A Multi-Level Exploration of Funds with the Fixed Income Exposure Analysis Tool

Exercise Guide

Morningstar Direct

Contents

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Overview

The Fixed Income Exposure Analysis tool in Morningstar Direct[SM] allows users investigating fixed-income funds to see a curated collection of calculated data points such as credit rating, effective duration, modified duration, and more. Most of these calculated fixed income data points offer both an average value, and a breakdown of data by portfolio weight. Seeing these data points juxtaposed with one another in Grid view, however, does not aid in a deeper analysis and true understanding of a manager's strategy for the portfolio, as well as what true risks lay in wait for investors and how their returns may be impacted.

For example, two funds may seem to have similar weightings to various credit rating classifications and effective duration breakdowns, but the actual breakout of this data among the holdings in the funds could be wildly different. The Fixed Income Exposure Analysis tool allows users to see how a variety of different fixed-income attributes intersect with one another. Thus, the tool offers users more detailed information to understand how risk exposures may be amplified or balanced in a fund's portfolio. This information provides a more precise analysis of the underlying contributors of risk and return, allowing meaningful differentiation between managed investment alternatives.

This manual offers the following exercises for working with the Fixed Income Exposure Analysis tool:

- Exercise 1: Read the background material for this data (page 5)
- Exercise 2: Create a List of Fixed-Income Funds (page 6)
- Exercise 3: Create a data set for the funds (page 8)
- Exercise 4: Change the component settings to show the Contribution (page 12)
- Exercise 5: Change the attributes for a fund (page 15)
- Exercise 6: Analyze funds based on historical scenarios (page 18)

Preparing to Work with the Fixed Income Exposure Analysis Tool

Overview

Prior to working with the Fixed Income Exposure Analysis tool, it will help to know how the data presented in the table is calculated, how to understand various attributes that can be used, and find answers to common questions about it. Users will also want access to a set of fixed-income funds which can be analyzed in the tool. This section offers the following exercises in support of these actions:

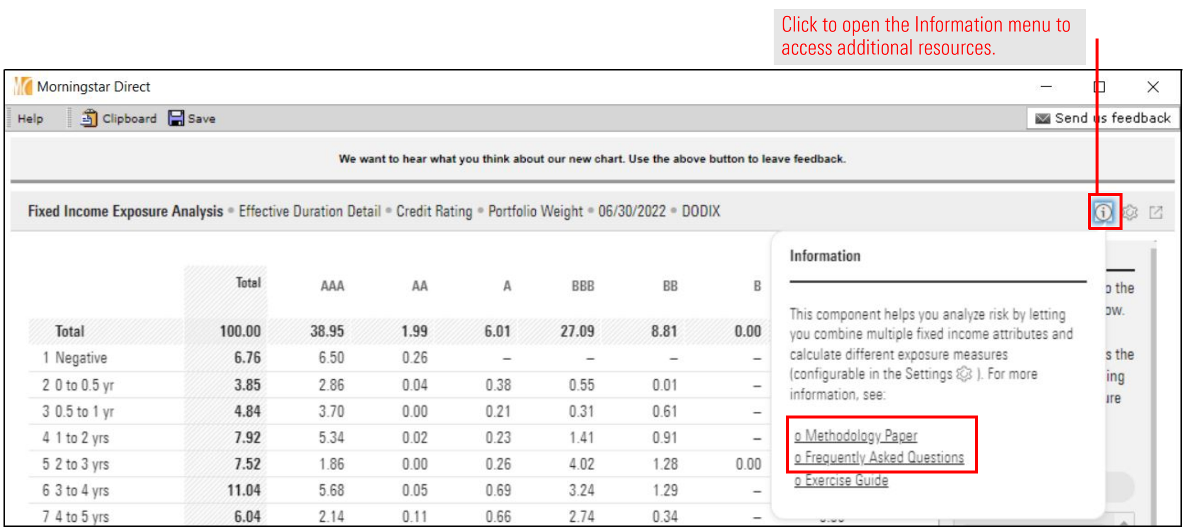
- Exercise 1: Read the background material for this data on page 5
- Exercise 2: Create a List of Fixed-Income Funds on page 6, and
- Exercise 3: Create a data set for the funds on page 8.

Exercise 1: Read the background material for this data

Before using the Fixed Income Exposure Analysis tool, it will help to be familiar with both the methodology underpinning how the data is calculated, and some frequently asked questions about how the data is presented. Use the following links to read each document:

- Fixed Income Exposure Analysis Methodology Paper
- Frequently Asked Questions about the Fixed Income Exposure Analysis Tool

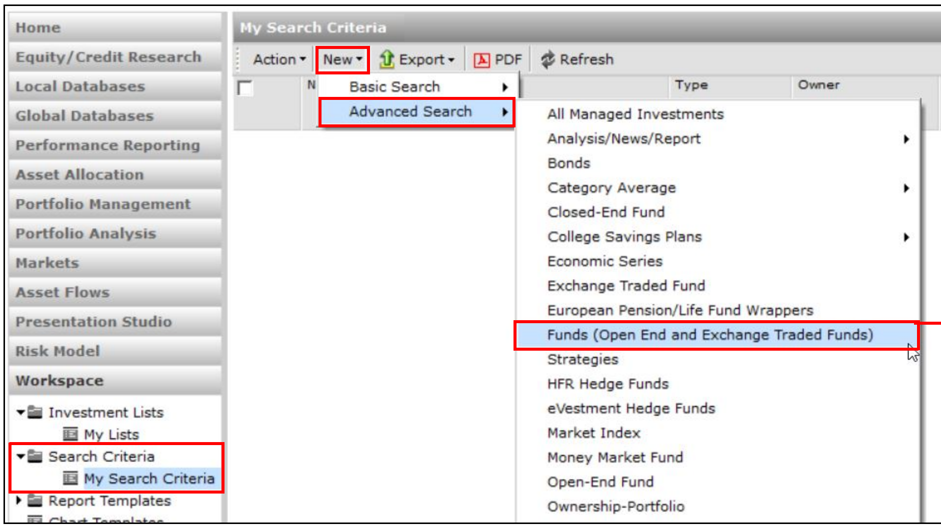
> Note: These documents can also be found in the Fixed Income Exposure Analysis tool itself, by clicking the links available from the Information icon on the component header.



