on Monday every week. If Monday is an exchange holiday, the previous trading day is used for the review.
- Eligible sub-themes for Trigger Events: The tier weight of 3PLs, Express Couriers, and REITs are eligible sub-themes for Trigger Events.
- Procedure of a trigger event: The relative performance of each eligible sub-theme is measured against the performance of a combination of the remaining eligible sub-themes on a daily basis. The performance calculation of each eligible sub-theme follows total return gross method. On a weekly basis, the resulting weekly relative performance is recorded and the following calculations are made:
  1. The +/- 2 and +/- 3 Bollinger bands based on 18 months of weekly relative performance are recorded.
  2. The current range and the moving averages of the range of the +/- 3 Bollinger bands for three months and 18 month periods are recorded.
- Initial Trigger: An initial trigger occurs if:
  1. The current range is greater than the 18 month moving average of the range and the relative performance rises above or falls below the +/- 2 Bollinger band or
  2. The current range is below the 18 month moving average of the range and the relative performance rises above or falls below the +/- 3 Bollinger band.
- Confirmation Trigger: A confirmation trigger occurs:



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1. At any point following an initial trigger, if the current range is above the 18 month moving average of the range and the current range crosses the three month moving average of the range.

further:

1. If the Initial trigger that precedes a confirmation trigger was caused by a rise above the +2 or +3 Bollinger bands, an underweight (“UW”) position in the subject sub-theme will be taken.
2. If the Initial trigger that precedes a confirmation trigger was caused by a fall below the -2 or -3 Bollinger bands, an overweight (“OW”) position in the subject sub-theme will be taken.

Procedure for the ad-hoc rebalance:

1. If a Trigger Event occurs the following procedure is applied:
  - A Trigger Event can indicate an overweight (“OW”) or underweight (“UW”) position for any eligible sub-theme.
    - OW Trigger Event will set the respective sub-theme weight to 1.33 times its base tier weight.
    - UW Trigger Event will set the respective sub-theme weight to 0.67 times its base tier weight.
  - Base tier weights are as follows:
    - 3PLs= 35%
    - REITs= 25%
    - Express Couriers = 20%
    - Software = 10%
    - Automation Equipment = 10%
2. A Trigger Event occurs in the following case:
  - When a confirmation trigger occurs.
  - There is no time limit for a confirmation trigger to occur after an initial trigger occurs.
3. Upon a Trigger Event the resulting excess or deficiency in the overall index weight around 100% will be spread proportionally among the remaining eligible Sub-Themes such that the weight of any eligible sub-theme does not fall below 0.67 times its base tier weight or does not rise above 1.33 times its Base Tier weight.
4. Upon a Trigger Event the tier weight for non-eligible sub-themes will also be reviewed:
  - If the weight of the non-eligible sub-themes is not below/above 0.67/1.33 times its respective base tier weight, the weight of these sub-themes will not be changed.
  - If the weight of the non-eligible sub-themes falls below/rises above 0.67/1.33 times its respective base tier weight, the respective sub-theme weight will be set to 0.67/1.33 times its respective base tier weight and the resulting excess or deficiency in the overall index weight around 100% will be spread proportionally among all remaining sub-themes.
5. Upon a Trigger Event component weights within a sub-theme relative to other components of the same sub-theme will remain unchanged.

### 3 INDEX DISSEMINATION AND IDENTIFIERS

## 3 Index Dissemination and Identifiers

This index is calculated on weekdays between 01:00 and 22:40 (CET) and index values are disseminated to data vendors every 15 seconds on days when both the NYSE and Luxembourg Exchange are open for trading.

The index is disseminated in EUR.

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 22:40:00 CET with fixed 16:00 London time exchange rates from WM company.

The BlueStar® Global Logistics Index is calculated as a price return index and a total return net index and has the following identifiers:

Index Type	ISIN	SEDOL	WKN	Bloomberg	Reuters
Price Return Index	DE000SLOFUN4	BQOGRY2	SLOFUN	BLOGR	.BLOGR
Total Return Net Index	DE000SLOA105	BMGR581	SLOA10	BLOGRNTR	.BLOGRNTR

The price return version was launched on May 5, 2022 with a base index value of 100.00 as of December 29, 2006 and the total return net version was launched on October 23, 2020 with a base index value of 100.00 as of December 29, 2006.

