



# **Invesco Investment Grade Defensive Index Methodology**

December 2021

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# Invesco Investment Grade Defensive Index Methodology

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## Index Overview

### Description

The Invesco Investment Grade Defensive Index (the “Index”) is a member of the Invesco Fixed Income Factor Index family. The Index employs a factor-based approach to provide exposure to quality in fixed income. High quality bonds are characterized as those with higher credit ratings and shorter maturities relative to others. This quality approach may provide increased opportunities for downside protection during periods of market stress. Overall, the Index seeks to provide enhanced risk-adjusted returns relative to a comparable market value weighted index.

### Index Universe

The Index Universe of eligible securities includes US dollar denominated bonds issued by US companies. Appendix 1 describes the process by which companies are assigned to their appropriate countries. The universe only includes investment grade bonds with an average credit rating that is higher than BBB- (or equivalent). The average credit rating is derived from the numerical value equivalent of a security’s available credit rating from Standard and Poor’s, Fitch, and Moody’s (see Appendix 2). The letter designation of the average credit rating follows that of Standard and Poor’s. The bonds must be relatively liquid, as proxied by issue size. Specifically, all bonds in the Index Universe must have a face value to remain of at least \$600 million, and only the largest bond from each issuer is included. In the case of multiple bonds from the same issuer with the same face value outstanding, the bond with fewer years to maturity is selected. If the years to maturity are identical, the bond issued most recently is selected. If the previous criteria are identical, preference will be given to SEC-registered bonds followed by Rule 144A bonds. All bonds must also have at least two years and no more than 10 years until final maturity. To be eligible for Index inclusion, these bonds must make coupon payments. Qualifying bond types include: fixed rate, bullet bonds, sinking funds, amortizing, puttable, extendable, callable, and step-up bonds with schedules known at issuance. 144A and SEC registered bonds, publicly underwritten medium-term notes, and Eurodollar bonds are all eligible for Index inclusion. The Index Universe explicitly excludes all securities with characteristics that are inconsistent with traditional coupon bonds. These include preferred shares, bonds with warrants, perpetual, zero coupon, floating rate notes, zero step-ups (GAINS), Reg S, Reg D, inflation-linked, fixed-to-float, pay-in-kind, retail, and convertible bonds. Finally, the Index Universe is limited to those securities for which pricing data is available from the Index Calculator, see “Index Calculation and the Role of the Calculation Agent”.

### Security Selection

All eligible securities are ranked by the Quality Score as defined in the Index Details section on page 5. Initially, the top 40% of bonds on the Quality Score are included in the Index. Going forward, any security that is not an Index constituent is added to the Index if it is in the top 30% of Quality Scores. Any bond that is currently an Index constituent will remain in the Index if it is in the top 50% of Quality Scores and meets all Index Universe eligibility criteria. The separate threshold for new and existing Index constituents creates a buffer that helps to manage Index turnover.

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### **Security Weighting**

Index constituents are equally weighted.

All security weighting criteria are applied on the Reference Date of an Index update (see Updates on page 6).

### **History**

The Index was launched on April 24, 2018. History is available for the Index since its base date of December 31, 2007. The base value of the Index is 100.

### **Related Indexes**

Several other related Invesco fixed income market beta indexes are available. Similar to the Invesco Investment Grade Defensive Index, these indexes are market value weighted; however, they differ in their regional and sector coverage. Please visit [www.InvescoIndexing.com/en/indexes/fixed-income](http://www.InvescoIndexing.com/en/indexes/fixed-income) to learn more about these related indexes.

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## Index Details

A Quality Score for each eligible bond is computed as a combination of two quality factors, Maturity and Credit. Bonds with fewer years to maturity are considered higher quality. The Maturity factor is calculated as the product of -1 and the years to maturity.

Bonds with higher credit scores are also viewed as higher quality. The Credit factor is a composite credit score based on ratings from Standard and Poor's, Fitch, and Moody's. Each agency's rating is converted into a numerical value (see Appendix 2), and the bond's Credit factor is calculated as an equally weighted average of the numerical scores from the three agencies. If a score is missing from any agency, then Credit is calculated as an average of the remaining scores.

The Maturity and Credit factors for each bond are standardized into z-scores across the Index Universe, and the Quality Score for each bond is computed as an equally weighted combination of these two factors.

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## Updates

### Index Rebalance

The Index is rebalanced each calendar month (“Rebalance Months”). At that time, the set of eligible securities is determined, securities are selected for membership in the Index, and the Index is reweighted. See “Index Overview” on page 3 for more information about security selection and weighting.

