

Bloomberg Australian Enhanced Yield Composite Bond Index

This document is intended to be read in conjunction with the [Bloomberg Australian Aggregate 100mn Index](#); these documents collectively constitute the index methodology for this Index.

The Bloomberg Australian Enhanced Yield Composite Bond Index is an optimized benchmark designed to provide a higher yield than the Bloomberg Australian Aggregate 100mn Index ("Parent Index"). Yield is optimized by tilting exposure based on a number of different risk dimensions, including sovereign, interest rate risk (i.e., duration) and credit risk (e.g. spread). The index uses a rules-based approach to reweight the sub-components of the Parent Index such that yield is maximized - subject to certain constraints - while the risk characteristics are broadly preserved. The index was launched in August 2021, with history backfilled to August 2011.

The features specific to this Index are set out below.

Index ID	I36601
Base Currency Index Ticker	I36601AU Index: Total Return AUD Unhedged

Eligibility Requirements:

Currency	Principal and coupon must be denominated in AUD
Credit Rating	<p>Securities must be rated investment grade (Baa3/BBB-/BBB- or higher) using the middle rating of Moody's, S&P and Fitch; when a rating from only two agencies is available, the lower is used; when only one agency rates a bond, that rating is used. In cases where explicit bond-level ratings may not be available, other sources may be used to classify securities by credit quality:</p> <ul style="list-style-type: none"> Local currency treasury and hard currency sovereign issues are classified using the middle issuer-level local currency and hard currency debt ratings from each agency for all outstanding bonds, even if bond-level ratings are available. Expected ratings at issuance may be used to ensure timely index inclusion or to classify split-rated issuers properly. <p>Unrated securities may use an issuer rating for index classification purposes, if available. Unrated subordinated securities are included if a subordinated issuer rating is available.</p>
Minimum Amount Outstanding	<ul style="list-style-type: none"> AUD100mn minimum par amount outstanding for domestic issues. AUD300mn minimum par amount outstanding for global issues. To be eligible for the Asian-Pacific and Global Aggregate Indices, securities must have 300mn par outstanding.
Maturity	<ul style="list-style-type: none"> Securities must have at least one year until final maturity, regardless of optionality. Bonds that convert from fixed to floating rate, including fixed-to-float perpetuals, will exist the index one year prior to conversion to floating rate. Fixed-rate perpetuals are not included. Sub-indices based on maturity are inclusive of lower bounds.
Minimum Liquidity Requirements	See Minimum Amount Outstanding specified above

Coupon Types	<ul style="list-style-type: none"> • Fixed-rate coupon. • Callable fixed-to-floating rate bonds are eligible during their fixed-rate term only. • Bonds with a step-up coupon that changes according to a predetermined schedule are eligible 		
Market of Issue	<ul style="list-style-type: none"> • For securities with at least AUD300mn outstanding, publicly issued global and domestic issues are eligible. • For securities with AUD100mn-AUD300mn outstanding, only publicly issued domestic issues are eligible. 		
Taxability	Only fully taxable issues are eligible.		
Seniority of Debt	Senior and subordinated issues are included.		
Security Types	<table border="0" style="width: 100%;"> <tr> <td style="vertical-align: top;"> <p>Included</p> <ul style="list-style-type: none"> • Bullet, puttable, sinkable/amortizing and callable bonds • Original issue zero coupon bonds • Fixed-rate and fixed-to-float capital securities </td> <td style="vertical-align: top;"> <p>Excluded</p> <ul style="list-style-type: none"> • Contingent capital securities including traditional CoCos and contingent write-down securities, with explicit capital ratio or solvency/balance sheet-based trigger • Bonds with equity type features (e.g., warrants, convertibles, preferreds, DRD/QDI-eligible issues) • Inflation-linked bonds, floating-rate issues • Fixed-rate perpetuals • Private placements, retail bonds • Structured notes, pass-through certificates • Illiquid securities where reliable pricing is unavailable </td> </tr> </table>	<p>Included</p> <ul style="list-style-type: none"> • Bullet, puttable, sinkable/amortizing and callable bonds • Original issue zero coupon bonds • Fixed-rate and fixed-to-float capital securities 	<p>Excluded</p> <ul style="list-style-type: none"> • Contingent capital securities including traditional CoCos and contingent write-down securities, with explicit capital ratio or solvency/balance sheet-based trigger • Bonds with equity type features (e.g., warrants, convertibles, preferreds, DRD/QDI-eligible issues) • Inflation-linked bonds, floating-rate issues • Fixed-rate perpetuals • Private placements, retail bonds • Structured notes, pass-through certificates • Illiquid securities where reliable pricing is unavailable
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Date	Monthly on the fifth last business day		

