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

The Fixed Income Exposure Analysis tool in Morningstar Direct<sup>SM</sup> 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)

**Overview** 

#### Preparing to Work with the Fixed Income Exposure Analysis Tool

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.

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.

								Click to open the Information menu to access additional resources.	
Morningstar Direct								1	
Help 🗿 Clipboard	Save							Send	l us feedbar
		We wa	ant to hear wha	t you think abo	ut our new chart	t. Use the above	button to le	ave feedback.	
Fixed Income Exposu	re Analysis • Effectiv	e Duration Deta	ail • Credit Rat	ting • Portfolio	o Weight = 06/3	30/2022 • DOC	DIX		<b>)</b> 🕸 E
								Information	
	Total	AAA	AA	А	BBB	BB	В	-	o the
Total	100.00	38.95	1.99	6.01	27.09	8.81	0.00	This component helps you analyze risk by letting you combine multiple fixed income attributes and	DW.
1 Negative	6.76	6.50	0.26	-	-	-	-	calculate different exposure measures	s the
2 0 to 0.5 yr	3.85	2.86	0.04	0.38	0.55	0.01	-	(configurable in the Settings 🐼 ). For more	ing
3 0.5 to 1 yr	4.84	3.70	0.00	0.21	0.31	0.61	-	internation, see.	ire
4 1 to 2 yrs	7.92	5.34	0.02	0.23	1.41	0.91	-	o Methodology Paper	
5 2 to 3 yrs	7.52	1.86	0.00	0.26	4.02	1.28	0.00	o Frequently Asked Questions	
6 3 to 4 yrs	11.04	5.68	0.05	0.69	3.24	1.29	-	<u>o Exercise Guide</u>	
7 4 to 5 yrs	6.04	2.14	0.11	0.66	2.74	0.34	-	0.00	

# Exercise 1: Read the background material for this data

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:

Exercise 2: Create a List of Fixed-Income Funds

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

Home	My Sear	My Search Criteria							
Equity/Credit Research	Action •	New	• 🟦 Export •	PDF	& Refresh				
Local Databases	Г	N B	lasic Search	•		Туре	Owner		
Global Databases		A	dvanced Searc	sh ▶	All Managed Inv	estments			
Performance Reporting					Analysis/News/I	Report	•		
Asset Allocation					Bonds				
Portfolio Management					Closed-End Fun	ige d	•		
Portfolio Analysis					College Savings	s Plans	•	1	
Markets	1				Economic Serie	s			
Asset Flows	1				Exchange Trade	d Fund			
Presentation Studio	1				European Pensi	on/Life Fund V	Vrappers		
Risk Model	1				Funds (Open En	d and Exchan	ge Traded Funds)	5	0.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1
Workspace					Strategies HFR Hedge Fund	ds			to create a search in
▼Investment Lists					eVestment Hedg	ge Funds			the Funds universe.
回 My Lists					Market Index				
📲 Search Criteria					Money Market F	und			
🔝 My Search Criteria					Open-End Fund				
Report Templates					Ownership-Port	folio			
Risk Model Workspace The Investment Lists My Lists Search Criteria My Search Criteria Report Templates Chot Templates	]				Funds (Open En Strategies HFR Hedge Fund eVestment Hedg Market Index Money Market F Open-End Fund Ownership-Port	d and Exchan ds ge Funds fund folio	ge Traded Funds)		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	

00	pen	]+= Ins	ert 🗙 Delete 🖆 Clear All 🟦 Export 🗸 🖪	PDF Save As	Feedback				
	Rel	(	Field Name	Operator	Value		)		Note the included da
] 1			Morningstar Analyst Rating	>=	Bronze			^	points and the value
2	And	(	Morningstar Category	=	Emerging Markets Bond				selected for them.
3	Or		Morningstar Category	=	Intermediate Core Bond				
4	Or		Morningstar Category	=	Global Bond		)		
5	And		Oldest Share Class	=	Yes				
] 6	And		Exchange Country	=	United States				
7									
8									
9									
] 10								~	
View By	Field Na Catego	me:	Include:	Items Searched: 0	Items Found: Run Sea	rch			
	habetic	ally	User Defined Primary Class Only						
					-	-) (		1	

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**.

