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FTSE Russell Index Module

User guide



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About the Index Module

The FTSE Russell Index Module (“IXM”) is a tool that allows users to design their ideal custom benchmark, research historical trends, and perform in depth analysis on the fixed income universe. It was built with full suite of FTSE Fixed Income Indices across the five standard packages to be used as the starting universe, and currently allows up to 10 years of backtested history for many metrics, including total return, index level, and turnover, to be produced instantaneously. This tool allows for several types of customizations including but not limited to the following:

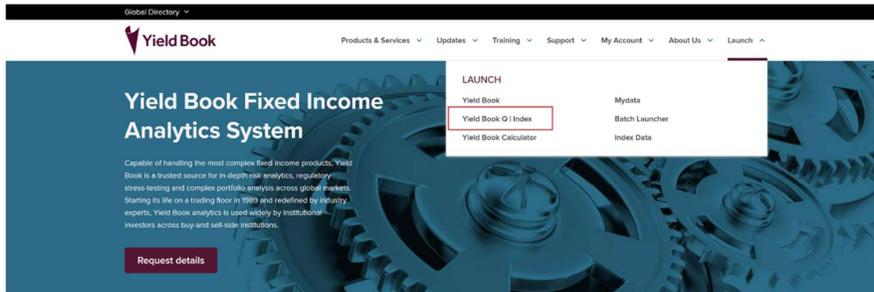
- Composite composed of up to 10 underlying indices, with the ability to individually weight the underlying indices
- Inclusion/Exclusion based on the FTSE Fixed Income reported sectors such as GLIC Code, COBS Code, Country, Rating, Issuer, etc.
- Capping applied at the sector level
- Partial hedging
- Exclusion lists
- Custom sectorizations to focus on specialized sectors e.g. outstanding amount greater than a set amount as a liquidity screen

This tool is not all encompassing of the customization capabilities of FTSE Russell. Please reach out to a representative anytime to discuss more bespoke custom strategies/index design.

Index Module Access

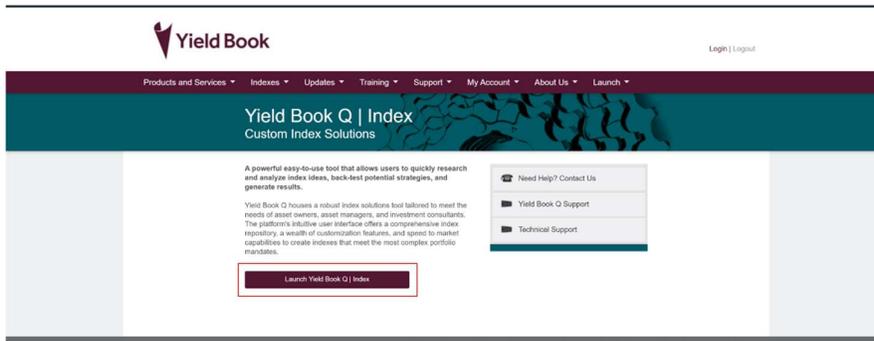
The IXM can be accessed in two different ways; via a web browser or via Refinitiv Workspace.

Logging in via Web Browser



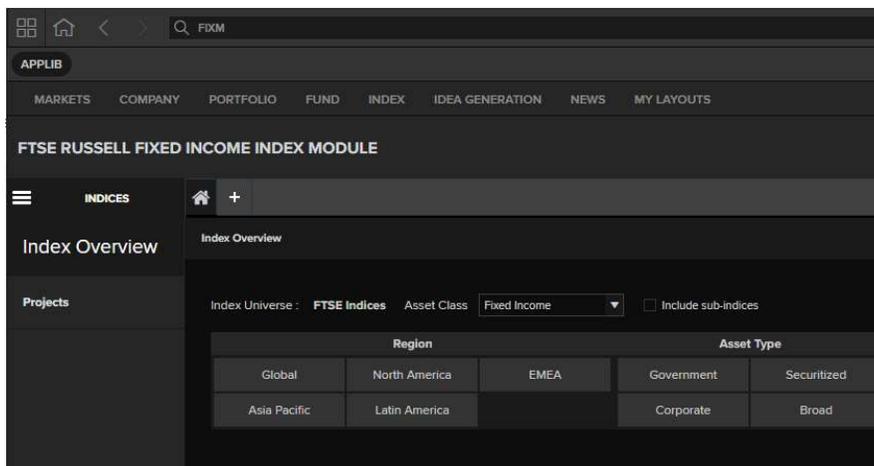
Go to www.yieldbook.com and navigate to the Launch Menu. Select Yield Book Q | Index

Our solutions



On the login page, enter your username and password. Then, select the Launch Yield Book Q | Index button.

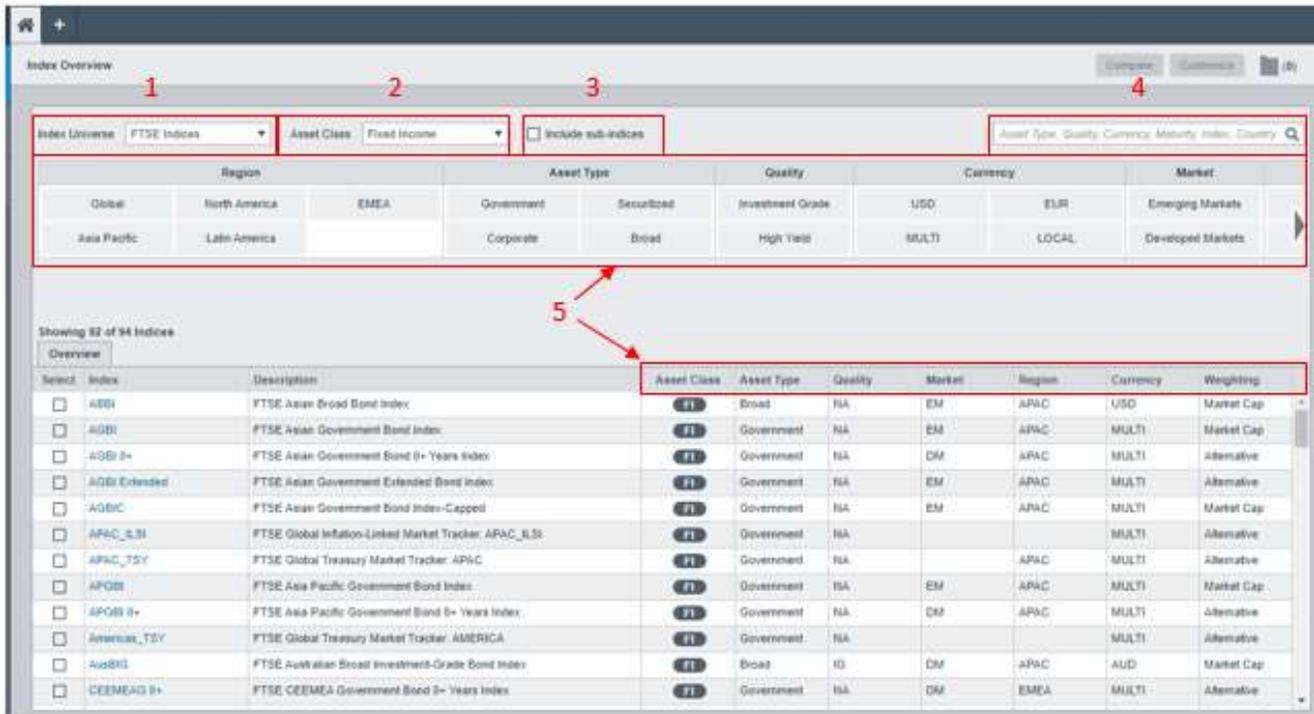
Logging in via Refinitiv Workspace



Login to the Workspace application using your username and password. In the search menu, type in "FTSE Russell Index Module" and the tool should pop up under the abbreviation "FIXM". Select the tool in the menu to launch.

Basic Navigation

Once the application has launched, users will see the following home screen. This page has several toggles and radio buttons for navigation.