Exercise 2: Create a List of Fixed-Income Funds

Using the Fixed Income Exposure Analysis tool requires a selection of fixed-income funds. If you already have a list or search criteria to find these investments, feel free to use one of those for the following exercises. Otherwise, use the following procedure to create a set of funds with which to practice:

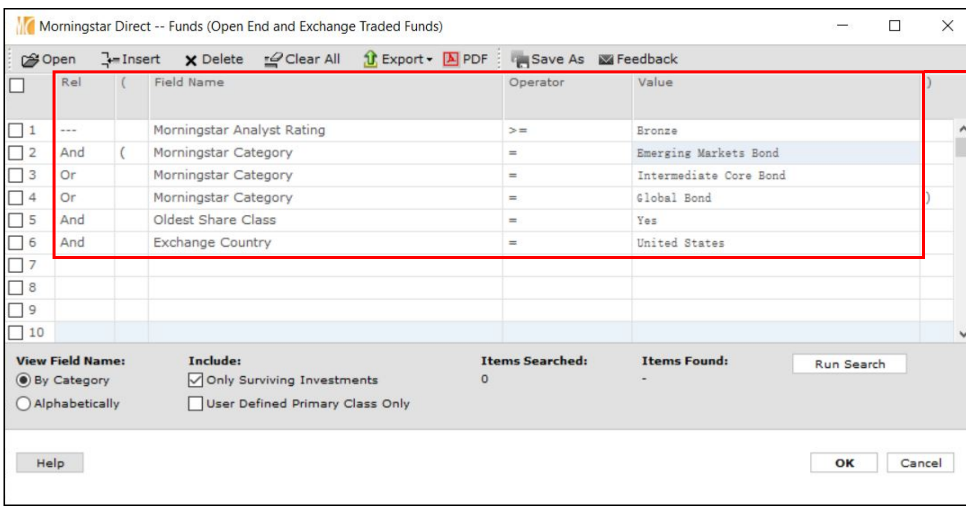
1. From the **Workspace** module, click **Search Criteria** > **My Search Criteria**
2. Start a new search by clicking **New** > **Advanced Search** > **Funds (Open End and Exchange Traded Funds)**. The search criteria window opens.



Select this option to create a search in the Funds universe.

3. Update your criteria to match the below table.

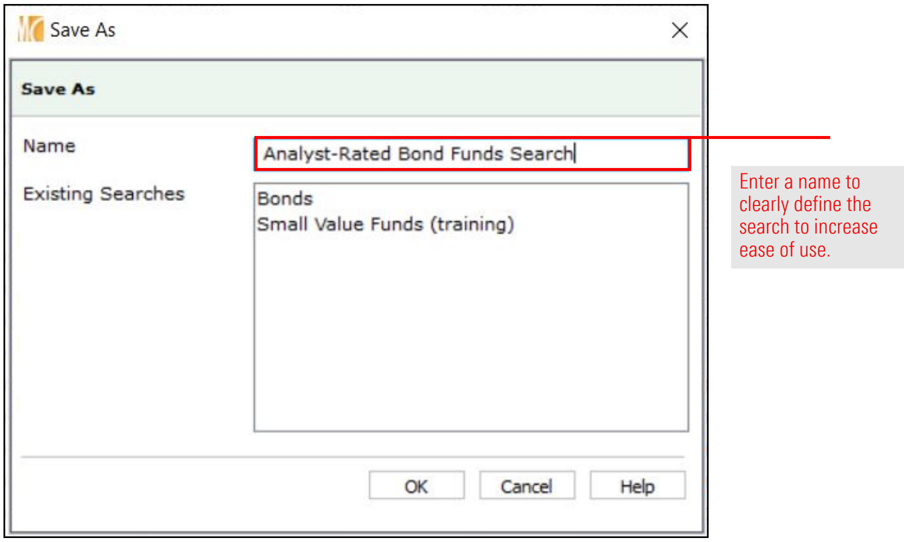
Relationship	(	Field Name	Operator	Value	)
---		Morningstar Analyst Rating	>=	Bronze	
And	(	Morningstar Category	=	Emerging Markets Bond	
Or		Morningstar Category	=	Global Bond	
Or		Morningstar Category	=	Intermediate Core Bond	)
And		Oldest Share Class	=	Yes	
And		Exchange Country	=	United States	



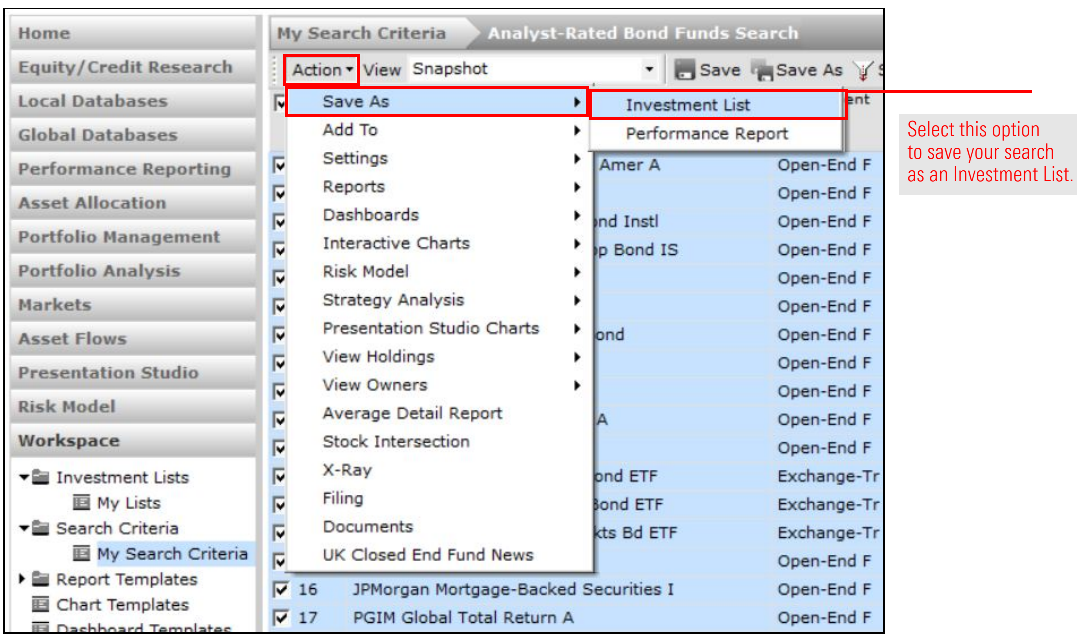
Note the included data points and the values selected for them.

