

# **Fixed Income Policies & Practices** *Methodology*

November 2023

# Table of Contents

Introduction	3
<b>Overview</b>	<b>3</b>
Bond Events and Rebalancing	4
Corporate Actions	5
<b>Credit Ratings Revisions</b>	<b>5</b>
<b>Defaults</b>	<b>6</b>
<b>Optionality</b>	<b>6</b>
<b>Calls</b>	<b>6</b>
<b>Puts and Tenders</b>	<b>7</b>
<b>Refundings</b>	<b>7</b>
<b>Current Refundings</b>	<b>8</b>
<b>Advance Refundings</b>	<b>8</b>
<b>Mergers &amp; Acquisitions</b>	<b>10</b>
<b>Sanctions</b>	<b>11</b>
Country Eligibility	12
<b>Country Classification</b>	<b>12</b>
<b>Country Upgrade/Downgrade</b>	<b>12</b>
<b>Current Country Classifications</b>	<b>13</b>
<b>Security Classification</b>	<b>14</b>
Restatement Policy	15
<b>Recalculation Events</b>	<b>15</b>
<b>Incorrect Data Input and Late Announcement Events</b>	<b>15</b>
<b>Incorrect or Inaccurate Bond Classification</b>	<b>15</b>
<b>Incorrect Application of the Methodology</b>	<b>16</b>
<b>Error Materiality Assessment</b>	<b>16</b>
<b>Restatement</b>	<b>16</b>
Index Governance	17
<b>Index Committee</b>	<b>17</b>
<b>Quality Assurance</b>	<b>17</b>
<b>Internal Reviews of Methodology</b>	<b>17</b>
Index Policy	19
<b>Announcements</b>	<b>19</b>

	<b>Calculations and Pricing Disruptions</b>	<b>19</b>
	<b>Child Indices</b>	<b>19</b>
	<b>Index Terminations</b>	<b>20</b>
	<b>Expert Judgment</b>	<b>21</b>
	<b>Discretion</b>	<b>21</b>
	<b>Data Hierarchy</b>	<b>21</b>
	<b>Contact Information</b>	<b>21</b>
Appendix I		<b>22</b>
	<b>Key Ratings Symbols and Definitions Used by S&amp;P Dow Jones Indices' Fixed Income Indices</b>	<b>22</b>
	<b>Key Ratings Symbols and Definitions Used by S&amp;P Dow Jones Indices' Fixed Income Indices</b>	<b>23</b>
	<b>SPGR Issue Credit Ratings Definitions</b>	<b>24</b>
	<b>S&amp;P Global Ratings Long-Term Issue Credit Ratings</b>	<b>24</b>
	<b>S&amp;P Global Ratings Short-Term Issue Credit Ratings</b>	<b>25</b>
	<b>Moody's General Credit Ratings Services Definitions</b>	<b>25</b>
	<b>Moody's Long-Term Obligation Ratings</b>	<b>25</b>
	<b>Moody's Demand Obligation Ratings</b>	<b>26</b>
	<b>Fitch Ratings Definitions</b>	<b>27</b>
	<b>Fitch Long-Term Structured, Project &amp; Public Finance Obligations Ratings</b>	<b>27</b>
	<b>Fitch Short-Term Ratings</b>	<b>28</b>
Appendix II		<b>29</b>
	<b>Glossary of Terms</b>	<b>29</b>
	<b>Constituent Level Terminology</b>	<b>29</b>
	<b>Index Level Terminology</b>	<b>33</b>
Appendix III		<b>40</b>
	<b>Price Capture Times</b>	<b>40</b>
Appendix IV		<b>42</b>
	<b>Country Classification</b>	<b>42</b>
Appendix V		<b>43</b>
	<b>Methodology Changes</b>	<b>43</b>
Disclaimer		<b>45</b>
	<b>Performance Disclosure/Back-Tested Data</b>	<b>45</b>
	<b>Intellectual Property Notices/Disclaimer</b>	<b>46</b>

# Introduction

## Overview

S&P Dow Jones Indices (S&P DJI) Fixed Income Indices adhere to the general policies and practices covering corporate action treatment, index applications, market disruptions, recalculations, and other policies outlined herein. To understand and successfully use our indices it is important to know how adjustments are made, when different kinds of index actions occur, and how those events are treated. Our goal is to provide consistent and transparent global treatment of index actions, to the greatest extent possible. However, please note that local market and sector practices may dominate major decisions. Thus, this document outlines the general approaches applicable to the majority of fixed income indices, but it is necessary to review each specific index methodology, as certain indices may differ from the general approaches.

S&P DJI uses a variety of processes for dealing with events impacting fixed income security constituents in the S&P Dow Jones Indices' Fixed Income Indices. This document aims to provide a general outline of key events impacting fixed income constituents in the S&P Dow Jones Indices' Fixed Income Indices. Included herein are some of the more common events affecting fixed income securities, with definitions, and general policies and procedures of how S&P DJI deals with these events.

Defined terms used throughout this document (also see *Appendix II*) come from a variety of sources including, but not limited to, S&P DJI, the Securities Industry and Financial Markets Association (SIFMA), and the Municipal Securities Rulemaking Board (MSRB).

This document does not aim to be a substitute for the various policies and procedures outlined in each respective index's methodology. Please refer to each index's respective methodology for further policies and procedures applicable to each index.

# Bond Events and Rebalancing

This document details some of the more common credit events, such as credit rating upgrades and downgrades, as well as defaults. The document also covers many of the common corporate actions, including calls and puts, mergers and acquisitions, and security refundings. In order to account for these actions, S&P DJI's fixed income indices are generally maintained in accordance with the following rebalancing rules as they relate to credit events and corporate actions. Fixed income indices are typically reviewed and rebalanced monthly. The Index Committee, nevertheless, reserves the right to make adjustments to an index at any time that it believes appropriate.

As a general rule:

- Publicly available information, up to and including the close on the Rebalancing Reference Date, is considered in the rebalancing.
- Additions, deletions, and other changes to the index arising from the monthly (or periodic) rebalancing are published after the close of business on the Rebalancing Announcement Date.
- Index changes published in the announcement are not normally subject to revision and become effective after the close of business on the Rebalancing Date (typically the last business day of the month).
- Eligible securities are added to an index on the next Rebalancing Date, subject to the schedule of the monthly (or periodic) rebalancing procedures.
- Any index bond that fails to meet any one of the eligibility factors as of the next Rebalancing Date, is removed from the index on that Rebalancing Date.
- Credit events and corporate actions of index bonds are adjusted on the Rebalancing Reference Date to reflect any changes that have occurred since the previous Rebalancing Date, due to upgrades, downgrades, partial calls, tenders, etc. On the Rebalancing Reference Date, should an index bond's fail to meet the eligibility or selection criteria set forth in the index's methodology, the index bond is removed from the index at the next Rebalancing Date.

Generally, index rebalancings follow a monthly schedule as follows:

- Rebalancing Date: Last day of the rebalancing period (T)
- Announcement Date: First date of rebalancing pro-forma (T-3)
- Rebalancing Reference Date: Date on which all eligible data is evaluated (T-4)

All days reflect after the close and count business days. Please see each index's respective methodology for specific index rebalancing policies and procedures, including the index's Reference, Announcement and Rebalancing Dates, as each index (or index family) maintains its own rebalancing schedule.

# Corporate Actions

## Credit Ratings Revisions

In general, a bond's underlying rating is used to evaluate index eligibility. Issuer rating may be applied in place of the bond level ratings. For example, a sovereign bond index may apply the long term foreign currency issuer rating in place of each sovereign bond issue.

For those fixed income indices where credit ratings are an eligibility factor for constituent holdings, a ratings revision may cause a security to be added to or deleted from an index on the subsequent monthly (or periodic) rebalancing. No constituent changes due to ratings revisions occur intra-rebalancing.

Generally, S&P DJI uses credit ratings from three primary credit ratings agencies:

- S&P Global Ratings (SPGR)
- Moody's Investors Services (MIS)
- Fitch Ratings (FR)

However, in certain instances additional credit rating agencies may be used as noted in each index's methodology document. For example, the S&P China High Quality Corporate Bond Index eligibility rules require that each index constituent has issuer rating from at least one of the three primary credit rating agencies noted above, and a bond rating from a recognized Chinese rating agency.

To ensure quality and consistency in credit ratings used by S&P DJI, certain requirements are mandated when using credit rating agencies other than the three primary ones noted above. For example, the S&P China High Quality Corporate Bond Index eligibility rules require that each index constituent must be rated AAA by a recognized Chinese rating agency.

Please note that while most indices use the credit ratings of all three primary ratings agencies, some indices use the ratings of only two agencies (e.g., MIS and SPGR) or one agency (e.g., SPGR) as disclosed in each index's respective methodology.

As a general rule, and for increased transparency and uniformity, when an index security has a rating from more than one eligible rating agency, the lowest of the ratings is used for index eligibility purposes. However, please see each respective index methodology for specific eligibility requirements and associated policies for specific ratings criteria.

**Scenarios.** For index calculation purposes, a credit ratings revision presents the following key questions:

- Additions - Does a non-index security become an index constituent?
- Deletions - Does the index security retain membership in the index?

To answer these questions, we need to know the index's credit rating criteria. In general, S&P DJI employs the following key credit ratings criteria:

1. Investment Grade - ( $\geq$ BBB- by SPGR,  $\geq$ BBB- by FR,  $\geq$ Baa3 by MIS)
2. High Yield - (NR or  $\leq$ BB+ by SPGR, NR or  $\leq$ BB+ by FR, NR or  $\leq$ Ba1 by MIS)
3. Ratings Bands - A specified range of ratings (For example, a AA band index or sub-index may specify that index securities must have a rating of AA-, AA, AA+ by SPGR)
4. No Ratings Criteria

## Defaults

Index constituent data received from service providers are flagged if they are in default. Generally, S&P DJI excludes defaulted bonds unless the inclusion of such bonds is explicitly stated in the methodology (e.g., the S&P Municipal Bond Defaulted Index Methodology). When an index bond defaults, the security is removed at the next rebalancing date.

Defaulted securities typically remain in an index at the daily price received by service providers, which generally reflects the base recovery rate. However, a defaulted security carries without accruing any further interest. If the vendor no longer publishes a daily price for a defaulted security, the security remains in the index at the last price received until the next rebalancing, and then deleted from the index. However, the Index Committee may determine that the security be removed from the index at a different price and may specify a price of \$0.00.

For further information on a specific index's policies relating to defaulted constituents, please see each index's respective methodology.

## Optionality

Eligibility criteria differs according to the specific index with respect to their constituent holdings. One aspect of this is whether the index includes bonds with embedded options or not. For those indices allowing callable bonds, the bond must conform to applicable eligibility criteria as outlined in the index's methodology, which typically includes a minimum term to complete mandatory redemption (maturity, call and/or put date) and a minimum par amount outstanding. For most indices the minimum term to maturity and/or mandatory call date is at least one calendar month plus one calendar day as of the next index Rebalancing Date.

## Calls

S&P DJI actively tracks mandatory calls for indices allowing the inclusion of callable bonds. A mandatory call may cause the bond's deletion from the index on the subsequent Rebalancing Date. Bonds with mandatory calls are typically deleted from the index for the following reasons:

- **Indices with a minimum term to call:** Bonds that have a scheduled complete mandatory call such that the term to call is less than the minimum required as set forth in the index's methodology.
- **Indices without a minimum term to call:** Bonds that are subject to a mandatory call which will result in a complete call of the bond during the month (or period).

Optional calls are not actively tracked by S&P DJI. Changes in par amounts are only considered at the next Rebalancing Date. For a bond subject to a mandatory complete call interest is typically accrued up to, but not including the mandatory call date when the bond is redeemed and paid off. Thus, if a bond is deleted from an index on the rebalancing date, but the rebalancing precedes the mandatory call date (due to the term to mandatory call date not meeting minimum requirements), the interest on the bond ceases accruing and is no longer included in return calculations after the Rebalancing Date, as the bond is no longer in the index.

**Scenarios.** For index calculation purposes, a bond call presents the following key question:

- **Deletions** - Does the index security retain membership in the index?

To answer this, we need to know whether the call is mandatory or optional and whether the call is complete or partial.

A key determinant in considering whether to delete an index bond from the index due to a mandatory complete call is its term to mandatory call date. If, at the rebalancing, the term to maturity or call date is less than the minimum required in the index eligibility criteria, the bond is deleted at that rebalancing. For

partial calls, a key determinant in considering whether to delete an index bond from the index is whether the remaining par amount outstanding is greater than or equal to the minimum par amount outstanding required by the index's eligibility requirements as set forth in the index methodology. If, at the rebalancing, the par amount outstanding of the partially called bond is less than the minimum required, the bond is deleted at that rebalancing.

## **Puts and Tenders**

Some indices exclude puttable bonds, while others include them. For indices allowing puttable bonds, the bond must conform to applicable eligibility criteria as outlined in the index's methodology, which typically includes a minimum term to mandatory redemption (maturity, call and/or put date) and a minimum par amount outstanding. For most indices, the minimum term to maturity and/or mandatory put date is at least one calendar month plus one calendar day as of the next Rebalancing Date. Certain indices, however, may differ.

Please refer to each index's methodology for further details on security eligibility requirements.

For those indices that include puttable bonds, S&P DJI actively tracks mandatory tenders. A mandatory tender may cause a bond to be deleted from the index on the subsequent Rebalancing Date. Bonds with mandatory tenders are typically deleted from the index at the rebalancing for the following reasons:

- **Indices with a minimum term to put:** Bonds that have a scheduled complete mandatory tender such that the term to put is less than the minimum required as set forth in the index's methodology.
- **Indices without a minimum term to put:** Bonds that are subject to a mandatory tender which will result in a complete tender of the bond during the month (or period).

Optional tenders are not actively tracked by S&P DJI, and as such are only considered on the Rebalancing Date when index bonds' par amounts are known and adjusted to reflect any changes that have occurred since the previous Rebalancing Date due to partial calls, tenders, etc. On the Rebalancing Date, should an index bond's par amount outstanding fall below the minimum set forth in the index's methodology, the index bond is removed from the index on that Rebalancing Date.

**Scenarios.** For index calculation purposes, a bond tender presents the following key questions:

- Deletions - Does the index security retain membership in the index?

To answer this requires knowing whether the tender is mandatory or optional and whether the tender is complete or partial. A key determinant in considering whether to delete an index bond from the index due to a mandatory complete tender is its term to mandatory put date. If, at the rebalancing, the term to maturity or put date is less than the minimum required in the index eligibility criteria, the bond is deleted at that rebalancing. For partial tenders, a key determinant in considering whether to delete an index bond from the index is whether the remaining par amount outstanding is greater than or equal to the minimum par amount outstanding required by the index's eligibility requirements as set forth in the index methodology. If, at the rebalancing, the par amount outstanding of the partially tendered bond is less than the minimum required, the bond is deleted at that rebalancing.