Save As		
Name	Analyst-Rated Bond Funds Search	
Existing Searches	Bonds Small Value Funds (training)	Enter a name to clearly define the search to increase ease of use.
	OK Cased Hole	3

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

Home	My Search Criteria Analyst-R	ated Bond Funds S	earch	
Equity/Credit Research	Action • View Snapshot	• 🔚 Save	Save As ¥S	
Local Databases	Save As	Investment List	t ent	
Global Databases	Add To	Performance R	eport	Select this optic
Performance Reporting	Settings	Amer A	Open-End F	to save your sea
Asset Allocation	Reports	f	Open-End F	
Portfolio Management	Dashboards	ond Instl	Open-End F	
Portfolio Analysis	Risk Model	p Bond IS	Open-End F	
Markets	Strategy Analysis		Open-End F	
Asset Flows	Presentation Studio Charts	ond	Open-End F	
Presentation Studio	View Holdings	•	Open-End F	
Dick Model	View Owners		Open-End F	
KISK HOUEI	Average Detail Report	A	Open-End F	
Workspace	Stock Intersection		Open-End F	
📲 Investment Lists	₩ X-Ray	ond ETF	Exchange-Tr	
My Lists	Filing	Bond ETF	Exchange-Tr	
📲 Search Criteria	Documents	kts Bd ETF	Exchange-Tr	
🔟 My Search Criteria	UK Closed End Fund News		Open-End F	
🕨 🚞 Report Templates	V 16 IPMorgan Mortgage-Backed	Securities I	Open-End F	
Chart Templates	▼ 17 PGIM Global Total Return A	Securices 1	Open-End F	
I Dashboard Templates			opan and t	

8. Name your new list, Analyst-Rated Bond 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:

Exercise 3: Create a data set for the funds

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.

Home	My List	Analyst-Rate	ed Bond Funds					
Equity/Credit Research	Action	· * * * * *	/iew Snapshot	• 🔚 s	ave 🔛 Add 🗐 Edit	Data 🐺 Sort 🍳	Locate 🟦 Expo	r
Local Databases	Г	Name		-				Open the data point
Global Databases			Select Data Points				×	selection window to
Performance Reporting	<b>□</b> 1	American Funds B	Select Data Points					add data points that
Asset Allocation	2	Baird Aggregate B	Choose a Universe, t	hen locate data poi	nts by selecting an e	xisting view, or sea	arching by	are relevant to your lis
Partfalia Management	<b>□</b> 3	BlackRock Strateg	name. To change the	general or calculat	on settings of a sele	cted point, use the	Settings button.	of investments
Portiolio Management	<b>□</b> 4	BrandywineGLOBA	Available Data Lists					
Portfolio Analysis	□ 5	Dodge & Cox Glob						
Markets	F 6	Fidelity® Intermed	Universe	Open End Funds			$\sim$	
Asset Flows	7	Fidelity® Investme	Find Data Point By	() View	Name cont	aining		
Presentation Studio	<b>□</b> 8	Fidelity® Mortgage		() nen		an in g		
Disk Madel	□ 9	Fidelity® US Bond		Snapshot			~	
RISK MODEI	□ 10	Guggenheim Core						
Workspace	□ 11	Hartford World Bo	Available Data Points					
📲 Investment Lists	☐ 12	iShares Core US A	Total Data Points: 155					
🔟 My Lists	□ 13	iShares ESG U.S.	Name				^	
E Search Criteria	□ 14	iShares JP Morgan	Base Currency Virtual Class					
My Search Criteria	□ 15	JPMorgan Core Bo	Ticker					
Report Templates	☐ 16	JPMorgan Mortgag	ISIN Global Broad Category G	roup				
Chart Templates     Dashboard Templates	□ 17	PGIM Global Total	Global Category					
The Data Sets	☐ 18	PIMCO Emerging I	Morningstar Category Morningstar Institutional	Category			~	
My Data Sets	□ 19	Schwab US Aggre			Add	Add All		
III Sample Data Sets	☐ 20	SPDR® Portfolio A			huu			
🕨 🚞 Custom Database	☐ 21	TCW Core Fixed I	Selected Data Points					
Defined Contribution Play	22	TCW Emerging Ma	Total Data Points: 77					
E Saved Reports	23	TIAA-CREF Core I	Name				^ *	
Note Manager	24	Vanguard Total Bo	Ticker					
Retirement Plans	25	Vanguard Total Bo	ISIN Clabel Presed Cabarra					
Group Manager	26	Western Asset Co	Global Broad Category G	roup			~	Clear all selected
			Morningstar Category	Catagory			*	data points.
			Morningstar Rating Over	all			×	
< >				Settings	Remove	Remove All		
Analytics Lab	All	# A						
Hubs	Total: 26	Selecte			Spine		ncal Halo	
		a da Cimenana			Save		nep	C

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.