4. Click **OK** to see your results.

5. If you'd like to run this search again, click **Save As** and name the search **Analyst-Rated Bond Funds Search**.



6. To access these specific funds again, check the box in the header to highlight the results
7. Click **Action** > **Save As** > **Investment List**.



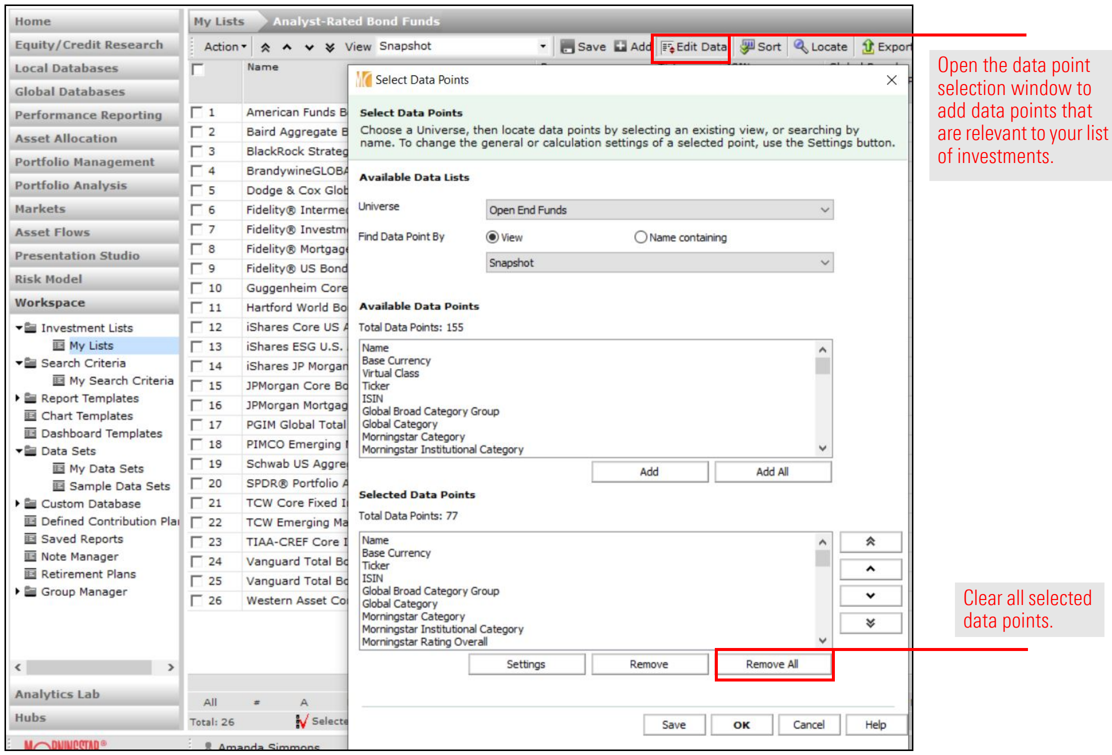
8. Name your new list, **Analyst-Rated Bond Funds**.

Exercise 3: Create a data set for the funds

Prior to working with the Fixed Income Exposure Analysis tool, a custom data set of calculated fixed-income data can be created to help identify fixed-income funds to further evaluate. Do the following:

