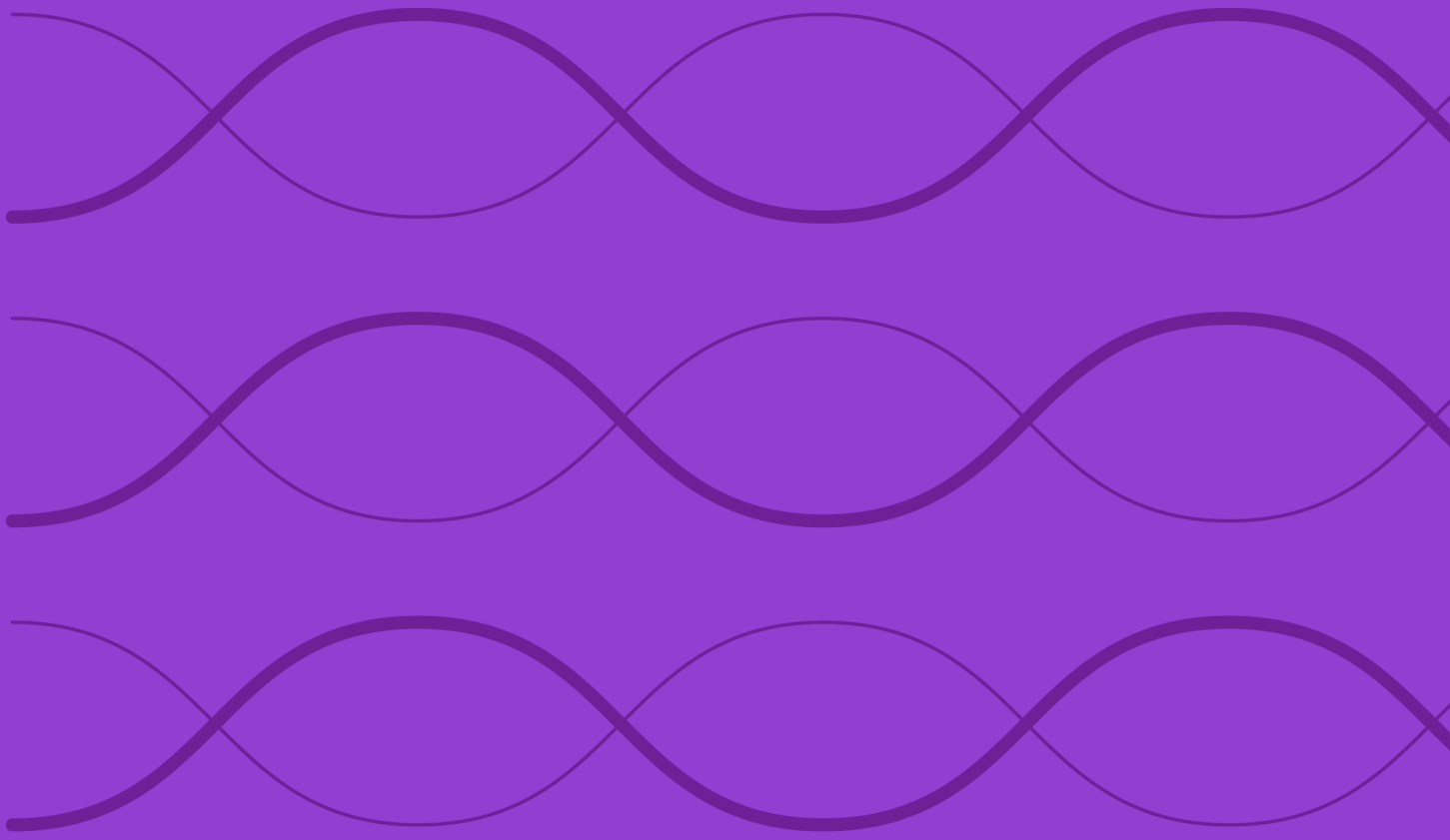
MORNINGSTAR Indexes

Construction Rules for the Morningstar Transatlantic Select 50 Target Volatility 17% Index



June 2025

Overview

The Morningstar® Transatlantic Select 50 Target Volatility 17% Index aims to achieve a target volatility of 17% by providing a varying exposure to an underlying "Base Index". The Base Index is Morningstar® Transatlantic Select 50 GR EUR Index.

This index does not incorporate environmental, social, or governance criteria.

