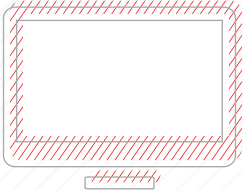
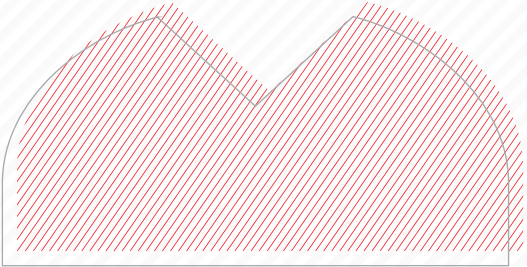
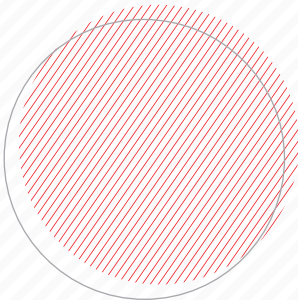
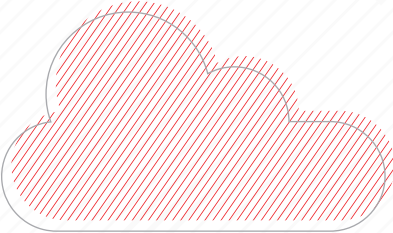
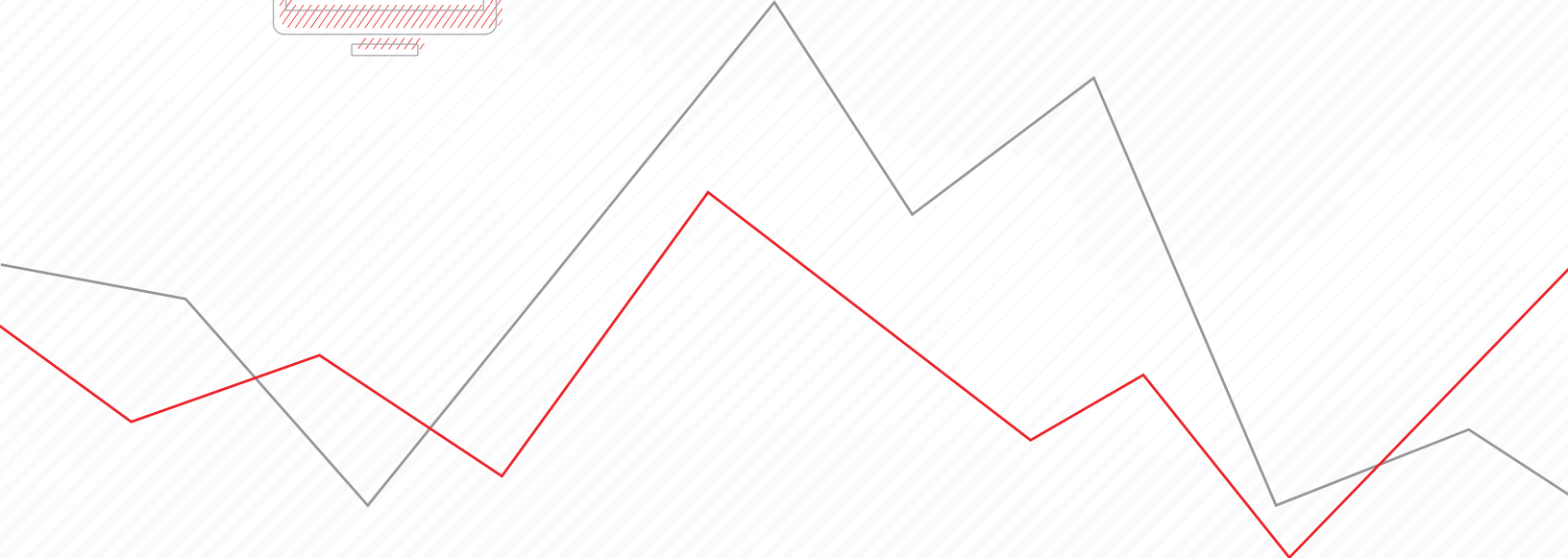


Using the Custom Database in Morningstar Direct

Onboarding Guide



MORNINGSTAR Direct



Copyright © 2020 Morningstar, Inc. All rights reserved.