Select Data Points			×	
Select Data Points Choose a Universe, name. To change th	then locate data p e general or calcu	oints by selecting an existing view, or searching lation settings of a selected point, use the Setting	by gs button.	Select the annropriate
Available Data Lists				universe to find the necessary data points.
Universe	Funds (Open End	and Exchange Traded Funds) 🗸		
Find Data Point By	View	○ Name containing		Select <b>View</b> to type to
	Fixd-Inc Core Ana	alytics ~		search for data points.
Available Data Point	ts .			
Total Data Points: 359				
Fixd-Inc Credit Rtg - Br Fixd-Inc YTM - Brkdwn	kdwn AA (Caic) (Net) kdwn BBB (Calc) (Net) (f kdwn BBB (Calc) (Net) kdwn BB (Calc) (Net) kdwn B (Calc) (Net) (f kdwn Below B (Calc) ( kdwn NR (Calc) (Net) (NEG)% (Calc) (Net) (	(F1%) (F1%) (F1%) (F1%) 1%) Net) (F1%) (F1%) F1%) ×		
		Add Add All		
Selected Data Points	5			
Name Ticker Morningstar Category Fixd-Inc Eff Dur - Avg y Fixd-Inc YTM - Avg % ( Fixd-Inc Eff Mty - Avg Fixd-Inc Mod Dur - Avg	vrs (Calc) (Net) (FI%) (Calc) (Net) (FI%) vrs (Calc) (Net) (FI%) vrs (Calc) (Net) (FI%)		* * *	Review your added data points here.
[	Settings	Remove Remove All		
		Save OK Cancel	Help	

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

Via Save As		×	
Save As			
Name	Fixed-Income Data		<b>T</b> 1.1 1
My Data Sets	Basics Daily Data Mid-Cap List 1		title. Choose a title that reflects the included data points for ease of use.
~		2.1. 	
	OK Cancel	Help	

- 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.

		Once save with the r	ed, the list will open new data set by default.	
Home	My Lis	sts Analyst-Rated Bond Funds		
Equity/Credit Research	Actio	on 🔹 🐟 🐱 😵 View Fixed-Income Dat	a 🔹 📻 Save	
Local Databases	Г	Name	Ticker	Morni
Global Databases				
Performance Reporting	□ 1	American Funds Bond Fund of Amer A	ABNDX	US Fu
Asset Allocation	□ 2	Baird Aggregate Bond Inst	BAGIX	US Fu
Portfolio Management	<b>□</b> 3	BlackRock Strategic Global Bond Instl	MAWIX	US Fu
3	Γ4	BrandywineGLOBAL Global Opp Bond IS	GOBSX	US FU

**Exercise 4: Change the** 

component settings to

show the Contribution

## Altering Component Settings to Evaluate a Bond Fund

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.

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.

