S&P Dow Jones Indices

A Division of S&P Global

Fixed Income Policies & Practices
Methodology

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Introduction

This document covers constituent and index actions, per S&P Dow Jones Indices' Fixed Income Indices policies and practices. To understand and successfully use our indices, it is important to know how adjustments are made, when different kinds of index actions occur, and S&P Dow Jones Indices' treatment of these events. Our goal is to provide transparency and offer consistency in our global treatment of index actions, to the greatest extent possible. Please note, however, that local market and sector practices may dominate major decisions. Thus, this document outlines general approaches applicable to the majority of fixed income indices. It is imperative however, to review each specific index methodology as certain indices may differ from the general outlines noted herein.

S&P Dow Jones Indices 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 Dow Jones Indices 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 Dow Jones Indices, 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 methodology for further policies and procedures applicable to each particular index.

Calls

Terminology

Call: Actions taken to pay the principal amount prior to the stated maturity date, in accordance with the provisions for “call” stated in the bond indenture or official statement of the securities.

Call Date: The date at which some bonds are redeemable by the issuer prior to the maturity date.

Call Premium: The dollar amount paid to the investor by the issuer for exercising a call provision that is usually stated as a percent of the principal amount called. Also sometimes referred to as “redemption premium”.

Call Price: The specified price at which a bond may be redeemed or called prior to maturity, typically either at a premium (above par value) or at par. Also sometimes referred to as “redemption price”.

Call Protection: A provision whereby bonds are not callable for a certain number of years before their call date.

Call Provision: A provision on a bond or other fixed-income instrument that allows the original issuer to repurchase and retire the bonds. If there is a call provision in place, it will typically come with a time frame under which the bond can be called, and a specific price to be paid (the call price) to bondholders and any accrued interest are defined. Also known as “redemption provision”.

Call Risk: The risk that declining interest rates may accelerate the redemption of a callable security, causing an investor’s principal to be returned sooner than expected. As a consequence, investors may have to reinvest their principal at a lower rate of interest.

Callable Bonds: Bonds that are redeemable at the option of the issuer prior to the maturity date, at a predetermined price at or above par.

Early Call Risk: The risk to bond investors that high-yielding bonds will be called early, with the result that proceeds may be reinvested at lower interest rates.

Extraordinary Redemption: This redemption is different from optional redemption or mandatory redemption in that it occurs under an unusual circumstance such as destruction of the facility financed. Also known as a “special redemption.”

Make Whole Call: The obligation of an issuer of a corporate bond to pay a premium to an investor if the issuer pays off its bond before the final maturity. The premium is based on a formula that compensates the investor for future coupon payments that it will not receive because the bonds have been called.

Mandatory Call or Redemption: A requirement on the part of the issuer to redeem or call all (an “in-whole redemption”) or a portion (a “partial redemption”) of an outstanding issue of bonds prior to its stated date of maturity.

Mandatory Redemption Fund: A fund into which the issuer makes periodic deposits of moneys to be used to pay the costs of calling bonds in accordance with the mandatory redemption schedule in the bond contract or to purchase bonds in the open market in satisfaction of such mandatory redemption requirement. This term is sometimes used interchangeably with the term “sinking fund”.

Mandatory Sinking-Fund Redemption: A requirement to redeem a fixed portion of term bonds, which may comprise the entire issue, in accordance with a fixed schedule. Although the principal amount of the bonds to be redeemed is fixed, the specific bonds which will be called are selected by the trustee on a lot basis.

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.

Notice of Redemption: A publication announcing the issuer's intention to call some or all outstanding bonds prior to their stated maturity dates. Also referred to as "notice of call".

Optional Redemption: A right of the issuer, at its option, to retire all or part of an issue prior to the stated maturity during a specified period of years, often at a premium.

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.

Prepayment Provision: A provision specifying that, and at what time and on what terms, repayment of the principal amount may be made by the issuer prior to the stated maturity. Includes "call," but "prepayment" usually connotes less formal procedures than a call.

Prepayment Risk: The risk that principal repayment will occur earlier than scheduled, forcing the investor to receive principal sooner than anticipated and reinvested at lower prevailing rates. The measurement of prepayment risk is a key consideration for investors in mortgage- and asset-backed securities.

Redemption: The paying off or buying back of a bond or other fixed income security by the issuer.

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. Also sometimes referred to as "call premium".

Redemption Price: See "call price".

Redemption Provision: Another term for "call provision". Action taken to pay the principal amount prior to the stated maturity date, in accordance with the provision for "call" stated in the proceedings of the securities.

Sinker: A bond with a sinking fund.

Sinking Fund: Separate accumulation of cash or investments (including earnings on investments) in a fund in accordance with the terms of a trust agreement or indenture, funded by periodic deposits by the issuer (or other entity responsible for the debt service), for the purpose of assuring timely availability of monies for payment of the debt service. Usually used in connection with term bonds. Bonds with such a feature are known as "sinkers".

Sinking Fund Call or Redemption: Mandatory calls or redemptions that occur either on a scheduled basis (made in specified amounts or in amounts then on deposit in the sinking fund) or whenever a specified amount of money is available in the sinking fund.

Special Redemption: See "extraordinary redemption".

Calls and S&P Dow Jones Indices

Within the S&P Dow Jones Indices' family of fixed income indices, eligibility criteria differ among the various indices with regard to their constituent holdings. One aspect of this is whether the index can include bonds with embedded options or not. Some indices exclude callable bonds altogether, while others allow them. 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 the majority of fixed income 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. Certain indices, however, may differ.

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

For those fixed income indices allowing the inclusion of callable bonds, S&P Dow Jones Indices actively tracks mandatory calls. A mandatory call may cause a bond to be deleted from the index on the subsequent Rebalancing Date.

Bonds with mandatory calls are typically 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).

Optional calls are not actively tracked by S&P Dow Jones Indices and as such are only taken into account on the Rebalancing Date when known par amounts of index bonds are 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.

Please refer to each index's methodology for further details on security eligibility requirements as certain indices may differ from this general outline.

Calls and Index Maintenance

S&P Dow Jones Indices' fixed income indices are generally maintained in accordance with the following rules:

- 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, or that has a term to maturity and/or mandatory complete call date less than the minimum required as of the next Rebalancing Date, is removed from the index on that Rebalancing Date.
- Par amounts of index bonds are adjusted on the Rebalancing Reference Date to reflect any changes that have occurred since the previous Rebalancing Date, due to partial calls, tenders, etc. On the Rebalancing Reference 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 at the next Rebalancing Date.

Calls and Rebalancing

S&P Dow Jones Indices' fixed income indices are typically reviewed and rebalanced monthly. The Index Committee, nevertheless, reserves the right to make adjustments to the 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).

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.

Cash Flows

S&P Dow Jones Indices' fixed income indices are typically rebalanced monthly. Generally, interest payments are considered received on the payment date. Depending on the index's policy, the cash from interest payments may be reinvested in the index or another vehicle for the remainder of the month (or period) or set aside until the next rebalancing to be considered part of that month's (or period's) total return.

Index bond par amounts outstanding are adjusted at the monthly (or periodic) rebalancing and are not adjusted intra-month (or intra-period). Thus, any pre-payments, pay-downs, sinking fund payments, and most other forms of cash flow (other than scheduled interest payments) are not recognized.

In the case of a bond that is 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 this is before 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, since the bond has been deleted from the index.

Please see each index's respective methodology for specific policies and procedures regarding cash flows for each respective index, as certain indices may differ from the general outline above.

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 determinate 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 determinate 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.

Scenario 1 - Calls		
Scenario 1a: Complete Mandatory Call	Generally, as of the next Rebalancing Date, the index bond must have a minimum term to mandatory call date as specified in the index methodology (typically greater than one calendar month) 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 yes, the bond remains in the index. If no, delete from the index on that Rebalancing Date
Scenario 1b: Partial Mandatory Call	Generally, as of the next Rebalancing Reference Date, the index bond must have a minimum par amount outstanding (as specified in the index methodology) to remain in the index, otherwise it is deleted at the next Rebalancing Date. Question: Is the par amount outstanding of the index bond greater than or equal to than the minimum required in the index methodology?	Decision: If yes, the bond remains in the index at the new par amount outstanding (net of any partial calls, tenders, sinking fund payments, etc.). If no, delete from the index on that Rebalancing Date
Scenario 1c: Optional Calls	Optional call notices are generally sent out 30 to 60 days prior to the call exercise date (though this may vary depending upon the issuer). As the outcome of an optional call exercise is unknown until after it has occurred, S&P Dow Jones Indices waits until the optional call has occurred (the call exercise date). Once the results of the call exercise are known, the analyst can determine the remaining par amount outstanding of the index bond, if any, and determine what further action to take. Question: As of the Rebalancing Reference date, does the new par amount outstanding (adjusted for any calls, tenders, sinking fund payments, etc.) meet the minimum par amount outstanding eligibility criteria as outlined in the index methodology?	Decision: If yes, the bond remains in the index at the new par amount outstanding (net of any calls, tenders, sinking fund payments, etc.). If no, delete from the index on that Rebalancing Date

Convertible Bonds

Terminology

Busted Convertible: A convertible bond that trades well below its parity (conversion value). The result is that the security is val ued as regular debt because very little chance exists that it will reach the convertible price before maturity. Busted convertibles typically trade at prices and yields very close to other non-convertible debt.

Call Features: The ability of the issuer (on some bonds) to call a bond early for redemption, sometimes subject to certain share price performance. The intention is to encourage investors to convert earlier into equity (which has now become worth more than the bond's face value) by threatening repayment in cash for what is now a lower amount.

Call Option: An embedded option that grants the bond issuer the right to repurchase the bond from the bondholder at a specified price (usually par) on a specified call date. This feature is to the issuer's benefit and it is typically used to compel the holder to convert the security into common stock.

Call Price: The price at which the issuer may call a convertible bond that has a call feature.

Common Stock: A share representing participation in the ownership of an enterprise, generally with the right to participate in dividends and in most cases to vote on major matters affecting stockholder interests.

Contingent Convertible Bond (CoCo Bond): A type of convertible bond with an innovative feature that may provide insurance for companies like banks during a financial crisis. For example, a CoCo bond would mandatorily convert into the company's common shares when one or more triggers occur, such as capital levels falling below a pre-specified level. Such bonds converting to stock would provide the bank a boost to its capital, speeding recapitalization of a bank in distress. Also referred to as "contingent capital bonds".

Conversion Premium: Represents the divergence of the price of the convertible bond compared to that of the parity (conversion) value. This is typically expressed as a percentage.

Conversion Price: The dollar value at which a convertible security can be converted into common stock. This price is generally established at the time of issue.

Conversion Ratio: The number of common shares each convertible bond converts into. It may be expressed per bond or on a per centum (per 100) basis.