The information contained herein: (1) is proprietary to Morningstar and/or its content providers; (2) may not be copied or distributed; (3) is not warranted to be accurate, complete or timely; and (4) does not constitute advice of any kind. Neither Morningstar nor its content providers are responsible for any damages or losses arising from any use of this information. Any statements that are nonfactual in nature constitute opinions only, are subject to change without notice, and may not be consistent across Morningstar. Past performance is no guarantee of future results.

Contents

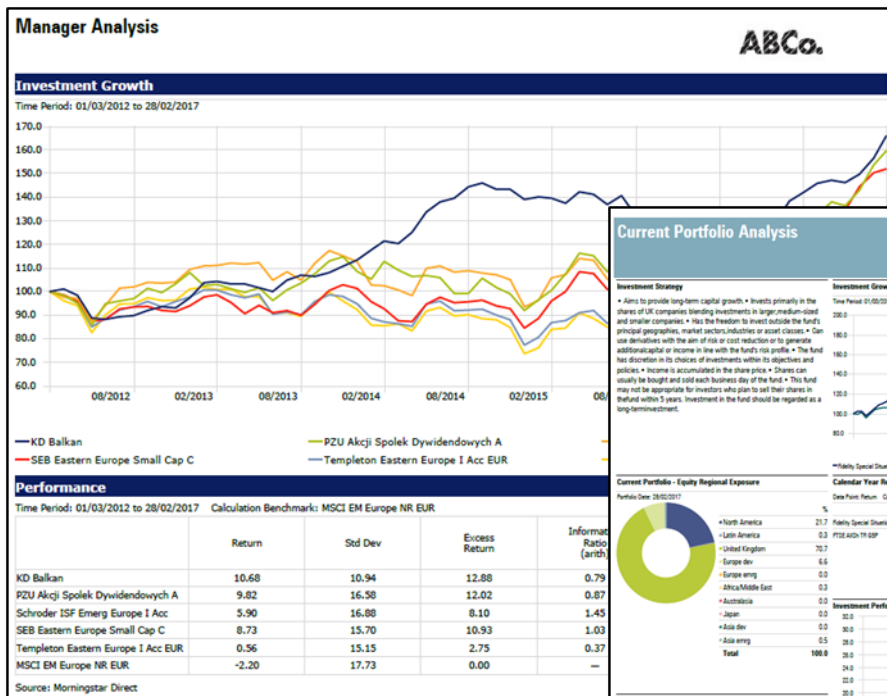
Overview	4
Understanding Basic Information about the Custom Database	5
Overview	5
Where is the Custom Database found?	5
Where can custom data points be used in Morningstar Direct?	5
What types of custom data points can be created?	6
Creating and Assigning Values to Custom Data Points	7
Overview	7
Exercise 1: Create discrete custom data	8
Exercise 2: Manually input values for custom data points	10
Exercise 3: Import data for discrete data points	12
Exercise 4: Create custom time series data points	17
Exercise 5: Input data for time series custom data points	19
Exercise 6: Import data for custom time series data points	21
Exercise 7: Add a custom Composition data point	24
Exercise 8: Enter data for a Composition custom data point	26
Leveraging Custom Data in Other Modules	30
Overview	30
Exercise 9: View custom data in the Workspace module	30
Exercise 10: Adjust the general settings for performance reporting to use custom data points	32
Exercise 11: Use a custom data point as a benchmark	34
Exercise 12: Use a custom date data point in a performance report	36
Exercise 13: Add the discrete and historical custom data points to the performance report	38
Exercise 14: Retrieve custom data using the Morningstar Excel Add-In	42
Exercise 15: Use custom data in Presentation Studio	43
Exercise 16: Include discrete custom data points on a template	47
Exercise 17: Use a composition custom data point in a template	50
Exercise 18: Use custom historical time series data points	52

Using the Custom Database in Morningstar DirectSM

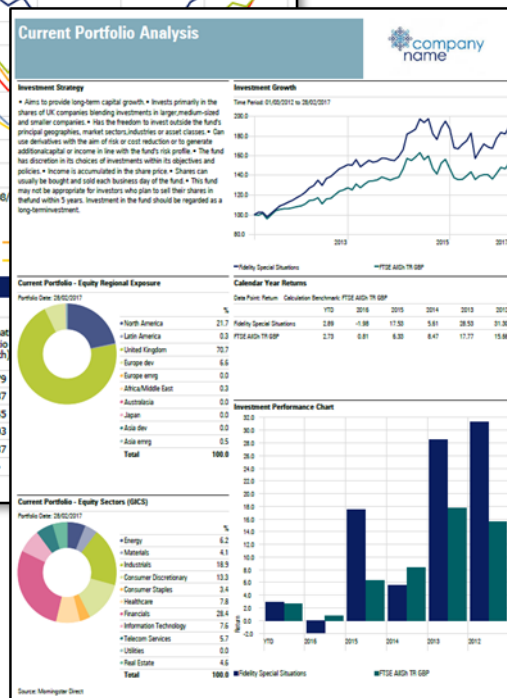
The Custom Database allows Morningstar DirectSM users to create and import custom data for use in the analysis of investments. Custom data can also be used on reports created in Presentation Studio and as grouping options in the Performance Reporting, Equity Attribution, and Total Portfolio Attribution capabilities.