1. FTSE Indices is the default choice, and when selected, the user will be able to view the standard FTSE Fixed Income Indices. The other option in this dropdown menu is called “Custom Indices.” When this menu item is selected, users will be able to view and further analyze their licensed, productionized custom indices.
2. This menu allows users to select which FTSE index universe to view. When Fixed Income is selected, the user will be able to view the full list of standard FTSE Fixed Income Indices. This includes all parent indices in the Global, EMEA, EM, Americas, and APAC Packages, as well as any licensed Thematic Indices. The second option is Fixed Income Canada, which will allow a user to view/access the FTSE Canada Index suite. All entitlements in the IXM are aligned to a user’s licensing agreement.
3. When this box is checked, the list of indices at the bottom will no longer display the parent indices. It will instead display all 6000+ sub-indices that are included in the standard packages. These sub-sectors include breakdowns by average life, index quality, corporate classification codes, as well as several others.
4. The search box can be used to narrow the scope of indices displayed. Users can enter any information related to the type of index coverage they are looking for here, and a smart menu will appear with options related to the search. For example, if a user searches for “US”, the smart menu will suggest standard indices such as the USBIG and US Treasury STRIPS Index but will also provide options for filtering down the universe such as Country = United States, or Currency = USD. Once the search is executed, the list at the bottom will show only the parent and sub-indices qualified by the search.
5. The series of radio buttons that can be used to narrow down the list of indices in the list by specific criteria. These include Region, Asset Type, Quality, Currency, Market, and Weighting. The classifications of each index, linked to these radio buttons, are all in the columns to the right in the list of indices, as highlighted in the above screenshot.

Viewing an Index

All indices within the menu can be accessed as standalone products within the tool. Click on any name in blue and the index page will open. A basic description is available at the top of the page, and a brief summary of the methodology is available at the bottom.

WGBI FI

FTSE World Government Bond Index

The World Government Bond Index (WGBI) measures the performance of fixed-rate, local currency, investment grade sovereign bonds. The WGBI is a widely used benchmark that currently comprises sovereign debt from over 20 countries, denominated in a variety of currencies, and has more than 25 years of history available. The WGBI provides a broad benchmark for the global sovereign fixed income market. Sub-indices are available in any combination of currency, maturity, or rating.

Profile
Performance
Characteristics
Turnover

Chart | Table | Sectorization
Weighted Average Life ▼
Download
⚙

	Par Amount	# of Constituents	Market Value	% Market Weight	Yield to Maturity	Yield To Worst	Accrued Interest	Weighted Aver...	Effective Durat...	Modified Durat...	Option Adjuste...	OAS to St
WGBI	25,522,234.69 MM	1,206	23,502.29 B	100.00	3.38	3.38	0.58	9.61	7.44	7.39	10.39	
1-3 Years	6,399,192.54 MM	277	6,205.44 B	26.40	3.86	3.86	0.54	1.84	1.77	1.77	2.32	
3-5 Years	4,726,939.87 MM	206	4,458.34 B	18.97	3.45	3.45	0.55	3.90	3.69	3.70	8.03	
5-7 Years	3,366,272.43 MM	148	3,151.17 B	13.41	3.35	3.35	0.61	5.83	5.38	5.40	12.72	
7-10 Years	3,509,239.58 MM	152	3,152.41 B	13.41	3.10	3.10	0.45	8.40	7.67	7.68	16.61	
10+ Years	7,520,590.27 MM	423	6,534.93 B	27.81	3.04	3.04	0.67	22.06	16.29	16.07	15.54	

Design Criteria and Calculation Methodology

Maturity: 1+ Year

Quality: >=BBB-

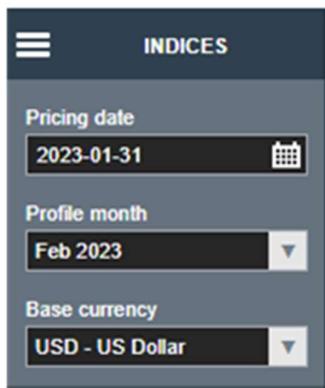
Weighting: Market Cap

Rebalancing: Once a month at the end of the month

Reinvestment Rate: At daily average of local currency one-month Eurodeposit rate

Calculation Frequency: Daily

Base Date: 1984-12-31

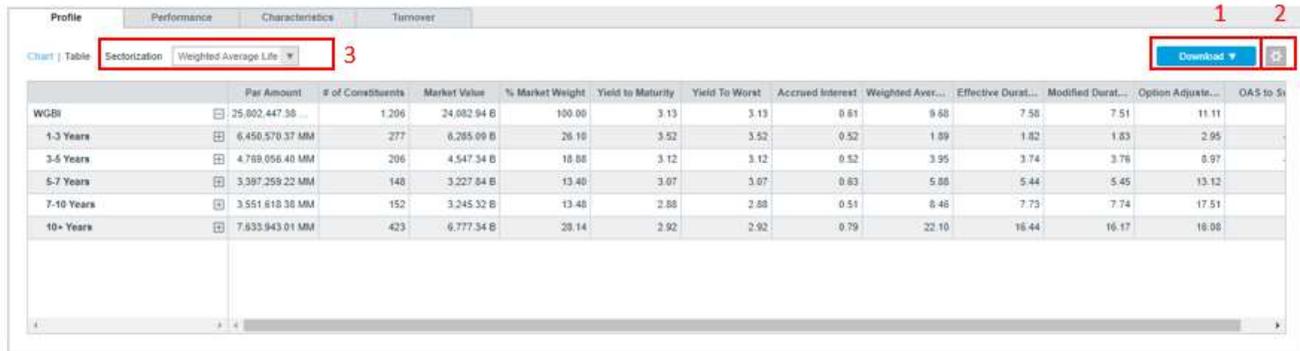


When an index is selected, the menu at the top left of the screen will change to show the pricing date, profile month, and base currency.

The pricing date can be set to any business day, in line with index production. The FTSE Fixed Income Indices rebalance monthly on month end, so if the date selected is the last business day of the month, users can switch between two profile months. Any other date selected will default to that month's profile.

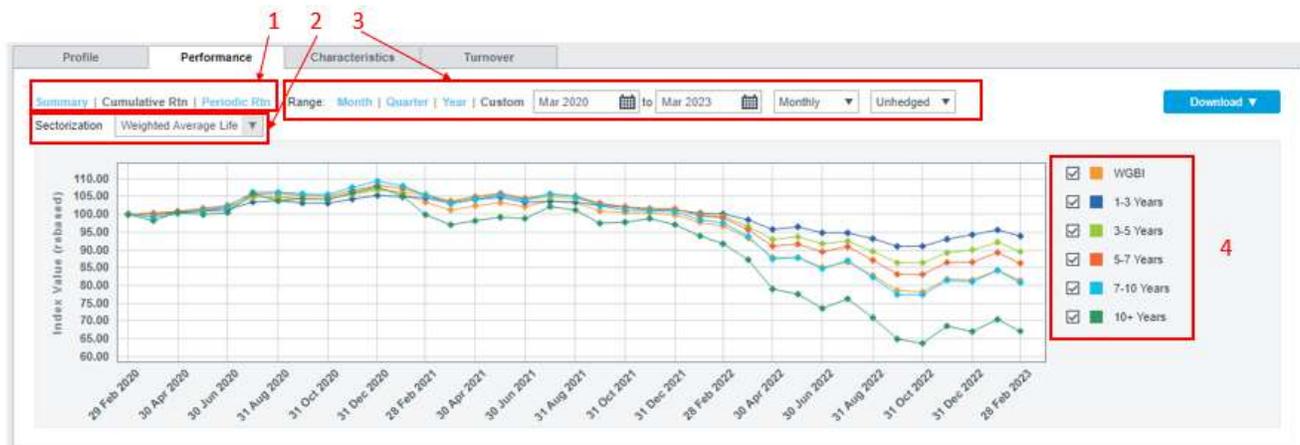
The currency can be set to use many different currencies. All options can be viewed using the dropdown menu. Any reporting and hedging applied within the tool will always be with respect to the base currency set here.

The four tabs on the index page are constant throughout the tool, whether you are viewing, comparing, or customizing an index. The first tab is the Profile tab, which displays the selected profile characteristics with prices as of the date in the menu on the top left.