Index Inception and Performance Start Date

The index inception date is October 18th, 2024, and the performance start date, when the first back-tested index value was calculated, is July 20th, 2010.

Index Construction

Methodology Summary

Starting Universe

- Base index is Morningstar Transatlantic Select 50 Index

Index Construction

- Apply the Target Volatility overlay on the Base Index with the below parameters:
  - Target Volatility – 17%
  - Maximum Exposure – 150%
  - Tolerance – 0%
  - Trading Cost Adjustment Factor – 0%
  - Target Exposure Used Lag – 3 days
  - Cash/Borrowing Rate – ESTR

Morningstar® Transatlantic Select 50 Target Volatility 17% Index

Index Universe

The Base index (the Morningstar Transatlantic Select 50 Index) provides exposure to the largest 25 stocks in the U.S. and the largest 25 stocks in the Eurozone by market capitalization.

For more information regarding the Base Index, please refer to the Construction Rules for the Morningstar Transatlantic Select 50 Index.

Index Construction

- Apply the Target Volatility Methodology on the Base Index of Index with the below parameters:
  - Target Volatility – 17%
  - Measured Volatility – 20 days volatility
  - Measured Volatility Calculation Lag – 0
  - Maximum Exposure – 150%
  - Tolerance – 0%
  - Trading Cost Adjustment Factor – 0%
  - Target Exposure Used Lag – 3 days

- Cash/Borrowing Rate – Euro short-term rate (ESTR) – Volume-weighted trimmed mean rate [1]

For more details, refer to Appendix 1.

[1] The EMMI Euro Overnight Index Average (EONIA) rate minus fixed spread of 0.085% (8.5 basis points) is used till October 1, 2019.

Index Maintenance and Calculation

Reconstitution and Rebalancing

The Index contains variable exposure to the Base Index. This exposure is assessed daily, and Index is rebalanced accordingly.

For more information on reconstitution and rebalancing to the Base Index, please visit the Construction Rules for the Morningstar Transatlantic Select 50 Index.

Index files are published according to a custom holiday calendar schedule where files are not published on days when the New York Stock Exchange, Euronext Amsterdam, Deutsche Borse Xetra, and Paris Stock Exchange are all closed.

Index Calculation and Price Data

Index follows calculation and publication as per trading days of below exchanges. Index levels are not calculated or published on days when all of the exchanges below are closed:

EXCHANGE	MIC (Market Identifier Code)
NASDAQ (US)	XNAS
Euronext Paris	XPAR
New York Stock Exchange	XNYS
Xetra	XETR
Euronext Amsterdam	XAMS

Details about index calculations and price data can be found in their respective rulebooks: Morningstar Indexes Calculation Methodology and Equity Closing Prices Used for Index Calculation.

In the event that performance data is missing from one of the underlying component Indexes, previous day Index levels will be used for calculation of the Base Index.

Methodology Review and Index Cessation Policy

The index methodology is continually reviewed to ensure it achieves all stated objectives. These reviews consider corporate action treatment, selection, and maintenance procedures. Subscribers to the index will be notified before any methodology changes are made. For more details, refer to the Morningstar Index Methodology Change Policy.

Morningstar Indexes notifies all subscribers and stakeholders of the index that circumstances might arise that require a material change to, or a possible cessation of, the index. These circumstances are generally not within Morningstar's control and may include significant changes to the underlying market structure, inadequate access to necessary data, geo-political events, and regulatory changes. In addition, factors such as low usage or methodology convergence may result in the cessation of an index.

Because the cessation of the index or benchmark index could disrupt subscriber products that reference this index, all subscribers are encouraged to have robust fallback procedures if an index is terminated. For more details, refer to the Morningstar Index Decommissioning Policy.

Data Correction and Precision

Intraday Index Data Corrections

Commercially reasonable efforts are made to ensure the accuracy of data used in real-time index calculations. If incorrect price or corporate action data affects index calculations, corrections are applied prospectively.

Index-Related Data and Divisor Corrections

Incorrect pricing and corporate action data for individual issues in the database will be corrected upon detection. In addition, an incorrect divisor of an index, if discovered if discovered within two days of its occurrence will be fixed retroactively on the day it is discovered to prevent an error from being carried forward. Commercially reasonable efforts are made to correct an older error subject to its significance and feasibility.

For more details, refer to the Recalculation Guidelines.