This guide shows users how to work with both discrete and time series custom data points, how to use the import function to bring in custom classification data (as an alternative to manually creating this content), and how to find and use this data within Morningstar Direct.

Overview



The unique classifications created in the Custom Database can be leveraged in templates created in Presentation Studio, among other areas in Morningstar Direct.



Understanding Basic Information about the Custom Database

Before beginning exercises where custom data will be created, it will help to cover some basic knowledge about this capability. This section covers the following topics to orient new users to this part of the application:

- ▶ where to find the Custom Database in Morningstar Direct ([page 5](#))
- ▶ where else in the application users can leverage the custom data points they create ([page 5](#)), and
- ▶ the types of data points users can create in the Custom Database ([page 6](#)).

The Custom Database is located in the Workspace module. It allows Morningstar Direct users to create custom data points and classifications for those data points to incorporate in their data sets, performance reports and Presentation Studio templates, amongst other areas. Data points can be created and then updated manually, or via an import function (for most data points).

The following levels are available for the Custom Database:

- ▶ **Firm-Level database:** a Morningstar Direct user can be granted read-write access to create and maintain custom data points which are available as read-only access to all other Morningstar Direct users within their company.
- ▶ **My Database:** a personal custom database only for the Morningstar user.

Custom data can be used in the following modules:

- ▶ Workspace
- ▶ Performance Reporting
- ▶ Presentation Studio
- ▶ Morningstar Excel Add-In, and
- ▶ Total Portfolio Attribution (for grouping options).

Overview

Where is the Custom Database found?

Where can custom data points be used in Morningstar Direct?

The following table provides a description of the various custom discrete data points users can create:

What types of custom data points can be created?

Data Point	Description
Extend Text	Free text, up to 250 characters
Date	Displays a date
Numeric	Displays numbers
Indicator	Five characters maximum; can be alpha, numerical, or alphanumerical
Free Text	Free text, up to 50 characters
Category	Classification; can be displayed as a data point in Workspace, Performance Reporting, Presentation Studio, or used as a grouping function in Performance Reporting or Total Portfolio Attribution
Benchmark ID	The Morningstar Security ID of an index from the Morningstar database to be assigned to a fund. This can then be selected as a calculation benchmark in Performance Reporting, or either a display or calculation benchmark in Presentation Studio.
Group Overwrite	Used to overwrite an existing grouping, such as Morningstar Category; this overwrites the Display Grouping in Performance Reporting.
Morningstar Direct User	Select a Morningstar Direct user in your company to whom funds are assigned
Grouping	Assign a security to an index or another security; use this for grouping options in Performance Reporting, for instance.

The following table shows how frequently the various custom historical time series data points can be updated:

Data Point	Frequency	Notes
Free Text	Daily	Can be displayed only in the Time Series chart and table in Presentation Studio, or in Workspace and Performance Reporting in the grid view. These historical data points can be imported.
Numeric	Monthly	
Price	Quarterly	
Return	Yearly	
Composition	Daily	These can be used only with the pie chart in Presentation Studio. The data must be entered manually; no import function is available.
	Monthly	
	Quarterly	
	Yearly	

Creating and Assigning Values to Custom Data Points

When beginning to work with custom data in Morningstar Direct, users need to take the following steps:

1. Create the data points to be used within Morningstar Direct, and
2. Assign values to those custom data points for specific investments. Values can be manually assigned or via import (for most data points).

This section covers the following exercises:

- ▶ Manually creating discrete custom data points ([Exercise 1 on page 8](#))
- ▶ Manually assigning values for discrete custom data points ([Exercise 2 on page 10](#))
- ▶ Importing values for discrete custom data points ([Exercise 3 on page 12](#))
- ▶ Manually creating time series custom data points ([Exercise 4 on page 17](#))
- ▶ Manually assigning values for time series custom data points ([Exercise 5 on page 19](#))
- ▶ Importing values for discrete custom data points ([Exercise 6 on page 21](#)), and
- ▶ Working with the Composition custom data point ([Exercise 7 on page 24](#) and [Exercise 8 on page 26](#)).