1. To create a new data set from your Investment List, click **Edit Data**.

2. Click **Remove All** to clear the currently selected data points.

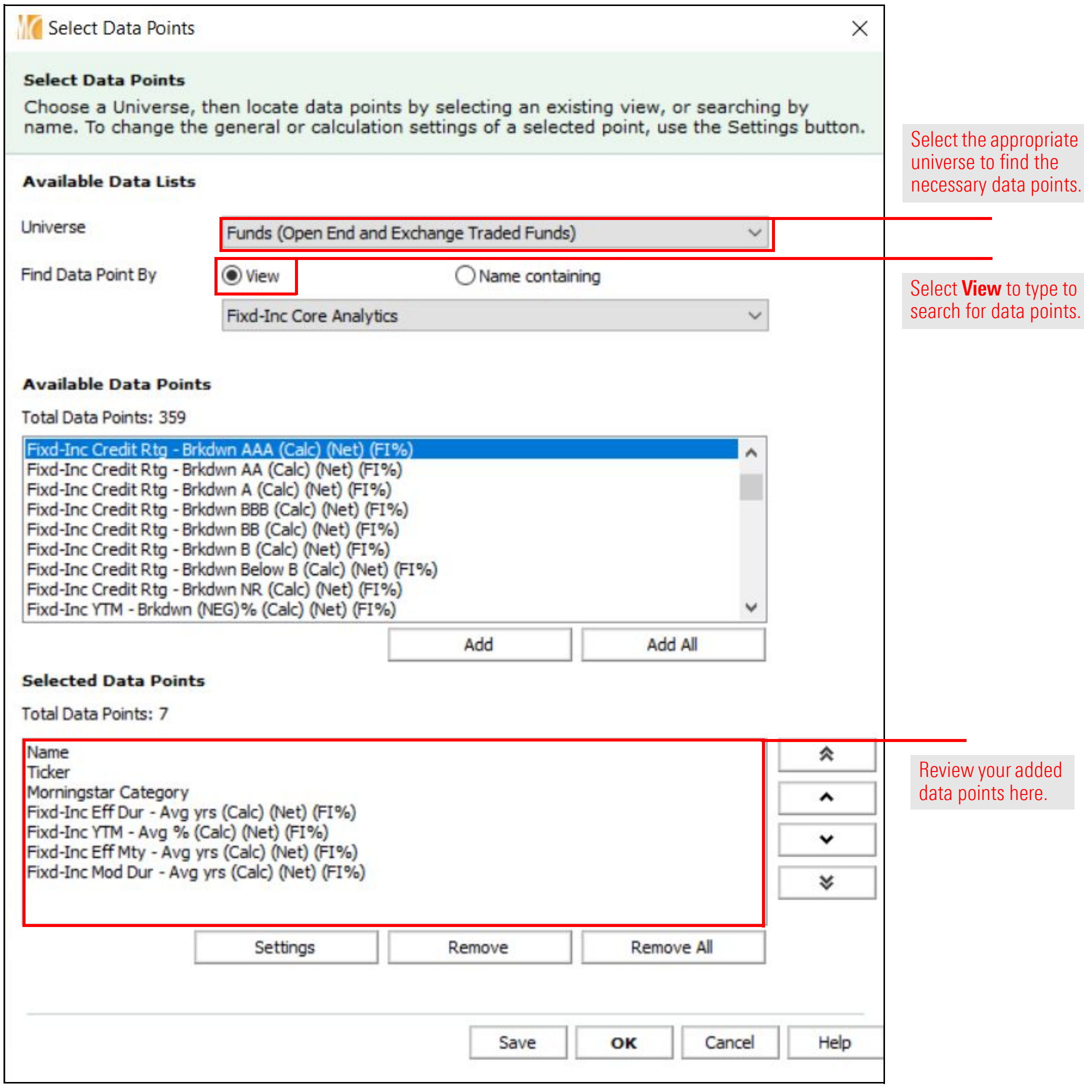


3. Confirm you are in the **Funds (Open End and Exchange Traded Funds)** universe then add the data points by View as indicated in the following table.

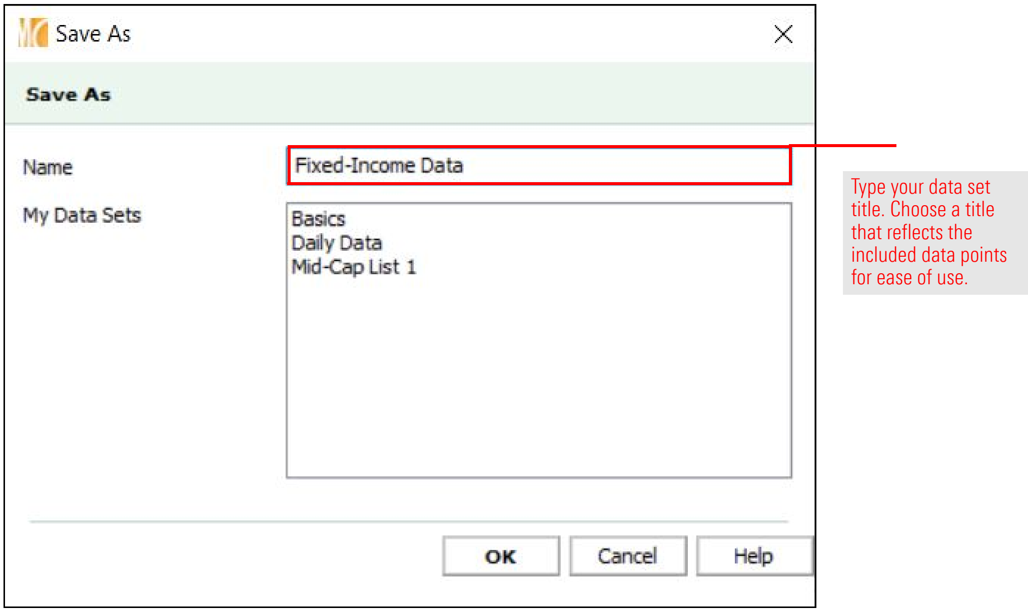
Open this view...	**To select these data points**. . .
Snapshot	Ticker Morningstar Category
Fixd-Inc Core Analytics	Fixd-Inc Eff Dur - Avg yrs (Calc) (Net) (FI%) Fixd-Inc YTM - Avg % (Calc) (Net) (FI%) Fixd-Inc Eff Mty - Avg yrs (Calc) (Net) (FI%) Fixd-Inc Mod Dur - Avg yrs (Calc) (Net) (FI%) Fixd-Inc Credit Rtg - Brkdwn AAA (Calc) (Net) (FI%) Fixd-Inc Credit Rtg - Brkdwn AA (Calc) (Net) (FI%) Fixd-Inc Credit Rtg - Brkdwn A (Calc) (Net) (FI%) Fixd-Inc Credit Rtg - Brkdwn BBB (Calc) (Net) (FI%) Fixd-Inc Credit Rtg - Brkdwn BB (Calc) (Net) (FI%) Fixd-Inc Credit Rtg - Brkdwn B (Calc) (Net) (FI%) Fixd-Inc Credit Rtg - Brkdwn Below B (Calc) (Net) (FI%) Fixd-Inc Credit Rtg - Brkdwn NR (Calc) (Net) (FI%)