Optimization Constraints and Calculations

- Overview**
- All qualifying securities are selected from the Bloomberg Australian Aggregate 100mn Index ("Parent Index").
 - An optimizer is used, as described in the Bloomberg Fixed Income Optimization Methodology Supplement, to weight each Constituent in the Index.
 - The optimizer runs once per month to calculate notional positions of each Constituent
 - This process will not impact bond prices and other security-level analytics

Determination Date The fifth last business day of each month

Government Ticker List The "Government" sub-sector group consists of bonds with the following issuer tickers: NSWTC, NTTC, TCV, QTC, TASCOR, WATC, SAFA, AUSCAP, ACGB

Groups Each bond in the Parent Index is placed into a Sub-Sector group and a Sub-Component group

Sub-Sector Group	Condition
Government	If security Ticker is in the Government Ticker List
Non-Government	Otherwise (not in the Government Sub-Sector Group)

Sub-Component Group	Condition
Government 1-5 Years	If $1 \leq \text{Years to Maturity EOM} < 5$ and in Government Sub-Sector
Government 5-7 Years	If $5 \leq \text{Years to Maturity EOM} < 7$ and in Government Sub-Sector
Government 7-10 Years	If $7 \leq \text{Years to Maturity EOM} < 10$ and in Government Sub-Sector
Government 10+ Years	If $\text{Years to Maturity EOM} \geq 10$ and in Government Sub-Sector
Non-Government 1-5 Years	If $1 \leq \text{Years to Maturity EOM} < 5$ and in Non-Government Sub-Sector
Non-Government 5-7 Years	If $5 \leq \text{Years to Maturity EOM} < 7$ and in Non-Government Sub-Sector
Non-Government 7-10 Years	If $7 \leq \text{Years to Maturity EOM} < 10$ and in Non-Government Sub-Sector
Non-Government 10+ Years	If $\text{Years to Maturity EOM} \geq 10$ and in Non-Government Sub-Sector
All Less Than 1 Year	Otherwise (not in any other Sub-Component Group)

Derived Risk Exposures The following derived risk exposures are defined:

Derived Risk Exposure	Definition
OAD Govt Contribution	The proportion of the OAD Risk Exposure of the Parent Index that is attributed to the Government sub-sector. Calculated as the weighted sum of the OAD Risk Exposure of the securities in the Government sub-sector, divided by the weighted sum of the OAD Risk Exposure of all securities in the Parent Index
OAD Govt Contribution -40% Bound	For each security in the Government sub-sector: $\left(\frac{1}{\text{OAD Govt Contribution} - 0.4} - 1 \right) \times \text{OAD}$ Otherwise: $-\text{OAD}$
OAD Govt Contribution +40% Bound	For each security in the Government sub-sector: $\left(\frac{1}{\text{OAD Govt Contribution} + 0.4} - 1 \right) \times \text{OAD}$ Otherwise: $-\text{OAD}$

Objective Function Risk Factor Exposure: Yield To Worst

The optimizer seeks to maximize the Yield To Worst weighted exposure of the Index

The Weight Bounds define the maximum and minimum weight that can be assigned to each Constituent. Unless otherwise specified for the Index, the Upper and Lower Weight Bounds are set with respect to Determination Date d for each Constituent i as follows:

Weight Bounds

If Constituent i is an Excluded Constituent:

$$\begin{aligned} ub_d^i &= 0\% \\ lb_d^i &= 0\% \end{aligned}$$

Else:

$$\begin{aligned} ub_d^i &= 100\% \\ lb_d^i &= 0\% \end{aligned}$$

Where:

ub_d^i and lb_d^i mean the Upper and Lower Weight Bounds respectively for Constituent i .