Convertible Bond: A corporate bond that can be exchanged, at the option of the holder, for a specific number of shares of the company's stock. Because a convertible bond is a bond with a stock option built into it, it will usually offer a lower than prevailing rate of return.

Corporate Bond: Bonds issued by corporations. Corporations use the funds they raise from selling bonds for a variety of purposes, from building facilities to purchasing equipment to expanding their business. Corporate bonds are debt obligations, or IOUs, issued by private and public corporations. They are typically issued in multiples of $1,000 and/or $5,000.

Dividend Risk: The prospect that the underlying company increases its common stock dividend and that the convertible debenture's current yield does not rise to match it. This may reduce or even negate the yield advantage over the common stock. Most convertible bonds are issued with provisions that require the company to adjust the conversion ratio to compensate convertible holders should the dividend increase.

Exchangeable Bond: A bond with an option to exchange it for shares in a company other than that of the issuer. While not a convertible bond in a strict sense, such bonds share certain common evaluation characteristics.

Hard Call Protection: One of two types of call protection (the other being “soft call”). Most convertible bonds have a period of time at which the issue cannot be called for any reason. This is referred to as “hard call” protection.

Mandatory Convertible: A convertible bond that has a conversion or redemption feature requiring that the holder must convert the security into the underlying common stock either on or before a contractual conversion date. These securities generally provide investors higher yields to compensate for the mandatory conversion structure.

Mandatory Exchangeable: An exchangeable bond that is mandatorily exchangeable upon or before a contractual exchange date into a fixed number of common shares in a company other than the issuer.

Parity (Conversion) Value: The value of the convertible bond if converted into the common shares (i.e. stock price * conversion ratio).

Provisional Call Protection: A convertible bond that has provisional call protection can be called only if the underlying stock rises to a pre-determined price and remains at that price, or higher, for a set number of days. This is also referred to as “soft call protection”.

Put Option: A put option allows the holder of a bond to “put”, or present, the bond to an issuer (or trustee) and demand payment at a stated date before the final stated maturity of the bond. Also known as a “tender option”.

Soft Call Protection: One of two types of call protection (the other being “hard call”). Soft or provisional call protection prohibits an issuer from calling a bond issue until a certain threshold price level for the underlying stock has been reached. For example, the bond structure might specify that the bonds may be called when the closing price of the underlying stock is at least 120-150 percent of the conversion price for any 20 out of 30 consecutive trading days. Soft call provisions are typically in effect for two to three years after hard call protection has expired. Soft call protection is a compromise between issuers and investors. It guarantees that the issuing company will not be able to call the bonds until the investors have achieved a certain level of profitability, but it also provides issuers with more flexibility than that available from hard call protection and allows the company to call the bonds once the bondholders have achieved a certain threshold level of returns.

Takeover Risk: The possibility that the issuer will be acquired, which may change the conversion terms and options. This can also result in a change in the issuer’s financial makeup.

Yield Advantage: The current yield in excess of the dividend yield of the underlying common stock.

Convertible Bonds

Convertible bonds allow investors to participate in a company’s stock price appreciation while providing some downside protection against a decline in the underlying common stock’s share price.

Convertible bonds generally have similar features as regular bonds: issue size, issue date, maturity date, maturity value, face value and coupon. However, they also tend to have the following additional features:

- Conversion price
- Conversion ratio

- Parity (conversion) value
- Conversion premium
- Call Features

Please see *Terminology* for definitions of these additional features.

Convertible bonds frequently have call or put provisions. Call options are advantageous to the bond issuers if the underlying common stock is trading above the convertible's conversion price. This is because the issuer has the right to repurchase the bond from the holder at a specified price (usually par), thus forcing the holder to convert into common shares on the specified call date. In contrast, put options are advantageous to the bondholder if the underlying common stock is trading below the convertible's conversion price. This is because the holder has the right to put (sell back) the bond to the issuer (usually at par) on the specified put date.

Scenario 1 – Convertible Bonds		
Scenario 1a: Complete Mandatory Call, Put or Conversion to common stock	Bonds subject to upcoming maturities, complete mandatory calls, puts or conversions to common stock are deleted from the index at the close on the day prior to the exercise or redemption date, with a three day notice. Question: Is the bond subject to a complete mandatory call, put or conversion to common shares?	Decision: If <u>yes</u>, the bond is deleted from the index at the close of the day prior to the exercise or redemption date, with a three day notice. If <u>no</u>, the bond remains in the index, assuming all other eligibility criteria are met.
Scenario 1b: Partial Mandatory Call, Put or Conversion to common stock	For partial calls, puts or conversions to common stock, a key determinate 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 criteria, currently RMB 30 million. Partial calls, puts and conversions are taken into account when known par amounts of index bonds are adjusted to reflect any changes that have occurred since the last confirmation of a bond's par amount outstanding. This is typically performed on a daily basis as information regarding a bond's par amount outstanding is sourced directly from the Shanghai and Shenzhen Stock Exchanges via a daily report from their websites. Should an index bond's par amount outstanding fall below RMB 30 million, the index bond is removed from the index as of the close of its last trading day. *Please note that both the Shanghai and Shenzhen Stock Exchanges delist convertible bonds whose outstanding par amounts have fallen below RMB 30 million. Such delistings generally occur three days after the exchange makes a delisting announcement.* Question: Is the par amount outstanding of the index bond greater than or equal to RMB 30 million?	Decision: If <u>yes</u>, the bond remains in the index at the new par amount outstanding (net of any partial calls, tenders, conversions, sinking fund payments, etc.), if the cumulative net par amount change since the last confirmation of par amount outstanding is greater than 1.0%. If 1.0% or less, the bond remains in the index at the same par amount outstanding as before. If <u>no</u>, delete from the index as of the close of its last trading day. *Please note that both the Shanghai and Shenzhen Stock Exchanges delist convertible bonds whose outstanding par amounts have fallen below RMB 30 million. Such delistings generally occur three days after a delisting announcement from the exchange is made.* As such, a three day notice is issued on the day that confirmation is made that the bond is no longer eligible for inclusion in the index.

Scenario 1 – Convertible Bonds		
Scenario 1c: Optional Calls, Puts or Conversions to common stock	For optional calls, puts or conversions to common stock, a key determinate 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 criteria, currently RMB 30 million. Optional calls, puts and conversions are taken into account when known par amounts of index bonds are adjusted to reflect any changes that have occurred since the last confirmation of a bond's par amount outstanding. This is typically performed on a daily basis as information regarding a bond's par amount outstanding is sourced directly from the Shanghai and Shenzhen Stock Exchanges via a daily report from their websites. Should an index bond's par amount outstanding fall below RMB 30 million, the index bond is removed from the index as of the close of its last trading day. *Please note that both the Shanghai and Shenzhen Stock Exchanges delist convertible bonds whose outstanding par amounts have fallen below RMB 30 million. Such delistings generally occur three days after the exchange makes a delisting announcement.* Question: Is the par amount outstanding of the index bond greater than or equal to RMB 30 million?	Decision: If <u>yes</u>, the bond remains in the index at the new par amount outstanding (net of any optional calls, tenders, conversions, sinking fund payments, etc.), if the cumulative net par amount change since the last confirmation of par amount outstanding is greater than 1.0%. If 1.0% or less, the bond remains in the index at the same par amount outstanding as before. If <u>no</u>, delete from the index as of the close of its last trading day. *Please note that both the Shanghai and Shenzhen Stock Exchanges delist convertible bonds whose outstanding par amounts have fallen below RMB 30 million. Such delistings generally occur three days after a delisting announcement from the exchange is made.* As such, a three day notice is issued on the day that confirmation is made that the bond is no longer eligible for inclusion in the index.

Credit Ratings Revisions

Terminology

Credit Ratings: Designations used by ratings agencies to give relative indications of credit quality.

Credit ratings are intended to measure the probability of the timely repayment of principal of and interest on fixed income debt securities. Ratings often are assigned upon issuance and are periodically reviewed and may be amended to reflect changes in the issuer's credit position. Ratings also are sometimes assigned after the initial issuance, often on bonds that have advance refundings. The factors upon which rating agencies base their credit ratings vary with each type of issue. Ratings may derive from the credit worthiness of the issuer itself or from a credit enhancement feature of the security, for example a guarantor, letter of credit provider or bond insurer. For short-term obligations, liquidity generally plays a significant factor in the determination of a short-term rating.

Please see Appendix I *Key Ratings Symbols and Definitions Used by S&P Dow Jones Indices' Fixed Income Indices*, for further detail.

Fallen Angel: A corporate bond which was investment grade rated by credit rating agencies such as Standard & Poor's Ratings Services or Moody's Investors Services when issued, but is now downgraded due to a deteriorated financial situation.

High-Yield Bonds: Bonds rated 'BB+' or lower by Standard & Poor's Ratings Services 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 Standard & Poor's Rating Services 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.

Credit Ratings Revisions and S&P Dow Jones Indices

Within the S&P Dow Jones Indices' family of fixed income indices, eligibility criteria differ among the various indices with regard to their constituent holdings. One aspect of this is their credit ratings. Some indices require that constituent securities be "investment-grade". Certain indices require that they be "high-yield" or "speculative". Some require a specific rating or range of ratings, while still others do not require a credit rating at all.

Please see each index's respective methodology for specific eligibility requirements and associated policies and procedures for each respective index.

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. Index changes due to ratings revisions are not made intra-month (or intra-period).

Generally, S&P Dow Jones Indices uses credit ratings from three primary credit ratings agencies:

- Standard & Poor's Ratings Services (SPRS)
- 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/ASX Australian Fixed Interest Index Series eligibility rules require that each index constituent be rated by at least one of the three primary credit rating agencies noted above, or by a recognized Australian rating agency.

To ensure quality and consistency in credit ratings used by S&P Dow Jones Indices, certain requirements are mandated when using credit rating agencies other than the three primary ones noted above. For example, the S&P/ASX Australian Fixed Interest Index Series eligibility rules require that if a security is rated by an Australian rating agency it must have a retail rating and must adhere to the same investment grade standards.

Please note that while the majority of indices (and sub-indices) use the credit ratings of all three primary ratings agencies, some indices use the ratings of only two agencies (e.g. MIS and SPRS) or one agency (e.g. SPRS) 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.

Credit Ratings Revisions and Index Maintenance

S&P Dow Jones Indices' fixed income indices are generally maintained in accordance with the following rules:

- 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 security that fails to meet any one of the eligibility factors, including ratings criteria is removed from the index on the next Rebalancing Date.
- Any index security that has a credit rating revision (downgrade or upgrade) making it ineligible for inclusion in the index between Rebalancing Dates is removed at the next Rebalancing Date. Index changes due to ratings revisions are not made intra-month (or intra-period).

Credit Ratings Revisions and Rebalancing

S&P Dow Jones Indices' fixed income indices are typically reviewed and rebalanced monthly. The Index Committee, nevertheless, reserves the right to make adjustments to the 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 on the Rebalancing Announcement Date 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).