4. From the Data Point Management window, click **Save**.

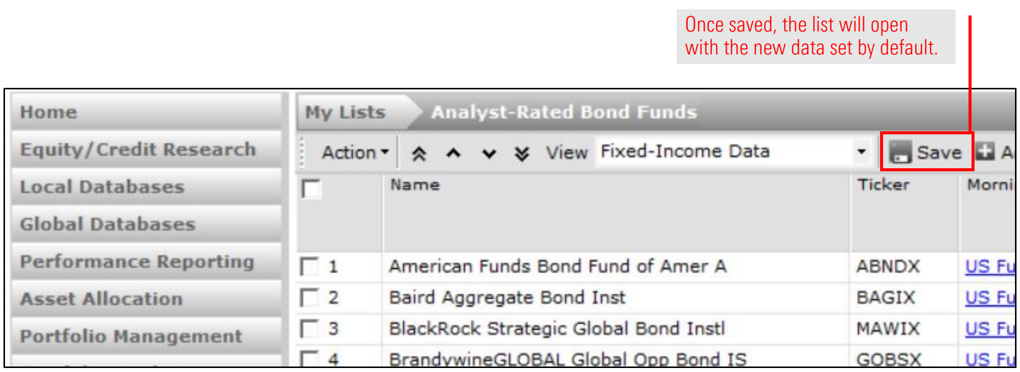
   ☞ Note: If you search for the data points by name and more than one data point with the same name appears as a search result, select the second option; this is the present value for the data point, whereas the first is the historical time series version of the data point.



5. Name the data set **Fixed-Income Data**, then click **OK** to save.



6. In the Data Point Management window, click **OK** to see your Investment List with your saved data set.
7. To permanently associate the custom data set with this investment list, click **Save**.



Altering Component Settings to Evaluate a Bond Fund

Overview

In the Fixed Income Exposure Analysis tool, users can see not only the portfolio weight invested in different credit rating groupings, but also the extent to whether high-quality or low-quality holdings offer exposure to different effective duration values. This section contains an exercise showing users how to change the exposure being displayed in the Fixed Income Exposure Analysis tool.

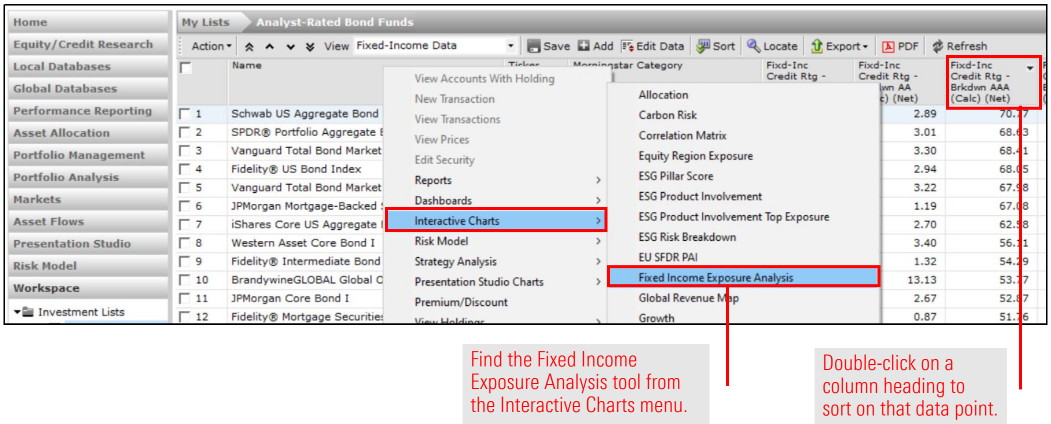
Exercise 4: Change the component settings to show the Contribution

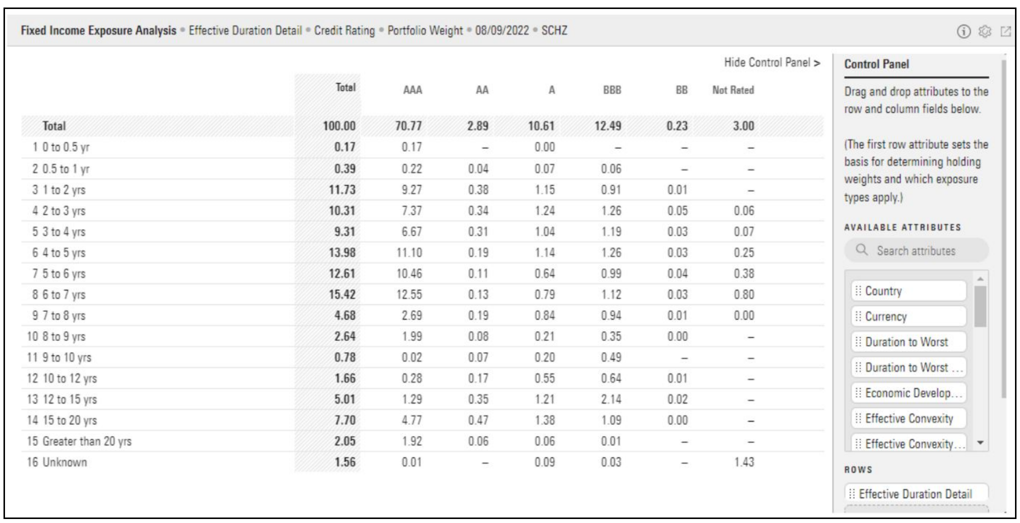
By default, the Fixed Income Exposure Analysis tool shows users both Credit Rating and Effective Duration as attributes. The portfolio weight for each intersection also shows as the default Exposure value. To instead see the contribution to duration by credit rating, do the following:

1. Confirm that the **Analyst-Rated Bond Funds** list is open with the **Fixed-Income Data** set showing.
2. Find the fund with the largest allocation to the AAA rating.

3. **Right-click** on the fund, then select **Interactive Charts** > **Fixed Income Exposure Analysis**. The Fixed Income Exposure Analysis tool opens in a new window.

   ☞ Note: Maximize the Fixed Income Exposure Analysis window to make it easier to read.