Optimization Constraints

Constraint	Parameter	Value
Budget <i>Weights add up to 100%</i>	Benchmark	Parent Index
	Constraint Type	Group Risk Exposure - Absolute
	Risk Exposure	Equal to 1
	Groups	One Group - All Constituents
	Selection	Excluding
	Exclude	n/a
	Lower	100%
	Upper	100%
	Min	$-\infty$
	Max	∞
Sub-Component Exposure <i>The Exposure to each sub-component that contains securities with 1Y or more to maturity must be 5% or greater (the Non-Government 10+ Years Sub-component is excluded prior to July 2020)</i>	Benchmark	Parent Index
	Constraint Type	Group Risk Exposure - Absolute
	Risk Exposure	Equal to 1
	Groups	Sub-Component
	Selection	Excluding
	Exclude	All Less Than 1 Year
	Upper	100%
Sub-Component Under 1Y <i>All securities with less than one year to maturity should have a zero weight</i>	Benchmark	Parent Index
	Constraint Type	Group Risk Exposure - Absolute
	Risk Exposure	Equal to 1
	Groups	Sub-Component
	Selection	Including
	Include	All Less Than 1 Year
	Upper	0%
Govt Sub-Sector Exposure <i>Exposure to the Government sub-sector should be within 40% of the Parent Index</i>	Benchmark	Parent Index
	Constraint Type	Group Risk Exposure - Relative Value
	Risk Exposure	Equal to 1
	Groups	Sub-Sector
	Selection	Including
	Include	Government
	Lower	40%
	Upper	40%
	Min	$-\infty$
Max	∞	
Option Adjusted Duration (OAD) <i>OAD must be within 1 year of the OAD of the Parent Index</i>	Benchmark	Parent Index
	Constraint Type	Group Risk Exposure - Relative Value
	Risk Exposure	OAD

	Groups	One Group - All Constituents
	Selection	Excluding
	Exclude	n/a
	Lower	-1
	Upper	1
	Min	0
	Max	∞
OAD Govt Contribution Lower	Benchmark	Parent Index
<i>OAD contribution from the Government sub-sector must be greater than the OAD contribution in the Parent Index - 40%</i>	Constraint Type	Group Risk Exposure - Absolute
	Risk Exposure	OAD Govt Contribution -40% Bound
	Groups	One Group - All Constituents
	Selection	Excluding
	Exclude	n/a
	Lower	0
	Upper	∞
OAD Govt Contribution Upper	Benchmark	Parent Index
<i>OAD contribution from the Government sub-sector must be lower than the OAD contribution in the Parent Index + 40%</i>	Constraint Type	Group Risk Exposure - Absolute
	Risk Exposure	OAD Govt Contribution +40% Bound
	Groups	One Group - All Constituents
	Selection	Excluding
	Exclude	n/a
	Lower	$-\infty$
	Upper	0
OASD Non-Govt Contribution	Benchmark	Parent Index
<i>OASD contribution from the Non-Government sub-sector should be within 3 years of the Parent Index</i>	Constraint Type	Group Risk Exposure - Relative Value
	Risk Exposure	OASD
	Groups	Sub-Sector
	Selection	Including
	Include	Non-Government
	Lower	-3
	Upper	3
	Min	0
	Max	∞
Sub-Component Scaling	Benchmark	Screened Parent Index
<i>Constituent weights relative to the Screened Parent Index must be equal to overall sub-component exposure relative to the Screened Parent Index</i>	Constraint Type	Group Risk Exposure - Group Scaling
	Risk Exposure	Sub-Component Scale Factor
	Groups	Sub-Component
	Selection	Excluding
	Exclude	n/a
	Lower	0%
	Upper	0%
	Min	$-\infty$
	Max	∞
Turnover From Current	Benchmark	Parent Index
	Constraint Type	Turnover - Absolute
	Max	5%