## **Refundings**

Two types of refundings may impact bonds in S&P DJI's indices:

- Current refundings
- Advance refundings

Eligibility criteria differ among the various indices with regard to their constituent holdings. One aspect of this is whether the index can include bonds that are prerefunded or escrowed to maturity. Some indices exclude these types of bonds while others allow them. For example, the S&P Municipal Bond Index



allows prerefunded or escrowed to maturity bonds. However, certain sub-indices of this index do not, such as the S&P Municipal Bond High-Yield Index.

### **Current Refundings**

S&P DJI treats current refundings similarly to mandatory calls. That is, once notice is given that a bond is subject to a complete call and current refunding by the issuer, the bond is deleted from the index at the subsequent rebalancing if the term to call and redemption is less than the minimum term to maturity or mandatory call required in the index's eligibility criteria (typically one calendar month plus one calendar day for most indices).

If subject to a partial current refunding, at the rebalancing date the outstanding par amount of the refunded bond is determined and if that amount is below the minimum par amount outstanding as set forth in the index's eligibility criteria, the bond is deleted at that rebalancing. If the outstanding par amount of the refunded bond is greater than or equal to the minimum established in the index's eligibility criteria, the bond remains an index constituent with its par amount outstanding adjusted for any partial refunding activity at the rebalancing.

However, please note that the refunding issue (new issue) is not automatically added to the index as a replacement for the refunded issue. The refunding issue must meet all the applicable eligibility criteria as stated in each index's methodology for inclusion in an index.

### **Advance Refundings**

For those indices that excluding prerefunded bonds or bonds escrowed to maturity, when notice of an advance refunding is received, S&P DJI deletes the index constituent, which has undergone an advance refunding at the next rebalancing.

It should be noted however, that the advance refunding issue (the new bond issuance) is not automatically added to the index as a replacement for the prerefunded issue. The advance refunding issue must meet all the applicable eligibility criteria as stated in each index's methodology for inclusion in an index.

For those indices that do allow prerefunded bonds or bonds escrowed to maturity, S&P DJI treats advance refundings in a similar manner to that of mandatory calls. Remember that the time period for calling and redeeming prior issues in an advance refunding is greater than 90 days. As such, the prerefunded bond may continue to be included in the index (assuming other eligibility criteria are met) until notice is given of a call and redemption of the bond. Once notice of a complete call and redemption is given, the bond is deleted at the subsequent rebalancing if its term to mandatory call is less than the minimum required in the index eligibility criteria.

If subject to a partial advance refunding and once notice is given of a partial call and redemption, the outstanding par amount of the refunded bond is determined and if that amount is below the minimum par amount outstanding as set forth in the index's eligibility criteria, the bond is deleted at the next rebalancing. If the outstanding par amount of the refunded bond is greater than or equal to the minimum established in the index's eligibility criteria, the bond remains an index constituent with its par amount outstanding adjusted for any partial refunding activity at the rebalancing.

However, please note that the refunding issue (new issue) is not automatically added to the index as a replacement for the refunded issue. The refunding issue must meet all the applicable eligibility criteria as stated in each index's methodology for inclusion in an index.

To reiterate, bonds with mandatory complete calls (including refunded issues) are deleted from the index at the rebalancing for the following reasons:

- **Indices with a minimum term to call:** Bonds that have a scheduled complete mandatory call such that the term to call is less than the minimum required as set forth in the index's methodology.

- **Indices without a minimum term to call:** Bonds that are subject to a mandatory call which will result in a complete call of the bond during the course of the month (or period).

Bonds subject to mandatory partial calls (including refunded issues) are deleted from the index at the rebalancing for the following reason:

- Bonds whose par amount outstanding, as of the rebalancing date, has fallen below the minimum required in the index's eligibility criteria are deleted from the index at that rebalancing.

**Scenarios.** For index calculation purposes, a refunding presents the following key questions:

- Additions - Does a non-index security become an index constituent?
- Deletions - Does the index security retain membership in the index?

Additions - Please note that the refunding issue (new issue) is not automatically added to the index as a replacement for the refunded issue. The refunding issue must meet all the applicable eligibility criteria as stated in each index's methodology for inclusion in an index.

Deletions - To answer this, we need to know whether the refunding is a current refunding or an advance refunding and whether the refunding is complete or partial.

A key determinant in considering whether to delete an index bond from the index due to a complete refunding is its term to mandatory call date. If, at the rebalancing, the term to maturity or mandatory complete call date is less than the minimum required in the index eligibility criteria, the bond is deleted at that rebalancing. For partial refundings, a key determinant in considering whether to delete an index bond from the index is whether the remaining par amount outstanding is greater than or equal to the minimum par amount outstanding required by the index's eligibility requirements as set forth in the index methodology. If, at the rebalancing, the par amount outstanding of the partially refunded bond is less than the minimum required, the bond is deleted at that rebalancing.

Scenario 1 - Refundings		
Scenario 1a:  Complete Current Refunding	Generally, as of the next Rebalancing Date, the refunded bond must have a minimum term to mandatory call date as specified in the index methodology (typically greater than or equal to one calendar month plus one calendar day) to remain in the index, otherwise it is deleted at the next Rebalancing Date.  Question:  Is the term to mandatory call date greater than or equal to the minimum required in the index methodology?	Decision:  If <u>yes</u> , the bond remains in the index.  If <u>no</u> , delete from the index on that Rebalancing Date
Scenario 1b:  Partial Current Refunding	Generally, as of the next Rebalancing Date, the refunded bond must have a minimum par amount outstanding (as specified in the index methodology) to remain in the index, otherwise it is deleted at that Rebalancing Date.  Question:  Is the minimum par amount outstanding of the refunded bond greater than or equal to the minimum required in the index methodology?	Decision:  If <u>yes</u> , the bond remains in the index at the new par amount outstanding (net of any partial calls, tenders, sinking fund payments, etc.).  If <u>no</u> , delete from the index on that Rebalancing Date
Scenario 1c:  Complete Advance Refunding (Index allows prerefunded bonds)	Generally, as of the next Rebalancing Date, the refunded bond must have a minimum term to mandatory call date as specified in the index methodology (typically greater than or equal to one calendar month) to remain in the index, otherwise it is deleted at the next Rebalancing Date.  Question:	Decision:  If <u>yes</u> , the bond remains in the index.  If <u>no</u> , delete from the index on that Rebalancing Date.

Scenario 1 - Refundings		
	Is the term to mandatory call date greater than or equal to the minimum required in the index methodology?	
Scenario 1d:  Partial Advance Refunding  (Index allows prerefunded bonds)	Generally, as of the next Rebalancing Date, the refunded bond must have a minimum par amount outstanding (as specified in the index methodology) to remain in the index, otherwise it is deleted at that Rebalancing Date.  Question: Is the minimum par amount outstanding of the refunded bond greater than or equal to the minimum required in the index methodology?	Decision:  If <u>yes</u> , the bond remains in the index at the new par amount outstanding (net of any partial calls, tenders, sinking fund payments, etc.).  If <u>no</u> , delete from the index on that Rebalancing Date.
Scenario 1e:  Advance Refunding  (Index does not allow prerefunded bonds)	If an index does not allow prerefunded bonds or bonds escrowed to maturity, upon receipt of notice of advance refunding action on the part of the issuer, the prerefunded bond is deleted at the next Rebalancing Date.  Question: As of the Rebalancing Date, has notification been received of an index bond being subject to an advanced refunding transaction?	Decision:  If <u>no</u> , the bond remains in the index.  If <u>yes</u> , delete from the index on that Rebalancing Date.

## Mergers & Acquisitions

In the event of a merger or acquisition (M&A), a corporate bond generally remains outstanding or is paid off and retired as a result of the M&A either via a call or tender.

Each index maintains its own constituent security eligibility criteria including minimum par amounts outstanding, credit ratings criteria, minimum term to maturity and/or call/put date, among others. As M&A activity may impact one or more of the index's security eligibility requirements, an index security may be deleted from the index at the monthly or periodic rebalancing as a result of the M&A depending on the index's rebalancing schedule.

Worth noting are those indices which require issuer level membership in a related stock index such as the S&P 500 Bond Index. The index consists of corporate bonds issued in the U.S. by companies (and their subsidiaries) in the S&P 500. The bond index naturally inherits the impact of M&A activity on the underlying equity index. For example, if Company X is a constituent of S&P 500 while Company Y is not, and Company X acquires Company Y, the bonds issued by Company Y (if not paid off or retired) will become eligible for the S&P 500 Bond Index subject to the other index eligibility criteria.

*For more information on M&A treatment, please refer to S&P Dow Jones Indices Equity Indices Policies & Practices Methodology, available at [www.spglobal.com/spdji/](http://www.spglobal.com/spdji/).*

## Scenarios

For index calculation purposes, a merger or acquisition presents the following key questions:

- Additions - Does a non-index security become an index constituent?
- Deletions - Does the index security retain membership in the index?

To answer these questions, we need to know the index's criteria regarding credit ratings, minimum term to effective maturity and minimum par amount outstanding.

As the key determinants for a bond's inclusion or deletion from an index in regards to merger and acquisition activity relate to credit ratings revisions, minimum term to effective maturity and minimum par amount outstanding, please see the sections of this document entitled *Credit Ratings Revisions*, *Calls* and *Puts and Tenders* for scenarios related to credit ratings revisions, calls and tenders.

## Sanctions

Some sanctions programs are comprehensive in nature and include broad-based trade restrictions, while others selectively target specific individuals and entities. As sanctions can be either comprehensive or selective, S&P DJI reviews sanctions on a case-by-case basis. Depending on the circumstance, entire countries, or specific securities, may be impacted by sanctions.

Generally, S&P DJI will consider sanctions using the perspective of a U.S., U.K., and/or European Union (EU) based investor for standard, global indices. Subject to Index Committee determination, specific securities impacted by sanctions may:

- Have their current par amount outstanding/index weight/classification frozen for the duration of the sanctions
- Be deleted from indices; and/or
- Become ineligible for addition to indices.

In all cases, S&P DJI's specific treatment is announced to clients when new sanctions are imposed or removed with index implications.

Subject to S&P DJI's compliance with applicable law, S&P DJI may also elect to publish indices whose objective is to measure the performance of securities from the perspective of certain non U.S./U.K./EU investor groups that may not be impacted by the sanctions described above. Such indices may contain securities subject to sanctions from a U.S./U.K./EU perspective and are therefore ineligible for S&P DJI's global indices. In any such case, the relevant index methodology will explicitly define the treatment. Please note the use and licensing of such indices may be restricted to ensure S&P DJI's compliance with applicable law.

Please note that users of S&P DJI's indices are solely responsible for ensuring such users' compliance with all applicable law (including, without limitation, sanctions laws and any other rules, regulations or prohibitions) in connection with such use (including, without limitation, trading, investment or other use).

# Country Eligibility

S&P Dow Jones methodology focuses on providing a way to organize data into meaningful aggregates for the global fixed income investor base. Hence, classification of a country will depend on both the development level of its economy and the degree of accessibility to and liquidity of the particular fixed income market being classified.

In the initial step, countries are classified into two major economic development groups – *developed and emerging*. For the purposes of fixed income index classification, S&P DJI leverages the classification on the International Monetary Fund (IMF) World Economic Outlook (WEO) publication. Please note that despite leveraging the IMF World Economic Outlook publication, S&P DJI may ultimately deviate from those designations based on internal review and consultation with fixed income market participants.

Additionally, factors which determine liquidity and accessibility are key in determining index membership eligibility. A unique problem in classifying fixed income assets arises from the participation of a diverse issuer base as well as the variety of jurisdictions and currencies of issuance that each issuer may access. For example, a sovereign may choose to fund its fiscal expenditures in local currency or in hard currency. The issuance may be in global markets or in local markets. These factors can impact the ability of a global investor to access the particular asset. Therefore, in this second classification step, the assets themselves, rather than the country of domicile or issuer name will need to be classified in the context of index inclusion.

## Country Classification

From the perspective of the fixed income global investor, debt issued by the central government is likely the most liquid and accessible asset among debt issued by any other entity domiciled within that country. Hence as a first step, macroeconomic and policy data such as relative income ranking of a nation, diversification of the sources of the wealth (exports) and integration of the economy in the global markets are key factors which should be considered when classifying a country's development level by investors.

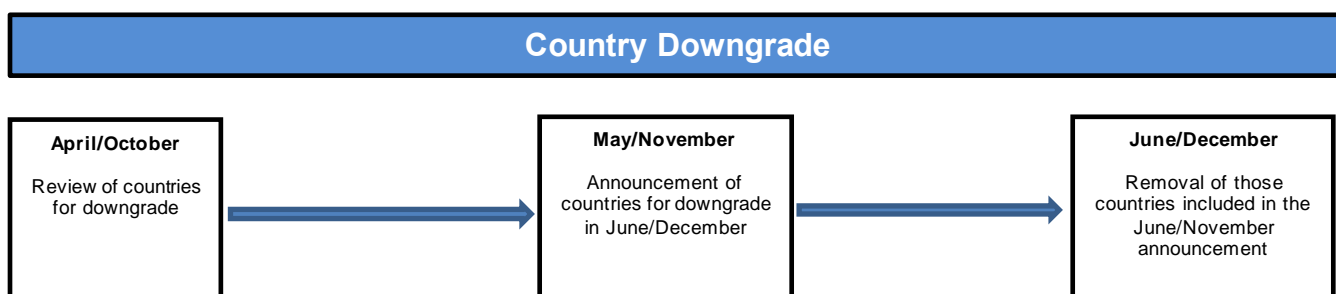
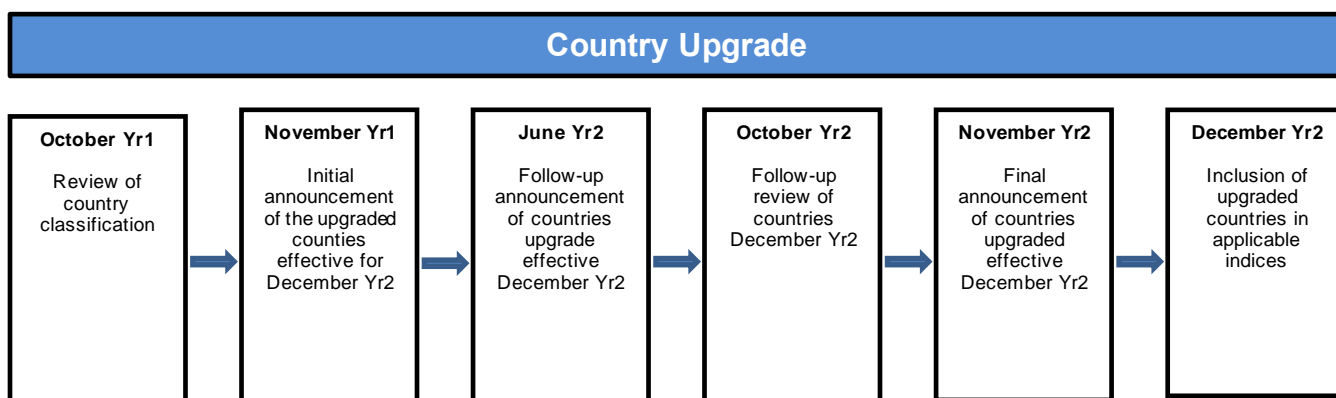
S&P DJI initially classifies fixed income markets leveraging the categorization found in the IMF World Economic Outlook publication. The country classification in the WEO divides the world into two major groups - *advanced economies* and *emerging market and developing economies*. The objective of the classification in the IMF's publication is to provide meaningful aggregates of macroeconomic performance and projections. The main criteria used by the IMF to classify countries include per capita GNI and the degree of integration of the economy into the global financial system. Additionally, export diversification is considered to avoid misclassifying rich emerging markets, such as oil exporters, as an advanced economy. It is worth noting that as stated in the WEO Statistical Appendix; *classification is not based on strict criteria, economic or otherwise, and it has evolved over time.*

## Country Upgrade/Downgrade

If a country is upgraded or newly classified in the Fall/October IMF WEO publication as a member of the *advanced economies*, S&P DJI will announce the classification change in November of that year and include the upgraded or newly classified country in the indices, effective in December of the following year. Prior to the December implementation, S&P DJI will review the Fall/October WEO publication of that year to ensure the country is still classified as a member of the *advanced economies*. An illustration of the timeline is shown below:

If a country is downgraded to membership in the *emerging market and developing economies* or is no longer classified in the WEO, S&P DJI will announce the classification change in the following month and

remove the downgraded country from the indices, effective in the month following the announcement. Please see below for Illustrations of the timelines for a country upgrade and downgrade.



