

INDEX METHODOLOGY

Northern Trust

50 South La Salle Street
Chicago, Illinois 60603
Nt_index_services@ntrs.com
northerntrust.com

INTRODUCTION

This document sets forth the methodology for the Northern Trust US Corporate Bond Index Family.

The indices included in the Northern Trust US Corporate Bond Index Family are constructed, calculated, and disseminated by Intercontinental Exchange Data Services (ICE), and had the inception dates listed below, each with a base index value of 1000.

- Northern Trust US Corporate Bond Index (NTUCB) had an inception date of September 30, 2014.
- Northern Trust Investment Grade US Corporate Bond Index (NTUIGCB) had an inception date of December 31, 2015.
- Northern Trust Investment Grade US Corporate Bond Index (NTUICB) had an inception date of September 30, 2014.
- Northern Trust Investment Grade US Long Corporate Bond Index (NTUILCB) had an inception date of May 29, 2015.
- Northern Trust High Yield US Corporate Bond Index (NTUHCB) had an inception date of March 29, 2018.

OVERVIEW

Northern Trust US Corporate Bond Index Family

The Northern Trust US Corporate Bond Index Family measures the performance of a universe of US dollar denominated corporate bonds issued in the United States.

INDEX ELIGIBILITY

The Northern Trust US Corporate Bond Index (NTUCB)

Currency: A security must be issued in U.S. dollars to be eligible for inclusion in the index.

Market of Issue: Each security must be publicly issued in the U.S. and SEC registered or eligible for resale under 144A of the Securities Act of 1933, to be eligible for inclusion in the index.



NTAC:3NS-20

Rating: Each security must be presently rated and not in default status¹ to be eligible for inclusion in the index. Securities that enter into default post-reconstitution are removed at the next scheduled reconstitution date.

Maturity: Each security must have a final maturity greater than or equal to one year from the reconstitution date in order to be eligible for inclusion in the index.

Size: Each security must have \$100 million or more in outstanding principal at each reconstitution to be eligible for inclusion in the index.

Bond Type:

Inclusions: Fixed and floating rate debentures, Medium Term Notes (MTN), callable and puttable bonds, original issue zero-coupon bonds, 144A securities with or without registration rights, convertible, warrant-bearing and contingent capital securities, callable perpetual securities provided they are at least 1 year from the first call date, Fixed to floating capital securities (hybrids), Payment in Kind (PIK) bonds, step-up coupons and those that change according to a predetermined schedule.

Exclusions: Non-corporate bonds, strips, inflation-linked bonds, securitized and covered bonds, private placements not governed under 144A of the Securities Act of 1933, bonds offered under Reg S, bonds with equity like features (warrants, convertibles, contingent capital securities), Certificates of Deposit (CD), Enhanced Equipment Trust Certificates (EETC), Dividends Received Deduction (DRD) and Qualified Dividend Income (QDI)-eligible, USD 25/USD 50 par bonds/retail bonds, Eurodollars.

Debt Seniority: Senior and subordinated bonds are eligible for inclusion in the index, however covered bonds are to be excluded.

Pricing: Daily pricing is provided by Intercontinental Exchange Data Services (ICE)

SUB-INDEX ELIGIBILITY

The Northern Trust High Yield US Corporate Bond Index (NTUHCN)

The Northern Trust High Yield US Corporate Bond Index is a sub-index of the Northern Trust US Corporate Bond Index with additional constraints and exclusions.

Ratings: The range of credit ratings for inclusion is from Ca/ C-/C- to Ba1/BB+/BB+. For issues rated by all three ratings agencies, a composite rating is created by using the average of the three ratings. When two ratings are present, a composite rating is created by using the average of the two ratings. At minimum, a single non-investment grade rating is required for a security to be eligible for the index. Bonds that are upgraded to investment grade status or that



enter into default post-reconstitution are removed at the next scheduled reconstitution.

Maturity: Each security must have a final maturity of at least one year at the time of each reconstitution, and a final maturity of at least 18 months at the time of issuance.

Size: Each security must have \$150 million or more in amount outstanding principal at each reconstitution to be eligible for inclusion in the index.

Bond Type:

Inclusions: All security types present in the Northern Trust US Corporate Bond Index will be eligible for inclusion in the Northern Trust High Yield US Corporate Bond Index unless denoted in the exclusions category below.

Eligible Countries (Country of Risk): Securities must have risk exposure to following members of the G10 Currencies and G12 Countries: Australia, Belgium, Canada, Denmark, France, Germany, Italy, Japan, Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland, United Kingdom, and the United States

Exclusions: When Issued Securities, Securities with a Country of Risk other than the list of eligible countries provided above, Securities in Default, and securities that are not presently rated by at least one bond rating agency.

The Northern Trust Investment Grade US Corporate Bond Index (NTUIGCB)

The Northern Trust Investment Grade US Corporate Bond Index is a sub-index of the Northern Trust US Corporate Bond index with additional constraints and exclusions.