Constraint Relaxation Process

If no solution is found for the Optimization Problem, each of the Constraints shown in this section is either **(1)** iteratively relaxed or **(2)** entirely excluded - in order of appearance under 'List and Sequence of Eligible Constraints' - until either a solution is found or the relaxation process is exhausted.

The process will start with Constraint Country Exposure. On each iteration of the Constraint Relaxation Process, only one Constraint will be addressed at a time.

If a Constraint is deemed to be excluded, it will be removed from the Optimization Problem and an attempt to solve the Optimization Problem is performed. If no solution is found the Constraint Relaxation Process will continue with the next Constraint included in 'List and Sequence of Eligible Constraints'.

List and Sequence of Eligible Constraints

Constraint	Type	Excluded or Relaxed
Turnover from Current	Turnover	Relaxed

Constraints to be Relaxed

On each iteration, all the relevant Constraint Parameters for the Constraint being relaxed will be adjusted additively by the corresponding Additive Increment.

If the value of the relevant Constraint Parameters is less than or equal to its corresponding 'Limit', then an attempt to solve the Optimization Problem is performed. Otherwise, the Constraint Parameter is set to equal the corresponding 'Limit' and an attempt to solve the Optimization Problem is performed.

The relaxation process on a Constraint completes when either a solution is found, or an attempt to solve the Optimization Problem with all the relevant Constraint Parameters set to their corresponding 'Limit' has been performed. If no solution is found the Constraint Relaxation Process will continue with the next Constraint included in 'List and Sequence of Eligible Constraints'.

The relaxation process completes when either a solution is found, or an attempt to solve the Optimization Problem with the Turnover Constraint Parameter 'Max' set the 'Limit' has been performed.

Constraint	Parameter	Additive Increment, Limit
Turnover From Current	Max	+0.5%,25%

Document Version History

Date	Update
August 2024	Update of the Optimization Constraints. Please below for previous optimization constraints.
August 2021	First publication

Optimization Constraints and Calculations (Discontinued on August 27, 2024)

Overview

The Bloomberg PORT Optimizer is used to select and weight each sub component in the index. The objective of the optimization is to maximize yield to worst.

Sub Components

- Australian Aggregate 100mn Government 1-5 Year
- Australian Aggregate 100mn Government 5-7 Year
- Australian Aggregate 100mn Government 7-10 Year
- Australian Aggregate 100mn Government 10+ Year
- Australian Aggregate 100mn Non-Government 1-5 Year
- Australian Aggregate 100mn Non-Government 5-7 Year
- Australian Aggregate 100mn Non-Government 7-10 Year
- Australian Aggregate 100mn Non-Government 10+ Year

Constraints

- OAD (option-adjusted-duration) must be within 1 years of the parent index.
- Contribution to OAD from the Government sub components must be within 50-85%.
- Sum of Government components must be between 40-75% of the overall index.
- Minimum weight of each sub component must be at least 5%. This constraint was relaxed during the backtest for Australian Aggregate 100mn Non-Government 10+ Year due to the lack of bonds.
- Active total risk, as calculated by the Bloomberg multi-factor fixed income risk model, must be within 2% of the parent index. This is an annualized measure.

Turnover

Turnover is calculated as two-way turnover: buys and sells.

The optimizer sets a 5% turnover constraint each month; this turnover constraint is increased by 0.5% if the optimizer is unable to find a feasible result.

Environmental, Social and Governance (ESG) Disclosures

This Index does not take into account any ESG factors or pursue any ESG objectives. Please refer to the [Bloomberg Fixed Income Methodology](#) for ESG disclosures.

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