1. The download button allows for download of sector level data, as displayed, or constituent data as of the profile month and pricing date set. This entitlement is set in line with licensing.
2. The keywords displayed can be edited using the settings wheel on the top right. This allows for addition/removal of keywords, as well as rearranging the order they are displayed.
3. The Sectorization menu allows users to view the profile characteristics by the standard breakdowns offered in the FTSE Fixed Income Commercial Policy, including Average Life, Quality, GLIC Code, and several others.

The second tab is the Performance tab, which displays several measures of index performance over time.



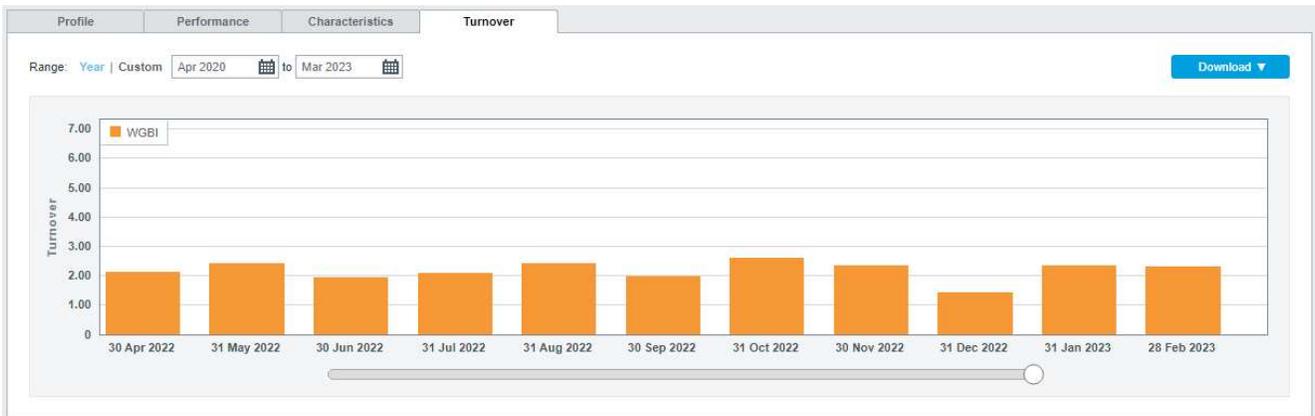
1. This includes the total index value as displayed in the Cumulative Rtn view. This feature allows for an instantaneous backtest of up to 10 years rolling. The index value will always be reset to 100 at the start date specified, as if this was the inception date. The Periodic Rtn view will display the total return, as well as the component parts of interest, principal, and reinvestment return. The Summary view shows periodic returns at specified time periods of 1 Month, 3 Months, Year-to-Date, 1 Year, and 3 Years.
2. The Sectorization menu functions the same as within the Profile menu, allowing users to choose which sector breakout to view within the Performance tab.
3. Users can select any time range to be displayed within the tool; the current month, quarter, or year, as well as a custom range up to ten years. Returns history can be displayed on a monthly or daily basis and reported hedged or unhedged to the base currency set at the top left of the screen. All of the charts, as well as the underlying data, can be downloaded using the Download button.

4. Sectorizations can be toggled on to compare returns side by side with the parent index. Once toggled on, the sector data will also be available to download alongside the parent index.

The third tab is the Characteristics tab. This tab will look similar to the Performance tab, in terms of display options, but the Characteristics tab will only display one metric at a time, hence the Metric menu. This will allow for viewing of yields, spreads, durations, and several other index characteristics and analytics up to ten years rolling history. All data and charts can be downloaded as well.



The fourth, and final tab, is the Turnover tab. This tab represents the one-way turnover calculated as the percent change in market value month over month. Ten year rolling history is available by adjusting the date range. The chart and data behind the chart are available for download.



Compare Feature

The application offers the Compare feature. By selecting up to four indices, from the basic navigation page, the user will be able to compare the underlying indices in a parallel view, from basic index characteristics to advanced underlying security sectorization. This feature is ideal for research purposes.

Next to each index on the home screen is a checkbox that is used to include indices in the analysis/customization. Toggle on the box to the left of a minimum of two and up to four indices for comparison. Once the indices have been selected, the Compare button on the top right will turn blue, enabling that feature and displaying the indices selected for comparison. Click on the Compare button to launch the Compare page.

The screenshot displays the 'Index Overview' interface. At the top right, there are buttons for 'Compare' (highlighted in blue) and 'Customize'. A 'Selected Indices' popup window is open, showing a table with two rows: 'USBIG' (FTSE US Broad Investment-Grade Bond Index) and 'US HYM' (FTSE US High-Yield Market Index). Below the popup, the main interface shows filters for 'Index Universe' (FTSE Indices), 'Asset Class' (Fixed Income), and 'Include sub-indices'. A grid of filters for 'Region' (Global, North America, EMEA, Asia Pacific, Latin America) and 'Asset Type' (Government, Securitized, Corporate, Broad) is visible. The 'Region' is set to 'NAM x'. Below the filters, it says 'Showing 17 of 115 Indices'. A table of indices is shown with columns: Select, Index, Description, Asset Class, Asset Type, Quality, Market, Region, Currency, and Weighting. The 'Select' column has checkboxes, with 'US HYM' and 'USBIG' checked. The 'Index' column lists codes like TWUSFA, US HYC, US HYM, USBIG, USBIG Credit, USBIG MTG Index, USLPPF, UST01Y, USTFRN, and USTSYST.

Select	Index	Description	Asset Class	Asset Type	Quality	Market	Region	Currency	Weighting
<input type="checkbox"/>	TWUSFA	Time-Weighted US Fallen Angel Bond Index	FI	Corporate	HY	DM	NAM	USD	Alternative
<input type="checkbox"/>	US HYC	FTSE US High-Yield Market Capped Index	FI	Corporate	HY	DM	NAM	USD	Alternative
<input checked="" type="checkbox"/>	US HYM	FTSE US High-Yield Market Index	FI	Corporate	HY	DM	NAM	USD	Market Cap
<input checked="" type="checkbox"/>	USBIG	FTSE US Broad Investment-Grade Bond Index	FI	Broad	IG	DM	NAM	USD	Market Cap
<input type="checkbox"/>	USBIG Credit	FTSE US Broad Investment-Grade Credit Index	FI	Broad	IG	DM	NAM	USD	Market Cap
<input type="checkbox"/>	USBIG MTG Index	FTSE US Broad Investment-Grade Bond Index: Securitized - Agency Poo...	FI	Securitized	IG	DM	NAM	USD	Alternative
<input type="checkbox"/>	USLPPF	FTSE US Large Pension Fund Baseline Bond Index	FI	Broad	IG	DM	NAM	USD	Market Cap
<input type="checkbox"/>	UST01Y	FTSE US Treasury Bond Index: TBILL and BOND	FI	Government	IG	DM	NAM	USD	Alternative
<input type="checkbox"/>	USTFRN	FTSE US Treasury Bond Index: Floating Rate Note	FI	Government	IG	DM	NAM	USD	Alternative
<input type="checkbox"/>	USTSYST	FTSE US Treasury Bond Index	FI	Government	IG	DM	NAM	USD	Alternative

The Compare page will look the same as the Basic Navigation, described previously, but with the selected indices listed side by side. The three tabs in the comparison metric section, allow for comparison of the selected indices against varying timelines, different sectorizations, and performance.



Index Customization

The application offers the ability to create custom indices through the Customize module. Users can tailor-make their custom index composed of up to 10 parent indices from the FTSE Fixed Income universe. The customize feature allows for multiple iterations side by side to optimize the index methodology and create the ideal benchmark for each use case. This section will be illustrated with an example as stated below.

- Iteration 1
 - The index is reported in USD
 - Quality: All securities with quality lower than or equal to BBB will be excluded
 - Maturity: Securities with an average life of less 5 years will be excluded
 - Country: China issuances should not exceed 40% of total index by market value weight
 - Issuer: No single issuer should constitute more than 5% of the index
 - Hedging: 50% currency hedging is applied to all currencies

Similar to the Compare feature, select the target index(es) for customization from the home page. Instead of the Compare button, select the Customize button on the top right.

