

INDEX METHODOLOGY

INTRODUCTION

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This document sets forth the methodology for the Northern Trust Developed Markets ex US Quality Low Volatility Index.

The Index is currently calculated and disseminated by Refinitivⁱ, and had an inception date of February 28, 2019 at a base value of 1000.

OVERVIEW

Northern Trust Developed Markets ex US Quality Low Volatility Index

The Northern Trust Developed Markets ex US Quality Low Volatility Index is designed to construct a high quality universe of companies that possess lower overall absolute volatility (i.e. risk) relative to an eligible developed market universe which excludes the United States. An emphasis is placed on a company's income and capital growth, while also reducing overall volatility of returns relative to the eligible universe. The proprietary Northern Trust quality factor is used to identify companies that exhibit strength in profitability, management efficiency and cash flow.

ELIGIBLE SECURITIES

In order to be eligible for inclusion in the Northern Trust Developed Markets Quality Low Volatility Index, a security must be a constituent of the Northern Trust Global Index, be domiciled in a developed market country (see list below), excluding the United States, and also designated as a *Large/Mid cap*ⁱⁱ company per Northern Trust's market capitalization classification.

| Developed Countries |
|---------------------|
| Australia |
| Austria |
| Belgium |
| Canada |
| Denmark |
| Finland |
| France |
| Germany |
| Hong Kong |
| Ireland |
| Israel |
| Italy |



| |
|----------------|
| Japan |
| Netherlands |
| New Zealand |
| Norway |
| Portugal |
| Singapore |
| Spain |
| Sweden |
| Switzerland |
| United Kingdom |

This eligible universe will be considered the benchmark herein.

In addition to the criteria above, securities ranking in the lowest quintile of qualityⁱⁱⁱ based on our proprietary scoring model^{iv} are ineligible for inclusion in the index.

DETAILED METHODOLOGY

The construction of the Index begins with a universe of eligible securities (defined in “Eligible Securities”). All eligible securities are then re-weighted by their float adjusted market capitalizations, and optimized to achieve a reduction in volatility, as well as obtain a quality tilt within the index relative to the eligible universe.

In addition to this main objective, systematic risk is managed during the optimization utilizing several constraints. These constraints are found below (bounds shown as relative weightings to the eligible universe unless noted otherwise):

- Security level constraint (+/- 5%) with a minimum absolute weight of 0.02%
- Liquidity^v constraint: to limit a constituent’s maximum weight in the index to its weight in the eligible universe, when the constituent’s liquidity score in the eligible universe falls in the bottom decile
- Sector (+/- 5%), Industry (+/- 6%), country (+/- 4 %), region (+/- 4%), region sector (+/- 5%), and style factor neutrality (excluding volatility)
- Historical Beta (0.65x)^{vi}
- Turnover constraint (to limit the maximum turnover to approximately 12% on any rebalance date)

All of the systematic risk constraints are placed in the constraint hierarchy so when a solution is not feasible due to hard constraints, a relaxed solution can be found.



Any changes to this methodology will be announced to clients at least sixty (60) days in advance prior to becoming effective.

REBALANCING AND RECONSTITUTION

The Northern Trust Developed Markets ex US Quality Low Volatility Index is reconstituted quarterly and adjusted intra-period only in connection with errors, securities' eligibility, exchange connectivity, float changes and corporate actions, including, but not limited to, initial public offerings and spin-offs.

The index is reconstituted in February, May, August, and November on the last business day of the month in which the U.S. equity markets are open for a full day of trading^{vii}, and becomes effective immediately after the close. The Northern Trust Developed Markets ex US Quality Low Volatility Index reserves the right to postpone each reconstitution date for up to one week with prior client notification of such a postponement.

All changes to constituents and weightings will be announced to clients at least two (2) days prior to reconstitution or rebalancing and with definitive weights after the close of the reconstitution or rebalancing date before the following day's market opening.

INDEX MAINTENANCE / CORPORATE ACTION-DRIVEN CHANGES

The Index will adopt all corporate action related policies and procedures used by Refinitiv. A complete list of Refinitiv's methodology is available by request at NT_Index_Services@ntrs.com.

Disclaimer: Returns of the indexes do not typically reflect the deduction of investment management fees, trading costs or other expenses. It is not possible to invest directly in an index. Indexes are the property of their respective owners, all rights reserved.

ⁱ Refinitiv is a subsidiary of The London Stock Exchange Group

ⁱⁱ Large/Mid cap, as stated in the Northern Trust Global Index methodology document.

ⁱⁱⁱ This factor seeks to identify companies that exhibit stable returns relative to the market, a characteristic which we define as quality.

^{iv} The core components of the proprietary quality scoring model are based on quantitative ranking of various metrics obtained from company filings. These scores have three components: Management Efficiency (e.g. corporate finance activities), Profitability (e.g. assess the reliability and the sustainability of financial performance), and Cash Flow (e.g. cash flow generation).

^v Liquidity of an asset measures the extent to which that asset can be bought or sold in the market without impacting the price of the asset. Examples of some commonly used liquidity measures include but are not



limited to: Share Turnover (number of shares traded divided by the total number of shares outstanding), Average Daily Volume (number of shares traded divided by a period of time), and Bid-Ask Spread (the difference or spread between the price a buyer is willing to pay for an asset, and the price a seller is willing to accept for an asset).

^{vi} Beta is the coefficient term of the regression of a security versus the market, and is also a measure of the systematic, non-diversifiable risk of a security or portfolio. Beta represents the market sensitivity, relative to a given market index and time period. For example, a security exhibiting a beta of 1.0 indicates that the security has the same sensitivity as the market index it is being compared to, while a security with a beta of 1.5 would indicate that the security has 1.5 times the sensitivity of the market index.

^{vii} Per the holiday calendar located at nyse.com

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