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.

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 Dow Jones Indices employs the following key credit ratings criteria:

1. Investment Grade - (≥BBB- by SPRS, ≥BBB- by FR, ≥Baa3 by MIS)
2. High Yield - (NR or ≤BB+ by SPRS, NR or ≤BB+ by FR, NR or ≤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 SPRS)
4. No Ratings Criteria

Please see each index's respective methodology for specific policies, procedures and ratings eligibility criteria for each respective index.

For purposes of this document, we will go through an example of each of the key ratings criteria, numbers 1-3 noted above and their associated scenarios. Number four is not applicable, as ratings revisions do not play a role in determining index security eligibility.

Scenario 1 – Investment Grade Credit Ratings Revision		
Scenario 1a: Ratings Criteria = Investment Grade (≥BBB-, ≥BBB-, ≥Baa3) Index security is downgraded between rebalancing dates.	Question: Is downgraded rating below eligibility criteria minimum? Examples: Yes. BBB- downgraded to BB+ No. A- downgraded to BBB+	Decision: If <u>yes</u>, delete from the index at the next rebalancing. If <u>no</u>, index security remains in the index, assuming all other eligibility requirements are met.
Scenario 1b: Ratings Criteria = Investment Grade (≥BBB-, ≥BBB-, ≥Baa3) Index security is upgraded between rebalancing dates.	Question: Not applicable, as upgraded rating is still above investment grade minimum. Example: BBB- upgraded to BBB	Decision: Index security remains in the index, assuming all other eligibility requirements are met.
Scenario 1c: Ratings Criteria = Investment Grade (≥BBB-, ≥BBB-, ≥Baa3) Non-index security is upgraded between rebalancing dates.	Question: Is upgraded rating at or above eligibility criteria minimum? Examples: Yes. BB+ upgraded to BBB- No. BB- upgraded to BB	Decision: If <u>yes</u>, add security to the index at the next rebalancing if all additional eligibility requirements are met. If <u>no</u>, security is not added to the index at the next rebalancing.
Scenario 1d: Ratings Criteria = Investment Grade (≥BBB-, ≥BBB-, ≥Baa3) Non-index security is downgraded between rebalancing dates.	Question: Not applicable, as downgraded rating is still below investment grade minimum. Example: BB+ downgraded to BB	Decision: Non-index security is not added to the index, as investment grade eligibility requirement is still not met.

Scenario 2 – High-Yield Credit Ratings Revision		
Scenario 2a: Ratings Criteria = High-Yield (NR or ≤BB+, NR or ≤BB+, NR or ≤Ba1) Index security is upgraded between rebalancing dates.	Question: Is upgraded rating above eligibility criteria maximum? Examples: Yes. BB+ upgraded to BBB- No. BB upgraded to BB+	Decision: If yes, delete from the index at the next rebalancing. If no, index security remains in the index, assuming all other eligibility requirements are met.
Scenario 2b: Ratings Criteria = High-Yield (NR or ≤BB+, NR or ≤BB+, NR or ≤Ba1) Index security is downgraded between rebalancing dates.	Question: Not applicable, as downgraded rating is still below high-yield maximum. Example: BB+ downgraded to BB	Decision: Index security remains in the index, assuming all other eligibility requirements are met.
Scenario 2c: Ratings Criteria = High-Yield (NR or ≤BB+, NR or ≤BB+, NR or ≤Ba1) Non-index security is downgraded between rebalancing dates.	Question: Is downgraded rating at or below eligibility criteria maximum? Examples: Yes. BBB- downgraded to BB+ No. AA downgraded to AA-	Decision: If yes, add security to the index at the next rebalancing if all additional eligibility requirements are met. If no, security is not added to the index at the next rebalancing.
Scenario 2d: Ratings Criteria = High-Yield (NR or ≤BB+, NR or ≤BB+, NR or ≤Ba1) Non-index security is upgraded between rebalancing dates.	Question: Not applicable, as upgraded rating is still above high-yield maximum. Example: BBB- upgraded to BBB	Decision: Non-index security is not added to the index, as high-yield eligibility requirement is still not met.

Scenario 3 – Ratings Bands Credit Ratings Revision		
Scenario 3a: Ratings Criteria = AA Band (AA-, AA, AA+ by SPRS) Index security is upgraded between rebalancing dates.	Question: Is upgraded rating above eligibility criteria maximum? Examples: Yes. AA+ upgraded to AAA No. AA- upgraded to AA	Decision: If yes, delete from the index at the next rebalancing. If no, index security remains in the index, assuming all other eligibility requirements are met.
Scenario 3b: Ratings Criteria = AA Band (AA-, AA, AA+ by SPRS) Index security is downgraded between rebalancing dates.	Question: Is downgraded rating below eligibility criteria minimum Examples: Yes. AA- downgraded to A+ No. AA downgraded to AA-	Decision: If yes, delete from the index at the next rebalancing. If no, index security remains in the index, assuming all other eligibility requirements are met.
Scenario 3c: Ratings Criteria = AA Band (AA-, AA, AA+ by SPRS) Non-index security is downgraded between rebalancing dates.	Question: Is downgraded rating within the ratings band? Examples: Yes. AAA downgraded to AA+ No. A- downgraded to BBB+	Decision: If yes, add security to the index at the next rebalancing if all additional eligibility requirements are met. If no, security is not added to the index at the next rebalancing.
Scenario 3d: Ratings Criteria = AA Band (AA-, AA, AA+ by SPRS) Non-index security is upgraded between rebalancing dates.	Question: Is upgraded rating within the ratings band? Examples: Yes. A+ upgraded to AA- No. BBB+ upgraded to A-	Decision: If yes, add security to the index at the next rebalancing if all additional eligibility requirements are met. If no, security is not added to the index at the next rebalancing.

Defaults

Terminology

Acceleration: A contract term providing for the principal amount of and any accrued interest on an obligation to become due and payable prior to the originally scheduled due date upon occurrence of a contractually stipulated event (typically, certain specified default events).

Covenant: The issuer's pledge, in the financing documents, to do or to avoid from doing certain practices and actions.

Debt Service Reserve Fund (DSRF): The fund into which monies are paid, which are required by the trust agreement or indenture as a reserve against a temporary interruption in the receipt of the revenues or other amounts which are pledged for the payment of the bonds. A common deposit requirement for a DSRF is six months or one-year's debt service on the bonds. The DSRF may be initially funded out of bond proceeds, over a period of time from revenues, or by a combination of the two.

Default: A failure by an issuer to: (i) pay principal or interest when due, (ii) meet non-payment obligations, such as reporting requirements, or (iii) comply with certain covenants in the document authorizing the issuance of a bond (an indenture).

Generally, if an issuer defaults in the payment of principal, interest, or both, or if a technical default is not cured within a specified period of time, the bondholders or trustee may exercise legally available rights and remedies for the enforcement of the bond contract.

For further information concerning the definition of default as applied by the three primary credit ratings agencies, please see the following:

- Standard & Poor's Ratings Service: "Standard & Poor's Ratings Definitions," <https://www.standardandpoors.com/en_US/web/guest/article/-/view/sourceId/504352>
- Moody's Investors Services: "Ratings Symbols and Definitions," Oct. 2011, <http://www.moodys.com/researchdocumentcontentpage.aspx?docid=PBC_79004>
- Fitch Ratings: "Definitions of Ratings and Other Forms of Opinion," Sept. 2011, <http://www.fitchratings.com/web_content/ratings/fitch_ratings_definitions_and_scales.pdf>

Default Probability: The likelihood that a debt instrument will default within a stated timeframe.

Default Risk: Possibility that a bond issuer will fail to pay principal or interest when due.

Distressed Exchange: When during a time of credit distress, debt holders may be effectively forced to accept securities in exchange for their debt claim with such securities being of a lower value than the nominal present value of their original claim. These new securities may have a lower coupon, delayed sinking funds, and/or lengthened maturity. For historical estimation of default probabilities, this counts as a default event since it can significantly impair the security's value.

Expected Recovery Given Default: See "recovery rate".

Exposure: The amount which would be lost in default given the worst possible assumption about recovery in the liquidation or bankruptcy of an obligor.

Loss Given Default: The amount of loss on a credit instrument after the borrower has defaulted. It is typically stated as a percentage of the debt's par value (one minus the recovery rate). Also known as "loss in the event of default".

Loss in the Event of Default: See "loss given default".

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

Recovery Rate: The amount that a creditor receives in final satisfaction of the claims on a defaulted credit. The recovery rate is generally stated as a percentage of the debt's par value. Also known as "expected recovery given default".

Technical default: Other than monetary default, when an issuer does not adhere to provisions in the bond indenture they are considered in technical default. Examples include:

- Draw of funds from the Debt Service Reserve Fund (DSRF) in some cases is a technical default
- Failure to replenish funds drawn from DSRF
- Filing for bankruptcy (technical default until bondholders don't receive what was promised)
- Failure to report financial statements on schedule or in a timely manner
- Failure to maintain specific financial ratios
- Failure to remit monthly debt service to bond trustee on schedule (even though semi-annual debt service is paid to holders, in most cases the trustee collects the funds monthly)

Defaults and S&P Dow Jones Indices

Within the S&P Dow Jones Indices' family of fixed income indices, eligibility criteria differ among the various indices with regard to their constituent holdings. One aspect of this is whether a security is in default or not.

Index constituent data received from service providers are flagged if they are in default. However, it should be noted that this flagging refers only to **monetary default**. A fixed income security is flagged for monetary default if it has missed a scheduled principal and/or interest payment.

Assuming no change to a security's credit rating due to default, the treatment for a default is generally as follows:

Generally, a defaulted security typically remains in its index at the daily price received by service providers, which generally reflects the base recovery rate. However, the security is carried without any further interest accruals. 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 month end rebalancing, when it is 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. The decision of the Index Committee is final.

Technical defaults are not flagged and generally do not have any bearing on constituents as it relates to deleting them from an index. This is because a security in technical default is still paying its principal and interest payments and any such issues relating to the technical default are generally reflected in its daily trading price.

Defaults and Credit Ratings

The key determinate for inclusion or deletion of a security from an index due to a default is the impact of the default on the security's credit rating. Typically a monetary or technical default will result in a downgrade of a security's credit rating by the rating agencies. In such a scenario, the security may no longer be eligible for inclusion in the index. For example, let's say an investment grade index has a security rated BBB- that defaults and is subsequently downgraded to D due to the default. The security in question would no longer be eligible for inclusion in the index as it no longer meets the index's minimum credit ratings standards and would be subsequently deleted at the next rebalancing. For a description of the policies and procedures related to credit rating revisions, please see the section *Credit Ratings Revisions*.