### Index Key Dates

The key dates are as follows. The Index Review Team (see Governance on page 9) may change these dates for reasons including market holidays. Any such changes will be publicly announced with as much advance notice as possible under the circumstances. All events take place after the close.

Event	Day	Description
Reference Date	Six business days before the last business day of the month	Data is captured for Index construction
Announcement Date	Three business days before the last business day of the month	Summary of Index rebalance changes are announced to public
Pro-Forma Date	Three business days before the last business day of the month	Preliminary Index weights begin to be distributed to Index subscribers
Effective Date	Calendar month-end, whether or not the date is also a business day	Rebalanced Index weights are finalized

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## **Index Calculation and the Role of the Calculation Agent**

The calculation agent for the Index (“the Calculator”) is ICE Data Indices, LLC. The Calculator evaluates the closing value of the Index, updates the Index at Rebalance Months based on constituent selections and weightings determined either by Invesco Indexing LLC or the Calculator (with appropriate oversight and review by Invesco Indexing), taking into account Corporate Events (see Corporate Events on page 8), and disseminates the values of the Index to Invesco Indexing LLC and major index data distribution partners (see Index Information and Data Dissemination on page 11).

### **Calculator Input Data Used and Hierarchy of Input Data**

The Index is calculated using closing prices or last transacted prices of underlying constituent securities from exchanges or exchange equivalents. Should this type of data be unavailable, the Index may be calculated using quotes or evaluated data or, in case when continued availability of transacted security prices from security exchanges is suspended, the Calculator reserves the right to exercise a judgement call, including carrying forward the latest available closing price.

### **Use of Discretion and/or Expert Judgement**

No discretion or expert judgement is exercised by Invesco Indexing LLC in the determination of daily index pricing. Rules-based index methodologies, which cover index construction, maintenance and calculation, provide that discretion is not used in the daily pricing of the indexes except in unusual cases not effectively addressed by the methodology, which could be exercised by the Calculator. These include, but may not be limited to:

- Corporate events not previously encountered,
- Structural changes to the underlying markets,
- Operational issues at security exchanges,
- Geo-political events,
- Technological problems / failures, or
- Natural disaster or other business continuity process-related event.

In such circumstances, the calculating agent will inform Invesco Indexing LLC of any discretion being used.

### **Potential Limitations of the Methodology and Benchmark Calculation**

The potential limitations of daily Index calculation include circumstances where the prices of constituent elements of the Index are not available, either because there are insufficient participants or because the exchange(s) / exchange equivalent(s) suffers an unexpected outage or closure or Invesco and/or the Calculator is denied permission to use such data for determining the Index. In such circumstances an announcement will be made to notify clients, including whether the Index will not be published or delayed in publication.

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## Corporate Events

The Calculator identifies and adjusts for corporate events based on the following policy.

Corporate Events	Index Adjustments
Accrued Interest and Cash	With the exception of US securitized products (MBS, CMBS, CMO and ABS), accrued interest is calculated assuming next-day settlement. Accrued interest for US securitized products assumes same-day settlement. Cash flows from bond payments that are received during the month are retained in the Index until the end of the month and then are removed as part of the rebalancing. Cash from coupon payments is reinvested at the Secured Overnight Financing Rate (SOFR) while it is held in the Index.
Called Securities	Securities that are announced as called, and for which the amount called meets certain minimum thresholds, are removed from the Index at the next rebalancing provided this occurs on or before the third business day before the last business day of the month. Cash flows from called bonds that are received during the month are retained in the Index until the end of the month and then are removed as part of the rebalancing. Cash from called bonds does not earn any reinvestment income while it is held in the Index.
Default Treatment	Defaulted securities are excluded from the Index at the next rebalancing following the default event, provided this occurs on or before the third business day before the last business day of the month. Securities are considered in default based on their individual legal terms. A rating of "D" by a major rating agency is not a consideration for default status.
No Re-entry Once Removed for Lack of Pricing	If a bond is removed due to lack of pricing that bond will not qualify for entry into the Index at a later date even if adequate pricing subsequently becomes available.

As mentioned above in the Index Calculation and the Role of the Calculation Agent section, the Calculator manages corporate events for this Index using its standard corporate event framework and its divisor index methodology. For additional details, please refer to <https://indices.theice.com>.



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## Index Policy

All Index constituents are evaluated daily for data needed to calculate Index levels and returns. The Index follows the general Index policies of the Calculator as described below.