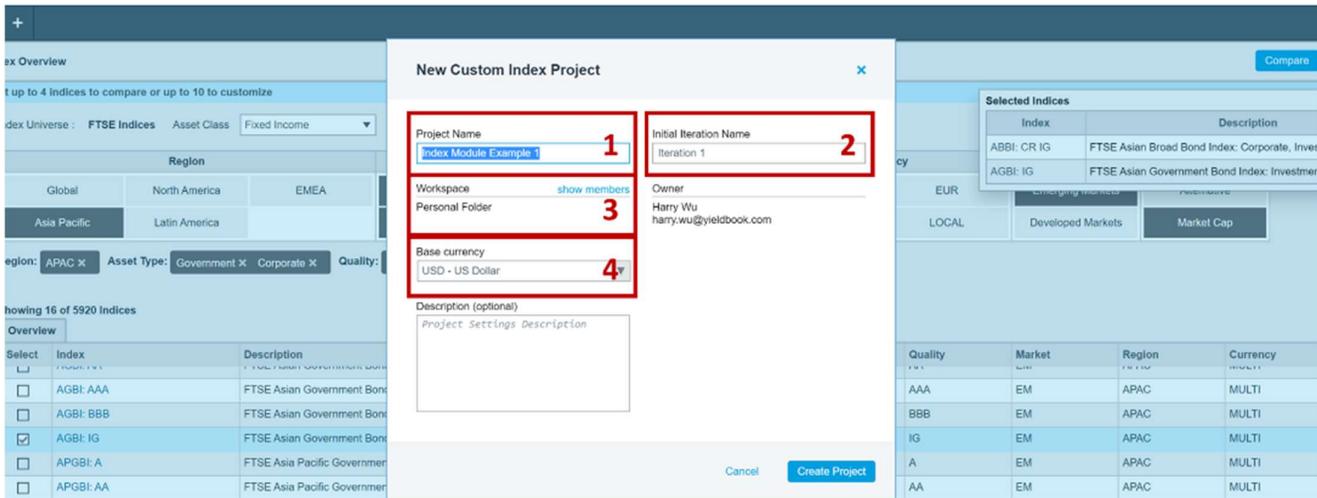
The screenshot displays the 'Index Overview' interface. At the top right, there are buttons for 'Compare' and 'Customize'. A 'Selected Indices' table is shown, containing the following data:

Index	Description
ABBI: CR IG	FTSE Asian Broad Bond Index: Corporate, Investment Grade
AGBI: IG	FTSE Asian Government Bond Index: Investment Grade

Below this, a table lists various indices with checkboxes for selection. The 'AGBI: IG' row is highlighted with a red box, and a red circle is drawn around the 'Select' column header.

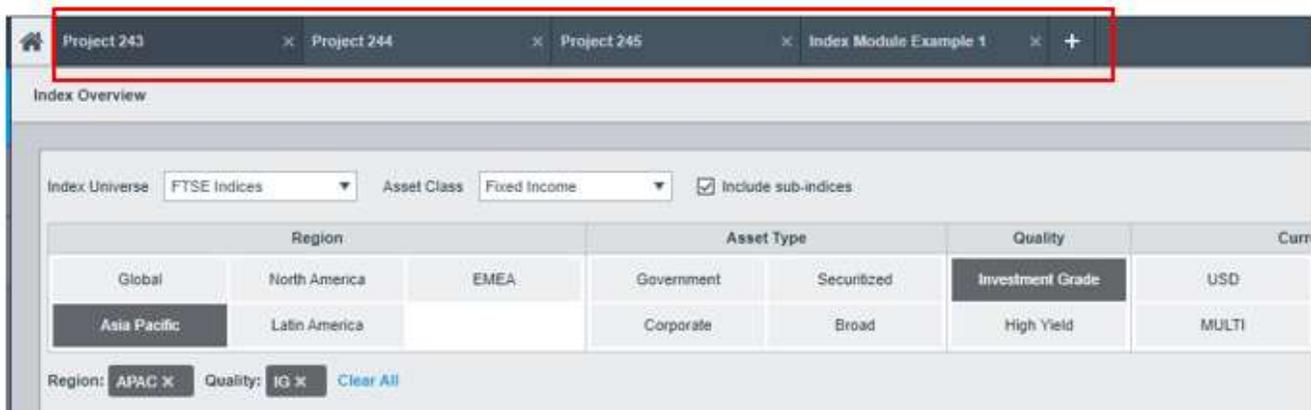
Select	Index	Description	Asset Class	Asset Type	Quality	Market	Region	Currency	Weighting
<input type="checkbox"/>	ABBI: CR BBB	FTSE Asian Broad Bond Index: Corporate, BBB	FI	Corporate	BBB	EM	APAC	USD	Market Cap
<input checked="" type="checkbox"/>	ABBI: CR IG	FTSE Asian Broad Bond Index: Corporate, Investment Grade	FI	Corporate	IG	EM	APAC	USD	Market Cap
<input type="checkbox"/>	AGBI: A	FTSE Asian Government Bond Index: A	FI	Government	A	EM	APAC	MULTI	Market Cap
<input type="checkbox"/>	AGBI: AA	FTSE Asian Government Bond Index: AA	FI	Government	AA	EM	APAC	MULTI	Market Cap
<input type="checkbox"/>	AGBI: AAA	FTSE Asian Government Bond Index: AAA	FI	Government	AAA	EM	APAC	MULTI	Market Cap
<input type="checkbox"/>	AGBI: BBB	FTSE Asian Government Bond Index: BBB	FI	Government	BBB	EM	APAC	MULTI	Market Cap
<input checked="" type="checkbox"/>	AGBI: IG	FTSE Asian Government Bond Index: Investment Grade	FI	Government	IG	EM	APAC	MULTI	Market Cap
<input type="checkbox"/>	APGBI: A	FTSE Asia Pacific Government Bond Index: A	FI	Government	A	EM	APAC	MULTI	Market Cap

Before beginning the customization, a new project must be created. Selecting the Customize button will prompt the user to create a new project each time, opening the box below.