Equity/Credit Research	Action	n• ♠ ▲ ♥ ♥ View Fixed-In	ncome Data 🔹 📻 Save	Add	Fo Edit Data	J Sort	Cocate	1 Export	PDF	Refresh	
.ocal Databases	Г	Name	View Accounts With Holding	ornings 	star Category		Fixd-In Credit	c F Rtg - C	ixd-Inc Credit Rtg -	Fixd-Inc Credit Rtg -	
Global Databases			New Transaction		Allocation				(Net)	Brkdwn AAA (Calc) (Net)	
Performance Reporting	<b></b> 1	Schwab US Aggregate Bond	View Transactions		Carbon Ris	k			2.89	70.3	7
Asset Allocation	□ 2	SPDR® Portfolio Aggregate E	View Brises		Correlation	Matrix			3.01	68.	3
Portfolio Management	□ 3	Vanguard Total Bond Market	File Country		Equity Reg	ion Exposu	re		3.30	68.4	1
Portfolio Analysis	<b>□</b> 4	Fidelity® US Bond Index	Edit Security		ESG Dillar	core			2.94	68.0	5
fortiono Anarysis	□ 5	Vanguard Total Bond Market	Reports	`	ESG Bradu	et Involven			3.22	67.9	8
Aarkets	F 6	JPMorgan Mortgage-Backed	Dashboards	>	ESG PIOUU	ct involven	ient		1.19	67.0	8
Asset Flows	□ 7	iShares Core US Aggregate I	Interactive Charts	>	ESG Produ	ct Involven	nent lop Exp	osure	2.70	62.	8
Presentation Studio	<b>□</b> 8	Western Asset Core Bond I	Risk Model	>	ESG Risk B	reakdown			3.40	56.3	1
Risk Model	Γ9	Fidelity® Intermediate Bond	Strategy Analysis	>	EU SFDR P	AI			1.32	54.3	9
Workspace	☐ 10	BrandywineGLOBAL Global C	Presentation Studio Charts	>	Fixed Inco	me Exposu	re Analysis		13.13	53.	7
workspace	T 11	JPMorgan Core Bond I	Premium/Discount		Global Rev	enue Map			2.67	52.4	7
- Por Incombine and Links	L 12	Fidelity® Mortgage Securities			Growth				0.87	51.	6

Exposure Analysis tool from the Interactive Charts menu.

column heading to
sort on that data point.

							Hide Control Panel >	Control Panel
	Total	AAA	AA	А	BBB	BB	Not Rated	Drag and drop attributes to th row and column fields below.
Total	100.00	70.77	2.89	10.61	12.49	0.23	3.00	
1 0 to 0.5 yr	0.17	0.17	-	0.00	-	-	-	(The first row attribute sets th
2 0.5 to 1 yr	0.39	0.22	0.04	0.07	0.06	-	-	basis for determining holding
3 1 to 2 yrs	11.73	9.27	0.38	1.15	0.91	0.01	-	types annly )
4 2 to 3 yrs	10.31	7.37	0.34	1.24	1.26	0.05	0.06	types apply.
5 3 to 4 yrs	9.31	6.67	0.31	1.04	1.19	0.03	0.07	AVAILABLE ATTRIBUTES
5 4 to 5 yrs	13.98	11.10	0.19	1.14	1.26	0.03	0.25	Q. Search attributes
7 5 to 6 yrs	12.61	10.46	0.11	0.64	0.99	0.04	0.38	
3 6 to 7 yrs	15.42	12.55	0.13	0.79	1.12	0.03	0.80	ii Country
9 7 to 8 yrs	4.68	2.69	0.19	0.84	0.94	0.01	0.00	II Currency
0 8 to 9 yrs	2.64	1.99	0.08	0.21	0.35	0.00	-	E Duration to Worst
9 to 10 yrs	0.78	0.02	0.07	0.20	0.49	-	-	II Duration to Warst
2 10 to 12 yrs	1.66	0.28	0.17	0.55	0.64	0.01	-	.: Duration to worst
12 to 15 yrs	5.01	1.29	0.35	1.21	2.14	0.02	-	Economic Develop
1 15 to 20 yrs	7.70	4.77	0.47	1.38	1.09	0.00	-	Effective Convexity
5 Greater than 20 yrs	2.05	1.92	0.06	0.06	0.01	-	-	Effective Convexity
Unknown	1.56	0.01	-	0.09	0.03	-	1.43	POWS

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?	

- 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.

xed Income Exposure Analysis	ective Duration Detail * Credit Rating	• Portfolio \	Weight = 08/05/2022 = SCHZ	(j)	\$ \$	Z	Open the Component Settings menu.
Total	Total	AAA 70.85	Portfolio Date 08/05/2022	>	3		
1 0 to 0.5 yr	0.14	0.14	Exposure Partfalia Waight	(i) >	3	Γ	Select a component to
2 0.5 to 1 yr	0.40	0.25	Fortiono weight				see available setting
3 1 to 2 yrs	11.58	9.12	Sales Position	>			options and update.
4 2 to 3 yrs	10.22	7.29	iver				
5 3 to 4 yrs	9.79	6.82	Display Settings				
6 4 to 5 yrs	14.37	11.17	Holdings				
7 5 to 6 yrs	12.90	10.40	Hide	(j) >	1		
8 6 to 7 yrs	16.00	12.76					