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

Defaults and Index Maintenance

S&P Dow Jones Indices' fixed income indices are generally maintained in accordance with the following rules:

- 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 security that fails to meet any one of the eligibility factors, including ratings criteria if applicable, is removed from the index on the next Rebalancing Date.
- For municipal indices, when an index security is in default or misses an interest payment, the price reported by the vendor is used. However, the Index Committee may determine that the security be removed from the index at a different price and may even specify a price of US$ 0.00. The decision of the Index Committee is final.
- Any index security that has a credit rating revision (downgrade or upgrade) making it ineligible for inclusion in the index between Rebalancing Dates is removed on the next Rebalancing Date. Changes due to ratings revisions are not made intra-month (or intra-period).

Please see each index's respective methodology for specific maintenance policies and procedures for each respective index, as certain indices may differ from the general outline above.

Defaults and Rebalancing

S&P Dow Jones Indices' fixed income indices are typically reviewed and rebalanced monthly. The Index Committee, nevertheless, reserves the right to make adjustments to the 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).

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.

Scenarios

For index calculation purposes, a default presents the following key questions:

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

<u>Additions</u> **-** At this time, non-index securities in default are not added to an index.

<u>Deletions</u> **-** To answer the above question, we need to look at the following scenarios:

Scenario 1 - Defaults	
Scenario 1a: Municipal Indices Index security defaults (monetary default)	Decision assuming all other eligibility requirements are met: The index security remains in the index at the daily price received from the vendor. However, all interest accruals cease for the defaulted security. If a daily price is no longer received by the vendor, the index security is deleted from the index at the subsequent rebalancing. However, until the next rebalancing, the index security is kept in the index at the last price received from the vendor. In addition, all interest accruals cease for the defaulted security. However, the Index Committee may determine that the security be removed from the index at a different price and may even specify a price of US$ 0.00. The decision of the Index Committee is final.
Scenario 1b: Non-Municipal Indices Index security defaults (monetary default)	Decision assuming all other eligibility requirements are met: The index security is generally deleted from the index upon notification of the default with its weight redistributed pro-rata to the remaining index constituents. However, the respective Index Committee has ultimate authority over the treatment of constituent securities.

Please see each index's respective methodology for specific policies, procedures and ratings eligibility criteria for each respective index.

Credit Ratings Scenarios

As stated above, a default by a constituent may impact its credit rating, causing a credit rating revision. For those indices where credit ratings are a determinate for eligibility purposes, a credit rating revision may impact the eligibility of the security to remain in the index. For a description of the policies and procedures related to credit rating revisions and a description of typical scenarios, please see the section *Credit Ratings Revisions*.

Mergers & Acquisitions

Terminology

Acquisition: An acquisition is an event in which a company buys most, if not all, of the target company in order to assume control. The acquisition could be done via a cash offer, stock swap or a combination of both. For the purposes of S&P Dow Jones Indices' branded indices, an acquisition can result in the deletion of the target company, as well as a possible share issuance and IWF change to the acquirer, if the purchase was funded with acquirer shares.

Cash Offer: Shareholders of the target company are offered cash by the acquirer for the stocks they own in the target company.

Delisting: This refers to the removal of a listed security from the exchange on which it trades. The stock is removed from the exchange because the company is not in compliance with the listing requirements of the exchange. Delisting could be a voluntary action taken by the company or involuntary. This typically occurs when a company has become private after a merger/acquisition, declares bankruptcy or no longer satisfies the listing rules of the stock exchange.

Exchange offers: An exchange offer takes place when a company exchanges its securities for a different series that it has issued or for securities of another company (as seen with split-offs). This should not be confused with the conversion of preferred stocks or bonds to common stock.

Float-Adjusted Shares: Total number of shares held by the public and available for trading. These are the shares outstanding adjusted for any restricted shares or strategic holdings.

Investable Weight Factor (IWF): The percentage of shares outstanding that is readily available to investors for a given company. Investors who own shares with the intention of maintaining control are said to be investors of a "strategic" nature and are not included in the IWF calculation. The three examples of strategic investments are:

- Holdings by other publicly-traded corporations, venture capital firms, private equity firms or strategic partners or leveraged buy-out groups.
- Holdings by government entities, including all levels of government in the United States or foreign countries.
- Holdings by current or former officers and directors of the company, founders of the company, or family trusts of officers, directors or founders. Second, holdings of trusts, foundations, pension funds, employee stock ownership plans or other investment vehicles associated with and controlled by the company.

Merger: A merger is the combination of two (or more) companies into one larger company, involving a stock swap and/or cash payment to the shareholders of the target company.

Recapitalization: A change in the company's capital structure which often involves altering the asset allocation between equity and debt.

Reverse Takeover: This is the acquisition of a publicly traded company by a privately held company. A private company might choose to go public using this route over an IPO, to bypass the complex process involved with an initial public offering.

Scrip Offer: This term is commonly used in some markets to refer to an all-stock takeover offer. The acquirer offers its shares to the target company shareholders as the consideration instead of cash.

Shares Outstanding: This is the total number of shares issued by a company that is currently held by investors. Shares that have been repurchased by the company are not considered outstanding.

Tender Offers: These are offers made by a prospective acquirer to purchase shares of a company, usually at a premium to the market price. Cash or other securities may be offered to the target company's shareholders. Tender offers might be friendly or hostile. A friendly offer is when the bidder informs the company's board of directors of its intent; and if the board approves they would recommend that the shareholders accept the offer. A hostile offer is when the target company's management is either not informed in advance or unwilling to accept the offer, yet the bidder continues to pursue it. The term "partial tender offer" refers to an invitation for tenders for less than all of the outstanding shares of the target company. This is done by specifying a maximum number of shares that will be accepted.

Mergers & Acquisitions and S&P Dow Jones Indices

Mergers and acquisitions are events that impact **companies**. Thus, the only fixed income indices where mergers and acquisitions may have an effect are those with corporate fixed income constituents. Thus, the following policies are not applicable to municipal and sovereign fixed income indices.

A corporate bond is typically issued under its own name. Thus, unlike stock, the target company's debt does not just disappear upon conclusion of a merger or acquisition. In the event of a merger or acquisition, the bond generally remains outstanding and trades as normal unless, as is often the case, it is paid off and retired as a consequence of the merger or acquisition 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. Please see each index's respective methodology for specific eligibility requirements and associated policies and procedures for each respective index.

As merger and acquisition 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 consequence of the merger or acquisition depending on the index's rebalancing schedule.

For example, if Company X acquires Company Y, the bonds of either or both companies may be subject to a credit rating revision by the credit ratings agencies. This may affect a security's standing in an index if it no longer meets the index's credit ratings criteria. In such a case, the index security that no longer meets the credit ratings criteria is deleted from the index at the subsequent rebalancing.

Should a company's bonds be subject to a complete call or mandatory tender as a consequence of the merger or acquisition process, so that the security no longer meets the index's eligibility criteria such as the minimum term to effective maturity, then the security is deleted at the subsequent rebalancing.

Should a company's bonds be subject to a partial call or tender as a consequence of the merger or acquisition process, at the subsequent rebalancing the analyst will determine the known par amount outstanding and determine further action. For example, if the known par amount outstanding of the bond falls below minimum requirements, the bond is deleted at that rebalancing. If the known par amount outstanding meets minimum requirements, then the bond remains in the index at the new par amount outstanding (assuming all other eligibility requirements are met).

Please note that only mandatory calls and puts are actively tracked by S&P Dow Jones Indices. Thus, optional calls and tenders are only taken into account on the rebalancing date when known par amounts outstanding are adjusted for any partial or optional call and put activity that has occurred between rebalancing dates.

As the key determinates 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 more information on how S&P Dow Jones Indices generally handles credit rating revisions, calls and tenders.

Mergers & Acquisitions and Index Maintenance

S&P Dow Jones Indices fixed income indices are generally maintained in accordance with the following rules:

- 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 security that fails to meet any one of the eligibility factors, including ratings criteria, or that has a term to effective maturity less than the minimum required as set forth in the eligibility criteria in the index's methodology as of the next Rebalancing Date, is removed from the index on that Rebalancing Date.
- Par amounts of index bonds are adjusted on the Rebalancing Date to reflect any changes that have occurred since the previous Rebalancing Date, due to partial calls, tenders, etc. Should an index bond's par amount outstanding on the Rebalancing Date fall below the minimum set forth in the index's methodology, the index bond is removed from the index on that Rebalancing Date.
- Any index security that has a credit rating revision (downgrade or upgrade) making it ineligible for inclusion in the index between Rebalancing Dates is removed at the next Rebalancing Date. Changes due to ratings revisions are not made intra-month (or intra-period).

Mergers & Acquisitions and Rebalancing

S&P Dow Jones Indices' fixed income indices are typically reviewed and rebalanced monthly. The Index Committee, nevertheless, reserves the right to make adjustments to the 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).

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.

Cash Flows

S&P Dow Jones Indices' fixed income indices are typically rebalanced monthly. Generally, interest payments are considered received on the payment date. Depending on the index's policy, the cash from interest payments may be reinvested in the index or another vehicle for the remainder of the month (or period) or set aside until the next rebalancing to be considered part of that month's (or period's) total return.

Index bond par amounts outstanding are adjusted at the monthly (or periodic) rebalancing and are not adjusted intra-month (or intra-period). Thus, any pre-payments, pay-downs, sinking fund payments, and most other forms of cash flow (other than scheduled interest payments) are not recognized.

In the case of a bond that is subject to retirement due to merger or acquisition activity, interest is typically accrued up to, but not including, the retirement date when the bond is redeemed and paid off. Thus, if a bond is deleted from the index on the rebalancing date, but this is before the retirement date (due to the term to effective maturity not meeting minimum requirements), the interest on the bond ceases accruing and is no longer included in return calculations after the Rebalancing Date, since the bond has been deleted from the index.

Please see each index's respective methodology for specific policies and procedures regarding cash flows for each respective index, as certain indices may differ from the general outline above.

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 determinates 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.

In addition, please see each index's respective methodology for specific policies, procedures and constituent eligibility criteria for each respective index.

Puts and Tenders

Terminology

Mandatory Tender (Put): The requirement that a holder of a security surrender the security to the issuer or its agent for purchase. The tender date may be established under the bond contract or may be specified by the issuer upon the occurrence of an event specified in the bond contract. The purchase price typically is at par. This term is sometimes referred to as a “mandatory put”.

Put: See “tender”.

Put Bond: A bond that gives the holder the right to force the issuer or the issuer’s agent to repurchase the bonds at a predetermined price (typically at par), at a predetermined date or dates prior to the final stated maturity. Also known as a “tender option bond”.

Put Option: A put option allows the holder of a bond to “put,” or present, the bond to an issuer (or trustee) and demand payment at a stated time before the final stated maturity of the bond. Also known as a “tender option”.

Put Provision: A condition that allows a bondholder to resell a bond back to the issuer on certain stipulated dates prior to maturity at a certain price (generally par).