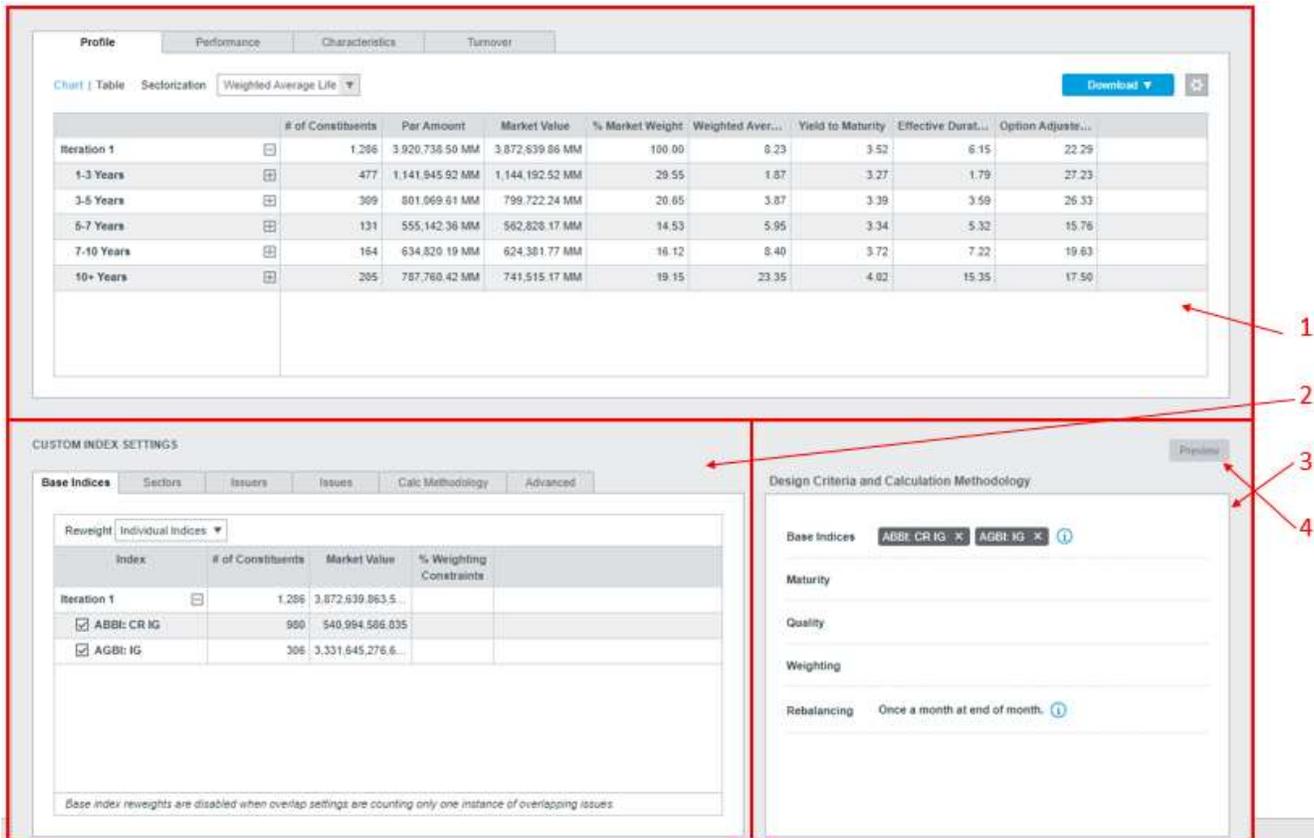


1. Provide a Project Name, that is descriptive and memorable. Once a project is created, it can be pulled up at any time within the tool by the project name.
2. The initial iteration box can be left as is, "Iteration 1," or renamed depending on the project. If there will be multiple iterations within a single project, give the first iteration a name to differentiate it from others, i.e., 2% cap, 5% cap, 10% cap, as a series of iterations with different issuer caps applied.
3. The Workspace can be at the user level or firm wide. The Workspace determines who has access to and can edit the project. If a user selects Personal Folder, then only they can view it. If the user chooses Firm Folder, then anyone within the firm can access the project.
4. The Base Currency here can be changed to any currency offered within the tool. Once set, it can be adjusted within the project itself.

After all items are filled in, click Create Project and a new tab will open for the project within the tool for customization. At any time, a project can be opened within the tool using the '+' button at the top and searching for the project name. Users can have multiple projects open and in progress simultaneously.

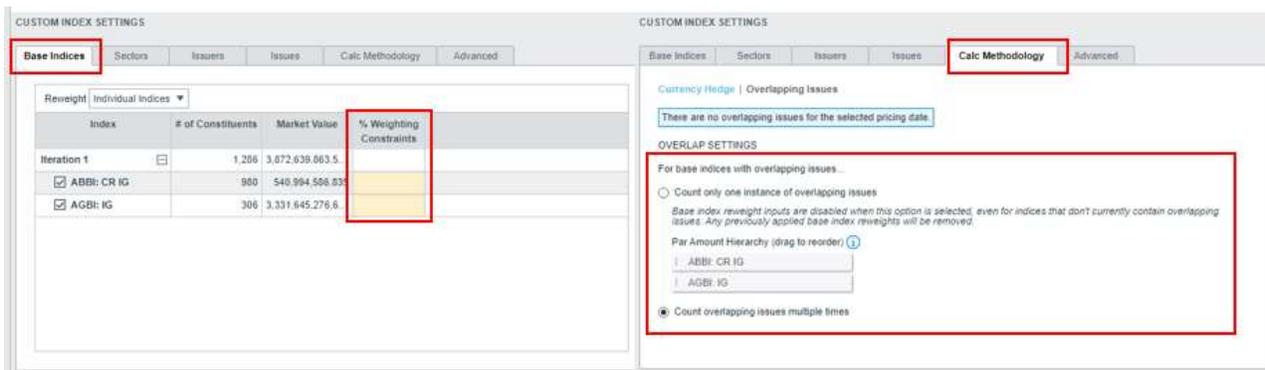


The project page is divided into 3 sub-sections, including the preview panel (1), custom index setting (2) and design criteria summary (3). After inputting all design criteria, the custom index can be viewed in the preview panel by clicking the Preview button (4).

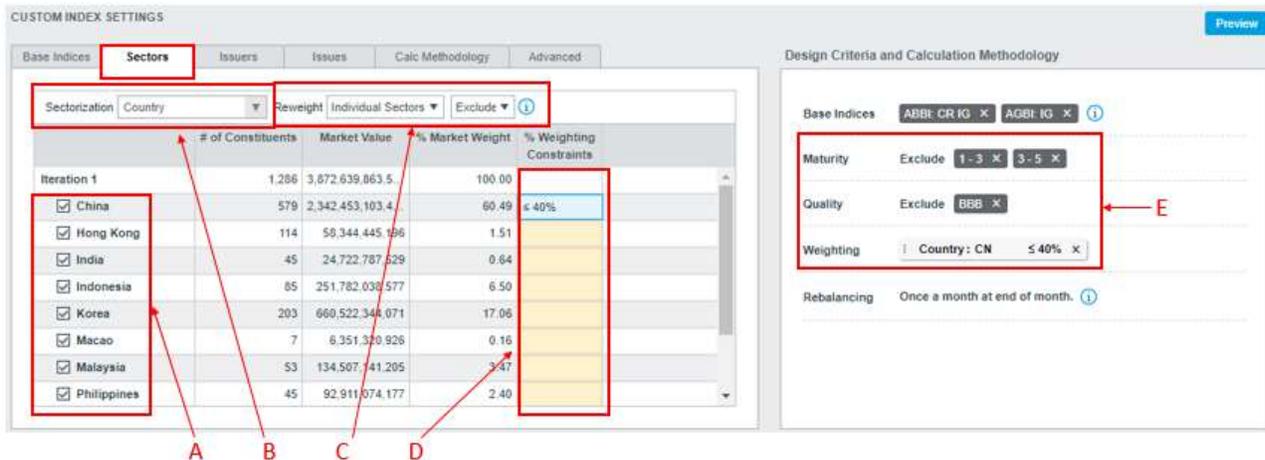


The Custom Index Settings section has six tabs, each with their own customization functionality.

1. In the **Base Indices** tab, the selected parent indices are displayed with their number of constituents and market value. From here, users can specify weights of the base indices, or apply caps/floors to the exposure of the base indices within their new custom index. Users can also input their desired % weighting constraint on the rightmost of the table in the yellow boxes (e.g. inputting 40% on the ABBI row if 40:60 split is desired). To set these weights, users must first go to the Calc Methodology tab, and allow overlapping issues. If this is toggled off, the tool will not allow for specified weightings of the base indices.



2. On the **Sectors** tab, users can include, or exclude sectors, as well as apply specific weighting over various sectorizations. In the example, the maturity, quality and country filter can be set up in Sector tab.
 - 1-3 years and 3-5 years are excluded under Weighted Average Life
 - BBB securities are excluded under Quality
 - Under country, a cap of 40% is input in the yellow box to the right of China, ensuring China will make up no more than 40% of the index by market value weight



- A. Use the check boxes on the left to include sectors (toggled on), or exclude sectors (toggled off)
- B. Several sectorizations are offered within the tool, and can be changed by using the dropdown menu. The tool allows for the use of multiple sectorizations to create a custom index.
- C. The Reweight section has two menus. The first applies to sector weights allowing users to specify weights by individual sector, specifying a weight for all sectors (most commonly used to apply a single cap to all sectors at once), or set the sectors to have equal weights. The second allows for changing between Include and Exclude mode. In Exclude mode, sectors are explicitly excluded by unchecking the box to the left of the sector name. It is important to note that sectors added to the sectorization category over time will be included by default if using Exclude mode. In Include mode, no boxes will be automatically checked. Sectors are explicitly included and if any sectors are added to the sectorization category over time, they will not be automatically included.
- D. If specifying individual weights, they will need to be entered in the yellow boxes. Users will select from operators of equal to- to specify the percentage weight, greater than or equal to- to set a floor, or less than or equal to- to set a cap. Then, a numerical value will need to be entered in the yellow box as the weight, cap, or floor.
- E. Any customizations will automatically populate in the Design Criteria box on the bottom right of the screen. To remove criteria, click the “x” within the criteria to be deleted.