- 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

While you n Fixed sectio	e the Fixed Income Exposure Analysis tool can be used as a standalone activity, nay also want to analyze other information at the same time. You can use the Income Dashboard to analyze a variety of attributes or compare funds. This on offers the following exercises to explore these capabilities:	Overview
► [ ► [	xercise 5: Change the attributes for a fund on page 15, and xercise 6: Analyze funds based on historical scenarios on page 18.	
To ch durat	ange the attributes to display region and country information by effective ion, do the following:	Exercise 5: Change the attributes for a fund
1.	Confirm that the <b>Analyst-Rated Bond Funds</b> list is open and showing the Fixed-Income Data set.	
2.	From the Grid view, <b>right-click</b> the first <b>fund</b> 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.

Home	My Lis	ts Analyst-R	lated Bond Funds	_			
Equity/Credit Research	Actio	n- <	View Fixed-Income Data	• 📻 Sa	ave 🖬 Add 📭 Edit Data 🐉 S	Sort 🔍 I	
Local Databases Global Databases	Г	Name	View Accounts With Holding	Ticker	Morningstar Category	^	Double-click on a
Performance Reporting Asset Allocation	□ 1 □ 2	iShares JP M PIMCO Emer	New Iransaction View Transactions	IX	US Fund Emerging Markets US Fund Emerging Markets	Bond Bond	sort on that topic.
Portfolio Management		TCW Emergin BlackRock St	Edit Security	IX VIX	US Fund Emerging Markets US Fund Global Bond	Bond	
Markets		BrandywineG Dodge & Co>	Reports Dashboards	> 3SX	US Fund Global Bond Fixed Income Dashboard		The Fixed Income
Asset Flows Presentation Studio		Hartford Wor PGIM Global	Interactive Charts Risk Model	>	Managed Fund Dashboard Portfolio Dashboard	ad	Dashboard opens
Risk Model Workspace	□ 10 □ 11	Baird Aggreg	Strategy Analysis Presentation Studio Charts	>	Risk Model Dashboard Strategy Dashboard	nd	
✓ Investment Lists Investment Lists	□ 12 □ 13	Fidelity® Inv Fidelity® Mor	Premium/Discount View Holdings	>	Sustainability Dashboard My Dashboard Templates	nd nd	
<ul> <li>Search Criteria</li> <li>Report Templates</li> </ul>	□ 14 □ 15	Fidelity® US	View Owners View Fundcode Info	> AX	US Fund Intermediate Core	Bond	

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

	Export v	dit Charts & Tables	ngs E	shboard Setti	🕲 Das	ed ∨	Recently View	Change	ond Insti 🖉	eckRock Strategic Global B	ixed Income Dashboard 🛇 BlackRock
			io Analysis	is Scenar	Factor Analysi	MPT	Characteristics	Holdings	re Analysis	Region Style Exposu	rformance Analyst Research Sector Region
Open the Expo	) @ []	(				NIX	31/2022 = MAV	Weight • 05/3	ig • Portfolio	uration Detail • Credit Ratio	Fixed Income Exposure Analysis • Effective Duration I
Analysis tab.		C DOBIDITALIDATES	Panel >	Hide Contro							
	-	II OAS Detail	Below	В	BB	BBB	A	AA	AAA	Total	
		II Primary Sector	0.5	2.32	6.01	18.81	14.82	22.00	10.51	100.00	Total
		II Region		0.27	0.20		- -	-	0.01	0.69	1 Negative
		II US Muni Security		0.24	0.55	0.80	0.21	0.03	0.06	13.97	2 0 to 0.5 yr
		ii Conseder: Cester		0.02	0.15	0.90	0.42	10.39	0.10	11.97	3 0.5 to 1 yr
		.: Secondary Sector		0.09	0.14	0.59	0.88	0.69	5.25	7.98	4 1 to 2 yrs
		ii Super Sector		0.51	0.76	1.27	1.28	0.16	2.09	6.67	5 2 to 3 yrs
	•	ii Vield to Maturity		0.36	0.60	1.90	2.11	0.31	1.00	6.65	6 3 to 4 yrs
		ROWS		0.32	0.48	1.78	2.18	0.31	-16.10	-10.23	7 4 to 5 yrs
n	li	Effective Duration Det		0.25	1.10	3.01	0.52	0.63	2.58	9.41	8 5 to 6 yrs
Remove existin				0.20	0.50	1.81	3.13	0.05	18.78	25.99	9 6 to 7 yrs
attributes by				0.01	0.99	2.77	0.34	3.03	-17.55	-8.90	10 7 to 8 yrs
clicking the X.				0.00	0.02	0.52	0.38	0.59	1.13	2.65	11 8 to 9 yrs
		COLUMNS		0.00	0.02	0.24	0.07	2.65	0.12	3.09	12 9 to 10 yrs
	×	II Credit Bating		0.00	0.14	0.16	0.08	0.24	0.24	1.01	13 10 to 12 yrs
		( source nating		-	0.01	0.99	0.38	0.16	1.64	3.28	14 12 to 15 yrs
				-	0.05	1.67	0.91	0.81	9,70	13.14	15 15 to 20 yrs