### Announcements

Best efforts are made to announce any changes to Index methodology well ahead of time via the Invesco Indexing website and via email to all Index clients.

### Pro-Forma Files

Invesco Indexing provides constituent pro-forma files (*IND10Projected\_yyyymmdd.csv*) each time the Index rebalances. The pro-forma file is typically provided daily in advance of the rebalancing date and contains all constituents and their corresponding weights effective for the upcoming rebalancing. The actual weight of each security at the Index rebalance typically differs from the pro-forma weights due to market movements.

### Holiday Schedule

The Index is calculated on global business days and the last calendar day of every month. If the last calendar day of the month falls on a weekend, all prices are rolled from the last business day and accrued interest is calculated for the new settlement date. The Index is not calculated on Global Holidays (defined as weekdays on which WM Company/Reuters does not publish closing FX rates) unless a Global Holiday falls on the last calendar day of the month, in which case prices are updated in all local markets that are open. Prices in all markets that are closed are rolled from the prior business day and accrued interest is calculated for the new settlement date.

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## Governance

The Index is managed by the Index Review Team (IRT). The IRT consists solely of members of Invesco Indexing. The IRT meets at least annually to review and revise Index methodology described in this document as appropriate. The IRT meets at least annually to review additions and deletions to the Index. All changes to the Index on Rebalance Months are subject to the approval of the IRT, and the IRT may make adjustments to the Index at its discretion when such changes are reasonable.

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## Index Methodology Update and Cessation Policy

Invesco Indexing periodically, at least annually, reviews each Index and its accompanying methodology, in addition to periodic rebalancing (if applicable), in an effort to ensure the Index continues to accurately represent that portion of the market it was originally intended to, and delivers the outcomes one would expect from the Index's exposures.

The procedures for the internal review of the methodologies, changes to the methodologies and procedures performed when the Index administered is ceasing publication are described in detail in the Changes to Benchmark Methodology and Cessation Policy.

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## Return Types and Tickers

The Calculator computes the total return for the Index on a daily basis.

Return Type	Ticker
Total Return	IIIGD

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## Index Information and Data Dissemination

### Data Vendors

Daily Index levels for all return types are available from major quote vendors and at [www.InvescoIndexing.com](http://www.InvescoIndexing.com).

### FTP

Daily constituent data and Index level data are available via the Invesco Indexing secure FTP site for Index subscribers. Please contact Invesco Indexing customer service at [IndexSupport@invesco.com](mailto:IndexSupport@invesco.com) for more information.

### File Types

The Invesco Indexing secure FTP site for Index subscribers will distribute the standard overnight Index files from the Calculator. These include:

File Description	File Extension
Index Levels	IndexIND_yyyymmdd.csv
Constituent Details	IND10_yyyymmdd.csv
Constituent Details Pro-forma	IND10Projected_yyyymmdd.csv

The data on these files is provided directly by the Calculator, and no descriptive information contained in these files is used by Invesco Indexing at any stage of the Index creation process. In addition, security characteristics are available upon request. The characteristics are created by Invesco Indexing periodically and are updated as necessary. The characteristics data contribute to the creation of the Index or otherwise help to describe the Index constituents. These data include sector, country, region, bond type, aggregate credit rating and developed/emerging classification. Please contact Invesco Indexing customer service at [IndexSupport@invesco.com](mailto:IndexSupport@invesco.com) for more information.

### Website

Index information is available on the Invesco Indexing website at [www.InvescoIndexing.com](http://www.InvescoIndexing.com).

## Definitions of Key Terms

Terms used in this document but not otherwise defined are defined in the following table. Definitions, that are marked with a ( \* ) are sourced from Regulation (EU) 2016/1011 ("EU Benchmark Regulation") Article 3. Definitions, that are marked with a ( \*\* ) are sourced from IOSCO Principles for Financial Benchmarks<sup>1</sup>.