- On the **Issuers** tab, users include, exclude, weight, cap, and/or floor specific issuers, similar to the previous Sector tab. Users can search for specific issuers by entering the parent ticker in the Search box. Only Parent Ticker can be used to identify issuers. The Reweight dropdown menu works the same as on the Sectors tab. In this example, an all issuer cap of 5% is applied. The Index Module will present an error if the weighting rules input do not have a feasible solution, and users should adjust the custom design criteria before applying any further customizations. In this case, the warning message is informing the user that the weighting rules will be applied in the order shown when calculating the custom index profile.

The screenshot shows the 'CUSTOM INDEX SETTINGS' interface. The 'Issuers' tab is active, displaying a table of constituents with columns for 'Issuer Search', '# of Constituents', 'Market Value', and '% Market Weight'. A search box and a 'Reweight' dropdown are highlighted. The 'Design Criteria and Calculation Methodology' panel on the right shows various settings, with the 'Weighting' section highlighted, showing rules for 'All Issuer' (≤ 5%) and 'Country: CN' (≤ 40%).

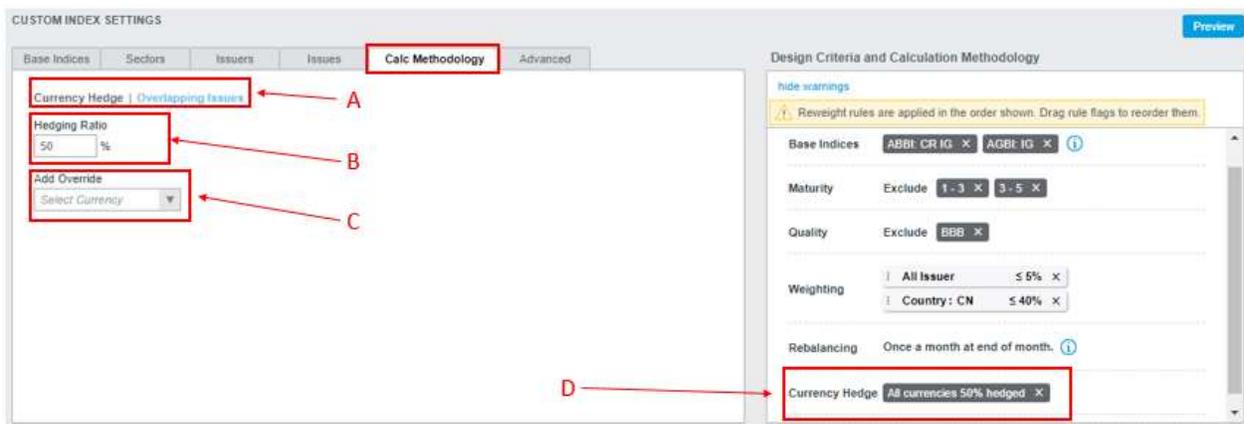
Issuer Search	# of Constituents	Market Value	% Market Weight
<input checked="" type="checkbox"/> HKCNG	1	193,383,333	0.00
<input checked="" type="checkbox"/> HOGFN	2	1,219,169,717	0.03
<input checked="" type="checkbox"/> HINFI	1	265,822,663	0.01
<input checked="" type="checkbox"/> HUTAI	3	2,290,120,496	0.06
<input checked="" type="checkbox"/> HUAYF	1	336,933,333	0.01
<input checked="" type="checkbox"/> HBUDI	1	281,027,842	0.01
<input checked="" type="checkbox"/> HXJDG	1	294,589,528	0.01
<input checked="" type="checkbox"/> HYSNY	3	1,014,577,882	0.03
<input checked="" type="checkbox"/> HYUN	23	13,544,927,276	0.35

On the **Issues** tab, users can create custom groupings to include, exclude, and weight additional, non-standard sectors. Once created, the sector can be toggled on and off to be included or excluded, or set to specific weights as with other sectorizations on the Sectors or Issuers tab.

The screenshot shows the 'CUSTOM INDEX SETTINGS' interface with the 'Issues' tab active. A table lists 'Issue Grouping Name', '# of Constituents', 'Market Value', and '% Weighting Constraints'. A 'New Issue Grouping' button is highlighted. The 'Edit Issue Grouping' dialog box is open, showing fields for 'Grouping Name' (Liquidity Screen) and 'ISSUES' conditions (Par Amount < (less than) 50000000). A 'Delete Issue Grouping' button is also highlighted. Red arrows labeled A, B, C, and D point to the 'New Issue Grouping' button, the 'Grouping Name' field, the 'ISSUES' conditions, and the 'Delete Issue Grouping' button respectively.

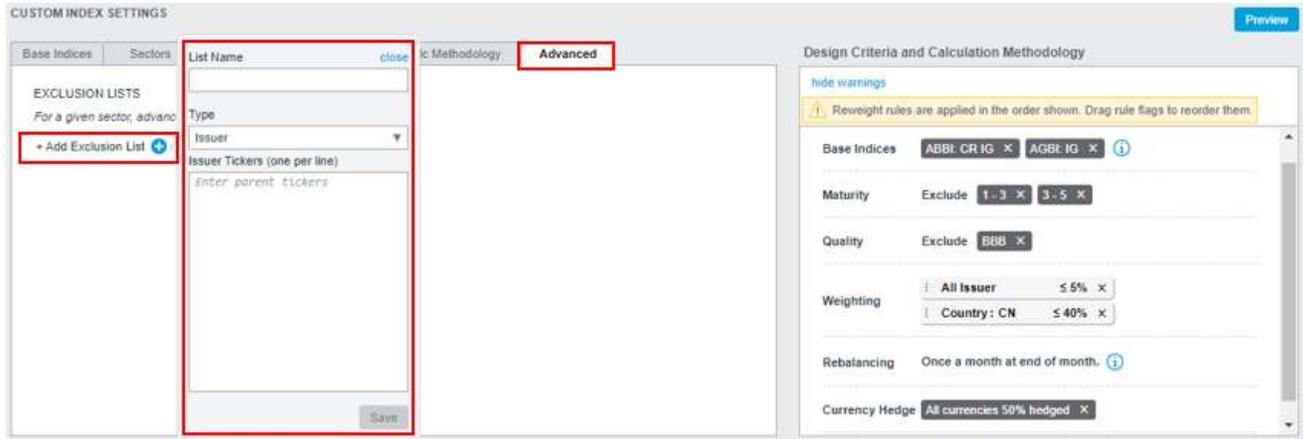
Issue Grouping Name	# of Constituents	Market Value	% Weighting Constraints
<input checked="" type="checkbox"/> Liquidity Screenedit	351	104,679,654.78...	

- A. Select the New Issue Grouping button, and a box will pop up to enter the criteria for the custom grouping.
 - B. First, give the new sector a name to identify it by within the tool.
 - C. Then, start by selecting a keyword, operator, and inputting the proper criteria for the custom sector of choice. Keywords and conditions can be combined to create granularity not offered within the standard sectorizations. The most common custom sectorization here is a liquidity screen created by setting a minimum par amount for inclusion in the custom index design.
 - D. When the sector statement is set, click Save on the bottom right. If any time the sectorization needs to be updated, simply click the edit button on the Issues tab. To delete an Issue Grouping, click the Delete Issue Grouping button on the bottom left.
4. The **Calc Methodology** tab allows users to specify currency hedging to the custom index, as well as allow the use of overlapping issues within the custom index, as previously noted in Section 1 for weighting base indices. In the example, the 50% currency hedge is applied.

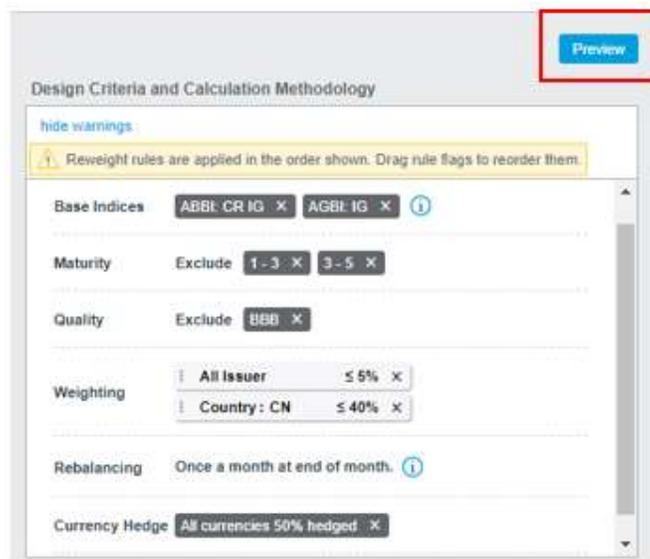


- A. To apply currency hedging, the Currency Hedge module should be selected. To allow overlapping issues to weight base indices, the Overlapping Issues module should be selected.
- B. Enter a hedging ratio between 0 and 100%. This will hedge all currencies within the index to the currency set in the top left for reporting.
- C. The currency override allows users to hedge each individual currency within the index a specified amount to the base currency. For example, the index can be hedged 50% for AUD, 25% for CNY, 100% for HKD, etc.
- D. The hedging criteria is automatically added to the custom index design criteria.