## Current Country Classifications

### Advanced Economies

- |                  |               |                   |
|------------------|---------------|-------------------|
| • Andorra        | • Hong Kong   | • Norway          |
| • Australia      | • Iceland     | • Portugal        |
| • Austria        | • Ireland     | • San Marino      |
| • Belgium        | • Israel      | • Singapore       |
| • Canada         | • Italy       | • Slovak Republic |
| • Cyprus         | • Japan       | • Slovenia        |
| • Czech Republic | • Latvia      | • South Korea     |
| • Denmark        | • Lithuania   | • Spain           |
| • Estonia        | • Luxembourg  | • Sweden          |
| • Finland        | • Macau       | • Switzerland     |
| • France         | • Malta       | • Taiwan          |
| • Germany        | • Netherlands | • United Kingdom  |
| • Greece         | • New Zealand | • United States   |

## Emerging Markets and Developing Economies (selected from the list classified by the IMF)

• Angola	• Costa Rica	• Honduras	• Morocco	• Senegal	• Vietnam
• Argentina	• Côte d'Ivoire	• Hungary	• Mozambique	• Serbia	• Zambia
• Armenia	• Croatia	• India	• Namibia	• South Africa	• Bahrain
• Azerbaijan	• Dominican Republic	• Indonesia	• Nigeria	• Sri Lanka	• Jordan
• Belarus	• Ecuador	• Iraq	• Pakistan	• Tanzania	• Kuwait
• Belize	• Egypt	• Jamaica	• Panama	• Thailand	• Oman
• Bolivia	• El Salvador	• Kazakhstan	• Paraguay	• Trinidad & Tobago	• Qatar
• Brazil	• Ethiopia	• Kenya	• Peru	• Tunisia	• Saudi Arabia
• Bulgaria	• Gabon	• Lebanon	• Philippines	• Turkey	• United Arab Emirates
• Chile	• Georgia	• Malaysia	• Poland	• Ukraine	• Cameroon
• China	• Ghana	• Mexico	• Romania	• Uruguay	• Suriname
• Colombia	• Guatemala	• Mongolia	• Russia	• Venezuela	• Barbados

Offshore financial centers not classified by the WEO such as Bermuda, British Virgin Islands and the Cayman Islands are considered emerging markets. Therefore, government related issues from these countries are classified as Emerging Markets. Corporate issuances domiciled or with a country of risk in these offshore financial centers are also considered emerging markets.

## Security Classification

Once countries have been classified, for the purposes of Index aggregation, S&P DJI classifies available securities based on level of accessibility by the global fixed income investor base. Fixed income securities are issued by various issuer classes such as government, agency, corporations, *and local authorities all of which have a differing level of risk and liquidity. Therefore, in certain cases, bonds issued by entities in the same country may require distinct classification.* Furthermore, a single issuer can issue debt in various jurisdictions and currencies with implications on both accessibility and liquidity. That is, bonds issued by a single issuer may be classified differently in terms of index membership depending on market and currency of issuance. Ultimately, the second level of classification will be reliant more heavily on the purpose of the index.

Determination of inclusion will be made using quantitative and qualitative approach. From a purely quantitative perspective, information such as market share may be utilized. For example, in determining if a county's local government bonds qualify for an emerging markets index, S&P Dow Jones will consider its relative weight among its peers. However, qualitative indicators such as ease of access, capital controls, institutional stability and investor appetite also play a part.

# Restatement Policy

## Recalculation Events

S&P DJI, at its discretion, reserves the right to recalculate an index if any of the following events materially impact index values:

- Input Data Error
  - Incorrect Input Prices
  - Incorrect Analytics (i.e., yield, duration, or spread)
  - Incorrect Instruments T&C (i.e., coupon, redemption date, or workout date)
  - Incorrect calculations or data entry errors
- Late Announcements
- Incorrect Application of Index Methodology or Missed Methodology
  - Constituents' eligibility (inclusion/exclusion)
  - Constituents' weightings

The decision to recalculate an index considers the following:

- materiality of the error's impact on an index value (Index Value  $\Delta$ ). In general, only material errors trigger potential index recalculations. Errors with non-material impact generally do not trigger recalculations.
- client impact
- whether the replicability of the index is preserved

All recalculation events, whether approved by the Index Committee or conducted independently by the Index Management & Production Group (IMPG) under the present policy, are reported to the Index Committee at the next committee meeting.

## Incorrect Data Input and Late Announcement Events

In general, if IMPG determines an incorrect input data or late announcement error's impact on an index to be "material" the index value recalculates, dependent on the timing of the error's reporting.

- **Errors Reported Within Two Business Days of Index Value Publication.** Generally, the index recalculates.
- **Errors Reported After Two Business Days of Index Value Publication.** Generally, the index recalculates. When a recalculation occurs, the Index Committee then determines whether to apply the recalculation retroactively to extend further back in history past the last index rebalancing. Recalculations are usually only applied backward to the last rebalancing, the Index Committee must specifically approve recalculations extending beyond the last rebalancing.

## Incorrect or Inaccurate Bond Classification

If stakeholders challenge a bond's classification by industry, type, or estimated workout date for callables and perpetual, or if IMPG determines a specific classification is inaccurate, IMPG assesses the materiality



of the impact on index value. Generally, non-material events do not trigger index recalculations. For material events the Index Committee meets to assess and approve a reclassification of the security.

### **Incorrect Application of the Methodology**

Certain incorrect applications of the index methodology cause errors that require the Index Committee to determine whether to recalculate an index, typically involving one of the following scenarios:

- incorrect application of the index eligibility criteria resulting in a constituent's addition to or removal from an index
- incorrect application of the index weighting scheme

In the event either of the above errors occur, the Index Committee reviews the error, approves a correction, and considers whether to apply the correction retroactively. Generally, to preserve index replicability and stability, the Index Committee only makes changes to index composition and/or weightings for the following errors:

- a constituent doesn't meet the index's defined objective (example: adding a non-Sukuk bond to a Sukuk bond index)
- the changes differ from those previously announced by S&P DJI in advance of the effective date (e.g., pro-forma files)

The Index Committee's decision to recalculate an index for such methodology application errors considers the replicability of the index, among other factors, and are treated according to the following guidelines.

### **Error Materiality Assessment**

IMPG conducts a materiality assessment for the potential impact of any error, appropriately escalating and reporting the assessment to the Index Committee. Materiality is determined based on the liquidity and volatility profile of the underlying index constituents, with consideration given to the recalculation's impact on index users and the use of the index as a reference into other financial instruments. The table below outlines the remediation guidelines.

Type of Material Error	Reported Within Two Business Days	Reported Past Two Business Days
<b>Incorrect Data Input / Late Announcement Events</b>	corrected with notice	referred to the Index Committee
<b>Incorrect or Inaccurate Bond Classification</b>	referred to the Index Committee	
<b>Incorrect Application of the Methodology</b>	referred to the Index Committee	

### **Restatement**

In cases where S&P DJI identifies a potential calculation error clients are notified as soon as possible. If the assessment determines a material error requiring index recalculation and republication of the index values, the following actions occur:

1. Regeneration and reposting of all impacted files.
2. Dissemination of a client announcement detailing the recalculation and the successful reposting of corrected files.

S&P DJI applies the rules set forth herein to all fixed income indices under its administration. Any decision that deviates from the stated rules is reviewed by the Index Committee and announced accordingly.

# Index Governance

## Index Committee

An S&P DJI Index Committee maintains the indices. Except for some co-branded indices, which may include committee members from external companies or exchanges, most committees are composed of full-time professional members of S&P DJI's staff. At each meeting, the Index Committee may review pending actions that may affect index constituents, statistics comparing the composition of the indices to the market, securities that are being considered as candidates for addition to an index, and any significant market events. In addition, the Index Committee may revise index policies.

Questions of interpretation or possible exceptions to rules are considered by the Index Committee responsible for the indices in question.

S&P DJI considers information about changes to its indices and related matters to be potentially market moving and material. Therefore, all Index Committee discussions are confidential.

S&P DJI's Index Committees reserve the right to make exceptions when applying the methodology if the need arises. In any scenario where the treatment differs from the general rules stated in this document or supplemental documents, clients will receive sufficient notice, whenever possible.

## Quality Assurance

S&P DJI maintains quality assurance processes and procedures for the calculation and maintenance of its indices that include a regularly scheduled meeting to review incidents or errors, if any, that occurred during the previous week and identify causes, determine repetitive issues, and evaluate whether any long-term changes are necessary (e.g., a change in process). Incidents and errors are tracked through S&P DJI's internal system and significant matters are escalated, requiring, at times, an ad hoc meeting of the same group.

## Internal Reviews of Methodology

**Annual Review Process.** In addition to its daily governance of indices and maintenance of index methodologies, at least once within any 12-month period, the Index Committee reviews each index methodology to ensure the indices continue to achieve the stated objectives, and that the data and methodology remain effective. In the case that an index methodology is reviewed off cycle from the annual review, the Index Committee reserves the right to cancel the annual review if the requested review covers all the relevant issues.

**Communication with Stakeholders and Consultations.** S&P DJI communicates and consults with stakeholders through various channels using press releases, index announcements, emails and the distribution of data files. In addition, S&DJI has a designated client service team available to respond to inquiries.

When a material change to an index methodology is considered, S&P DJI publishes a consultation inviting comments from external parties. A material change alters the index objective or changes the methodology in a way that affects the likelihood that the index will achieve its objective. Examples of methodology changes that could impact the index objective include altering rules determining the index universe, the selection of index constituents, or the weighting of those constituents. Consultations are posted on the Web site at [www.spglobal.com/spdji/](http://www.spglobal.com/spdji/), and feedback is accepted only during the posted timeframe. Under normal circumstances the consultation period is open for a minimum of 30 days from publication, but S&P DJI reserves the right to conduct shorter or longer consultation periods, at the

discretion of the Index Committee. Prior to the Index Committee's final review, S&P DJI will consider the issues and may request clarifications from respondents as part of that review. All feedback from consultations is reviewed and considered before a final decision is made by the Index Committee. Any changes to an index methodology are announced on the Web site.

Occasionally, S&P DJI may hold face-to-face meetings, conference calls, or hold meetings such as Advisory Panels.

**Complaints Procedure.** For any inquiry, comment, or complaint regarding the indices governed by this methodology, a Client Services Form can be found [here](#).

# Index Policy

## Announcements

Please refer to each respective index methodology for the specific policies and procedures related to index announcements for each fixed income index.

Major index releases are posted on the Web site, [www.spglobal.com/spdji/](http://www.spglobal.com/spdji/).

*For reposting guidelines due to late announcements or deviations from the index methodology, please refer to the - Recalculation Policy section in this document.*

## Calculations and Pricing Disruptions

**End-of Day-Calculations (EOD).** S&P DJI leverages evaluated prices from designated pricing providers for end-of-day index calculation. If a pricing source required for index calculation is unable to provide daily pricing for one or more securities, the previous close is used for the affected securities. In the event intraday prices are available for a security, the last available trade price is used for index calculation.

In extreme circumstances, S&P DJI may decide to delay index adjustments or not publish an index.

*For details on the evaluated pricing time per country, see Appendix III.*

**Real-time Index Calculation.** For certain indices, S&P Dow Jones Indices calculates intraday index calculations using real-time prices from designated pricing providers. S&P Dow Jones Indices does not calculate with each captured price, but rather, calculates on a pre-determined fixed interval (e.g. every five seconds). At each fixed interval, the index calculates with the latest real-time pricing for each underlying security included in the index. If a new price is not available since the last real-time calculation, the calculation will leverage the last available price provided by the pricing provider. In the absence of a real-time price for a given security, the calculation will leverage the prior day's EOD price.

S&P DJI also maintains price thresholds for real-time securities and indices to prevent unusually large price movements or incorrect price adjustments from adversely impacting index calculations.

- **Security Level.** If a security price breaches a threshold, the system generates an internal alert and temporarily holds the last price prior to the breach. For index calculations, a held security is included in the calculation, but the calculation uses the security's last accepted price prior to the breach. Once the held price is confirmed or falls back within the acceptable tolerance, index calculation resumes using the latest available real-time price.
- **Index Level.** If an index calculation breaches a threshold the system generates an internal alert but continues calculating and disseminating the index level as an S&P analyst investigates and responds to the alert accordingly.

S&P DJI seeks to minimize any disruptions to its index calculations. In the event there is a disruption in intraday calculations, S&P DJI will not recalculate the impacted period.

## Child Indices

S&P DJI calculates and maintains a number of sub-indices ("Child Index" or "Child Indices") derived from a larger or broader index ("Parent Index" or "Parent Indices"). A Child Index provides a further breakdown of individual constituents within a Parent Index based on a specific attribute, such as a specific maturity, credit rating, sector, country, or geographic region. The actual composition of each Child Index is a

subset of the respective Parent Index, with the weights of the Child Index constituents relative to their weights in the Parent Index. Therefore, a change to a Parent Index's composition causes a simultaneous change to the composition of the relevant Child Index.

A Child Index can be viewed as a building block of the Parent Index, which helps users better understand the overall performance of the Parent Index. In certain cases, Child Indices range from broad, well diversified benchmarks to very narrow, concentrated baskets. S&P DJI may choose to publish these Child Indices for a variety of purposes including performance attribution.

Child Indices are eligible to be calculated and published each trading day in end-of-day files provided the current composition of the Parent Index includes the specific attribute. For example, if a particular GICS sector is not represented in the Parent Index on rebalance reference date, then no Child Index for that sector is calculated and published by S&P DJI for the upcoming rebalancing. However, if that sector is represented within the Parent Index following a future rebalancing or reconstitution, S&P DJI will calculate and publish the applicable Child Index in end-of-day files.