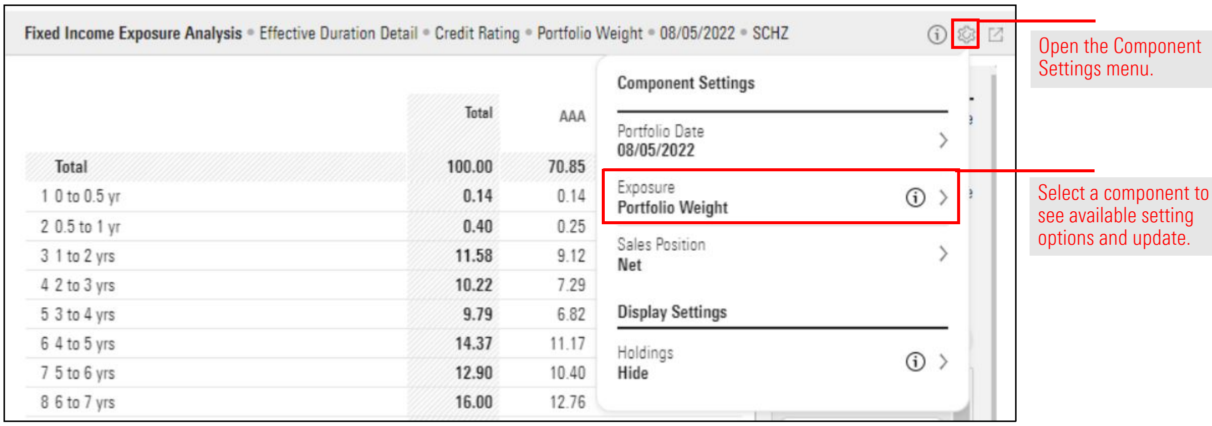


4. Review the data to answer the questions in the below table.

Question	Answer
Are the largest weightings to those holdings with shorter or longer durations?	
Which single duration grouping has the largest weighting to AAA?	
How does this impact your assessment of risk for these holdings?	
Which has the largest weighting to the lowest credit rating available?	
Do any credit rating columns from the grid view not appear here?	

5. Take note of the largest exposure value by each Effective Duration row across all credit ratings. To can see how much of the total duration each credit rating contributes, from the **Component Settings** menu, select **Exposure** > **Contribution**.

   ☞ Note: Contribution allows you to decompose a portfolio average value to see where the total average is distributed across an intersection of chosen attributes. This setting only works for numeric analytics.



6. Click away from the Component Settings menu to close it.
7. Consider the following questions and fill our your answers below.

Question	Answer
In reviewing the intersections that had the largest weights, did they also have the largest contribution values?	
What does this tell you about the risk associated with these exposures?	
Is the fund truly diversified between credit and duration risk or does the duration contribution correlate to the riskier credit ratings?	
For intersections with a negative value (where the fund is shorting those positions), how many bonds are held?	

8. Once the questions are completed, you can close the Fixed Income Exposure Analysis window.

   ☞ Note: If you would like to continue investigating this data, you can keep this tool open. Each Interactive Chart opens in a new window so you can keep it open in the background while completing your next workflow.

Using the Fixed Income Dashboard to Analyze Fund Performance

Overview

While the Fixed Income Exposure Analysis tool can be used as a standalone activity, you may also want to analyze other information at the same time. You can use the Fixed Income Dashboard to analyze a variety of attributes or compare funds. This section offers the following exercises to explore these capabilities:

- Exercise 5: Change the attributes for a fund on page 15, and
- Exercise 6: Analyze funds based on historical scenarios on page 18.

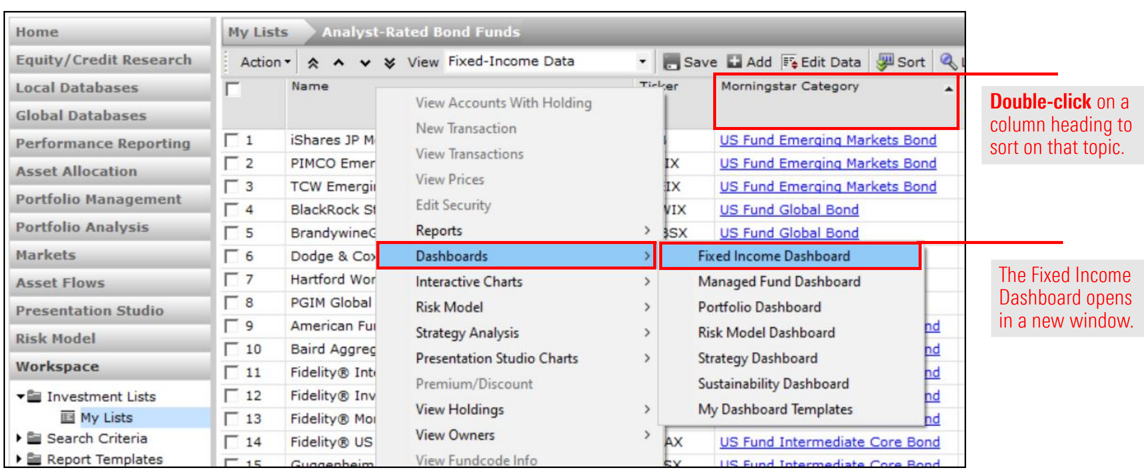
Exercise 5: Change the attributes for a fund

To change the attributes to display region and country information by effective duration, do the following:

1. Confirm that the **Analyst-Rated Bond Funds** list is open and showing the Fixed-Income Data set.
2. From the Grid view, **right-click** the first **fund** in the US Fund Global Bond category.