Term	Definition
<b>Administrator *</b>	'Administrator' means a natural or legal person that has control over the provision of a benchmark;
<b>Benchmark *</b>	'Benchmark' means any index by reference to which the amount payable under a financial instrument or a financial contract, or the value of a financial instrument, is determined, or an index that is used to measure the performance of an investment fund with the purpose of tracking the return of such index or of defining the asset allocation of a portfolio or of computing the performance fees;
<b>Calculation Agent **</b>	A legal entity with delegated responsibility for determining a Benchmark through the application of a formula or other method of calculating the information or expressions of opinions provided for that purpose, in accordance with the Methodology set out by the Administrator;
<b>Contribution of Input Data *</b>	'Contribution of input data' means providing any input data not readily available to an administrator, or to another person for the purposes of passing to an administrator, that is required in connection with the determination of a benchmark, and is provided for that purpose.
<b>Corporate Action</b>	A Corporate Action occurs when there is a change to a company's capital structure. Unlike Corporate Events, Corporate Actions have a prescribed ex-date. The share price will be subject to an adjustment on the ex-date and Invesco Indexing and/or the calculating agent will adjust the index to counteract the effect that the price change would otherwise have on the index. Examples of corporate actions include rights or entitlement issues, consolidations, stock splits and capital repayments.
<b>Expert Judgment *</b>	'Expert judgement' means the exercise of discretion by an administrator or a contributor with respect to the use of data in determining a benchmark, including extrapolating values from prior or related transactions, adjusting values for factors that might influence the quality of data such as market events or impairment of a buyer or seller's credit quality, and weighting firm bids or offers greater than a particular concluded transaction;
<b>Index*</b>	'Index' means any figure: (a) that is published or made available to the public; (b) that is regularly determined: (i) entirely or partially by the application of a formula or any other method of calculation, or by an assessment; and (ii) on the basis of the value of one or more underlying assets or prices, including estimated prices, actual or estimated interest rates, quotes and committed quotes, or other values or surveys;
<b>Input Data *</b>	'Input data' means the data in respect of the value of one or more underlying assets, or prices, including estimated prices, quotes, committed quotes or other values, used by an administrator to determine a benchmark;
<b>Material Change to Methodology</b>	In determining whether a change to an Index is material, the following factors shall be taken into account: <ul style="list-style-type: none"> <li>• Economic impact of the change;</li> <li>• Whether the change affects the original purpose of the Index.</li> </ul>
<b>Methodology **</b>	The written rules and procedures according to which information is collected and the Benchmark is determined;
<b>Rebalance</b>	The regular process (typically quarterly, semi-annually or annually) in which the eligibility and weights of constituent elements of indexes are reassessed;
<b>Subscriber **</b>	A person or entity that purchases Benchmark determination services from an Administrator;
<b>Transaction Data *</b>	'Transaction data' means observable prices, rates, indices or values representing transactions between unaffiliated counterparties in an active market subject to competitive supply and demand forces;

<sup>1</sup> <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD415.pdf>

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## **Changes to Index Methodology**

**The following section has been modified and is effective with the April 2021 rebalance:**

Updates: Index Key Dates

- Reference Date changed from 15<sup>th</sup> calendar day of the month to the sixth business day prior to the last business day of the month
- Announcement Date changed from four business days before the last business day of the month to three business days before the last business day of the month

**The following section has been modified and is effective December 31, 2021:**

Corporate Events

- Cash from coupon payments is reinvested at the Secured Overnight Financing Rate (SOFR)

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## Appendix

### Appendix 1. Country Assignment

Three criteria are considered when assigning a company to the Invesco Indexing Country: the country in which the company is headquartered, the country in which the company is incorporated, and the country that is most relevant for the company's equity trading (equity trading is used as this tends to be the most easily observable). If all of these are the same, then the company is assigned to that country. If the company is headquartered and trades in the same country, then this defines the country. Otherwise, if the company is incorporated and trades in the same country, then this defines the country. In cases for which neither the country of headquarters nor the country of incorporation aligns with trading, the company is first assigned to the headquarters country, provided it is in an emerging market country and that country is not a tax haven. Otherwise, the company is assigned to the country that is most relevant for the company's securities trading.<sup>2</sup>

### Appendix 2. Credit Rating Conversion Table

S&P	MOODY	FITCH	VALUE	GROUP
AAA	AAA	AAA	750	AAA
AA+	AA1	AA+	740	AA
AA	AA2	AA	730	
AA-	AA3	AA-	720	
A+	A1	A+	710	A
A	A2	A	700	
A-	A3	A-	690	
BBB+	BAA1	BBB+	680	BBB
BBB	BAA2	BBB	670	
BBB-	BAA3	BBB-	660	
BB+	BA1	BB+	650	BB
BB	BA2	BB	640	
BB-	BA3	BB-	630	
B+	B1	B+	620	B
B	B2	B	610	
B-	B3	B-	600	

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<sup>2</sup> Special treatment exists for Chinese, Russian, and Israeli companies. Though these countries use different data, the application of that data remains systematic.

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