As the constituents of a Parent Index change over time, there may be periods where an eligible Child Index is active or inactive, and is thereby added to or removed from end-of-day files. If a Child Index is added on trading day (t), the Child Index level is set to a predefined value (e.g. 100.00 or 1000.00) on trading day (t-1), and subsequently appears in end-of-day files on trading day (t). If a Child Index is removed, the relevant Child Index no longer appears in the end-of-day files, but remains eligible for inclusion in the future. The calculation and publication of Child Indices is an automated process, dependent on whether the applicable attribute appears in the Parent Index; accordingly, S&P DJI does not provide advance notice on the addition to or removal of Child Indices from end-of-day files.

Measuring the performance of an index requires a continuous and uninterrupted time series. Each reactivation instance of a Child Index signifies a new time series, and any historical data prior to that reactivation date should be treated as a separate time series.

## **Index Terminations**

S&P DJI may determine that an index should be discontinued. Reasons for an index termination could include:

- Fewer than the required number of securities are available for inclusion in an index, such as with par amount or GICS market segment based indices<sup>1</sup>
- An index duplicates another S&P DJI index
- Data required for an index is no longer available or no longer reliable
- Market conditions, regulations, or potential index constituents have changed, rendering the index unlikely to achieve its stated objective
- Declining investor use or interest

All proposals to discontinue an index are assessed to determine any potential impact on the market. S&P DJI may, at its discretion, consult with market participants regarding an index termination.

If the data on a discontinued index is provided to clients at the time of termination, S&P DJI may suggest possible appropriate alternative S&P DJI indices. Index terminations will be announced in advance, and vendors will be notified. Index levels and related data on a discontinued index are retained by S&P DJI.

If financial product issuers or investment managers choose to use an S&P DJI index, regardless of index family, as the basis of an index-linked financial product or an investment fund, they should consider the potential need to terminate or modify the terms of a financial product resulting from the termination of the

---

<sup>1</sup> The calculation of Child Indices does not follow the termination process described here. Child Indices are only calculated when the particular attribute is present in the parent index.

calculation of the index. Indices discontinued due to par amount or GICS segment may resume calculation if sufficient securities become eligible in the future.

### **Expert Judgment**

S&P DJI's Index Committees may exercise Expert Judgment when the situation calls for the interpretation of data in calculating and maintaining an S&P DJI index. S&P DJI maintains internal records of the use of Expert Judgment and the rationale for any such use. Expert Judgment specifically and exclusively refers to S&P DJI's exercise of discretion with respect to its use of data in determining an index in the following context: Expert Judgment includes extrapolating data from prior or related transactions, adjusting data for factors that might influence the quality of data such as market events or impairment of a buyer or seller's credit quality, or weighing firm bids or offers greater than a particular concluded transaction. Other areas of discretion, such as methodology changes, are not, for the purposes of this document, considered Expert Judgment.

### **Discretion**

S&P DJI's Index Committees may apply discretion to make decisions that differ from the index methodology in certain circumstances, including, to avoid unnecessary turnover, excessive index changes or adjustments, possible market disruption, to enhance/allow for index replicability, or when strict application of the index rules results in inconsistency with the intention of the index objective.

### **Data Hierarchy**

Data used for the indices governed by this methodology may include:

a) Evaluated Prices:

- Evaluated pricing providers use a variety of different data inputs, anchored in actual transactions. The weight given to transactions is subject to the type of security, level of market activity, and timing.

b) Non-Evaluated Prices:

- Transactions if appropriate to the security to be priced and the time of pricing, and
- Firm-Bid Offers if applicable to the security in question and pricing timeliness.

### **Contact Information**

For questions regarding an index, please contact: [index\\_services@spglobal.com](mailto:index_services@spglobal.com).

# Appendix I

## **Key Ratings Symbols and Definitions Used by S&P Dow Jones Indices' Fixed Income Indices**

S&P DJI uses a variety of criteria in constructing and maintaining fixed income indices. For many of the indices, credit ratings play a key role in the selection of index securities. For example, certain indices maintain eligibility criteria that require index securities to have an “investment-grade” rating of at least BBB- by S&P Global Ratings, Baa3 by Moody's, or BBB- by Fitch. Others require “high-yield” or “speculative” ratings below “investment-grade.” Eligibility criteria for each index can be found within the respective index methodology document available at [www.spglobal.com/spdji/](http://www.spglobal.com/spdji/).

A plethora of credit ratings symbols and definitions exist depending on the following:

- The Nationally Recognized Statistical Rating Organizations (NRSRO) – S&P Global Ratings, Moody's, Fitch, etc.
- The type of credit rating - Issuer or Issue
- The tenor of the obligation - Long-term or Short-term
- The type of obligation - Structured Finance, Public Finance, Corporate Finance, etc.
- Additional criteria as set forth by each NRSRO

This section aims to provide a general outline of key credit ratings symbols and definitions. Included herein are some of the more common SPGR, Moody's and Fitch ratings symbols and definitions.

This document does not aim to be a substitute for all the various ratings scales, symbols and definitions used by SPGR, Moody's, Fitch and other NRSROs. For the full range of credit scales, symbols and definitions used by each NRSRO, please refer to each respective agency's Web site.

## Key Ratings Symbols and Definitions Used by S&P Dow Jones Indices' Fixed Income Indices

Long-Term Issue Credit Ratings			
S&P	Moody's	Fitch*	
AAA	Aaa	AAA	<i>"Prime / Maximum Safety"</i>
AA+	Aa1	AA+	<i>"High Grade High Quality"</i>
AA	Aa2	AA	
AA-	Aa3	AA-	
A+	A1	A+	<i>"Upper Medium Grade"</i>
A	A2	A	
A-	A3	A-	
BBB+	Baa1	BBB+	<i>"Lower Medium Grade"</i>
BBB	Baa2	BBB	
BBB-	Baa3	BBB-	
BB+	Ba1	BB+	<i>"Non Investment Grade"</i>
BB	Ba2	BB	<i>"Speculative"</i>
BB-	Ba3	BB-	
B+	B1	B+	<i>"Highly Speculative"</i>
B	B2	B	
B-	B3	B-	
CCC+	Caa1	CCC	<i>"Substantial Risk"</i>
CCC	Caa2	-	<i>"In Poor Standing"</i>
CCC-	Caa3	-	
CC	Ca	CC	<i>"Extremely Speculative"</i>
C	C	C	<i>"May be in Default"</i>
D	-	D	<i>"Default"</i>
* For Fitch, Ratings Scale herein refers to the scale for Structured, Project and Public Finance Obligations. For additional rating scales and definitions, please refer to Fitch Ratings ( <a href="http://www.fitchratings.com">www.fitchratings.com</a> ).			

Short-Term Issue Credit Rating			
S&P	Moody's**	Fitch	
A-1+	VMIG 1	F1+	<i>"Investment Grade"</i>
A-1	VMIG 2	F1	
A-2	VMIG 2	F2	
A-3	VMIG 3	F3	
B	SG	B	<i>"Speculative"</i>
C	-	C	
D	-	RD/D	
<p>** For Moody's, Rating Scale herein refers to the scale for Variable Rate Demand Obligations. For additional short-term rating scales and definitions, please refer to Moody's Investor's Services (<a href="http://www.moody's.com">www.moody's.com</a>).</p>			



## SPGR Issue Credit Ratings Definitions<sup>2</sup>

An SPGR issued credit rating is a forward-looking opinion about the creditworthiness of an obligor with respect to a specific financial obligation, a specific class of financial obligations, or a specific financial program (including ratings on medium-term note programs and commercial paper programs). It takes into consideration the creditworthiness of guarantors, insurers, or other forms of credit enhancement on the obligation and takes into account the currency in which the obligation is denominated. The opinion reflects SPGR's view of the obligor's capacity and willingness to meet its financial commitments as they come due, and may assess terms, such as collateral security and subordination, which could affect ultimate payment in the event of default.

Issue credit ratings can be either long-term or short-term. Short-term ratings are generally assigned to those obligations considered short-term in the relevant market. In the U.S., for example, that means obligations with an original maturity of no more than 365 days including commercial paper. Short-term ratings are also used to indicate the creditworthiness of an obligor with respect to put features on long-term obligations. The result is a dual rating, in which the short-term rating addresses the put feature, in addition to the usual long-term rating. Medium-term notes are assigned long-term ratings.

## S&P Global Ratings Long-Term Issue Credit Ratings

Rating	Definition
AAA	An obligation rated 'AAA' has the highest rating assigned by SPGR. The obligor's capacity to meet its financial commitment on the obligation is extremely strong.
AA	An obligation rated 'AA' differs from the highest-rated obligations only to a small degree. The obligor's capacity to meet its financial commitment on the obligation is very strong.
A	An obligation rated 'A' is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than obligations in higher-rated categories. However, the obligor's capacity to meet its financial commitment on the obligation is still strong.
BBB	An obligation rated 'BBB' exhibits adequate protection parameters. However, adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity of the obligor to meet its financial commitment on the obligation.
BB	An obligation rated 'BB' is less vulnerable to nonpayment than other speculative issues. However, it faces major ongoing uncertainties or exposure to adverse business, financial, or economic conditions which could lead to the obligor's inadequate capacity to meet its financial commitment on the obligation.
B	An obligation rated 'B' is more vulnerable to nonpayment than obligations rated 'BB', but the obligor currently has the capacity to meet its financial commitment on the obligation. Adverse business, financial, or economic conditions will likely impair the obligor's capacity or willingness to meet its financial commitment on the obligation.
CCC	An obligation rated 'CCC' is currently vulnerable to nonpayment, and is dependent upon favorable business, financial, and economic conditions for the obligor to meet its financial commitment on the obligation. In the event of adverse business, financial, or economic conditions, the obligor is not likely to have the capacity to meet its financial commitment on the obligation.
CC	An obligation rated 'CC' is currently highly vulnerable to nonpayment.
C	A 'C' rating is assigned to obligations that are currently highly vulnerable to nonpayment, obligations that have payment arrearages allowed by the terms of the documents, or obligations of an issuer that is the subject of a bankruptcy petition or similar action which have not experienced a payment default. Among others, the 'C' rating may be assigned to subordinated debt, preferred stock or other obligations on which cash payments have been suspended in accordance with the instrument's terms or when preferred stock is the subject of a distressed exchange offer, whereby some or all of the issue is either

<sup>2</sup> "S&P Global Ratings Definitions," Apr. 19, 2018, S&P Global Ratings.  
[https://www.standardandpoors.com/en\\_US/web/quest/article/-/view/sourceId/504352](https://www.standardandpoors.com/en_US/web/quest/article/-/view/sourceId/504352).

<b>Rating</b>	<b>Definition</b>
	repurchased for an amount of cash or replaced by other instruments having a total value that is less than par.
<b>D</b>	An obligation rated 'D' is in payment default. The 'D' rating category is used when payments on an obligation, including a regulatory capital instrument, are not made on the date due even if the applicable grace period has not expired, unless S&P Global Ratings believes that such payments will be made during such grace period. The 'D' rating also will be used upon the filing of a bankruptcy petition or the taking of similar action if payments on an obligation are jeopardized. An obligation's rating is lowered to 'D' upon completion of a distressed exchange offer, whereby some or all of the issue is either repurchased for an amount of cash or replaced by other instruments having a total value that is less than par.
<b>NR</b>	This indicates that no rating has been requested, that there is insufficient information on which to base a rating, or that S&P Global Ratings does not rate a particular obligation as a matter of policy.

**Note:** The ratings from 'AA' to 'CCC' may be modified by the addition of a plus (+) or minus (-) sign to show relative standing within the major rating categories.

### S&P Global Ratings Short-Term Issue Credit Ratings

<b>Rating</b>	<b>Definition</b>
<b>A-1</b>	A short-term obligation rated 'A-1' is rated in the highest category by SPGR. The obligor's capacity to meet its financial commitment on the obligation is strong. Within this category, certain obligations are designated with a plus sign (+). This indicates that the obligor's capacity to meet its financial commitment on these obligations is extremely strong.
<b>A-2</b>	A short-term obligation rated 'A-2' is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than obligations in higher rating categories. However, the obligor's capacity to meet its financial commitment on the obligation is satisfactory.
<b>A-3</b>	A short-term obligation rated 'A-3' exhibits adequate protection parameters. However, adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity of the obligor to meet its financial commitment on the obligation.
<b>B</b>	A short-term obligation rated 'B' is regarded as having significant speculative characteristics. The obligor currently has the capacity to meet its financial commitment on the obligation; however, it faces major ongoing uncertainties which could lead to the obligor's inadequate capacity to meet its financial commitment on the obligation.
<b>C</b>	A short-term obligation rated 'C' is currently vulnerable to nonpayment and is dependent upon favorable business, financial, and economic conditions for the obligor to meet its financial commitment on the obligation.
<b>D</b>	A short-term obligation rated 'D' is in payment default. The 'D' rating category is used when payments on an obligation, including a regulatory capital instrument, are not made on the date due even if the applicable grace period has not expired, unless S&P Global Ratings believes that such payments will be made during such grace period. The 'D' rating also will be used upon the filing of a bankruptcy petition or the taking of a similar action if payments on an obligation are jeopardized.

### Moody's General Credit Ratings Services Definitions<sup>3</sup>

#### Moody's Long-Term Obligation Ratings

Moody's long-term ratings are opinions of the relative credit risk of financial obligations with an original maturity of one year or more. They address the possibility that a financial obligation will not be honored as promised. Such ratings use Moody's Global Scale and reflect both the likelihood of default and any financial loss suffered in the event of default.

<sup>3</sup> "Ratings Symbols and Definitions," Jul. 2017, Moody's Investors Service  
[http://www.moodys.com/researchdocumentcontentpage.aspx?docid=PBC\\_79004](http://www.moodys.com/researchdocumentcontentpage.aspx?docid=PBC_79004)

<b>Rating</b>	<b>Definition</b>
<b>Aaa</b>	Obligations rated 'Aaa' are judged to be of the highest quality, with minimal credit risk.
<b>Aa</b>	Obligations rated 'Aa' are judged to be of high quality and are subject to very low credit risk.
<b>A</b>	Obligations rated 'A' are considered upper-medium grade and are subject to low credit risk.
<b>Baa</b>	Obligations rated 'Baa' are subject to moderate credit risk. They are considered medium grade and as such may possess certain speculative characteristics.
<b>Ba</b>	Obligations rated 'Ba' are judged to have speculative elements and are subject to substantial credit risk.
<b>B</b>	Obligations rated 'B' are considered speculative and are subject to high credit risk.
<b>Caa</b>	Obligations rated 'Caa' are judged to be of poor standing and are subject to very high credit risk.
<b>Ca</b>	Obligations rated 'Ca' are highly speculative and are likely in, or very near, default, with some prospect of recovery of principal and interest.
<b>C</b>	Obligations rated 'C' are the lowest rated class and are typically in default, with little prospect for recovery of principal or interest.