Tender: The surrender of a security to the issuer or its agent for purchase. A tender may be mandatory or optional. This term is sometimes referred to as a “put”.

Tender Offer: A proposal requesting that bondholders sell their bonds to the issuer or the issuer’s representative (e.g., a tender agent) for a stated price.

Tender Option: A provision in a bond contract under which the investor has the right, on specified dates after required notification, to surrender the securities to the issuer (or someone acting on the issuer’s behalf, such as a tender agent) at the predetermined price (usually par). This is sometimes referred to as an “optional tender” or “put option”.

Tender Option Bond: Obligations, also known as “put bonds” or “puttable securities,” that grant the bondholder the right to require the issuer or a specified third party acting as agent for the issuer (e.g., a tender agent) to purchase the bonds, usually at par, at a certain time or times prior to maturity or upon the occurrence of specified events or conditions. The put option or tender option right is typically available to the investor on a periodic (e.g., daily, weekly or monthly) basis. Typically, these securities are floating or variable rate securities, with the put option exercisable on dates on which the floating rate changes. These latter securities are often called “variable rate demand obligations”.

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".

Puts and Tenders and S&P Dow Jones Indices

Within the S&P Dow Jones Indices' family of fixed income indices, eligibility criteria differ among the various indices with regard to their constituent holdings. One aspect of this is whether the index can include bonds with embedded optionality or not. Some indices exclude puttable bonds, while others allow them. For those 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 the majority of fixed income 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 S&P Dow Jones Indices allowing the inclusion of puttable bonds, S&P Dow Jones Indices 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 course of the month (or period).

Optional tenders are not actively tracked by S&P Dow Jones Indices and as such are only taken into account on the Rebalancing Date when known par amounts of index bonds are 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.

Please refer to each index's methodology for further details on security eligibility requirements as certain indices may differ from this general outline.

Puts and Tenders and Index Maintenance

S&P Dow Jones Indices' fixed income indices are generally maintained in accordance with the following rules:

- 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, or that will have a term to maturity and/or mandatory complete tender date less than the minimum required as set forth in the eligibility criteria in the index's methodology as of the next Rebalancing Date, is removed from the index on that Rebalancing Date.
- Par amounts of index bonds are adjusted on the Rebalancing Date 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 on the Rebalancing Date fall below the minimum set forth in the index's methodology, the index bond is removed from the index on that Rebalancing Date.

Puts and Tenders and Rebalancing

S&P Dow Jones Indices' fixed income indices are typically reviewed and rebalanced monthly. The Index Committee, nevertheless, reserves the right to make adjustments to the 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).

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.

Cash Flows

S&P Dow Jones Indices' fixed income indices are typically rebalanced monthly. Generally, interest payments are considered received on the payment date. Depending on the index's policy, the cash from interest payments may be reinvested in the index or another vehicle for the remainder of the month (or period) or set aside until the next rebalancing to be considered part of that month's (or period's) total return.

Index bond par amounts outstanding are adjusted at the monthly (or periodic) rebalancing and are not adjusted intra-month (or intra-period). Thus, any pre-payments, pay-downs, sinking fund payments, and most other forms of cash flow (other than scheduled interest payments) are not recognized.

In the case of a bond that is subject to a mandatory complete tender, interest is typically accrued up to, but not including, the mandatory tender date when the bond is redeemed and paid off. Thus, if a bond is deleted from an index on the rebalancing date, but this is before the mandatory tender date (due to the term to mandatory tender date not meeting minimum requirements), the interest on the bond ceases accruing and is no longer included in return calculations after the Rebalancing Date, since the bond has been deleted from the index.

Please see each index's respective methodology for specific policies and procedures regarding cash flows for each respective index, as certain indices may differ from the general outline above.

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, we need to know whether the tender is mandatory or optional and whether the tender is complete or partial.

A key determinate 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 determinate 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.

Scenario 1 – Puts and Tenders		
Scenario 1a: Complete Mandatory Tender	Generally, as of the next Rebalancing Date, the index bond must have a minimum term to mandatory put 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 put date greater than or equal to the minimum required in the index methodology?	Decision: If yes, the bond remains in the index. If no, delete from the index on that Rebalancing Date
Scenario 1b: Partial Mandatory Tender	Generally, as of the next Rebalancing Date, the index bond must have a minimum par amount outstanding (as specified in the index methodology) to remain in the index, otherwise it is deleted at the next Rebalancing Date. Question: Is the par amount outstanding of the index bond greater than or equal to the minimum required in the index methodology?	Decision: If yes, the bond remains in the index at the new par amount outstanding (net of any partial calls, tenders, sinking fund payments, etc.). If no, delete from the index on that Rebalancing Date
Scenario 1c: Optional Tenders	Optional tender notices are generally sent out 30 to 60 days prior to the tender exercise date (though this may vary depending upon the issuer). As the outcome of an optional tender exercise is unknown until after it has occurred, S&P Dow Jones Indices waits until the optional tender has occurred (the tender exercise date). Once the results of the tender exercise are known, the analyst can determine the remaining par amount outstanding of the index bond, if any, and determine what further action to take. Question: As of the Rebalancing date, does the new par amount outstanding (adjusted for any calls, tenders, sinking fund payments, etc.) meet the minimum par amount eligibility criteria as outlined in the index methodology?	Decision: If yes, the bond remains in the index at the new par amount outstanding (net of any calls, tenders, sinking fund payments, etc.). If no, delete from the index on that Rebalancing Date

Refundings

Terminology

Advance Refunding: For purposes of certain tax and securities laws and regulations, a refunding in which the refunded issue remains outstanding for a period of more than 90 days after the issuance of the refunding issue. The proceeds of the refunding issue are generally invested in Treasury securities or federal agency securities (although other instruments are sometimes used), with principal and interest from these investments being used (with limited exceptions) to pay principal and interest on the refunded issue. Bonds are "escrowed to maturity" when the proceeds of the refunding issue are deposited in an escrow account for investment in an amount sufficient to pay the principal of and interest on the issue being refunded on the original interest payment and maturity dates, although in some cases an issuer may expressly reserve its right (pursuant to certain procedures delineated by the SEC) to exercise an early call of bonds that have been escrowed to maturity. Bonds are considered "prerefunded" when the refunding issue's proceeds are escrowed only until a call date or dates on the refunded issue, with the refunded issue redeemed at that time. The Internal Revenue Code and regulations restrict the yield that may be earned on the investment of the proceeds of a refunding issue.

Advance Refunding Document: The refunding escrow deposit agreement or its equivalent prepared by or on behalf of an issuer in connection with the advance refunding of an outstanding issue of securities.

Crossover Refunding: A method of **advance refunding** in which the revenue stream originally pledged to secure the refunded bonds continues to be used to pay debt service on the refunded bonds until they mature or are called. At that time, the pledged revenues "cross over" to pay debt service on the refunding bonds and escrowed securities are used to retire the refunded bonds. During the period when both the refunded and the refunding bonds are outstanding, debt service on the refunding bonds is paid from interest earned on the invested proceeds of the refunding bonds.

Current Refunding: A financing structure under which the old bonds are called or mature within 90 days of the issuance of the new refunding bonds.

Defeasance or Defeased: Termination of the rights and interests of the bondholders and extinguishment of their lien on the pledged revenues in accordance with the terms of the indenture for the prior issue of bonds. Defeasance usually occurs in connection with the refunding of an outstanding issue by the final payment (current refunding), or provision for future payment (advance refunding with an escrow account), of principal and interest on a prior issue.

Escrow Account: A fund established to hold moneys pledged and to be used solely for a designated purpose, typically to pay debt service on an outstanding issue in an advance refunding.

Escrow Deposit Agreement: An agreement that typically provides for the deposit of moneys or securities in an escrow account to refund an outstanding issue of securities. The agreement sets forth the manner in which funds are to be invested (generally in eligible securities) pending their expenditure and the schedule on which on-going debt service payments are to be made and any early redemptions of securities are to occur.

Escrowed Securities: Securities that are held, typically in an escrow account, to be used solely for a designated purpose.

Escrowed to Maturity: See "advance refunding".

Forward Refunding: An agreement, usually between an issuer and the underwriter, whereby the issuer agrees to issue bonds on a specified future date and an underwriter agrees to purchase such bonds on such date. The proceeds of such bonds, when issued, will be used to refund the issuer's outstanding bonds. Typically, a forward refunding is used where the bonds to be refunded are not permitted to be advance refunded on a tax-exempt basis under the Internal Revenue Code. In such a case, the issuer agrees to issue, and the underwriter agrees to purchase, the new issue of bonds on a future date that would effect a current refunding.

Full Cash or Gross Refunding: A method of **advance refunding** in which the proceeds of refunding bonds, without reinvestment, will provide sufficient funds to pay debt service on the refunded bonds. Such a refunding issue generally consists of two series of bonds: the refunding bonds, which pay debt service on the refunded bonds; and "special obligation bonds," which pay a portion of the debt service on the refunding bonds. The special obligation bonds are paid from the interest earnings on the invested refunding bond proceeds. Thus, even though a larger total amount of principal may be outstanding as a result of this type of refunding, the issuer's total annual debt service requirements may be reduced because the debt service on the special obligation bonds is paid from the earnings on the series of refunding bonds.

Net Cash Refunding: A method of **advance refunding** in which the proceeds of refunding bonds and any other available moneys, together with interest earnings thereon, will produce sufficient funds to pay debt service on the refunded bonds.

Partial Refunding: A refunding of less than all outstanding bonds of an issue.

Prerefunded: See "advance refunding".

Refunding: Sale of a new issue, the proceeds of which are to be used, immediately or in the future (typically within 90 days), to retire an outstanding issue by, essentially, replacing the outstanding issue with the new issue. Refundings are done to save interest cost, extend the maturity of the debt, or to relax existing restrictive covenants. The new bonds are referred to as the "refunding bonds," and the outstanding bonds being refinanced are referred to as the "refunded bonds" or the "prior issue". Generally, refunded bonds are not considered a part of the issuer's debt because the lien of the holders of the refunded bonds is on the escrowed funds, not on the originally pledged source of revenues.

Synthetic Refunding: An agreement between an issuer and a counter-party entered into in connection with outstanding bonds that the issuer is not permitted to advance refund on a tax-exempt basis under the Internal Revenue Code. The agreement is designed to generate debt service savings that the issuer would realize if it were permitted to advance refund the outstanding bonds. Such agreements generally provide for a payment from the counter-party to the issuer upon execution in return for a specified action of the issuer or a right to take a specified action by the counter-party at a future date, typically a date on which the issuer can call the outstanding bonds and effect a current refunding. For example, on the call date, the counter-party may have the right to require the issuer to issue refunding bonds with certain specified terms for purchase by the counter-party. Alternatively, the issuer may issue variable rate refunding bonds and have the right to require the counter-party to enter into an interest rate swap on specified terms.