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

- 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.

Untitled Dashboard - Unsaved 🛇 🛛 Black	Rock Strategic (	ilobal Bond Ir	nstl 🖉 Chan	ige Recer	ntly Viewed 🗸		lashboard Sett	ings E	dit Charts & Tables Export V	
Performance Analyst Research Sector Region	Style Expos	ure Analysis	Holdings	Characteristi	cs MPT	Factor Analy	ysis Scenar	rio Analysis		
Fixed Income Exposure Analysis • Region • Effective D	uration Detail •	Portfolio Weig	ght = 05/31/20	022 ° MAWIX					) © Z	
							Hide Contri	ol Panel >	( 000/0// 01/00100 ·	
	Total	Negative	0 to 0.5 yr	0.5 to 1 yr	1 to 2 yrs	2 to 3 yrs	3 to 4 yrs	4 to 5 yı	ii Credit Rating	
Total	100.00	0.75	3 97	12 93	5.02	7 16	7 18	85	ii Currency	
1 United States	52.61	0.75	1.68	0.66	3.31	4.05	3.17	6.6	ii Duration to Worst	
2 Canada	0.70	-	-	-	0.30	0.00	0.01	0.0	ii Duration to Worst	Attributos con bo
3 Latin America	7.49	-	0.07	-	0.13	0.39	1.20	0.4	II Economic Develop	Attributes tall be
4 United Kingdom	4.27	-	0.12	-	0.53	0.36	1.37	0.5	ii Effective Converity	uraggeu-anu-uroppeu
5 Eurozone	20.42	-	0.13	12.24	0.20	1.18	0.94	0.6	I Effective Convexity	between Rows, Columns
6 Europe - ex Euro	0.97	-	0.25	-	0.00	0.49	0.05	0.0	:: Effective Convexity *	and Available Attributes.
7 Europe - Emerging	0.13	-	-	0.00	0.00	0.05	0.00	0.0	ROWS	
8 Africa	0.60	-	_	-	0.04	0.12	0.18	0.0	Lii Region	
9 Middle East	0.50	-	0.03	0.00	0.01	0.10	0.11	0.0	C Country	
10 Japan	3.40	-	1.58	-	0.25	0.03	0.00		Cu	
11 Australasia	0.15	-	0.05	-	0.01	0.01	0.00	0.0	· · · · · · · · · · · · · · · · · · ·	
12 Asia - Developed	0.31	-	0.03	-	0.06	0.04	0.11	0.0	COLUMNS	
13 Asia - Emerging	6.07	-	0.04	0.03	0.18	0.34	0.02	0.1	ii Effective Duration Detail	
14 Not Classified	0.00	-	-	-	-	-	-			
15 Unknown	2.39	-	-	-	-	-	-			