**Note:** Moody's appends numerical modifiers 1, 2, and 3 to each generic rating classification from 'Aa' through 'Caa'. A '1' indicates that the obligation ranks in the higher end of its generic rating category; A '2' indicates a mid-range ranking; and a '3' indicates a ranking in the lower end of that generic rating category.

### Moody's Demand Obligation Ratings

In the case of variable rate demand obligations (VRDOs), a two-component rating is assigned - a long or short-term debt rating and a demand obligation rating. The first element represents Moody's evaluation of the degree of risk associated with scheduled principal and interest payments. The second element represents Moody's evaluation of the degree of risk associated with the ability to receive purchase price upon demand ("demand feature"), using a variation of the MIG rating scale, the Variable Municipal Investment Grade or VMIG rating.

When either the long- or short-term aspect of a VRDO is not rated, that piece is designated NR, e.g., Aaa/NR or NR/VMIG 1.

VMIG rating expirations are a function of each issue's specific structural or credit features.

<b>Rating</b>	<b>Definition</b>
<b>VMIG 1</b>	This designation denotes superior credit quality. Excellent protection is afforded by the superior short-term credit strength of the liquidity provider and structural and legal protections that ensure the timely payment of purchase price upon demand.
<b>VMIG 2</b>	This designation denotes strong credit quality. Good protection is afforded by the strong short-term credit strength of the liquidity provider and structural and legal protections that ensure the timely payment of purchase price upon demand.
<b>VMIG 3</b>	This designation denotes acceptable credit quality. Adequate protection is afforded by the satisfactory short-term credit strength of the liquidity provider and structural and legal protections that ensure the timely payment of purchase price upon demand.
<b>SG</b>	This designation denotes speculative-grade credit quality. Demand features rated in this category may be supported by a liquidity provider that does not have an investment grade short-term rating or may lack the structural and/or legal protections necessary to ensure the timely payment of purchase price upon demand.

## Fitch Ratings Definitions<sup>4</sup>

### Fitch Long-Term Structured, Project & Public Finance Obligations Ratings

Ratings of structured finance, project finance and public finance obligations on the long-term scale, including the financial obligations of sovereigns, consider the obligations' relative vulnerability to default. These ratings are typically assigned to an individual security or tranche in a transaction and not to an issuer.

<b>Rating</b>	<b>Definition</b>
<b>AAA</b>	Highest credit quality. 'AAA' ratings denote the lowest expectation of default risk. They are assigned only in cases of exceptionally strong capacity for payment of financial commitments. This capacity is highly unlikely to be adversely affected by foreseeable events.
<b>AA</b>	Very high credit quality. 'AA' ratings denote expectations of very low default risk. They indicate very strong capacity for payment of financial commitments. This capacity is not significantly vulnerable to foreseeable events.
<b>A</b>	High credit quality. 'A' ratings denote expectations of low default risk. The capacity for payment of financial commitments is considered strong. This capacity may, nevertheless, be more vulnerable to adverse business or economic conditions than is the case for higher ratings.
<b>BBB</b>	Good credit quality. 'BBB' ratings indicate that expectations of default risk are currently low. The capacity for payment of financial commitments is considered adequate but adverse business or economic conditions are more likely to impair this capacity.
<b>BB</b>	Speculative. 'BB' ratings indicate an elevated vulnerability to default risk, particularly in the event of adverse changes in business or economic conditions over time.
<b>B</b>	Highly speculative. 'B' ratings indicate that material default risk is present, but a limited margin of safety remains. Financial commitments are currently being met; however, capacity for continued payment is vulnerable to deterioration in the business and economic environment.
<b>CCC</b>	Substantial credit risk. Default is a real possibility.
<b>CC</b>	Very high levels of credit risk. Default of some kind appears probable.
<b>C</b>	Exceptionally high levels of credit risk. Default appears imminent or inevitable.

<sup>4</sup> "Definitions of Ratings and Other Forms of Opinion," Dec. 2014, Fitch Ratings  
<[http://www.fitchratings.com/web\\_content/ratings/fitch\\_ratings\\_definitions\\_and\\_scales.pdf](http://www.fitchratings.com/web_content/ratings/fitch_ratings_definitions_and_scales.pdf)>

<b>Rating</b>	<b>Definition</b>
<b>D</b>	Default. Indicates a default. Default generally is defined as one of the following: <ul style="list-style-type: none"> <li>• failure to make payment of principal and/or interest under the contractual terms of the rated obligation;</li> <li>• the bankruptcy filings, administration, receivership, liquidation or other winding-up or cessation of the business of an issuer/obligor; or</li> <li>• the distressed exchange of an obligation, where creditors were offered securities with diminished structural or economic terms compared with the existing obligation to avoid a probable payment default.</li> </ul>
<b>NR</b>	Not Rated. Used to denote securities not rated by Fitch where Fitch has rated some, but not all, securities comprising an issuance capital structure.

**Note:** The modifiers “+” or “-” may be appended to a rating to denote relative status within major rating categories. Such suffixes are not added to the ‘AAA’ obligation rating category, or to corporate finance obligation ratings in the categories below ‘B’.

### **Fitch Short-Term Ratings**

Short-Term Ratings Assigned to Issuers or Obligations in Corporate, Public and Structured Finance

A short-term issuer or obligation rating is based in all cases on the short-term vulnerability to default of the rated entity or security stream and relates to the capacity to meet financial obligations in accordance with the documentation governing the relevant obligation. Short-Term Ratings are assigned to obligations whose initial maturity is viewed as “short term” based on market convention. Typically, this means up to 13 months for corporate, sovereign, and structured obligations, and up to 36 months for obligations in U.S. public finance markets.

<b>Rating</b>	<b>Definition</b>
<b>F1</b>	Highest short-term credit quality. Indicates the strongest intrinsic capacity for timely payment of financial commitments; may have an added “+” to denote any exceptionally strong credit feature.
<b>F2</b>	Good short-term credit quality. Good intrinsic capacity for timely payment of financial commitments.
<b>F3</b>	Fair short-term credit quality. The intrinsic capacity for timely payment of financial commitments is adequate.
<b>B</b>	Speculative short-term credit quality. Minimal capacity for timely payment of financial commitments, plus heightened vulnerability to near term adverse changes in financial and economic conditions.
<b>C</b>	High short-term default risk. Default is a real possibility.
<b>RD</b>	Restricted default. Indicates an entity that has defaulted on one or more of its financial commitments, although it continues to meet other financial obligations. Applicable to entity ratings only.
<b>D</b>	Default. Indicates a broad-based default event for an entity, or the default of a short-term obligation.

# Appendix II

## Glossary of Terms

The data used by S&P DJI's indices is contained in two output files, the Constituent Level file and the Index Level file.

The constituent level file shows data at the constituent security level. For example, it shows the security identifier (CUSIP or ISIN), security description, local currency par amount, security credit rating, etc., of each fixed income security in an index. The index level file shows data at the index level and uses the base currency of the index. For example, it shows the index name, the index total return value, the weighted average credit ratings, adjusted market value of the index, constituent count, etc.

This section aims to provide a general outline of the key data displayed in these files in addition to related fixed income terminology. Included herein are definitions of the key terms and calculations of the two files as they relate to the S&P DJI's fixed income indices. Where relevant, we have provided additional important fixed income terms which may not appear in the output files.

This document does not aim to be a substitute for the specific index methodology documents of each index. Rather, this document is a general outline and calculations for certain indices may differ. Therefore, please refer to each index methodology for specific details regarding constituent security eligibility and index calculations at both the constituent and index levels.

**High-Yield Bonds:** Bonds rated 'BB+' or lower by S&P Global Ratings and Fitch Ratings or 'Ba1' or lower by Moody's Investors Service. These lower credit ratings indicate a higher risk of default. Due to the increased risk of default, these bonds are typically issued at a higher yield than more creditworthy bonds. Also known as "speculative" or "junk" bonds.

**Investment Grade Bonds:** Bonds rated 'BBB-' or above by S&P Global Ratings and Fitch Ratings or 'Baa3' or above by Moody's Investors Service. These higher credit ratings indicate a lower risk of default. Correspondingly, these bonds also tend to issue at lower yields than less creditworthy bonds. Also known as "high grade" bonds.

**Ratings Upgrades or Downgrades:** Ratings revisions that are generally made by ratings agencies when something changes, either with the bond itself or the underlying economic fundamentals of the company, government or organization that issued the bond. For example, a bond may be downgraded (assigned a lower rating than it was initially given) because the issuer's financial condition, or the general economy in which it participates, has deteriorated.

## Constituent Level Terminology

**Accrued Interest:** Interest deemed to be earned on a security but not yet paid to the investor.

**Adjusted Market Value:** An adjustment to an index constituent's market value in order to conform to a particular index methodology weighting rules and concentration requirements. The calculation for the adjusted market value is as follows:

$$ADJ\ Market\ Value = Market\ Value * AWF$$

See each respective index's methodology for details on weighting, constituent concentration requirements and index calculations.

**Adjusted Weight Factor (AWF):** Sometimes referred to as “Additional Weight Factor,” the AWF is the value used to adjust the market value of securities in equal or modified market-cap weighted indices. Often, this is equal to one (1), and has no effect on a constituent security. However, for indices that have certain rules governing constituent weight limits and/or concentration requirements, an adjusted weight factor (AWF) is used to bring into line the weights and market values of certain index constituents in order to conform to the index methodology.

See each respective index’s methodology for details on weighting, constituent concentration requirements and index calculations.

For more detailed information regarding the application of AWFs, see the S&P Dow Jones Indices’ *Index Mathematics Methodology* available at [www.spglobal.com/spdji/](http://www.spglobal.com/spdji/).

**Beginning Market Value:** The security’s adjusted market value as of the close of the last rebalancing period.

**Cash:** In reference to S&P DJI’s fixed income indices, cash received on the instrument since the last rebalancing.

**Clean Price:** Price of a bond excluding accrued interest. Bond prices are usually quoted clean.

**Country:** Two-letter ISO country codes defined and published by the International Organization for Standardization (ISO), to represent countries, dependent territories, and special areas of geographical interest. Examples of ISO country codes include the codes for the United States (US), France (FR), and Japan (JP).

**Country of Risk:** Country assigned to a bond issue based on a combination of factors such as geographic revenue distribution, filing currency, and location of headquarters and primary security listing

**Country of Domicile:** Country assigned to a bond issue based on its listing domicile.

**Coupon:** The current annual coupon rate. Coupons are generally, but not always, paid semiannually.

**Currency Code:** ISO currency codes are three-letter alphabetic codes that represent the various currencies used throughout the world. The codes were developed and are maintained by the International Organization for Standardization (ISO), which provides standards for businesses, governments and societies.

**CUSIP:** The Committee on Uniform Security Identification Procedures was established by the American Bankers Association to develop a uniform method of identifying securities. CUSIP numbers are unique nine-character alphanumeric identifiers assigned to each series of securities. CUSIPs are assigned by CUSIP Global Services (CGS), the overarching entity representing all CUSIP global identification offerings. CGS is managed on behalf of the American Bankers Association (ABA) by S&P Global Market Intelligence’s CUSIP Service Bureau.

**Daily Interest Return:** The daily interest return (or daily coupon return) is the return due to interest earned on a bond. See S&P Dow Jones Indices’ Fixed Income Index Mathematics Methodology and/or the respective index’s methodology for calculation details.

**Daily Price Return:** The daily price return measures the return due to the day-over-day change in the market price of the bond. See S&P Dow Jones Indices’ Fixed Income Index Mathematics Methodology and/or the respective index’s methodology for calculation details.

**Daily Total Return:** An investment performance measure showing the actual rate of return of an index portfolio security day-over-day. Daily total return accounts for two categories of return: interest income and capital appreciation, or price return.



Price return measures the return due to the change in the market price of the bond. Interest return (or coupon return) includes the return due to the interest earned on that bond. In the case of zero coupon bonds, the accretion in price due to interest return is reported as price return.

See S&P Dow Jones Indices' Fixed Income Index Mathematics Methodology and/or the respective index's methodology for calculation details.

**Description:** Security name and description based on information from data feeds used by S&P DJI, such as Refinitiv, IDC, etc., depending on the index.

**Description (Other):** Security name and description based on additional/alternative information from data feeds used by S&P DJI, such as Refinitiv, IDC, etc., depending on the index.

**Dirty Price:** Price of a bond including accrued interest. May also be called the "all-in price".

**Effective Date:** Date of the data, as of after the close of business.

**Effective Duration:** Effective duration is a modification to Modified Duration and designed for bonds that have embedded options. This measure of duration takes into account the fact that expected cash flows will fluctuate as interest rates change, as opposed to the static approach that Modified Duration takes.

**Effective Maturity:** For fixed income securities with a mandatory redemption, call, tender or similar event prior to the maturity date, it is the date of such future event. If no mandatory redemption, call, tender or similar event is applicable to the security, it is generally the maturity date.

**Face (or Par Value or Principal Value):** The principal amount of a security that appears on the face of the instrument.

**Face Value:** The par value of a security, as distinct from its market value.

**Fitch Rating:** The fixed income security credit rating as per Fitch Ratings. Please see Appendix I *Key Ratings Symbols and Definitions Used by S&P Dow Jones Indices' Fixed Income Indices*.

**FX Rate:** The FX rate, or foreign exchange rate, is the price of one currency expressed in another currency. In other words, the rate at which one currency can be exchanged for another.

Generally, unless otherwise stated in the respective index methodology, the base currency of the index is U.S. Dollars. Therefore, holdings of foreign denominated constituent securities are translated into index base currency values using the daily spot FX rate. Securities denominated in U.S. Dollars, such as U.S. municipal securities show an FX rate of one (1). See *Market Value* for calculation details.

**GICS Code:** Detailed information can be found in *S&P Dow Jones Indices' Global Industry Classification Standard (GICS) Methodology* and *GICS Map*, available at [www.spglobal.com/spdji/](http://www.spglobal.com/spdji/).

**PIC Code:** S&P Global Primary Industry Classifications (PIC) Codes are sector classifications from the issuing company. PIC codes rely on a similar methodology as the GICS code, but includes private or other companies not trading an equity issue. Private companies are maintained in the S&P Capital IQ database, and the database is updated as new information is available. The PIC structure is owned by S&P Global; and while similar or comparable in structure to GICS, it is not GICS and does not use GICS codes.

**Index Weight:** Generally, for market-value weighted indices, the index weight is the relative weight of the index security in the index. This is defined as the market value of that security expressed as a percentage of the aggregate market value of all index securities in the index portfolio. However, certain indices maintain weight caps or other restrictions. See S&P Dow Jones Indices' Fixed Income Index Mathematics Methodology and/or the respective index's methodology for calculation details.



**ISIN:** An International Securities Identification Number (ISIN) uniquely identifies a security. Its structure is defined in International Standard for Organization 6166. Securities for which ISINs are issued include bonds, commercial paper, equities, and warrants. The ISIN code is a 12-character alpha-numerical code that does not contain information characterizing financial instruments but serves for uniform identification of a security at trading and settlement.