Ratings: The minimum credit rating for inclusion in the index is Baa3/BBB-/BBB-. For issues rated by all three ratings agencies, a composite rating is created by using the average of the three ratings. When two ratings are present, a composite rating is created by using the average of the two ratings. At minimum, a single investment grade rating is required for a security to be eligible for the index. Bonds that are downgraded below investment grade or that enter into default post-reconstitution are removed at the next scheduled reconstitution.

Maturity: Each security must have a final maturity of at least one year.

Size: Each security must have \$250 million or more in outstanding principal at each reconstitution to be eligible for inclusion in the index.

Bond Type:



Inclusions: All security types present in the Northern Trust US Corporate Bond Index will be eligible for inclusion in the Northern Trust Investment Grade US Corporate Bond Index unless denoted in the exclusions category below

Exclusions: Floating rate notes, 144A securities without registration rights, fixed to floating rate capital securities (hybrids) which convert within one year of the reconstitution date, perpetual securities, illiquid securities with no external pricing source.

The Northern Trust Investment Grade US Corporate Bond Index (NTUICB)

The Northern Trust Investment Grade US Corporate Bond Index is a sub-index of the Northern Trust US Corporate Bond index with additional constraints and exclusions.

Ratings: The minimum credit rating for inclusion in the index is Baa3/BBB-/BBB-. For issues rated by all three ratings agencies, a composite rating is created by using the average of the three ratings. When two ratings are present, a composite rating is created by using the average of the two ratings. At minimum, a single investment grade rating is required for a security to be eligible for the index. Bonds that are downgraded below investment grade or that enter into default post-reconstitution are removed at the next scheduled reconstitution.

Maturity: Each security must have a final maturity of at least one year and up to (but not including) ten years, at the time of each reconstitution.

Size: Each security must have \$250 million or more in outstanding principal at each reconstitution to be eligible for inclusion in the index.

Bond Type:

Inclusions: All security types present in the Northern Trust US Corporate Bond Index will be eligible for inclusion in the Northern Trust Investment Grade US Corporate Bond Index unless denoted in the exclusions category below

Exclusions: Floating rate notes, 144A securities without registration rights, fixed to floating rate capital securities (hybrids) which convert within one year of the reconstitution date, perpetual securities, illiquid securities with no external pricing source.

The Northern Trust Investment Grade US Long Corporate Bond Index (NTUILCB)

The Northern Trust Investment Grade US Long Corporate Bond Index is a sub-index of the Northern Trust US Corporate Bond index with additional constraints and exclusions.



Ratings: The minimum credit rating for inclusion in the index is Baa3/BBB-/BBB-. For issues rated by all three ratings agencies, a composite rating is created by using the average of the three ratings. When two ratings are present, a composite rating is created by using the average of the two ratings. At minimum, a single investment grade rating is required for a security to be eligible for the index. Bonds that are downgraded below investment grade or that enter into default post-reconstitution are removed at the next scheduled reconstitution.

Maturity: Each security must have a final maturity of ten years or greater, at the time of each reconstitution.

Size: Each security must have \$250 million or more in outstanding principal at each reconstitution to be eligible for inclusion in the index.

Bond Type:

Inclusions: All security types present in the Northern Trust US Corporate Bond Index will be eligible for inclusion in the Northern Trust Investment Grade US Long Corporate Bond Index unless denoted in the exclusions category below

Exclusions: Floating rate notes, 144A securities without registration rights, fixed to floating rate capital securities (hybrids) which convert within ten years of the reconstitution date, perpetual securities, illiquid securities with no external pricing source.

INDEX CONSTRUCTION

The construction of each index begins with a securities screen to determine eligibility for inclusion in the index (see “Index Eligibility” and “Sub-Index Eligibility sections above). Once all eligible securities have been identified, a market value weighting schemeⁱⁱ is applied to derive each index constituents’ weight.

RECONSTITUTION & REBALANCING

The Northern Trust US Corporate Bond Index Family is reconstituted monthlyⁱⁱⁱ on the last business day of the month in which U.S. bond markets are open for trading^{iv}, and becomes effective immediately after the market close. Intra-period adjustments may be made at the discretion of the index provider in connection with errors, changes in eligibility, and corporate actions.

The Northern Trust US Corporate Bond Index Family 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, and again with definitive weights after the close of the reconstitution



date, before the following business day's market open.

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 As defined by any of the three major credit agencies

ⁱⁱ Market value weighting is calculated based on a constituent's current market value of debt outstanding (including accrued interest), divided by the total market value of all debt outstanding (including accrued interest) within the eligible universe.

ⁱⁱⁱ Data used to strike the forward index is locked down for construction purposes eight business days prior to month end.

^{iv} Per the US holiday schedule posted at www.sifma.org/services/holiday-schedule/

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