Refundings and S&P Dow Jones Indices

There are two types of refundings that may affect bonds within the S&P Dow Jones Indices' family of fixed income indices:

- Current refundings
- Advance refundings

Within the S&P Dow Jones Indices' family of fixed income indices, 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 ecrowed to maturity bonds. However, certain sub-indices of this index do not, such as the S&P Municipal Bond High-Yield Index.

Please see each index's methodology for specific constituent eligibility criteria.

Hypothetical Example of a Current Refunding

This following example is taken from the *Tax-Exempt Bonds Phase 1* training manual of the Internal Revenue Service (http://www.irs.gov/pub/irs-tege/teb_phase_1_course_11204_-4module_c.pdf).

In 1997, City A needs money to construct a sewer system. The EPA offers a $10M grant if the city can raise another $10M on its own by the end of the year. City A wants this grant and needs to start work on the sewer system, but is not prepared to issue long-term bonds right now. The main reason is that it believes that long-term interest rates are too high right now. So City A issues $10M Bond Anticipation Notes with a two-year maturity. Issuing these notes allows City A to qualify for the $10M grant, and it now has $20M to begin the project.

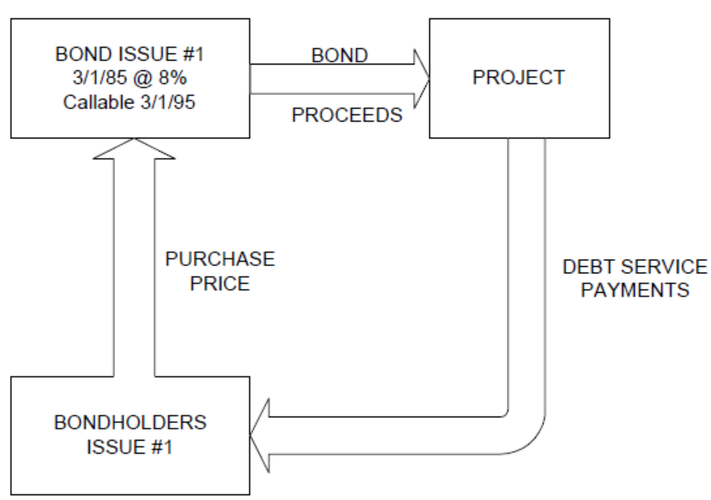
Two years later, interest rates have dropped to a point where the city feels comfortable issuing long-term bonds. Within 90 days of the redemption date of the notes, City A issues $10M principal amount of long-term bonds. The $10M in bond proceeds is used to pay off the notes. Interest due on the notes is paid with other funds.
This is a current refunding because the proceeds of the bonds ("refunding issue") were used to pay off ("refund") the notes ("refunded issue") within 90 days of issuance.

While current refundings are efficient if interest rates have dropped, they may not always be possible. The purchasers of the prior bonds may have required **call protection** when the bonds were marketed. Call protection is protection for the investor against having bonds paid off early.

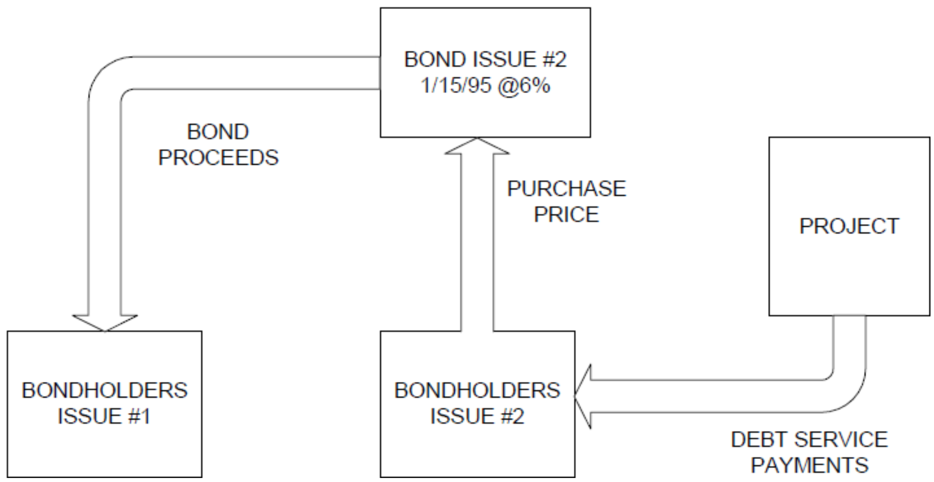
Diagram of a Hypothetical Current Refunding

This following example is taken from the *Tax-Exempt Bonds Phase 1* training manual of the Internal Revenue Service (http://www.irs.gov/pub/irs-tege/teb_phase_1_course_11204_-4module_c.pdf).

STEP 1: ISSUANCE OF ORIGINAL BONDS



STEP 2: ISSUANCE OF REFUNDING BONDS



Hypothetical Example of an Advance Refunding

This following example is taken from the *Tax-Exempt Bonds Phase 1* training manual of the Internal Revenue Service (http://www.irs.gov/pub/irs-tege/teb_phase_1_course_11204_-4module_c.pdf).

The year is 1993. Suppose that City N has $100M of 10% bonds outstanding. These bonds were issued in 1983 and mature in 2003. The bonds are callable in 1995. In 1990, tax-exempt interest rates fell to 7.5% and the city started to count down the days until the bonds can be called. In January 1993, rates fall to 4%, and the city decides that something has to be done. It does not want to continue to pay interest at 10%, when it can borrow at only 4%. But according to the terms of the indenture, the bonds can't be called for another 2 years. The city has paid off $50M in principal, but another $50M is still outstanding. So the city decides to issue $60M of new bonds at 4% due in 1998. Look at the savings:

Facts	1983 Bonds	1993 Bonds
Annual Principal Payment	$5M	$12M
Annual Interest Payment	$10M	$2.4M
Total Annual Payment	**$15M**	**$14.4M**

The city saves $600,000 ($15M-14.4M) each year by issuing new bonds. But, wait a minute: These bonds can't be called until 1995. So how can issuing new bonds help? Well, it won't help right away. Until 1995, the city will have to pay debt service on both bond issues. Additionally, the city has to borrow $60M in order to be able to pay both the debt service and the principal on the prior bonds (The $60M can only be invested at 4%.).

But the savings will occur once the 1983 bonds are called and retired in 1995. That is when the city will reduce its debt from 10% to 4%. In the meantime, the city will take the proceeds from the new bonds, and place them in an “escrow” account.

These proceeds will be earmarked only for debt service on the 1983 bonds, and will be invested in safe government securities (to appease the bondholders). In 1995, when the bonds can be called, the investments will mature and the proceeds will be used to redeem the 1983 bonds entirely.

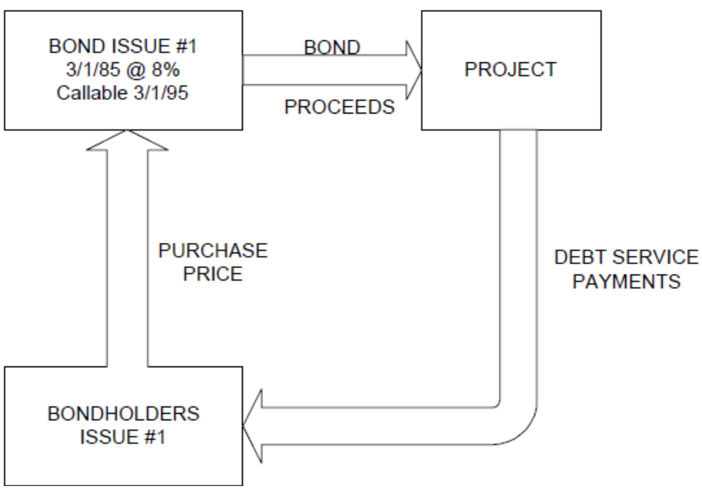
Once the escrow fund is established, the debt service on the 1983 bonds will be paid from the investments in the escrow. At the same time the source of the debt service payments for the prior bonds will then be used to pay the debt service on the 1993 bonds.

Because the 1983 bonds ("the refunded bonds") will not be redeemed until a date which is more than ninety days after the issuance date of the 1993 bonds ("the refunding issue"), this is an "advance refunding."

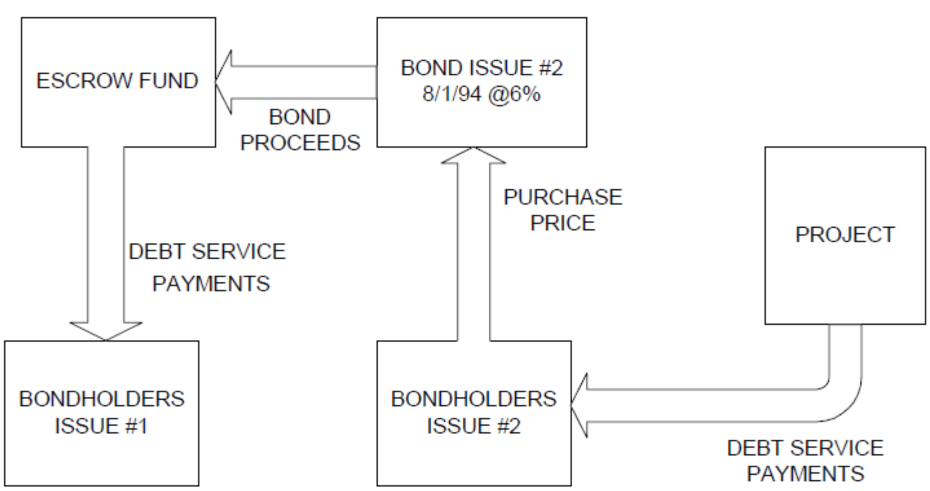
Diagram of a Hypothetical Advance Refunding

This following example is taken from the *Tax-Exempt Bonds Phase 1* training manual of the Internal Revenue Service (http://www.irs.gov/pub/irs-tege/teb_phase_1_course_11204_-4module_c.pdf).

STEP 1: ISSUANCE OF ORIGINAL BONDS



STEP 2: ISSUANCE OF REFUNDING BONDS



Current Refundings and S&P Dow Jones Indices

S&P Dow Jones Indices treats current refundings in a similar manner to that of 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 and S&P Dow Jones Indices

For those indices that do not allow prerefunded bonds or bonds escrowed to maturity, when notice of an advance refunding is received, S&P Dow Jones Indices 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 Dow Jones Indices 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.

Refundings and Index Maintenance

S&P Dow Jones Indices' fixed income indices are generally maintained in accordance with the following rules:

- 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, or that will have a term to maturity and/or mandatory call date less than the minimum required as set forth in the eligibility criteria in the index's methodology as of the next Rebalancing Date, is removed from the index on that Rebalancing Date.
- Par amounts of index bonds are adjusted on the Rebalancing Date 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.