Exceptions

While Morningstar will seek to apply the methodology as described within this document, the market environment, supervisory, legal, financial, or tax reasons may require an alternative approach to be adopted. A decision to take an alternative approach will be made by the Morningstar Index Methodology Committee, and in all instances, the application of a nonstandard process will be reported to the Morningstar Index Oversight Committee.

Appendixes

Appendix 1: Target Volatility Index Calculation

Total Return Calculation

The total return of the Target Volatility Index is comprised of two sources of return – the return on the Base Index, and the return on the cash investment. To calculate the return on the Base Index, we compare today's closing value to the previous day's close. To calculate the return on the cash investment, Morningstar uses the daily Euro short-term rate as an approximation of the interest gain on the cash investment.

When the Target Volatility Index is in a leveraged position (i.e. Realized exposure of the index is above 100%), there will be no cash investment. However, given the exposure to the Base Index is over 100%, it is essentially borrowing money to invest in the Base Index. Morningstar uses the Euro short-term rate to calculate the borrowing cost associated with the leveraged position.

The total return index calculation equation is shown below.

$$TR_t = TR_{t-1} \times [1 + w_{t-3} \cdot (\frac{B_t}{B_{t-1}} - 1) + (1 - w_{t-3}) \cdot (\frac{ESTR_t}{ESTR_{t-1}} - 1)]$$

where:

TR_t	=	Total Return Index Level on date t, rounded to two decimal places
W_{t-3}	=	Realized exposure of the index on date t-3 (Target Exposure Used Lag)
B_t	=	Base index level on date t
$ESTR_t$	=	Index capitalizing at the ESTR rate on date t with a base value of 1 on the inception date of the base index. ESTR Index calculation follows same calendar as Target Volatility Index.

$$ESTR_t = ESTR_{t-1} * [1 + rates_{t-1} * dcf(t-1, t)]$$

where:

dcf(t-1, t)	=	(Actual / 360) day count fraction between calculation date t-1 and calculation date t
$rates_{t-1}$	=	The ESTR[1] Volume Weighted Trimmed Mean Rate published on t-1 and based on transactions conducted and settled on day t-2 (reference date).

Measuring Volatility

The measured volatility of the base index is taken as the trailing 20-business-day historic volatility.

$$measured\_volatility\_t = vol_{20,t}$$

Where:

$$vol_{20,t} = \sqrt{252 \; x \; \frac{20}{19} \; x \; \left[\frac{1}{20}\sum_{k=0}^{19} Ln^2\left(\frac{B_{t-k}}{B_{t-k-1}}\right) - \left(\frac{1}{20}\sum_{k=0}^{19} Ln\left(\frac{B_{t-k}}{B_{t-k-1}}\right)\right)^2\right.}$$

Determining the Target Exposure

The target exposure of the Morningstar Transatlantic Select 50 Target Volatility 17% Index to the base index is determined by the formula below, with the aim of maintaining a target volatility. It is based on the ratio between the target volatility and the measured historic volatility of the base index and will vary between zero and the maximum allowable exposure.

$$w_{Target(t)} = min\left(maximum\ exposure, \frac{target\_volatility}{measured\_volatility\_t}\right)$$

To mitigate daily rebalancing of Target Volatility Indexes, the target exposure is updated only when there is a change that is greater than the exposure tolerance percentage. This index uses a tolerance of 0%, implying base index exposure is set to target on each calculation day.

Trading Cost Adjustment Factor, or TCAF is used to account for transaction costs. This index uses a TCAF of 0%

Volatility Calculation Calendar

Volatility Calculation is executed according to an intersected calendar schedule, meaning holiday days are implemented when any single of the below exchanges are on holiday. The intersected calendar schedule is made up of the following exchanges

EXCHANGE	MIC (Market Identifier Code)
NASDAQ (US)	XNAS
Euronext Paris	XPAR
New York Stock Exchange	XNYS
Xetra	XETR
Euronext Amsterdam	XAMS

Appendix 2: Glossary

Term	Description
Reconstitution	During each reconstitution, the steps mentioned in the index construction process are performed, resulting in membership reset.
Rebalance	During each rebalance, the weights are adjusted for updated free-float and shares outstanding data.