**Macaulay Modified Duration:** Macaulay Duration measures the number of years required to recover the true cost of a bond, considering the present value of all coupon and principal payments received in the future. Thus, it is a value-weighted average of the timing of the cash flows and is quoted in terms of years.

Modified Duration is a modification of the Macaulay Duration formula designed to measure how small changes in the yield to maturity affect the price of a bond. It follows the concept that interest rates and bond prices move in opposite directions.

**Market Value:** For S&P DJI's fixed income indices, the market value of the respective index security, calculated for each security as of the close on each calendar day. See S&P Dow Jones Indices' Fixed Income Index Mathematics Methodology and/or the respective index's methodology for calculation details.

**Maturity Date:** The date when the principal amount of a bond or other fixed income security is due to be repaid and interest payments stop. The maturity date tells you the last scheduled date when you will get your principal back and for how long you will receive interest payments. However, it is important to note that some fixed income securities have provisions for calls, puts and/or sinking funds, which means that the debt may be paid back prior to the stated maturity date.

**Monetary Default:** When an issuer does not pay all or part of the principal or interest to bondholders when due, it is considered a monetary default.

**Moodys Rating:** The fixed income security credit rating as per Moody's Investors Service. Please see Appendix I *Key Ratings Symbols and Definitions Used by S&P Dow Jones Indices' Fixed Income Indices*.

**OA Spread (Option Adjusted Spread):** The average spread over the benchmark curve, based on potential paths that can be realized in the future for interest rates. The potential paths of the cash flows are adjusted to reflect the options (puts/calls) embedded in the bond. The resulting spread is subject to a cap or floor of -3500 or 3500 respectively for index calculation.

**Par Amount:** The principal amount of a bond or note due at maturity, stated in the local currency. Also known as "par value", "face value" and "principal".

**Prepayment (Principal Prepayment):** Repayment of the principal amount by the issuer prior to the stated maturity. Includes "call," but "prepayment" usually connotes less formal procedures than a call.

**Price:** The amount to be paid for a security generally stated as a percentage of its face value or par.

For S&P DJI's fixed income indices, the price in the constituent file is the clean price, i.e. the prices of bonds excluding their respective accrued interest. In the U.S., market convention dictates that bond prices are usually quoted clean.

**Price to Date:** The redemption date used in the yield calculation of fixed income securities that results in the lowest return for the bond at its current price considering the maturity date of the security and any prior optional call provisions that may exist.

**Price with Accrued:** Price with accrued is commonly referred to as the "dirty price" and is the price of a bond including interest accrued up to the business day from the last coupon payment. The dirty price is the price an investor will pay to acquire the bond.

**Pricing Details:** Free text security pricing notes for applicable indices, generally from the security pricing service.

**Principal:** The face amount of a bond, exclusive of accrued interest and payable at maturity.

**Prior Optional Call Provisions:** Provisions outlined in the bond indenture at the time of the bonds sale that allow the issuer (borrower) to redeem the bonds at specific dates and prices prior to the bond's stated maturity.

**Redemption:** The paying off or buying back of a bond by the issuer; also, the repurchase of investment trust units by the trustee, at the bid price.

**Redemption Date:** The day when the bond's term ends and the principal amount of a security is payable along with any final interest payment. Also called the "maturity date". In cases of a callable bond, it may be the "call date".

**Redemption Premium:** The amount by which the "call" price of a security exceeds its principal, or par value.

**SEDOL:** SEDOL stands for Stock Exchange Daily Official List, a list of security identifiers used in the United Kingdom and Ireland for clearing purposes. The numbers are assigned by the London Stock Exchange on request by the security issuer. SEDOLs serve as the NSIN or National Securities Identifying Number for all securities issued in the United Kingdom and are, therefore, part of the security's ISIN as well.

**SP Rating:** The fixed income security credit rating as per S&P Global Ratings. Please see Appendix I *Key Ratings Symbols and Definitions Used by S&P Dow Jones Indices' Fixed Income Indices*.

**State:** Two-letter U.S. Postal Service codes representing U.S. states, dependent territories, and special areas of geographical interest. Examples include the codes for New York (NY), District of Columbia (DC), and Guam (GU).

For purposes of S&P DJI fixed income indices, the security's state is that of the issuer and includes all 50 U.S. states, the District of Columbia, the Commonwealth of Puerto Rico, and U.S. territories such as Guam and the U.S. Virgin Islands.

**Variable Rate Demand Obligation (VRDO):** A bond which bears interest at a variable, or floating, rate established at specified intervals (e.g., flexible, daily, weekly, monthly or annually). It contains a put option permitting the bondholder to tender the bond for purchase when a new interest rate is established. VRDOs are also referred to as VRDNs (N=Notes), VRDBs (B=Bonds) or "low floaters".

**Years to Maturity:** The number of years until maturity.

**Yield to Call:** The annual rate of return expected on a bond based on its current price and the assumption the bond will be called or redeemed by the issuer at a predetermined date and price. This is subject to a floor or cap of -250 or 250 respectively for index calculation.

**Yield to Maturity:** The annual rate of return expected on a bond based on its current price and the assumption that it will be held to maturity. Sometimes also referred to as "yield." This is subject to a floor or cap of -250 or 250 respectively for index calculation.

**Yield to Worst:** This is the lowest yield generated, given the potential stated calls prior to maturity. This is subject to a floor or cap of -250 or 250 respectively for index calculation.

## Index Level Terminology

**Constituent Count:** The number of fixed income constituent securities in the respective index at the close of business on the effective date.

**Convexity (Market Value Weighted Average):** Convexity is a measure of the change in a security's duration with respect to changes in interest rates. The more convex a security is, the more its duration will change with interest rate changes. The security's convexity is subject to a floor or cap of -100 or 100, respectively, for index calculation.

The index level file shows weighted average convexity. This is the weighted average of the convexities of all the fixed income securities in an index. This figure is computed by weighting the convexity of each fixed income security in the index by the market value of the security, then averaging these weighted figures.

The measure is calculated by totaling each bond's market value. The weight of each bond is found by dividing the market value of each into the total of all. To arrive at the weighted average convexity, the weight of each security is multiplied by the convexity of each bond, and then all the values are added together. For example, say an index has three bonds with market values of \$1,000, \$2,000 and \$3,000 (a total of \$6,000) and convexities of 23.19, 77.11 and 21.15 respectively. The weights of these are  $1/6$  ( $1,000/6,000$ ),  $1/3$  ( $2,000/6,000$ ) and  $1/2$  ( $3,000/6,000$ ). The weighted average convexity is approximately  $40.143$  ( $1/6 * 23.19 + 1/3 * 77.11 + 1/2 * 21.15$ ).

**Coupon (Par Amount Outstanding Weighted Average):** The weighted average of the stated interest rates of all the fixed income securities in a respective index. This figure is computed by weighting the coupons of each constituent security in the index by the par amount of the security, then averaging these weighted figures.

The measure is calculated by totaling each security's par amount. The weight of each security is found by dividing the par amount of each into the total of all. To arrive at the weighted average coupon, the weight of each security is multiplied by the coupon of each security, and then all the values are added together. For example, say an index has two bonds with adjusted par amounts of \$6,000,000 and \$4,000,000 (a total of \$10,000,000) and coupons of 7.5% and 5% respectively. The weights of these are  $0.6$  ( $6,000,000/10,000,000$ ) and  $0.4$  ( $4,000,000/10,000,000$ ). The weighted average coupon would be  $6.5\%$  ( $0.6 * 7.5\% + 0.4 * 5\%$ ).

**Daily Index Return:** The day-over-day change in index total return. See S&P Dow Jones Indices' Fixed Income Index Mathematics Methodology and/or the respective index's methodology for calculation details.

**Fitch Rating (Market Value Weighted Average):** The weighted average of all the Fitch Ratings rated bonds held by the index. The measure gives investors a snapshot of the index's overall credit quality. The lower the weighted average credit rating, the riskier the index. The weighted average credit rating is expressed as a regular letter rating, for example AAA, BBB and CCC.

To arrive at the weighted average credit rating, the calculation starts with dividing the market value of each Fitch Ratings rated bond in the index by the total adjusted market value of the Fitch Ratings rated bonds in the index. Bonds not rated by Fitch Ratings are excluded from this calculation. This gives the individual Fitch Ratings rated bond weights. The weight of a bond determines how much that bond influences the weighted average credit rating. Each bond's weight is then multiplied by its credit rating score as noted in the map below:

Fitch L-T Rating / Score					
AAA	100	A-	94	BB-	88
AA+	99	BBB+	93	B+	87
AA	98	BBB	92	B	86
AA-	97	BBB-	91	B-	85
A+	96	BB+	90	CCC+	84
A	95	BB	89	CCC	83
				CCC-	82
				CC+	81
				CC	80
				CC-	79
				C+	78
				C	77
				C-	76
				DDD	75
				DD	74
				D	73
				N/R	0

See *SP Rating* for an example of a weighted average credit rating calculation.

**Fitch ST Rating (Market Value Weighted Average):** The weighted average of all the Fitch Ratings rated short-term fixed income securities held by the index. The measure gives investors a snapshot of the index's overall credit quality. The lower the weighted average credit rating, the riskier the index. The weighted average credit rating is expressed as a regular letter rating, for example F1, B and C.

To arrive at the weighted average credit rating, the calculation starts with dividing the market value of each Fitch Ratings rated short-term security in the index by the total market value of the Fitch Ratings rated short-term securities in the index. Securities not rated by Fitch Ratings are excluded from this calculation. This gives the individual Fitch Ratings rated security weights. The weight of a security determines how much that security influences the weighted average credit rating. See *SP Rating* for an example of a weighted average credit rating calculation.

**Index Code:** S&P DJI's unique index code to represent each respective index.

**Index IR Value:** Daily index interest return values are generally calculated each day by applying the current day's index interest return to the previous day's index value. See S&P Dow Jones Indices' Fixed Income Index Mathematics Methodology and/or the respective index's methodology for calculation details.

**Index Market Value:** The sum of all the index constituents' market values. See S&P Dow Jones Indices' Fixed Income Index Mathematics Methodology and/or the respective index's methodology for calculation details.

**Index Name:** Name of the index to which the data applies.

**Index Par Amount Outstanding:** The sum of all the index constituents' par amounts. See S&P Dow Jones Indices' Fixed Income Index Mathematics Methodology and/or the respective index's methodology for calculation details.

**Index PR Value:** Daily index price return values are generally calculated each day by applying the current day's index price return to the previous day's index value. See S&P Dow Jones Indices' Fixed Income Index Mathematics Methodology and/or the respective index's methodology for calculation details.

**Index TR Value:** Daily index total return values are generally calculated each day by applying the current day's index total return to the previous day's index value. See S&P Dow Jones Indices' Fixed Income Index Mathematics Methodology and/or the respective index's methodology for calculation details.

**ISO (Currency) Code:** ISO currency codes are three-letter alphabetic codes that represent the various currencies used throughout the world. The codes were developed and are maintained by the International Organization for Standardization (ISO), which provides standards for businesses, governments and societies.

ISO currency code standards are periodically updated and published. Examples of ISO currency codes include the codes for the Euro (EUR), U.S. Dollar (USD), and Pound Sterling (GBP). These codes are used in foreign exchange markets, such as forex and currency futures. Each of the three-letter alphabetic codes has a corresponding three-digit numeric code. For example, the three-digit numeric code for the U.S. Dollar (USD) is 840.

For purposes of S&P DJI fixed income indices, the index level ISO code is the base currency of the index, generally U.S. Dollars unless otherwise stated in the index's methodology document.

For example, even though the S&P International Sovereign Ex-U.S. Bond Indices contain bonds denominated in a variety of local currencies, the index itself is in U.S. Dollars.

**Local Rating (Market Value Weighted Average):** Following the concept and calculation methodology outlined in *SP Rating*, *Moody Rating* and *Fitch Rating*, Local Rating is a placeholder for use if and when

an additional ratings agency is used to rate constituent bonds in conformity with the rules governing certain indices. Please refer to the index's methodology for the policies regarding its constituent ratings requirements.

See *SP Rating*, *Moody Rating* and *Fitch Rating* for details on how to compute.

**Local ST Rating (Market Value Weighted Average):** Following the concept and calculation methodology outlined in *SP ST Rating*, *Moody ST Rating* and *Fitch ST Rating*, Local ST Rating is a placeholder for use if and when an additional ratings agency is used to rate constituent short-term securities in conformity with the rules governing certain indices. Please refer to the index's methodology for the policies regarding its constituent ratings requirements.

See *SP ST Rating*, *Moody ST Rating* and *Fitch ST Rating* for details on how to compute.

**Modified Duration (Market Value Weighted Average):** The weighted average of the modified durations of all the fixed income securities in an index. This figure is computed by weighting the modified duration of each fixed income security in the index by the market value of the security, then averaging these weighted figures.

The measure is calculated by totaling each bond's market value. The weight of each bond is found by dividing the market value of each into the total of all. To arrive at the weighted average modified duration, the weight of each security is multiplied by the modified duration of each bond, and then all the values are added together. For example, say an index has three bonds with market values of \$1,000, \$2,000 and \$3,000 (a total of \$6,000) and modified durations of 5.5, 7.8 and 12 respectively. The weights of these are 1/6 (1,000/6,000), 1/3 (2,000/6,000) and 1/2 (3,000/6,000). The weighted average modified duration is approximately 9.52 ( $1/6 * 5.5 + 1/3 * 7.8 + 1/2 * 12$ ).

**Moody Rating (Market Value Weighted Average):** The weighted average of all the Moody's Investors Service rated bonds held by the index. The measure gives investors a snapshot of the index's overall credit quality. The lower the weighted average credit rating, the riskier the index. The weighted average credit rating is expressed as a regular letter rating, for example Aaa, Baa2 and Caa2.

To arrive at the weighted average credit rating, the calculation starts with dividing the market value of each Moody's Investors Service rated bond in the index by the total adjusted market value of the Moody's Investors Service rated bonds in the index. Bonds not rated by Moody's Investors Services are excluded from this calculation. This gives the individual Moody's Investors Service rated bond weights. The weight of a bond determines how much that bond influences the weighted average credit rating. Each bond's weight is then multiplied by its credit rating score as noted in the map below:

Moody's L-T Rating / Score											
AAA	100	A2	95	BA1	90	B3	85	CA1	80	WR	0
AA1	99	A3	94	BA2	89	CAA1	84	CA2	79		
AA2	98	BAA1	93	BA3	88	CAA2	83	CA3	78		
AA3	97	BAA2	92	B1	87	CAA3	82	C	77		
A1	96	BAA3	91	B2	86	CA	81	N/R	0		

See *SP Rating* for an example of a weighted average credit rating calculation.

**Moody ST Rating (Market Value Weighted Average):** The weighted average of all the Moody's Investors Service rated short-term fixed income securities held by the index. The measure gives investors a snapshot of the index's overall credit quality. The lower the weighted average credit rating, the riskier the index. The weighted average credit rating is expressed as a regular letter rating, for example VMIG 1, VMIG2 and SG, for Variable Rate Demand Obligations.