## 4 General Definition

### 4.1 Free-Float

The indexes are free-float adjusted - the number of shares outstanding is reduced to exclude closely held shares (amount larger than 5% of the company's full market capitalization) from the index calculation.

At times, other adjustments are made to the share count to reflect foreign ownership limits or sanctions. These are combined with the block-ownership adjustments into a single factor. To avoid unwanted double counting, either the block-ownership adjustment or the restricted stocks adjustment is applied, whichever produces the higher result.

Free-float factors are reviewed quarterly.

### 4.2 Index Types/Dividend Payments

The total return index includes all dividend payments (for the total return net indexes on a net-dividend basis, i.e., net dividend equals declared dividend less withholding tax, and for the total return gross indexes on a gross-dividend basis, i.e., gross dividend equals declared dividend) and the price return index only includes special dividends from non-operating income or cash dividends that are either declared as special or extraordinary, or do not coincide with the company's regular dividend distribution schedule.

Australian companies may pay dividends with or without franking credits (unfranked, partially franked or fully franked) attached. Withholding tax will only be applied on the unfranked portion of the dividend but not on the franked portion of the dividend or unfranked portion of the dividend declared to be conduit foreign income.

For the most recent list of withholding taxes, please refer to our website ([www.marketvector.com/withholding-taxes](http://www.marketvector.com/withholding-taxes)).

If the dividend amount for an index component is not available on the ex-date, an amount of zero will be applied. If for the same index component the dividend amount is available after the ex-date and applied to the price of this company, there will still be no adjustment to the index on this day either.

For dividends of Japanese and South Korean companies a post ex-date dividend adjustment is in place due to fact that they do not confirm their dividends prior to the ex-date. The delta amount between the confirmed and estimated dividend amount will be applied by using the index dividend points calculated with the number of shares on the dividend ex-date. In regards to the post ex-date dividend adjustment the historical index levels are not restated.

## 5 Ongoing Maintenance

### 5.1 Changes to Free-Float Factors and Number of Shares

Changes to the number of shares or the free-float factors due to corporate actions like stock dividends, splits, rights issues, spin-offs etc. are implemented on the ex-date.

Any secondary issuance, share repurchase, buy back, tender offer, Dutch auction, exchange offer, bought deal equity offering or prospectus offering will be updated at the quarterly review if the change is smaller than 10%. Changes larger than 10% will be pre-announced (three trading days notice) and implemented on the first dissemination day of the following month (on a best effort basis). If necessary and information is available, resulting float changes will be taken into consideration.

Share changes that result from M&As will impact all indexes of the MarketVector™ Equity Index family (excluding the MarketVector™ Total Global Equity Index) that contain affected companies on the merger effective date with no weighting cap factor change; the 10% share change restriction is removed.

### 5.2 Changes due to Mergers & Takeovers

A merger or takeover is deemed successful if it has been declared wholly unconditional and has received approval of all regulatory agencies with jurisdiction over the transaction. The result of a merger or takeover is typically one surviving security and one or more non-surviving securities that may not necessarily be delisted from the respective trading system(s).

The following treatments are applied for mergers and takeovers containing stock terms:

- If an index component merges with or takes over another index component:
  - The surviving security remains in the index and the other security is deleted immediately from the index. Its shares and float are adjusted according to the terms of the merger/takeover. The index market capitalization of the merged company corresponds to the market capitalization of the two separate companies.
- If a non-index component merges with or takes over an index component:
  - If the surviving security meets the eligible index universe requirements, it will be added to the index. Its shares and float will be adjusted according to the terms of the merger/takeover and will replace the current index component.
  - If the surviving security does not meet the eligible index universe requirements, it will not be added to the index and the current index component will be deleted immediately from the index.

The following treatments are applied for mergers and takeovers with cash terms only:

- If a non-index component merges with or takes over an index component:
  - The index component will be deleted.

### 5.3 Changes due to Spin-Offs

The spun-off company will be added to the index where the parent company is an index constituent according to the transaction terms, with a price of zero, on the ex-date. If the spun-off does not start trading on the ex-date a fixed indicative price will be used until the first trading day. If an indicative price

## 5 ONGOING MAINTENANCE

is not possible to be calculated the spun-off company will be added with a price of zero to the index. If the spun-off does not qualify for the index it will be deleted after two trading days based on its respective closing price.