#### 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.

						Re the	view Exposure settin e Component Setting	gs in s menu.
Untitled Dashboard - Unsaved 🛇 🛛 Blac	kRock Strategic (	Global Bond I	nsti 🖉 Chan	ge Recer	ntly Viewed 🗸	( 🕸 Da	ashboard Settings Edit Charts	8 Tables Expirit
Performance Analyst Research Sector Region	Style Expos	ure Analysis	Holdings	Characteristi	cs MPT	Factor Analys	sis Scenario Analysis	
Fixed Income Exposure Analysis • Region • Effective	Duration Detail •	Portfolio Wei	ght = 05/31/2	022 ° MAWIX				(j) (¢
							C Exposure	
	Total	Negative	0 to 0.5 yr	0.5 to 1 yr	1 to 2 yrs	2 to 3 yrs	Portfolio Weight	<u>(</u> ) 🗸
⊗ Total	100.00	0.75	3.97	12.93	5.02	7.16	Count	<u>(</u> )
▼ United States	52.61	0.75	1.68	0.66	3.31	4.05	Weighted Exposure	0
1 United States	52.61	0.75	1.68	0.66	3.31	4.05	weighted Exposure	
▼ Canada	0.70				0.30	0.00	Contribution	(i)
2 Canada	0.70	-	-	-	0.30	0.00	Average	<b>(i)</b>
▼ Latin America	7.49		0.07		0.13	0.39		
	0.47					0.04	e ee	ective Convexity

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

				Togg and Fixed tool	le the Co off to mal I Income or update	ntrol Pa ke space Equity A e the att	nel on e in the attributio ributes.	n	
Intitled Dashboard - Unsaved 🛇 🛛 Bia	a <mark>ckRock S</mark> trategic (	Global Bond Ir	n <b>sti 🖉</b> Chan	ge Recer	ntly Viewed 🗸		ashboard Setti	ings) (Ec	dit Charts & Tables Export
,									
Fixed Income Exposure Analysis = Region = Effectiv	e Duration Detail •	Portfolio Weig	ght = 05/31/20	022 ° MAWIX			Hide Contro	ol Panel >	③ 10 Control Panel
Fixed Income Exposure Analysis = Region = Effectiv	e Duration Detail * Total	Portfolio Weiç Negative	ght = 05/31/20 0 to 0.5 yr	022 = MAWIX 0.5 to 1 yr	1 to 2 yrs	2 to 3 yrs	Hide Contro 3 to 4 yrs	ol Panel > 4 to 5 yı	Control Panel Drag and drop attributes to the row and column fields below
Fixed Income Exposure Analysis = Region = Effectiv	e Duration Detail = Total 100.00	Portfolio Weiç Negative 0.75	ght = 05/31/20 0 to 0.5 yr <b>3.97</b>	022 = MAWIX 0.5 to 1 yr 12.93	1 to 2 yrs 5.02	2 to 3 yrs 7.16	Hide Contro 3 to 4 yrs 7.18	ol Panel > 4 to 5 yı 8.5	① 《 Control Panel Drag and drop attributes to the row and column fields below.
Fixed Income Exposure Analysis • Region • Effectiv	e Duration Detail = Total 100.00 52.61	Portfolio Weig Negative 0.75 0.75	ght = 05/31/20 0 to 0.5 yr 3.97 1.68	0.5 to 1 yr 12.93 0.66	1 to 2 yrs 5.02 3.31	2 to 3 yrs 7.16 4.05	Hide Contro 3 to 4 yrs 7.18 3.17	bl Panel > 4 to 5 yı 8.5	Control Panel     Drag and drop attributes to the row and column fields below.     (The first row attribute sets the
Fixed Income Exposure Analysis ≈ Region ≈ Effectiv ⊘ Total ▼ United States 1 United States	e Duration Detail = Total 100.00 52.61 52.61	Portfolio Weig Negative 0.75 0.75 0.75	ght = 05/31/20 0 to 0.5 yr <b>3.97</b> <b>1.68</b> 1.68	022 = MAWIX 0.5 to 1 yr <b>12.93</b> <b>0.66</b> 0.66	1 to 2 yrs 5.02 3.31 3.31	2 to 3 yrs 7.16 4.05 4.05	Hide Contro 3 to 4 yrs 7.18 3.17 3.17	ol Panel > 4 to 5 yı 8.5	Control Panel  Drag and drop attributes to the row and column fields below.  (The first row attribute sets the basis for determining holding
Fixed Income Exposure Analysis = Region = Effectiv           Statal           V United States           1 United States           V Canada	e Duration Detail = Total 100.00 52.61 52.61 0.70	Portfolio Weig Negative 0.75 0.75 0.75	ght = 05/31/20 0 to 0.5 yr <b>3.97</b> <b>1.68</b> 1.68	022 = MAWIX 0.5 to 1 yr <b>12.93</b> <b>0.66</b> 0.66	1 to 2 yrs 5.02 3.31 3.31 0.30	2 to 3 yrs 7.16 4.05 4.05 0.00	Hide Contro 3 to 4 yrs 7.18 3.17 3.17 0.01	ol Panel > 4 to 5 yı 8.5	Control Panel      Trag and drop attributes to the row and column fields below.      IThe first row attribute sets the basis for determining holding weights and which exposure there are below.
Fixed Income Exposure Analysis = Region = Effectiv ⊘ Total ▼ United States 1 United States ▼ Canada 2 Canada	e Duration Detail = Total 100.00 52.61 52.61 0.70 0.70	Portfolio Weig Negative 0.75 0.75 0.75	ght = 05/31/20 0 to 0.5 yr 3.97 1.68 1.68	0.5 to 1 yr 12.93 0.66 0.66	1 to 2 yrs 5.02 3.31 3.31 0.30 0.30	2 to 3 yrs 7.16 4.05 4.05 0.00 0.00	Hide Contro 3 to 4 yrs 7.18 3.17 3.17 0.01 0.01	ol Panel > 4 to 5 yı 8.5	Control Panel      Drag and drop attributes to the row and column fields below.      (The first row attribute sets the basis for determining holding weights and which exposure types apply.)