To arrive at the weighted average credit rating, the calculation starts with dividing the market value of each Moody's Investors Service rated short-term security in the index by the total market value of the Moody's Investors Service rated short-term securities in the index. Securities not rated by Moody's

Investors Services are excluded from this calculation. This gives the individual Moody's Investors Service rated security weights. The weight of a security determines how much that security influences the weighted average credit rating. See *SP Rating* for an example of a weighted average credit rating calculation.

**OA Spread (Market Value Weighted Average Option-Adjusted Spread):** The weighted average of the option adjusted spreads of all the fixed income securities in an index. This figure is computed by weighting the option adjusted spread of each fixed income security in the index by the market value of the security, then averaging these weighted figures.

The measure is calculated by totaling each bond's market value. The weight of each bond is found by dividing the market value of each into the total of all. To arrive at the weighted average option adjusted spread, the weight of each security is multiplied by the option adjusted spread of each bond, and then all the values are added together. For example, say an index has three bonds with market values of \$1,000, \$2,000 and \$3,000 (a total of \$6,000) and option adjusted spreads of 5.64, 7.905 and 11.648 respectively. The weights of these are  $1/6$  ( $1,000/6,000$ ),  $1/3$  ( $2,000/6,000$ ) and  $1/2$  ( $3,000/6,000$ ). The weighted average option adjusted spread is approximately 9.399 ( $1/6 * 5.64 + 1/3 * 7.905 + 1/2 * 11.648$ ).

**Price (Par Amount Outstanding Weighted Average):** This number reveals whether an index favors bonds selling at prices above or below face value and can also serve as an indicator of interest-rate sensitivity. It is normally expressed as a percentage of par value.

This figure is computed by weighting the clean prices of each constituent security in the index by the par amount of the security, then averaging these weighted figures.

The measure is calculated by totaling each security's par amount. The weight of each security is found by dividing the par amount of each into the total of all. To arrive at the weighted average price, the weight of each security is multiplied by the clean price of each security, and then all the values are added together. For example, say an index has two bonds with adjusted par amounts of \$6,000,000 and \$4,000,000 (a total of \$10,000,000) and prices of 91.3 and 100.137 respectively. The weights of these are 0.6 ( $6,000,000/10,000,000$ ) and 0.4 ( $4,000,000/10,000,000$ ). The weighted average price would be 94.835 ( $0.6 * 91.3 + 0.4 * 100.137$ ).

**Rebalancing Announcement Date:** The date on which changes to the index are published.

**Rebalancing Date:** The date when the changes to the index published on the "rebalancing announcement date" become effective.

**Rebalancing Reference Date:** The cutoff date whereby publicly available information is considered in the rebalancing.

**SP Rating (Market Value Weighted Average):** The weighted average of all the S&P Global Ratings rated bonds held by the index. The measure gives investors a snapshot of the index's overall credit quality. The lower the weighted average credit rating, the riskier the index. The weighted average credit rating is expressed as a regular letter rating, for example AAA, BBB and CCC.

To arrive at the weighted average credit rating, the calculation starts with dividing the market value of each bond in the index rated by S&P Global Ratings by the total adjusted market value of bonds in the index rated by S&P Global Ratings. Bonds not rated by S&P Global Ratings are excluded from this calculation. This gives the individual S&P Global Ratings rated bond weights. The weight of a bond determines how much that bond influences the weighted average credit rating. Each bond's weight is then multiplied by its credit rating score as noted in the map below:

#### S&P Global Ratings' L-T Rating / Score

AAA	100	A	95	BB+	90	B-	85	C	80
AA+	99	A-	94	BB	89	CCC+	84	D	79
AA	98	BBB+	93	BB-	88	CCC	83	N/R	0
AA-	97	BBB	92	B+	87	CCC-	82		
A+	96	BBB-	91	B	86	CC	81		

For example, say an index has three bonds with adjusted market values of \$1,000, \$2,000 and \$3,000 (a total of \$6,000) and S&P Global Ratings credit ratings of AAA, A+ and BBB- respectively. The weights of these are 1/6 (1,000/6,000), 1/3 (2,000/6,000) and 1/2 (3,000/6,000). The weighted average credit rating is approximately A- or 94.17 (1/6 \* 100 + 1/3 \* 96 + 1/2 \* 91). Note, decimals of 0.5 and above are rounded up to the next rating, while those below 0.5 are rounded down.

**SP ST Rating (Market Value Weighted Average):** The weighted average of all the S&P Global Ratings rated short-term fixed income securities held by the index. The measure gives investors a snapshot of the index's overall credit quality. The lower the weighted average credit rating, the riskier the index. The weighted average credit rating is expressed as a regular letter rating, for example A-1, B and C.

To arrive at the weighted average credit rating, the calculation starts with dividing the market value of each S&P Global Ratings rated short-term security in the index by the total adjusted market value of the S&P Global Ratings rated short-term securities in the index. Securities not rated by S&P Global Ratings are excluded from this calculation. This gives the individual S&P Global Ratings rated security weights. The weight of a security determines how much that security influences the weighted average credit rating. See *SP Rating* for an example of a weighted average credit rating calculation.

**Tax Equivalent Yield (Market Value Weighted Average):** For tax-exempt municipal indices, the tax equivalent yield is a formula which converts the lower yield of a tax-exempt bond into the higher yield of a taxable security to allow investors to compare yields on the two securities. It is calculated as follows:

$$\text{Tax Equivalent Yield} = \text{Tax Free Municipal Bond Yield} / (1 - \text{Tax Rate})$$

For purposes of S&P DJI fixed income indices, the tax rate used is generally 35%.

For example, if a tax-free municipal bond has a yield to maturity of 10% and the tax rate is 35%, a taxable bond would need a pretax yield to maturity of 15.38% (10% / 65%) in order to be considered as having an equivalent yield. Therefore, all taxable bonds with the same risk but with a pretax yield of less than 15.38% should be considered as having an inferior return compared to the 10% tax-exempt municipal bond.

The index level file shows weighted average tax equivalent yield. This is the weighted average of the tax equivalent yields of all the fixed income securities in a tax-exempt municipal index. This figure is computed by weighting the tax equivalent yield of each fixed income security in a tax-exempt municipal index by the market value of the security, then averaging these weighted figures.

The measure is calculated by totaling each bond's market value. The weight of each bond is found by dividing the market value of each into the total of all. To arrive at the weighted average tax equivalent yield, the weight of each security is multiplied by the tax equivalent yield of each bond, and then all the values are added together. For example, say an index has three bonds with market values of \$1,000, \$2,000 and \$3,000 (a total of \$6,000) and tax equivalent yields of 5%, 7% and 10%. The weights of these are 1/6 (1,000/6,000), 1/3 (2,000/6,000) and 1/2 (3,000/6,000). The weighted average taxable equivalent yield is approximately 8.17% (1/6 \* 5% + 1/3 \* 7% + 1/2 \* 10%).

**Years to Maturity (Market Value Weighted Average):** The weighted average of the years to maturity of all the bonds in a respective index. This figure is computed by weighting the maturity of each fixed income security in the index by the market value of the security, then averaging these weighted figures.

The measure is calculated by totaling each bond's market value. The weight of each bond is found by dividing the market value of each into the total of all. To arrive at the weighted average years to maturity, the weight of each security is multiplied by the time until maturity of each bond, and then all the values are added together. For example, say an index has three bonds with market values of \$1,000, \$2,000 and \$3,000 (a total of \$6,000) and mature in one, two and three years respectively. The weights of these are  $1/6$  ( $1,000/6,000$ ),  $1/3$  ( $2,000/6,000$ ) and  $1/2$  ( $3,000/6,000$ ). The weighted average years to maturity is  $2\frac{1}{3}$  years ( $1/6 * 1 \text{ year} + 1/3 * 2 \text{ years} + 1/2 * 3 \text{ years}$ ).

**Yield to Maturity (Market Value Weighted Average):** The weighted average of the yields to maturity of all the fixed income securities in an index. This figure is computed by weighting the yield to maturity of each fixed income security in the index by the market value of the security, then averaging these weighted figures.

The measure is calculated by totaling each bond's market value. The weight of each bond is found by dividing the adjusted market value of each into the total of all. To arrive at the weighted average yield to maturity, the weight of each security is multiplied by the yield to maturity of each bond, and then all the values are added together. For example, say an index has three bonds with market values of \$1,000, \$2,000 and \$3,000 (a total of \$6,000) and yield to maturities of 5%, 7% and 10% respectively. The weights of these are  $1/6$  ( $1,000/6,000$ ),  $1/3$  ( $2,000/6,000$ ) and  $1/2$  ( $3,000/6,000$ ). The weighted average yield to maturity is approximately 8.17% ( $1/6 * 5\% + 1/3 * 7\% + 1/2 * 10\%$ ).

**Yield to Maturity Adjustment for Inflation-linked Securities<sup>5</sup>:** To calculate the yield to maturity adjustment, one has to project the inflation rate for future cash flows of the bond. The projected inflation rate is an approximation of future inflation. See S&P Dow Jones Indices' Fixed Income Index Mathematics Methodology and/or the respective index's methodology for calculation details.

**Yield to Worst (Market Value Weighted Average):** The weighted average of the yields to worst of all the fixed income securities in an index. This figure is computed by weighting the yield to worst of each fixed income security in the index by the market value of the security, then averaging these weighted figures. The measure is calculated by totaling each bond's market value. The weight of each bond is found by dividing the adjusted market value of each into the total of all. To arrive at the weighted average yield to worst, the weight of each security is multiplied by the yield to worst of each bond, and then all the values are added together. For example, say an index has three bonds with adjusted market values of \$1,000, \$2,000 and \$3,000 (a total of \$6,000) and yields to worst of 5%, 7% and 10% respectively. The weights of these are  $1/6$  ( $1,000/6,000$ ),  $1/3$  ( $2,000/6,000$ ) and  $1/2$  ( $3,000/6,000$ ). The weighted average yield to worst is approximately 8.17% ( $1/6 * 5\% + 1/3 * 7\% + 1/2 * 10\%$ ).

---

<sup>5</sup> Nominal yield is applied to inflation/index-linked securities only.



# Appendix III

## Price Capture Times

S&P DJI captures prices for index securities at various times depending on the country/region of the security. Current price capture times are:

Country	Pricing Cycle	Branded	Time Zone	Local Price Time
AUSTRALIA	Asia-Pacific	S&P	Tokyo	4:00 PM JST
AUSTRALIA	Asia-Pacific	S&P/ASX	Sydney	5:00 PM NSW
AUSTRIA	Europe	S&P	London	6:00 PM GMT
BELGIUM	Europe	S&P	London	6:00 PM GMT
BOTSWANA	Europe	S&P	London	6:00 PM GMT
BRAZIL	Americas	S&P	New York	4:00 PM ET
CANADA	Americas	S&P	New York	4:00 PM ET
CHILE	Americas	S&P	New York	4:00 PM ET
CHINA	Asia-Pacific	S&P	Tokyo	4:00 PM JST
COLOMBIA	Americas	S&P	New York	4:00 PM ET
CYPRUS	Europe	S&P	London	6:00 PM GMT
CZECH REPUBLIC	Europe	S&P	London	6:00 PM GMT
DENMARK	Europe	S&P	London	6:00 PM GMT
EGYPT	Europe	S&P	London	6:00 PM GMT
FINLAND	Europe	S&P	London	6:00 PM GMT
FRANCE	Europe	S&P	London	6:00 PM GMT
GERMANY	Europe	S&P	London	6:00 PM GMT
GREECE	Europe	S&P	London	6:00 PM GMT
HONG KONG	Asia-Pacific	S&P	Tokyo	4:00 PM JST
HUNGARY	Europe	S&P	London	6:00 PM GMT
ICELAND	Europe	S&P	London	6:00 PM GMT
INDIA	Asia-Pacific	S&P	Tokyo	4:00 PM JST
INDONESIA	Asia-Pacific	S&P	Tokyo	4:00 PM JST
IRELAND	Europe	S&P	London	6:00 PM GMT
ISRAEL	Europe	S&P	London	6:00 PM GMT
ITALY	Europe	S&P	London	6:00 PM GMT
JAPAN	Asia-Pacific	S&P	Tokyo	4:00 PM JST
KENYA	Europe	S&P	London	6:00 PM GMT
LATVIA	Europe	S&P	London	6:00 PM GMT
LITHUANIA	Europe	S&P	London	6:00 PM GMT
LUXEMBOURG	Europe	S&P	London	6:00 PM GMT
MALAYSIA	Asia-Pacific	S&P	Tokyo	4:00 PM JST
MAURITIUS	Europe	S&P	London	6:00 PM GMT
MEXICO	Americas	S&P	New York	4:00 PM ET
MEXICO	Americas	S&P/BMV	Mexico	2:00 PM CDT
MOROCCO	Europe	S&P	London	6:00 PM GMT
NAMIBIA	Europe	S&P	London	6:00 PM GMT
NETHERLANDS	Europe	S&P	London	6:00 PM GMT
NEW ZEALAND	Asia-Pacific	S&P	Tokyo	4:00 PM JST
NIGERIA	Europe	S&P	London	6:00 PM GMT
NORWAY	Europe	S&P	London	6:00 PM GMT
PERU	Americas	S&P	New York	4:00 PM ET

Country	Pricing Cycle	Branded	Time Zone	Local Price Time
PHILIPPINES	Asia-Pacific	S&P	Tokyo	4:00 PM JST
POLAND	Europe	S&P	London	6:00 PM GMT
PORTUGAL	Europe	S&P	London	6:00 PM GMT
SINGAPORE	Asia-Pacific	S&P	Tokyo	4:00 PM JST
SLOVAKIA	Europe	S&P	London	6:00 PM GMT
SLOVENIA	Europe	S&P	London	6:00 PM GMT
SOUTH AFRICA	Europe	S&P	London	6:00 PM GMT
SOUTH KOREA	Asia-Pacific	S&P	Tokyo	4:00 PM JST
SPAIN	Europe	S&P	London	6:00 PM GMT
SWEDEN	Europe	S&P	London	6:00 PM GMT
SWITZERLAND	Europe	S&P	London	6:00 PM GMT
TAIWAN	Asia-Pacific	S&P	Tokyo	4:00 PM JST
THAILAND	Asia-Pacific	S&P	Tokyo	4:00 PM JST
TUNISIA	Europe	S&P	London	6:00 PM GMT
TURKEY	Europe	S&P	London	6:00 PM GMT
UGANDA	Europe	S&P	London	6:00 PM GMT
UNITED KINGDOM OF GREAT BRITAIN	Europe	S&P	London	6:00 PM GMT
UNITED STATES	Americas	S&P	New York	4:00 PM ET
ZAMBIA	Europe	S&P	London	6:00 PM GMT

# Appendix IV

## Country Classification

Country classification changes since January 1, 2021, are as follows:

Country	Effective Date (After Close)	Classification	
		Previous	Updated
Andorra	11/1/2021	Not Classified	Advanced Economy

# Appendix V

## Methodology Changes

Methodology changes since January 1, 2015, are as follows:

Change	Effective Date (After Close)	Methodology	
		Previous	Updated
Real-Time Index Calculations:  Index Level Auto-Hold	11/17/2023	Index Level: If a security price breaches a threshold, the system generates an internal alert, but continues calculating and disseminating the index level as an S&P analyst investigates and responds to the alert accordingly. In the event an index calculation breaches a threshold, the system will generate alerts and temporarily hold the last index value prior to the breach. While the index is held, the last held index value will be distributed as defined by the set dissemination frequency. Once the held index value is confirmed or falls back within the acceptable tolerance, index calculations will resume with the latest market data.	<b>Index Level:</b> If a security price breaches a threshold, the system generates an internal alert but continues calculating and disseminating the index level as an S&P analyst investigates and responds to the alert accordingly.
Sanctions	02/19/2021	Some sanctions programs are comprehensive in nature, and block the government or include broad-based trade restrictions, while others selectively target specific individuals and entities. Because sanctions can be either comprehensive or selective, S&P DJI reviews sanctions on a case-by-case basis. Depending on the circumstance, countries or specific securities may be impacted by sanctions. Generally, S&P DJI will treat sanctions using the perspective of a U.S. and/or European Union (EU) based investor. Specific securities impacted by sanctions may result in deletion from indices if the impacted security is a current index constituent, blocking the addition of a non-constituent security to an index or freezing the current par amount outstanding/index weight/GICS of a security for the duration of the sanctions. In all cases, S&P DJI's treatment is announced to clients when new sanctions are imposed or removed with index implications.	<p>Some sanctions programs are comprehensive in nature and include broad-based trade restrictions, while others selectively target specific individuals and entities. As sanctions can be either comprehensive or selective, S&amp;P DJI reviews sanctions on a case-by-case basis. Depending on the circumstance, entire countries, or specific securities, may be impacted by sanctions.</p> <p>Generally, S&amp;P DJI will consider sanctions using the perspective of a U.S., U.K., and/or European Union (EU) based investor for standard, global indices. Subject to Index Committee determination, specific securities impacted by sanctions may:</p> <ul style="list-style-type: none"> <li>• Have their current par amount outstanding/index weight/GICS frozen for the duration of the sanctions</li> <li>• Be deleted from indices; and/or</li> <li>• Become ineligible for addition to indices.</li> </ul> <p>In all cases, S&amp;P DJI's specific treatment is announced to clients when new sanctions are imposed or removed with index implications.</p> <p>Subject to S&amp;P DJI's compliance with applicable law, S&amp;P DJI may also elect to publish indices whose objective is to measure the performance of securities from the perspective of certain non U.S./U.K./EU investor groups that may not be impacted by the sanctions described above. Such indices may contain securities subject to sanctions from a U.S./U.K./EU perspective and are therefore ineligible for S&amp;P DJI's global indices. In any such case, the relevant index methodology will explicitly define the treatment. Please note the use and licensing</p>

Change	Effective Date (After Close)	Methodology	
		Previous	Updated
			<p>of such indices may be restricted to ensure S&amp;P DJI's compliance with applicable law.</p> <p>Please note that users of S&amp;P DJI's indices are solely responsible for ensuring such users' compliance with all applicable law (including, without limitation, sanctions laws and any other rules, regulations or prohibitions) in connection with such use (including, without limitation, trading, investment or other use).</p>
Country Classification Policy	09/30/2020	No specific review and implementation process.	Review and implementation process is established.

# Disclaimer

## Performance Disclosure/Back-Tested Data

Where applicable, S&P Dow Jones Indices and its index-related affiliates (“S&P DJI”) defines various dates to assist our clients in providing transparency. The First Value Date is the first day for which there is a calculated value (either live or back-tested) for a given index. The Base Date is the date at which the index is set to a fixed value for calculation purposes. The Launch Date designates the date when the values of an index are first considered live: index values provided for any date or time period prior to the index’s Launch Date are considered back-tested. S&P DJI defines the Launch Date as the date by which the values of an index are known to have been released to the public, for example via the company’s public website or its data feed to external parties. For Dow Jones-branded indices introduced prior to May 31, 2013, the Launch Date (which prior to May 31, 2013, was termed “Date of introduction”) is set at a date upon which no further changes were permitted to be made to the index methodology, but that may have been prior to the Index’s public release date.

Please refer to the methodology for the Index for more details about the index, including the manner in which it is rebalanced, the timing of such rebalancing, criteria for additions and deletions, as well as all index calculations.

Information presented prior to an index’s launch date is hypothetical back-tested performance, not actual performance, and is based on the index methodology in effect on the launch date. However, when creating back-tested history for periods of market anomalies or other periods that do not reflect the general current market environment, index methodology rules may be relaxed to capture a large enough universe of securities to simulate the target market the index is designed to measure or strategy the index is designed to capture. For example, market capitalization and liquidity thresholds may be reduced. In addition, forks have not been factored into the back-test data with respect to the S&P Cryptocurrency Indices. For the S&P Cryptocurrency Top 5 & 10 Equal Weight Indices, the custody element of the methodology was not considered; the back-test history is based on the index constituents that meet the custody element as of the Launch Date. Back-tested performance reflects application of an index methodology and selection of index constituents with the benefit of hindsight and knowledge of factors that may have positively affected its performance, cannot account for all financial risk that may affect results and may be considered to reflect survivor/look ahead bias. Actual returns may differ significantly from, and be lower than, back-tested returns. Past performance is not an indication or guarantee of future results.

Typically, when S&P DJI creates back-tested index data, S&P DJI uses actual historical constituent-level data (e.g., historical price, market capitalization, and corporate action data) in its calculations. As ESG investing is still in early stages of development, certain datapoints used to calculate certain ESG indices may not be available for the entire desired period of back-tested history. The same data availability issue could be true for other indices as well. In cases when actual data is not available for all relevant historical periods, S&P DJI may employ a process of using “Backward Data Assumption” (or pulling back) of ESG data for the calculation of back-tested historical performance. “Backward Data Assumption” is a process that applies the earliest actual live data point available for an index constituent company to all prior historical instances in the index performance. For example, Backward Data Assumption inherently assumes that companies currently not involved in a specific business activity (also known as “product involvement”) were never involved historically and similarly also assumes that companies currently involved in a specific business activity were involved historically too. The Backward Data Assumption allows the hypothetical back-test to be extended over more historical years than would be feasible using only actual data. For more information on “Backward Data Assumption” please refer to the FAQ. The methodology and factsheets of any index that employs backward assumption in the back-tested history will explicitly state so. The methodology will include an Appendix with a table setting forth the specific

data points and relevant time period for which backward projected data was used. Index returns shown do not represent the results of actual trading of investable assets/securities. S&P DJI maintains the index and calculates the index levels and performance shown or discussed but does not manage any assets.

Index returns do not reflect payment of any sales charges or fees an investor may pay to purchase the securities underlying the Index or investment funds that are intended to track the performance of the Index. The imposition of these fees and charges would cause actual and back-tested performance of the securities/fund to be lower than the Index performance shown. As a simple example, if an index returned 10% on a US \$100,000 investment for a 12-month period (or US \$10,000) and an actual asset-based fee of 1.5% was imposed at the end of the period on the investment plus accrued interest (or US \$1,650), the net return would be 8.35% (or US \$8,350) for the year. Over a three-year period, an annual 1.5% fee taken at year end with an assumed 10% return per year would result in a cumulative gross return of 33.10%, a total fee of US \$5,375, and a cumulative net return of 27.2% (or US \$27,200).

### **Intellectual Property Notices/Disclaimer**

© 2023 S&P Dow Jones Indices. All rights reserved. S&P, S&P 500, SPX, SPY, The 500, US500, US 30, S&P 100, S&P COMPOSITE 1500, S&P 400, S&P MIDCAP 400, S&P 600, S&P SMALLCAP 600, S&P GIVI, GLOBAL TITANS, DIVIDEND ARISTOCRATS, Select Sector, S&P MAESTRO, S&P PRISM, S&P STRIDE, GICS, SPIVA, SPDR, INDEXOLOGY, iTraxx, iBoxx, ABX, ADBI, CDX, CMBX, MBX, MCDX, PRIMEX, HHPI, and SOVX are registered trademarks of S&P Global, Inc. ("S&P Global") or its affiliates. DOW JONES, DJIA, THE DOW and DOW JONES INDUSTRIAL AVERAGE are trademarks of Dow Jones Trademark Holdings LLC ("Dow Jones"). These trademarks together with others have been licensed to S&P Dow Jones Indices LLC. Redistribution or reproduction in whole or in part are prohibited without written permission of S&P Dow Jones Indices LLC. This document does not constitute an offer of services in jurisdictions where S&P DJI does not have the necessary licenses. Except for certain custom index calculation services, all information provided by S&P DJI is impersonal and not tailored to the needs of any person, entity, or group of persons. S&P DJI receives compensation in connection with licensing its indices to third parties and providing custom calculation services. Past performance of an index is not an indication or guarantee of future results.

It is not possible to invest directly in an index. Exposure to an asset class represented by an index may be available through investable instruments based on that index. S&P DJI does not sponsor, endorse, sell, promote or manage any investment fund or other investment vehicle that is offered by third parties and that seeks to provide an investment return based on the performance of any index. S&P DJI makes no assurance that investment products based on the index will accurately track index performance or provide positive investment returns. S&P DJI is not an investment advisor, commodity trading advisor, fiduciary, "promoter" (as defined in the Investment Company Act of 1940, as amended) or "expert" as enumerated within 15 U.S.C. § 77k(a), and S&P DJI makes no representation regarding the advisability of investing in any such investment fund or other investment vehicle. A decision to invest in any such investment fund or other investment vehicle should not be made in reliance on any of the statements set forth in this document. S&P DJI is not a tax advisor. Inclusion of a security, commodity, crypto currency, or other asset within an index is not a recommendation by S&P DJI to buy, sell, or hold such security, commodity, crypto currency, or other asset, nor is it considered to be investment or trading advice.

These materials have been prepared solely for informational purposes based upon information generally available to the public and from sources believed to be reliable. No content contained in these materials (including index data, ratings, credit-related analyses and data, research, valuations, model, software or other application or output therefrom) or any part thereof ("Content") may be modified, reverse engineered, reproduced, or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written permission of S&P DJI. The Content shall not be used for any unlawful or unauthorized purposes. S&P DJI and its third-party data providers and licensors (collectively "S&P Dow Jones Indices Parties") do not guarantee the accuracy, completeness, timeliness, or availability of the Content. S&P Dow Jones Indices Parties are not responsible for any errors or omissions, regardless of the cause, for the results obtained from the use of the Content. THE CONTENT IS PROVIDED ON AN "AS IS" "WHERE IS" BASIS. S&P DOW JONES INDICES PARTIES DISCLAIMS ANY AND ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF

MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, FREEDOM FROM BUGS, SOFTWARE ERRORS OR DEFECTS, THAT THE CONTENT'S FUNCTIONING WILL BE UNINTERRUPTED OR THAT THE CONTENT WILL OPERATE WITH ANY SOFTWARE OR HARDWARE CONFIGURATION. In no event shall S&P Dow Jones Indices Parties be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special, or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs) in connection with any use of the Content even if advised of the possibility of such damages.

Credit-related information and other analyses, including ratings, research and valuations are generally provided by licensors and/or affiliates of S&P Dow Jones Indices, including but not limited to S&P Global's other divisions such as S&P Global Market Intelligence. Any credit-related information and other related analyses and statements in the Content are statements of opinion as of the date they are expressed and not statements of fact. Any opinion, analyses and rating acknowledgement decisions are not recommendations to purchase, hold, or sell any securities or to make any investment decisions, and do not address the suitability of any security. S&P Dow Jones Indices does not assume any obligation to update the Content following publication in any form or format. The Content should not be relied on and is not a substitute for the skill, judgment and experience of the user, its management, employees, advisors and/or clients when making investment and other business decisions. S&P DJI does not act as a fiduciary or an investment advisor. While S&P DJI has obtained information from sources it believes to be reliable, S&P DJI does not perform an audit or undertake independent verification of any information it receives. S&P DJI reserves the right to vary or discontinue any index at any time for regulatory or other reasons. Various factors, including external factors beyond S&P DJI's control might necessitate material changes to indices.

To the extent that regulatory authorities allow a rating agency to acknowledge in one jurisdiction a rating issued in another jurisdiction for certain regulatory purposes, S&P Global Ratings reserves the right to assign, withdraw or suspend such acknowledgement at any time and in its sole discretion. S&P Dow Jones Indices, including S&P Global Ratings, disclaim any duty whatsoever arising out of the assignment, withdrawal, or suspension of an acknowledgement as well as any liability for any damage alleged to have been suffered on account thereof. Affiliates of S&P Dow Jones Indices LLC, including S&P Global Ratings, may receive compensation for its ratings and certain credit-related analyses, normally from issuers or underwriters of securities or from obligors. Such affiliates of S&P Dow Jones Indices LLC, including S&P Global Ratings, reserve the right to disseminate its opinions and analyses. Public ratings and analyses from S&P Global Ratings are made available on its Web sites, [www.standardandpoors.com](http://www.standardandpoors.com) (free of charge), and [www.ratingsdirect.com](http://www.ratingsdirect.com) and [www.globalcreditportal.com](http://www.globalcreditportal.com) (subscription), and may be distributed through other means, including via S&P Global Ratings publications and third-party redistributors. Additional information about our ratings fees is available at [www.standardandpoors.com/usratingsfees](http://www.standardandpoors.com/usratingsfees).

S&P Global keeps certain activities of its various divisions and business units separate from each other to preserve the independence and objectivity of their respective activities. As a result, certain divisions and business units of S&P Global may have information that is not available to other business units. S&P Global has established policies and procedures to maintain the confidentiality of certain nonpublic information received in connection with each analytical process.

In addition, S&P Dow Jones Indices provides a wide range of services to, or relating to, many organizations, including issuers of securities, investment advisers, broker-dealers, investment banks, other financial institutions, and financial intermediaries, and accordingly may receive fees or other economic benefits from those organizations, including organizations whose securities or services they may recommend, rate, include in model portfolios, evaluate, or otherwise address.

Some indices use the Global Industry Classification Standard (GICS®), which was developed by, and is the exclusive property and a trademark of, S&P Global and MSCI. Neither MSCI, S&P DJI nor any other party involved in making or compiling any GICS classifications makes any express or implied warranties or representations with respect to such standard or classification (or the results to be obtained by the use thereof), and all such parties hereby expressly disclaim all warranties of originality, accuracy,



completeness, merchantability, or fitness for a particular purpose with respect to any of such standard or classification. Without limiting any of the foregoing, in no event shall MSCI, S&P DJI, any of their affiliates or any third party involved in making or compiling any GICS classifications have any liability for any direct, indirect, special, punitive, consequential or any other damages (including lost profits) even if notified of the possibility of such damages.

S&P Dow Jones Indices products are governed by the terms and conditions of the agreements under which they may be provided. A license is required from S&P Dow Jones Indices to display, create derivative works of and/or distribute any product or service that uses, is based upon and/or refers to any S&P Dow Jones Indices and/or index data.