Appendix 3: Morningstar Transatlantic Select 50 Decrement Indexes

Index Name	Underlying Index	Base value	Base Date	Performance Inception Date	Inception Date
Morningstar Transatlantic Select 50 Target Volatility 17% Index Decrement 50 Point GR	Morningstar Transatlantic Select 50 GR	900	Oct. 18, 2024	Jul. 16, 2010	Oct. 18, 2024

Appendix 4: Decrement Levels

The index levels are adjusted by deducting a predetermined value of index points from the gross return, or GR, or fixed percentage point from the net return, or NR, levels of the base index. These constant markdowns are applied to the base index daily.

Return Variant of the Base Index	Base Currency	Decrement Type	Decrement Frequency	Decrement Application	Decrement Value	Day Count Convention
Net Total Return Gross Total Return	EUR	Fixed Percentage Decrement or Fixed Point Decrement based on the index version.	Daily	Geometric application for both decrement types.	5% decrement based on the Net Total Return 50-point decrement based on Gross Total Return	*ACT/365

*ACT is the number of calendar days between two calculation days.

Formula for Fixed Point Decrement

Geometric Decrement Calculation

$$IV_t = (IV_{t-1} \times (U_t \div U_{t-1})) - (D \times (Act(t-1,t) \div DayCount))$$

Where:

IV_t = *The value of the Fixed Point Decrement Index for calculation day t*

IV_{t-1} = *The value of the Fixed Point Decrement Index for day t-1*
Ut = *The value of the base Index for calculation day t*
$Ut\text{-}1$ = *The value of the base Index for calculation day t-1*
$Act(t\text{-}1,t)$ = *Number of calendar days between calculation day t-1 and calculation day t*
D = *The Decrement value expressed in Index points*
$DayCount$ = *Set to 365*

Formula for Fixed Percentage Decrement

Geometric Decrement Calculation

$$IV_t = IV_{t-1} \times ((U_t \div U_{t-1}) - (c \times (Act(t-1,t) \div DayCount))$$

Where:

IV_t = *The value of the Fixed Percentage Decrement Index for calculation day t*

IV_{t-1} = *The value of the Fixed Percentage Decrement Index for day t-1*
Ut = *The value of the base Index for calculation day t*

Ut-1 = The value of the base Index for calculation day t-1
Act(t-1,t) = Number of calendar days between calculation day t-1 and calculation day t
c = The Decrement value expressed in Fixed Percentage
DayCount = Set to 365

Appendix 5: Modifications to the Rulebook

Section	Description of Change	Update Date
Data Correction and Precision	Computational and Reporting Precision section removed	September 2024

About Morningstar Indexes

Morningstar Indexes was built to keep up with the evolving needs of investors—and to be a leading-edge advocate for them. Our rich heritage as a transparent, investor-focused leader in data and research uniquely equips us to support individuals, institutions, wealth managers, and advisors in navigating investment opportunities across major asset classes, styles, and strategies. From traditional benchmarks and unique IP-driven indexes to index design, calculation, and distribution services, our solutions span an investment landscape as diverse as investors themselves.

Morningstar Indexes Methodology Committee

The Morningstar Indexes Methodology Committee oversees all new index development, index methodology changes, and cessation of indexes for any indexes where Morningstar owns the intellectual property. This committee is also charged with ensuring that indexes align with Morningstar Research principles and values. The group comprises members of the index team with index research, product development, product management, client service, index implementation, and operation expertise who provide the first layer of governance over index design and methodology.

Morningstar Indexes Operations Committee

The Morningstar Indexes Operations Committee governs the processes, systems, and exception handling of the day-to-day management of all live indexes, including index rebalancing and reconstitution, restatements, market classification, and contingency management. The committee oversees the annual review of index methodology (as required by U.K. and EU benchmark regulations, or BMR), ensuring that methodologies remain fit for purpose and continue to achieve their stated investment objectives. The group comprises members of the index team with data, operations, corporate actions, product development, index launch, client service, and index management experience who provide the first layer of governance over index operations.

Morningstar Indexes Oversight Committee

The Morningstar Indexes Oversight Committee is responsible for the index oversight function as per the requirements of the U.K. and European BMR, providing independent oversight of all aspects of the governance of benchmark administration as required by the relevant BMR. Its remit extends to all calculation and administration-related business activities of Morningstar Indexes, including administration of Morningstar-owned benchmarks as well as client-owned benchmarks and index calculation. The oversight function is part of the organizational structure of Morningstar but is separate and independent from the index business, index management, and the other index committees.

www.indexes.morningstar.com

Contact Us

indexes@morningstar.com

MORNINGSTAR®