Refundings and Rebalancing

S&P Dow Jones Indices' fixed income indices are typically reviewed and rebalanced monthly. The Index Committee, nevertheless, reserves the right to make adjustments to the 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).

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.

Cash Flows

S&P Dow Jones Indices' fixed income indices are typically rebalanced monthly. Generally, interest payments are considered received on the payment date. Depending on the index's policy, the cash from interest payments may be reinvested in the index or another vehicle for the remainder of the month (or period) or set aside until the next rebalancing to be considered part of that month's (or period's) total return.

Index bond par amounts outstanding are adjusted at the monthly (or periodic) rebalancing and are not adjusted intra-month (or intra-period). Thus, any pre-payments, pay-downs, sinking fund payments, and most other forms of cash flow (other than scheduled interest payments) are not recognized.
In the case of a bond that is subject to a mandatory complete call such as a refunding, 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 this is before 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, since the bond has been deleted from the index.

Please see each index's respective methodology for specific policies and procedures regarding cash flows for each respective index, as certain indices may differ from the general outline above.

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 determinate 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 determinate 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 yes, the bond remains in the index. If no, delete from the index on that Rebalancing Date

Scenario 1 - Refundings		
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 yes, the bond remains in the index at the new par amount outstanding (net of any partial calls, tenders, sinking fund payments, etc.). If no, 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: Is the term to mandatory call date greater than or equal to the minimum required in the index methodology?	Decision: If yes, the bond remains in the index. If no, delete from the index on that Rebalancing Date
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 yes, the bond remains in the index at the new par amount outstanding (net of any partial calls, tenders, sinking fund payments, etc.). If no, 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 no, the bond remains in the index. If yes, delete from the index on that Rebalancing Date

Recalculation Policy for S&P Dow Jones Indices' Branded Indices

S&P Dow Jones Indices reserves the right to recalculate an index at its discretion in the event one of the following issues has occurred:

1. Incorrect or revised price of one or more constituent securities;
2. Late announcement;
3. Incorrect calculation or data entry error;
4. Incorrect application of index methodology or missed methodology event.

A general description of how these events are handled is provided in the table below.

The decision to recalculate an index is made at the discretion of the applicable Index Manager and/or Index Committee, as set forth herein. The potential market impact or disruption resulting from the potential recalculation is considered when making any such decision.

Recalculation Events that may be Made by an Index Manager without Involving the Index Committee. In the event one of the following recalculation events is discovered within two trading days of its occurrence, the Index Manager may, at his/her discretion, recalculate the index without involving the Index Committee. In the event any such recalculation event is discovered beyond such two trading day period, the applicable Index Committee shall decide whether the index should be recalculated.

Recalculation Events	Treatment In S&P Dow Jones Indices' Branded Indices
Incorrect or revised price of one or more constituent securities	Incorrect constituent prices enter a challenge process with the price provider. If the error is corrected by the price provider, this may result in a recalculation. Index levels are generally not recalculated due to a change in price but S&P Dow Jones Indices reserves the right to recalculate an index if a given price change is deemed, solely in its discretion, large enough.
Late announcement	Late information is applied at the earliest opportunity when S&P Dow Jones Indices becomes aware of the event.
Incorrect calculation or data entry error	Incorrect calculations or data entry mistakes caused by S&P Dow Jones Indices are corrected and impacted indices are recalculated.
Incorrect application of index methodology or missed methodology event	See below.

Index Methodology Event. The Index Committee shall determine whether or not to recalculate an index in the event an error is discovered by S&P Dow Jones Indices that was caused by the incorrect application of an index methodology and results in the incorrect composition and/or weighting of index constituents in accordance with the following guidelines:

- In the event the Index Committee discovers a constituent that does not meet index eligibility and selection criteria for a given index as documented in the index's methodology, and was therefore incorrectly added to or deleted from the index, or the constituent weightings in the index were incorrectly assigned, then the Index Committee may decide to amend the constituents or weighting of the index in line with the index methodology proactively (as opposed to retroactively) on a future date, providing reasonable advance notice from the announcement date to the effective date. The Index Committee will generally not alter the index composition and/or weightings of constituents retroactively except in accordance with the following guidelines:

  - The addition of a constituent that does not meet the index objective as defined in the index methodology (e.g. adding a non-Sukuk bond to a Sukuk bond index).
  - The changes made differ from those that were announced by S&P Dow Jones Indices in advance of the effective date (e.g. pro-forma files).

- If an incorrect application of the methodology for determining index composition or weighting is discovered after the action has been announced by S&P Dow Jones Indices, but prior to the effective date of the action, S&P Dow Jones Indices reserves the right to rescind the action and restate it using corrected data. S&P Dow Jones Indices will generally restate the action if the inconsistency is discovered within two trading days of the action becoming effective.

In the event S&P Dow Jones Indices chooses to recalculate an index, it shall do so within a reasonable timeframe following the detection and review of the issue. If it is determined that an index will be recalculated, the following steps will be taken upon completion of the recalculation:

- All impacted files are regenerated and reposted.
- All clients (i.e. S&P Dow Jones Indices-licensed entities) are notified of the recalculation and alerted when files have been successfully reposted.

S&P Dow Jones Indices applies the recalculation rules set forth herein to its branded indices and markets (developed, emerging and frontier). Any decisions that differ from the stated rules will be reviewed by the Index Committee and announced accordingly.

Common Identifiers. Incorrect identifiers are generally corrected on the same day such an error is detected and will be included in the next regularly scheduled file delivery. In the event that index analytics are changed, S&P Dow Jones Indices reserves the right to recalculate the indices affected by the change.

Index Governance

Index Committee

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

Quality Assurance

S&P Dow Jones Indices 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 Dow Jones Indices' 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 objective, and that the data and methodology remain effective. The annual review process includes the gathering of information on the appropriateness, representativeness, and effectiveness of the index methodology from colleagues responsible for commercializing the indices. In the case that a 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. S&P Dow Jones Indices communicates and consults with stakeholders through various channels using press releases, index announcements, emails and the distribution of data files. In addition, S&P Dow Jones Indices has a designated client service team available to respond to inquiries. When a material change to an index methodology is considered, S&P Dow Jones Indices may publish a consultation inviting comments from external parties. Occasionally, S&P Dow Jones Indices 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 at *http://us.spindices.com/feedback/client-services*.

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.spdji.com*.

Index methodologies are constantly under review for best practices, and any changes are announced well ahead of time via the Web site and email to all clients.

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

Calculations and Pricing Disruptions

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 Dow Jones Indices may decide to delay index adjustments or not publish an index.

Expert Judgment

Expert Judgment specifically and exclusively refers to S&P Dow Jones Indices' exercise of discretion with respect to its use of data in determining an index. Other areas of discretion, such as methodology changes, are not, for the purposes of this document, considered Expert Judgment.

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.

Appendix I

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

S&P Dow Jones Indices 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 Standard &Poor's, Baa3 by Moody's, or BBB- by Fitch. Others require "high-yield" or "speculative" ratings below "investment-grade." Eligibility criteria for each S&P Dow Jones Indices Fixed income index can be found within its respective index methodology document available at *www.spdji.com*.

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

- The Nationally Recognized Statistical Rating Organizations (NRSRO) - Standard & Poor's, 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 used by many of the S&P Dow Jones Indices Fixed income indices. Included herein are some of the more common Standard & Poor's, Moody's and Fitch ratings symbols and definitions used by the S&P Dow Jones Indices' family of fixed income indices.

This document does not aim to be a substitute for all the various ratings scales, symbols and definitions used by Standard & Poor's, 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	*"Prime / Maximum Safety"*
AA+ AA AA-	Aa1 Aa2 Aa3	AA+ AA AA-	*"High Grade High Quality"*
A+ A A-	A1 A2 A3	A+ A A-	*"Upper Medium Grade"*
BBB+ BBB BBB-	Baa1 Baa2 Baa3	BBB+ BBB BBB-	*"Lower Medium Grade"*
BB+	Ba1	BB+	*"Non Investment Grade"*
BB BB-	Ba2 Ba3	BB BB-	*"Speculative"*
B+ B B-	B1 B2 B3	B+ B B-	*"Highly Speculative"*
CCC+	Caa1	CCC	*"Substantial Risk"*
CCC CCC-	Caa2 Caa3	- -	*"In Poor Standing"*
CC	Ca	CC	*"Extremely Speculative"*
C	C	C	*"May be in Default"*
D	-	D	*"Default"*

* 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 (www.fitchratings.com).

Short-Term Issue Credit Rating

S&P	Moody's**	Fitch	
A-1+ A-1 A-2 A-3	VMIG 1 VMIG 2 VMIG 2 VMIG 3	F1+ F1 F2 F3	*"Investment Grade"*
B C D	SG - -	B C RD/D	*"Speculative"*

** 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 (www.moodys.com).

Standard & Poor's Issue Credit Ratings Definitions[1]

A Standard & Poor's issue 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 Standard & Poor'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.

Standard & Poor's Long-Term Issue Credit Ratings

Rating	*Definition*
AAA	An obligation rated 'AAA' has the highest rating assigned by Standard & Poor's. 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.

[1] "Standard & Poor's Ratings Definitions," Feb. 24, 2012, Standard & Poor's
<http://www.standardandpoors.com/ratings/articles/en/us/?articleType=HTML&assetID=1245329361492>

Rating	Definition
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 repurchased for an amount of cash or replaced by other instruments having a total value that is less than par.
D	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 Standard & Poor's 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.
NR	This indicates that no rating has been requested, that there is insufficient information on which to base a rating, or that Standard & Poor's 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.*

Standard & Poor's Short-Term Issue Credit Ratings

Rating	Definition
A-1	A short-term obligation rated 'A-1' is rated in the highest category by Standard & Poor's. 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.
A-2	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.
A-3	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	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..
C	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.
D	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 Standard & Poor's 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[2]

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.

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

[2] "Ratings Symbols and Definitions," Oct. 2011, Moody's Investors Service
<http://www.moodys.com/researchdocumentcontentpage.aspx?docid=PBC_79004>

Rating	Definition
VMIG 1	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.
VMIG 2	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.
VMIG 3	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.
SG	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[3]

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.

Rating	Definition
AAA	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.
AA	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.
A	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.
BBB	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.
BB	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	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.
CCC	Substantial credit risk. Default is a real possibility.
CC	Very high levels of credit risk. Default of some kind appears probable.
C	Exceptionally high levels of credit risk. Default appears imminent or inevitable.

[3] "Definitions of Ratings and Other Forms of Opinion," Sept. 2011, Fitch Ratings <http://www.fitchratings.com/web_content/ratings/fitch_ratings_definitions_and_scales.pdf>

Rating	Definition
D	Default. Indicates a default. Default generally is defined as one of the following: • failure to make payment of principal and/or interest under the contractual terms of the rated obligation; • the bankruptcy filings, administration, receivership, liquidation or other winding-up or cessation of the business of an issuer/obligor; or • 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.
NR	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.