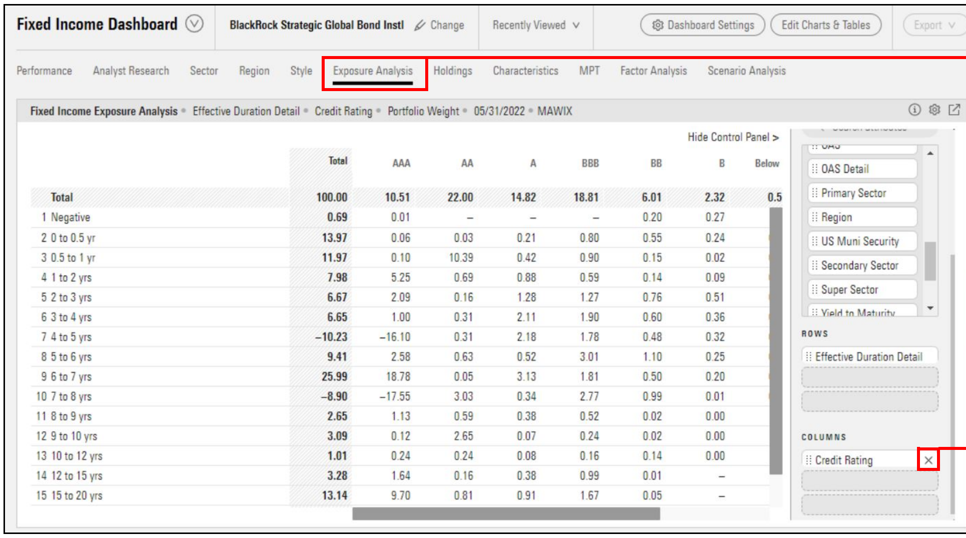
   ☞ Note: To more easily find funds in this category, **double click** on the **Morningstar Category** column header to sort alphabetically.

3. Select **Dashboards** > **Fixed Income Dashboard**.



4. In the Dashboard, open the **Exposure Analysis** tab.

5. In the Control Panel, **remove Credit Rating** from the Columns area.



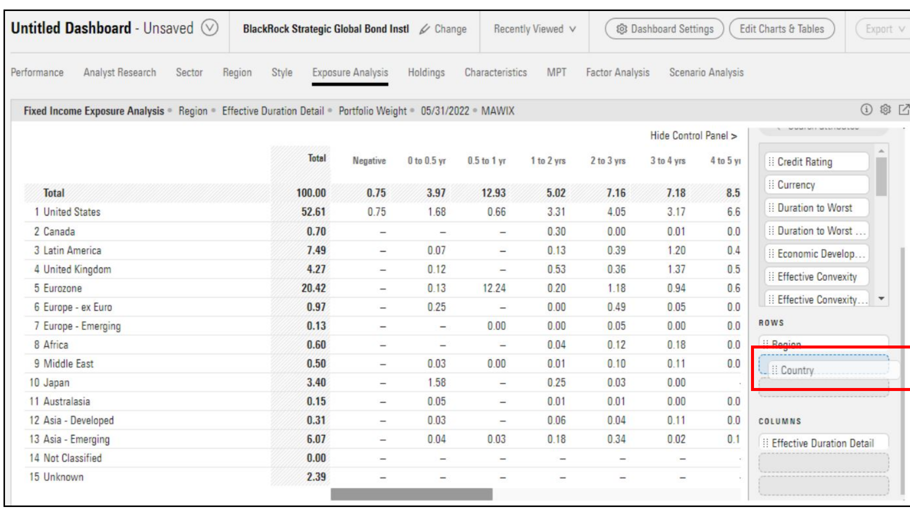
Open the **Exposure Analysis** tab.

Remove existing attributes by clicking the **X**.

6. **Drag-and-drop Effective Duration Detail** from the Rows area to the **Columns** area.
7. From the Available Attributes area, **drag-and-drop Region** into the **Rows** area.

   ☞ Note: You can scroll through the list or type in the Search bar to easily find attributes.

8. From the Available Attributes area, **drag-and-drop Country** into the **Rows** area, below Region.



Attributes can be dragged-and-dropped between Rows, Columns, and Available Attributes.

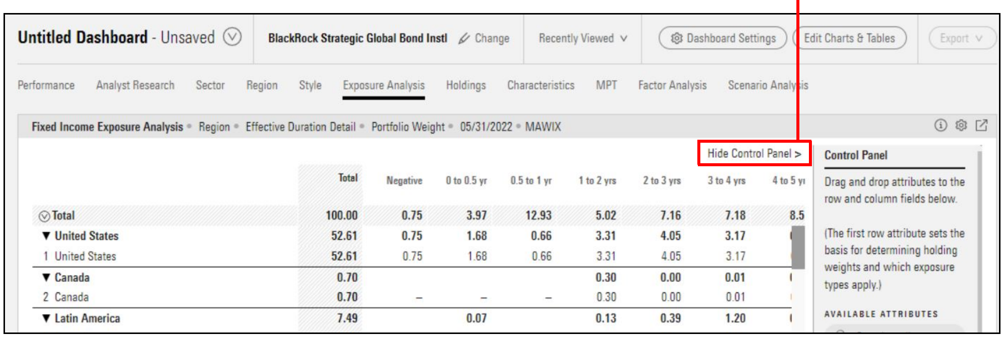
9. From the **Component Settings** menu, confirm that **Exposure** = **Portfolio Weight**.

   ☞ Note: Contribution can be chosen as an Exposure only when Effective Duration is the first attribute listed in the Rows section.

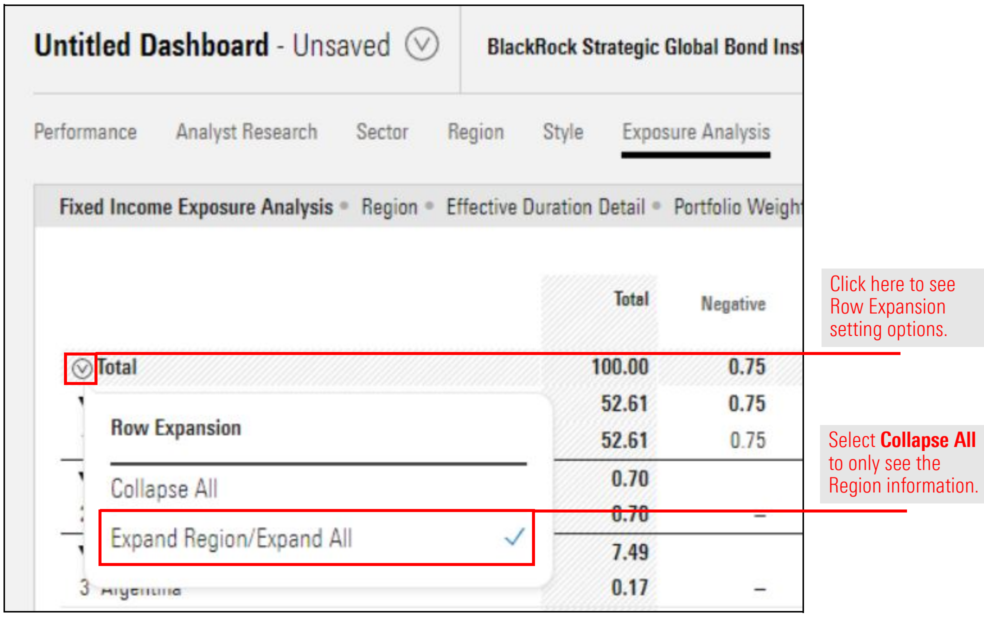
Review Exposure settings in the Component Settings menu.