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

Untitled D	<b>)ashboard</b> - Uns	aved 🕑	Bla	ckRock S	Strategic	Global Bond Inst	
Performance	Analyst Research	Sector	Region	Style	Expo	sure Analysis	
Fixed Incor	ne Exposure Analysis	<ul> <li>Region •</li> </ul>	Effective	Duration	Detail •	Portfolio Weight	
					Total	Negative	Click here to see Row Expansion setting options.
⊙Total					100.00	0.75	
1					52.61	0.75	
Row	Row Expansion				52.61	0.75	Select Collapse Al
Colla	anse All			- 100	0.70		to only see the Region information
					0.70	-	
Expand Region/Expand All		V		7.49			
3 AIYEI	una				0.17	-	

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

Exercise 6: Analyze funds based on historical scenarios

- 1. Navigate to the Scenario Analysis tab.
- 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.

Find Investments				×	
Within	OUniverses	My Lists	O My Searches		
	Analyst-Rated Bo	nd Funds	~		
Find By	Name  V  Begins with  Contains  Include Only Surviving Investments				Search for funds within your list.
				Go	
Available Records					
Total records: 26					
Jump to record name:					
Schwab US Aggregate SPDR® Portfolio Aggre TCW Core Fixed Incon	Bond ETF™ (USD,A egate Bond ETF (USI ne I (USD,XNAS,TG0	RCX,SCHZ,Port+Per D,ARCX,SPAB,Port+ CFX,Port+Perf,RepPe Add	f,RepPerf) Perf,RepPerf) erf) v		Available Records.
Total records: 3					
BlackRock Strategic Global Bond Instl iShares JP Morgan USD Em Mkts Bd ETF (USD,XNAS,EMB,Port+Perf,RepPerf) PIMCO Emerging Markets Bond Instl (USD,XNAS,PEBIX,Port+Perf,RepPerf)					
				*	
		Remov	re Remove All		
Help			ОК	Cancel	

- 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**.

Untitled Dashboard - Unsaved 💟 🛛 BlackRock Strategic	Global Bond Instl +2 More 🖉	Open the <b>Dashboard Actions</b> menu
Performance Analyst Research Secto Save	alysis Holdings Cl	
Scenario Trend   Global Multi-Asset Mod Save As	elloff = Multiple Investme	Save the dashboard
0.00 Upen Create New Dashboard	<ul> <li>investments selected</li> <li>Trend can only show 1</li> </ul>	
-0.18	~	
-0.37		
-0.55		

9. Save the dashboard as 2004 Emerging Marketing Crisis.

Enter a name to save dashboard:	
2004 Emerging Market Crisis	Choose a name that clearly defines the dashboard to increase ease of use.