### 5.4 Additions due to Replacements

For all corporate events that result in a security deletion from the index, there is no replacement. The additional weight resulting from the deletion will be redistributed proportionally across all other index constituents.

### 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 analyzed 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 analyze 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.

### 5.6 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, 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,
- Ownership structures,
- Revenue and asset breakdowns,
- Corporate action information,
- Dividends, volatility and other secondary data.

Regarding extraordinary events, this may include:

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

### 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

## 5 ONGOING MAINTENANCE

- 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 Calculation

#### 6.1 Index Formula

The index is 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 securities (i) in the index):

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

#### 6.2 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 ( $cf_i$ ).

#### 6.3 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.



## 6 CALCULATION

### 6.4 Corporate Action Related Adjustments

Corporate actions range widely from routine share issuances or buy backs to unusual events like spin-offs or mergers. These are listed on the table below with notes about the necessary changes and whether the divisor will be adjusted.

$p_i$  = security price,

$q_i$  = number of shares.

- 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.)
- Special cash dividend (for price and total return indexes) 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.

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

$$q_{(i,adjusted)} = q_i * B/A$$
- Rights Offering Divisor change: Yes

Shareholders receive 'B' new shares for every 'A' share held. If the subscription-price is either not available or not smaller than the closing price, no adjustment will be made.

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

$$q_{(i,adjusted)} = q_i * (A + B)/A$$
- Stock dividend (withholding taxes are applied, if applicable) Divisor change: No

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

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

$$q_{(i,adjusted)} = q_i * (A + B)/A$$
- Stock dividend from treasury (withholding taxes are applied, if applicable) Divisor change: Yes

Stock dividends from treasury are adjusted as ordinary (adjustments for price and total return indexes) or special (adjustments for total return indexes only) cash dividends. Shareholders receive 'B' new shares for every 'A' share held.

$$p_{(i,adjusted)} = p_i - (p_i * B)/(A + B)$$
- Stock dividend of a different company security (withholding taxes are applied, if applicable) Divisor change: No

The shares of the different company will be added according to the terms.
- Addition/Deletion of a company Divisor change: Yes

Net change in free-float market value determines the divisor adjustment.

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- Changes due to a merger/takeover
Divisor change: Yes  
 Net change in free-float market value determines the divisor adjustment. In case of no change, the divisor change is 0.
- Spin-offs
Divisor change: No  
 Shareholders receive ‘B’ new shares for every ‘A’ share held.
- Changes in shares outstanding
Divisor change: Yes  
 Net change in free-float market value determines the divisor adjustment. In case of no change, the divisor change is 0.

With corporate actions where cash dividends or other corporate assets are distributed to shareholders, the price of the security 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.

### 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. 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.
- 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.

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- 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 Changes to the Index Guide

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

Date	IG Version	Change
March 19, 2021	-	Inclusion of SPAC treatment (like for IPOs)
June 1, 2021	-	Changes for BlueStar branded Indexes (as announced in details on 12 April 2021): - Standardised cut-off date, - Liquidity: standardised ADTV criterion/liquidity overlay, removal of bid-ask spread, minimum monthly volume, - Eligibility changing from currencies to resp. exchanges, - Standardised IPO rule, - Standardised holiday calendar, - Standardised free float rule
August 2, 2021	-	30 days announcement period for Index Guide changes
May 4, 2022	-	Inclusion of price return versions
May 31, 2022	-	Clarification: Indices with stricter size/liquidity criteria than in the IPO/spinoff/SPAC rule will take these into account
August 31, 2022	-	Share changes implemented on a monthly basis
August 31, 2022	-	Discretion in case of extraordinary events
August 31, 2022	-	Pricing source: exceptions removed from BlueStar Indexes
November 22, 2022	-	10% weights for Logistics Automation Equipment and Software, Ad-hoc rebalance trigger events that occur between two and four Mondays before a semi-annual review effective date will be implemented along with the semi-annual review
February 28, 2023	-	Removal of 10% share change restriction for M&As for surviving companies
March 1, 2024	-	Maximum weight of components takes precedence over tier weights for Fixed Tiered Weighting Schemes
May 27, 2024	1.00	Initial publication of the individual index guide and discontinuation of the MarketVector Global Equity Index Guide

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