10. Click away from the Component Settings menu to close it.
11. To make it easier to see the data, click **Hide Control Panel >**.

Toggle the Control Panel on and off to make space in the Fixed Income Equity Attribution tool or update the attributes.



12. To focus on the Region information first, click the **Total** item above the first column, then select **Collapse All**.



Exercise 6: Analyze funds based on historical scenarios

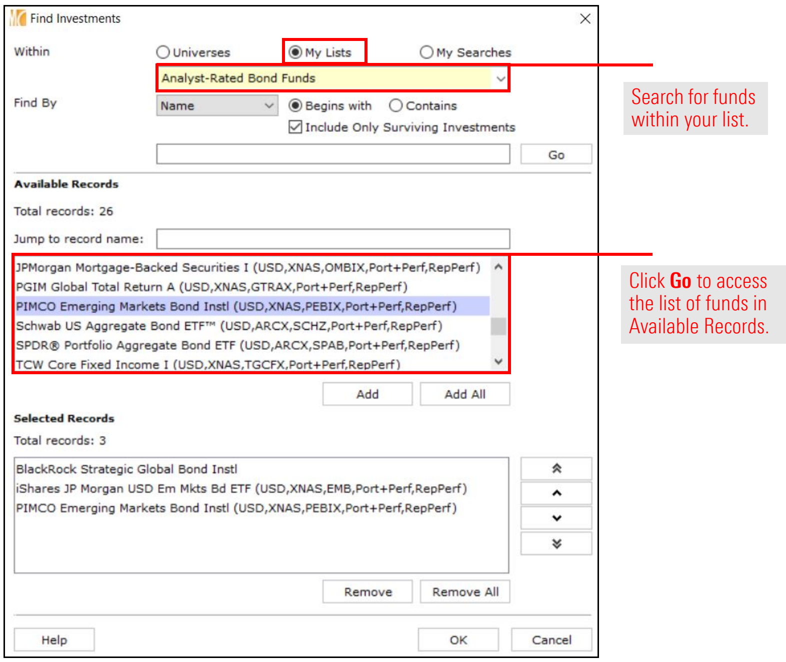
To analyze and compare funds based on how they would perform in historical scenarios, complete the following steps:

1. Navigate to the **Scenario Analysis** tab.
2. To see how these funds would do in historical scenarios, from the **Component Settings** menu of the **Scenario Trend** component, select **Scenarios** > deselect all scenarios, except **2004 Emerging Market Crisis**.

3. Repeat step 2 for the **Scenario Metrics** component.

4. To review different funds, click **Change** next to your currently selected fund.

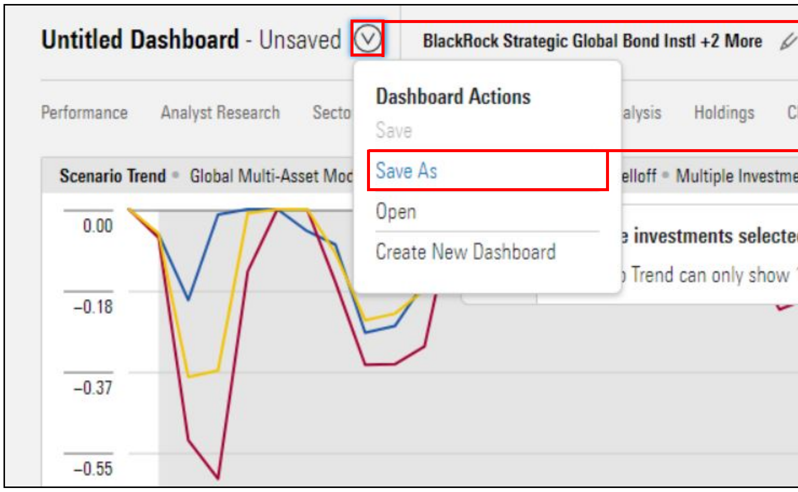
5. Add the top two funds from the US Fund Emerging Markets Bond list.



6. Click **OK**.
7. Use the dashboard data to fill your answers in the following table.

In this scenario, which fund...	Answer
performs best?	
performs worst?	
has the highest alpha?	
has the lowest alpha?	
has the highest standard deviation?	
has the lowest standard deviation?	

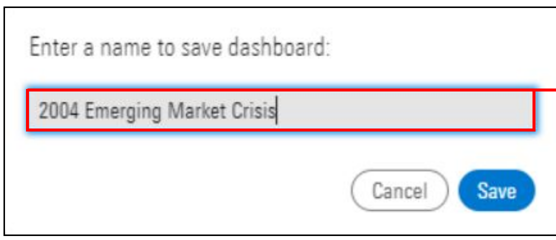
8. If you'd like to use this dashboard again, open the **Dashboard Actions** menu and click **Save As**.



Open the **Dashboard Actions** menu.

Save the dashboard to be used again.

9. Save the dashboard as **2004 Emerging Marketing Crisis**.



Choose a name that clearly defines the dashboard to increase ease of use.