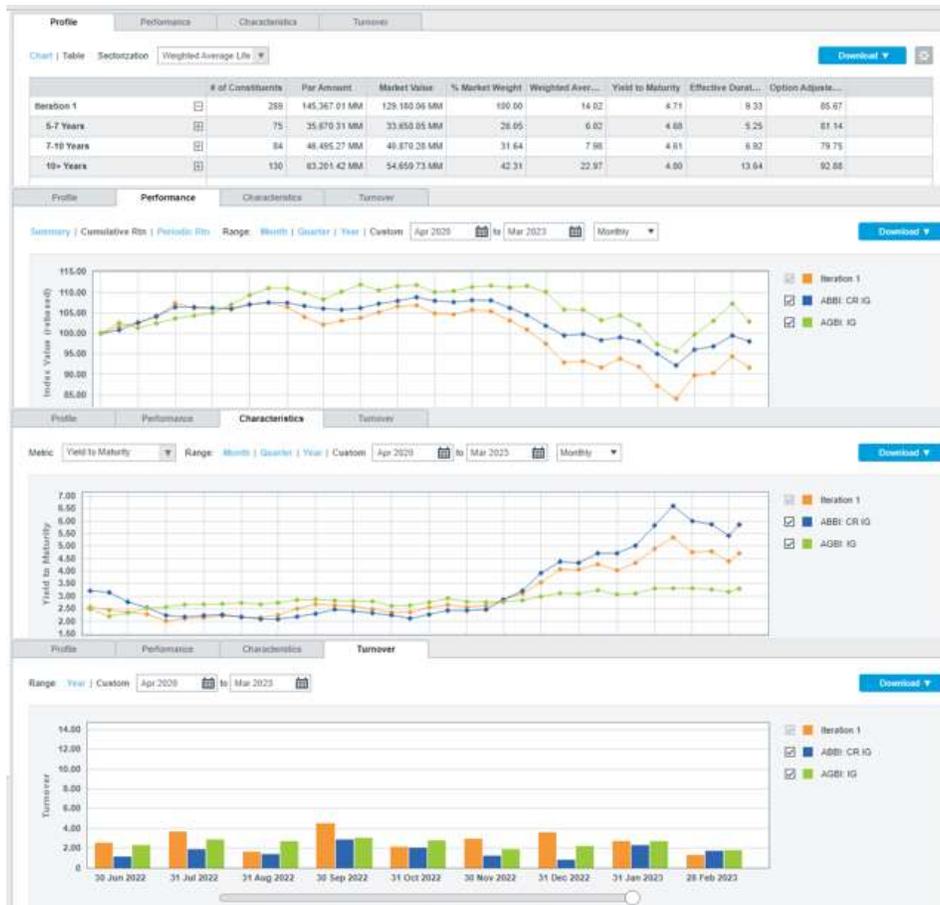
- The **Advanced** tab offers the optional for users to upload an exclusion list, rather than using the include/exclude functionality. By clicking the '+' button, users can paste their exclusion list based on country, issuers (Parent Ticker), industry (GLIC Code) or currency. To save this exclusion list, fill in the List Name and click the Save button.



Once the design of the custom index is as desired, click the Preview button, just above the custom index design criteria.



The Preview Panel at the top, will now populate the data on all four tabs for the custom index, providing a look at the current profile, an instantaneous backtest with up to ten years of history for analytics and returns, as well as historical turnover.

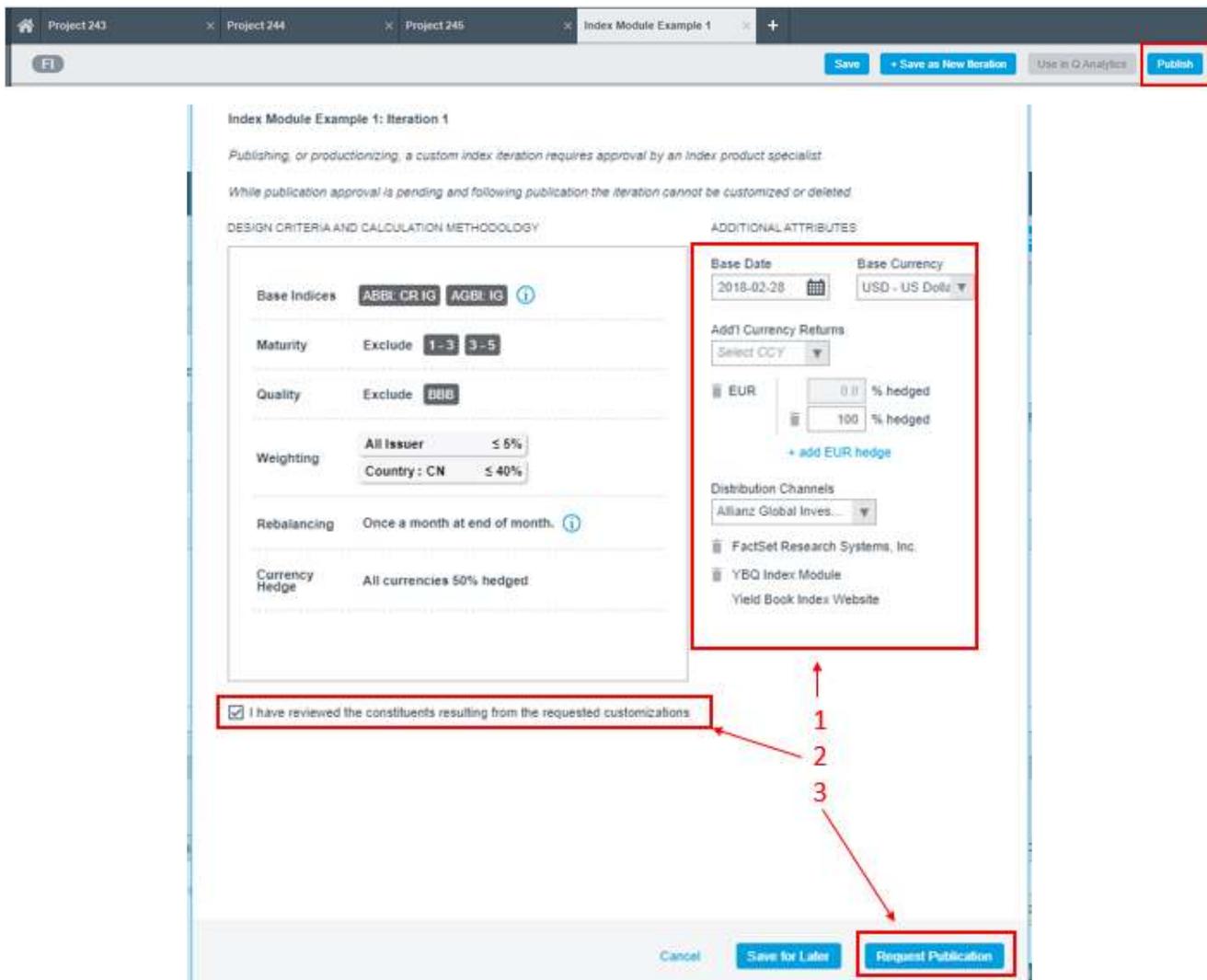


If the design is as desired, the simulation can be saved or saved as a new iteration. If saved as a New Iteration, a box will appear prompting the user to name the iteration before saving. Once saved in either way, the project can be closed and the iteration will be exactly the same when opened the next time.