Rating	Definition
F1	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.
F2	Good short-term credit quality. Good intrinsic capacity for timely payment of financial commitments.
F3	Fair short-term credit quality. The intrinsic capacity for timely payment of financial commitments is adequate.
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.
C	High short-term default risk. Default is a real possibility.
RD	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.
D	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 the S&P Dow Jones Indices' fixed income 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, ISIN or SEDOL), 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 Dow Jones Indices' 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.

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 manipulate 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.spdji.com*](http://www.spdji.com).

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

Call: Actions taken to pay the principal amount prior to the stated maturity date, in accordance with the provisions for "call" stated in the bond indenture or official statement of the securities. Another term for call provision is "redemption provision".

Call Date: The date at which some bonds are redeemable by the issuer prior to the maturity date.

Call Price: The specified price at which a bond may be redeemed or called prior to maturity, typically either at a premium (above par value) or at par.

Callable Bonds: Bonds that are redeemable at the option of the issuer prior to the maturity date, at a predetermined price at or above par.

Cash: In reference to S&P Dow Jones Indices' 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).

For purposes of S&P Dow Jones Indices' fixed income indices, the security's country is generally that of the issuer.

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

For example, a $1,000 bond with a coupon of 7% will pay $70 in interest a year. If the coupon is paid semiannually, the bondholder will receive $35 in each of two six-month interest payments.

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 Dow Jones Indices' fixed income indices, the constituent level currency code is that of the security's currency of issuance.

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 Standard & Poor'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 Dow Jones Indices, such as SPSE, IDC, etc., depending on the index.

Description (Other): Security name and description based on additional/alternative information from data feeds used by S&P Dow Jones Indices, such as SPSE, 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 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: In 1999, S&P and MSCI jointly developed Global Industry Classification Standard (GICS®) to establish a global standard for categorizing companies into sectors and industries, thereby enabling asset owners, asset managers and investment research specialists to make seamless comparisons across indices by industry, by region, and globally. GICS is the basis of most sector and industry-based indices at S&P Dow Jones Indices. All classifications are agreed upon and implemented by both S&P and MSCI.

S&P and MSCI frequently undergo a GICS structure review with clients. This usually occurs on an annual basis and may result in major structural changes to GICS.

Detailed information can be found in S&P Dow Jones Indices' *Global Industry Classification Standard Methodology* available on our Web site, www.spdji.com.

Contact the GICS team at spgics@standardandpoors.com with any GICS-related questions.

Full information on GICS, including the latest GICS map in 10 languages, can be found at *www.spdji.com*.

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.

An ISIN consists of three components: A two letter country code, a nine character alpha-numeric national security identifier and a single check digit. The country code is the ISO 3166-1 alpha-2 code for the country of issue. International securities cleared through Clearstream or Euroclear use "XS" as the country code. The nine-digit security identifier is the National Securities Identifying Number (NSIN), assigned by the governing bodies in each country.

The organization that allocates ISINs in any given country is called the National Numbering Agency (NNA). The NNA of the appropriate country administers the nine digit security identification number. In the U.S., that NNA is called CUSIP Global Services, established under the auspices of the American Bankers Association to develop a uniform method of identifying securities.

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.

Mandatory Put/Tender/Repurchase Date: The date prior to maturity specified in the bond indenture where bond holders must tender (surrender) their bonds.

Mandatory Put/Tender/Repurchase Price: The price of the bond specified in the bond indenture that bondholders will receive upon tender of their bonds.

Market Value: For S&P Dow Jones Indices' 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.

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.

Prerefunding Date: The date of a prior optional call provision where the issuer has decided in advance to exercise its option by escrowing funds for the early repayment of the bonds in US Government and/or agency securities.

Prerefunding Price: The price of the bonds that will be used to redeem the bonds upon the prerefunding date.

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

For S&P Dow Jones Indices' fixed income indices, the price in the constituent file is the clean price, that is, 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.

Put Bond: A bond that gives the holder the right to force the issuer or the issuer's agent to repurchase the bonds at a predetermined price (typically at par), at a predetermined date or dates prior to the final stated maturity. Also known as a "tender option bond".

Put Option: A put option allows the holder of a bond to "put", or present, the bond to an issuer (or trustee) and demand payment at a stated date before the final stated maturity of the bond. Also known as a "tender option".

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.

Redemption Provision: Another term for “call provision”. Action taken to pay the principal amount prior to the stated maturity date, in accordance with the provision for “call” stated in the proceedings of the securities.

Refunding: Sale of a new issue, the proceeds of which are to be used, immediately or in the future (typically within 90 days), to retire an outstanding issue by, essentially, replacing the outstanding issue with the new issue. Refundings are done to save interest cost, extend the maturity of the debt, or to relax existing restrictive covenants. The new bonds are referred to as the “refunding bonds,” and the outstanding bonds being refinanced are referred to as the “refunded bonds” or the “prior issue”. Generally, refunded bonds are not considered a part of the issuer’s debt because the lien of the holders of the refunded bonds is on the escrowed funds, not on the originally pledged source of revenues.

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.

SEDOLs are seven characters in length, consists of two components: a six alphanumeric code and a trailing check digit. SEDOLs issued prior to January 26, 2004 were composed only of numbers.

The following are some additional characteristics of SEDOLs:

- Registered and Issued by the LSE as requested by the issuer
- Available on data vendor terminals
- SEDOLS are allocated per country of listing, therefore SEDOLS may not be unique if there are multiple listings across many exchanges within one country. They will also be allocated with additional identification data including the Market Identifier Code (MIC) and ISIN codes to increase efficiencies in identifying the market an instrument is traded on.
- Allocated sequentially with no inherent meaning for each market that an instrument is listed on
- SEDOL Codes are 7 characters alphanumeric (B-Z excluding vowels and 0-9)
- First character will be alpha (legacy codes may be numeric)
- No codes are issued with a “9” as the leading character (the 9 is reserved for client customizations)
- First six characters form a unique combination (600 million codes available)
- Seventh character is a check digit

Sinker: A bond with a sinking fund.

Sinking Fund: Separate accumulation of cash or investments (including earnings on investments) in a fund in accordance with the terms of a trust agreement or indenture, funded by periodic deposits by the issuer (or other entity responsible for the debt service), for the purpose of assuring timely availability of monies for payment of the debt service. Usually used in connection with term bonds. Bonds with such a feature are known as “sinkers”.

SP Rating: The fixed income security credit rating as per Standard & Poor’s Ratings Services. 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 Colombia (DC), and Guam (GU).

For purposes of S&P Dow Jones Indices 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.

Technical Default: Other than monetary default, when an issuer does not adhere to provisions in the bond indenture they are considered in technical default. Examples include:

- Draw of funds from the Debt Service Reserve Fund (DSRF) in some cases is a technical default
- Failure to replenish funds drawn from DSRF
- Filing for bankruptcy (technical default until bondholders don't receive what was promised)
- Failure to report financial statements on schedule or in a timely manner
- Failure to maintain specific financial ratios
- Failure to remit monthly debt service to a bond trustee on schedule (even though semi-annual debt service is paid to holders, in most cases the trustee collects the funds monthly)

Tender: The surrender of a security to the issuer or its agent for purchase. A tender may be mandatory or optional. This term is sometimes referred to as a "put".

Tender Offer: A proposal requesting that bondholders sell their bonds to the issuer or the issuer's representative (e.g., a tender agent) for a stated price.

Tender Option: A provision in a bond contract under which the investor has the right, on specified dates after required notification, to surrender the securities to the issuer (or someone acting on the issuer's behalf, such as a tender agent) at the predetermined price (usually par). This is sometimes referred to as an "optional tender" or "put option."

Tender Option Bond: Obligations, also known as "put bonds" or "puttable securities," that grant the bondholder the right to require the issuer or a specified third party acting as agent for the issuer (e.g., a tender agent) to purchase the bonds, usually at par, at a certain time or times prior to maturity or upon the occurrence of specified events or conditions. The put option or tender option right is typically available to the investor on a periodic (e.g., daily, weekly or monthly) basis. Typically, these securities are floating or variable rate securities, with the put option exercisable on dates on which the floating rate changes. These latter securities are often called "variable rate demand obligations".

Unit: A fractional, undivided interest in a unit investment trust.

Unit Investment Trust: An investment fund created with a fixed portfolio of investments to provide a steady, periodic flow of income to investors.

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 the effective 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.

Yield to Mandatory Put Date: The annual rate of return expected on a bond based on its current price and the mandatory put date and price established by the issuer.

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."

Yield to Par 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 at par.

Yield to Prerefunding Date: The annual rate of return expected on a bond based on its current price and the date and price at which it was prerefunded.

Yield to Worst: This is the lowest yield generated, given the potential stated calls prior to maturity.

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 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.

Days to Maturity (Market Value Weighted Average): The weighted average of the days to maturity of all the short-term fixed income securities 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. See *Years to Maturity (Market Value Weighted Average)* for details on how to compute.

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

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. <u>Bonds not rated by Fitch Ratings are excluded from this calculation</u>. 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	CCC-	82	C-	76
AA+	99	BBB+	93	B+	87	CC+	81	DDD	75
AA	98	BBB	92	B	86	CC	80	DD	74
AA-	97	BBB-	91	B-	85	CC-	79	D	73
A+	96	BB+	90	CCC+	84	C+	78	N/R	0
A	95	BB	89	CCC	83	C	77		

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. <u>Securities not rated by Fitch Ratings are excluded from this calculation</u>. 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 Dow Jones Indices' 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 Dow Jones Indices 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/Citigroup International Treasury 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 Standard & Poor's Ratings Services 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 Standard & Poor's Ratings Services by the total adjusted market value of bonds in the index rated by Standard & Poor's Ratings Services. <u>Bonds not rated by Standard & Poor's Ratings Services are excluded from this calculation</u>. This gives the individual Standard & Poor's Ratings Services 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:

Standard & Poor's 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 Standard & Poor's Ratings Services 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 Standard & Poor's Ratings Services 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 Standard & Poor's Ratings Services rated short-term security in the index by the total adjusted market value of the Standard & Poor's Ratings Services rated short-term securities in the index. <u>Securities not rated by Standard & Poor's Ratings Services are excluded from this calculation</u>. This gives the individual Standard & Poor's Ratings Services 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:

Tax Equivalent Yield = Tax Free Municipal Bond Yield / (1 – Tax Rate)

For purposes of S&P Dow Jones Indices 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 1/3 years (1/6 * 1 year + 1/3 * 2 years + 1/2 * 3 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[4]: 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.

[4] Nominal yield is applied to inflation/index-linked securities only.

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%).

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