Submission for Publication

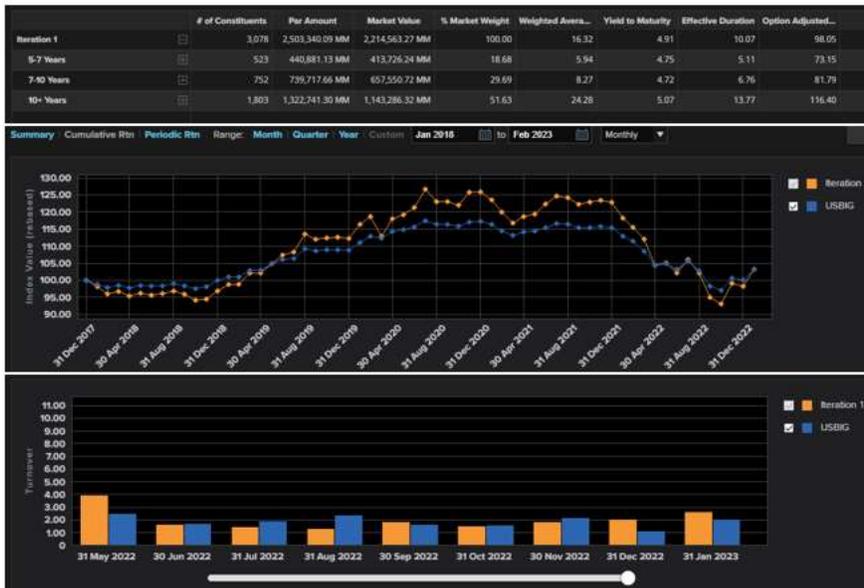
Once a custom index has been created, verified, and saved by the user, it can be submitted directly to the FTSE Custom Index Solutions team for publication, using the Publish button at the top right of the custom index module. Once clicked, the user will then be prompted to fill in necessary information for publication. The turnaround time from submission to deployment is approximately two weeks.



1. For custom index publication, the user must provide the base date of the custom index, base currency as well as any additional reporting currencies (hedged and/or unhedged), as well as any distribution channels. All terms of publication are subject to FTSE review and standard commercial policies.
2. User must certify that the build is exactly as intended for a new custom benchmark.
3. Request Publication sends a request to the FTSE Custom Solutions team for review. If there are no concerns with the custom index design, the FTSE sales team will be informed and will work on the licensing in parallel to the Custom Solutions team working to deploy the custom index. Custom indices launched using the Index Module can be deployed in two weeks' time. If there are concerns, the Custom Solutions team will flag the index for review and halt the production process until further discussions have been had to confirm the build.

Example Custom Index Simulations

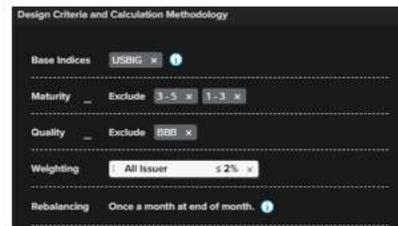
Simulation 1: USBIG with Exclusions and Capping



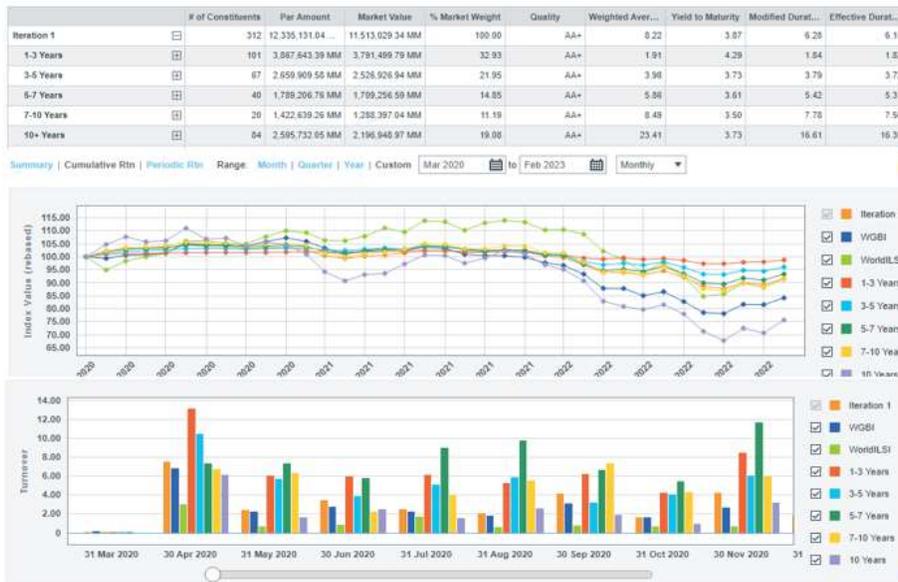
Base Index: USBIG

Customisations:

- Exclude bonds with a weighted average life of less than 5 years
- Exclude bonds rated below A-
- 2% Issuer cap



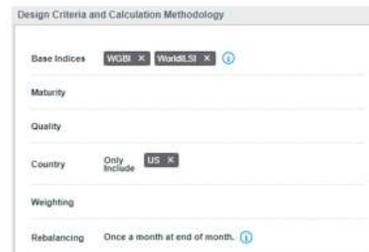
Simulation 2: US Government Bond Index + US Inflation-Linked Securities Index



Base Index: Composite of WorldLSI and WGBI

Customisations:

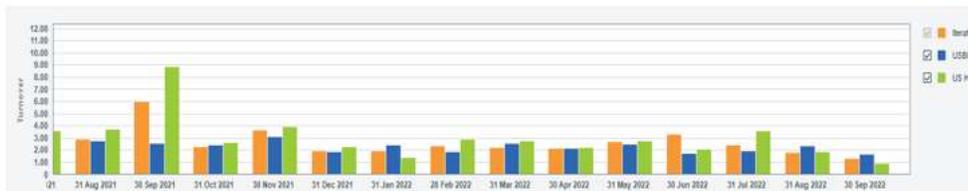
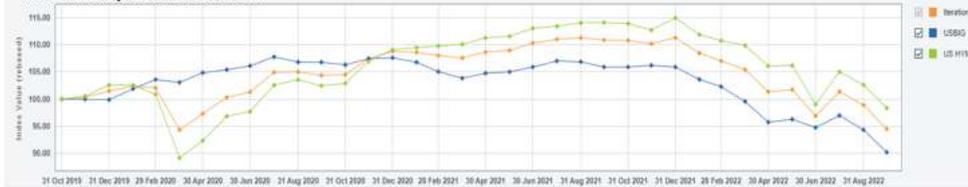
- Include USD-denominated bonds only



Simulation 3: US HY and IG Blend

	# of Const	Par Amount (USD)	Market Value (USD)	Percent Weight	Average Life	Yield To Maturity	Modified Duration	Effective Duration	OAS
60% USBIG 40% HYM	11,011	19,934,013	17,189,123	100.00	7.56	7.80	5.30	5.20	367.98
AAA	354	424,457	389,038	2.26	8.03	4.38	4.37	4.35	20.81
AA	1,305	3,891,804	3,258,800	18.96	8.80	4.63	6.29	5.98	40.48
A	3,215	1,772,477	1,556,450	9.05	11.51	5.39	7.12	7.09	132.30
BBB	4,299	2,471,766	2,159,238	12.56	11.52	6.13	6.83	6.81	207.81
BB	958	5,962,745	5,203,907	30.27	8.40	7.96	4.81	4.75	387.24
B	847	4,148,764	3,564,837	20.74	5.13	10.12	3.99	3.94	598.83
CCC	233	1,462,199	1,056,858	6.15	6.05	17.24	3.57	3.55	1307.13

*Prices and analytics effective 20220831



Base Indices: Composite of USBIG and US HYM

Customizations:

- Weighted 60% US Broad Investment-Grade Bond Index, 40% US High-Yield Market Index
- 5% issuer cap

Base Indices: US HYM USBIG

Maturity:

Quality:

Weighting: Base Indices: US HYM = 40%
 Base Indices: USBIG = 60%
 All Issuer ≤ 5%

Rebalancing: Once a month at end of month

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