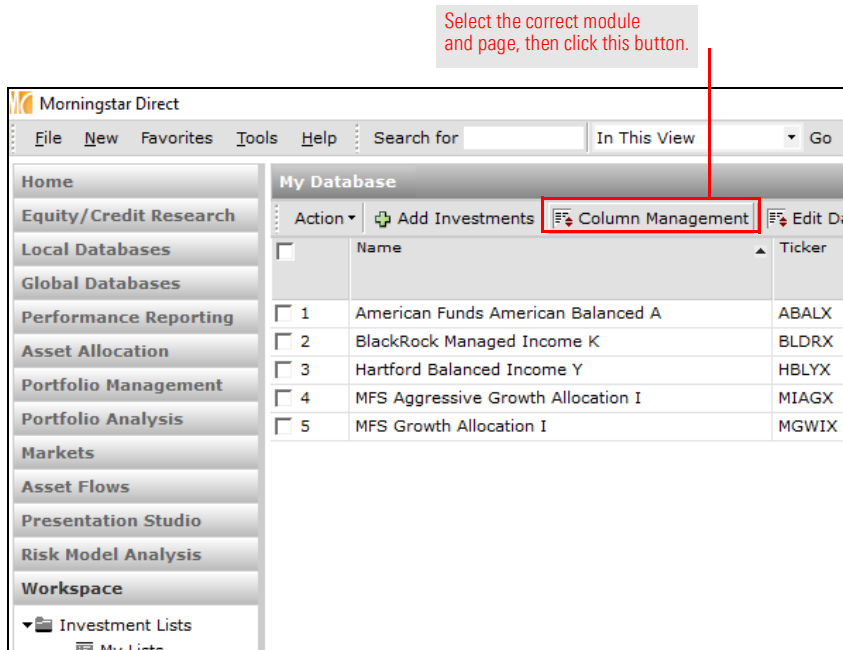
Overview

This exercise demonstrates how to create a few custom discrete data points. A discrete data point displays only the most recent value for an investment, such as the latest rating, date, or classification a user assigns to a fund. In contrast, a time series data point can show multiple past values for an investment.

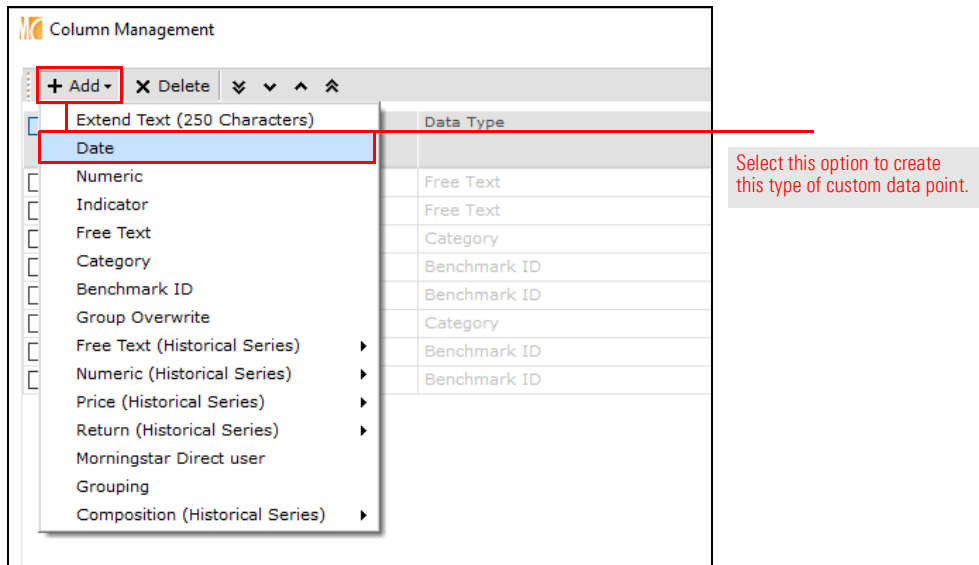
Exercise 1: Create discrete custom data

To create these custom data points, do the following:

1. In the desktop edition of Morningstar Direct, select **Workspace > Custom Database > My Database**.
2. From the toolbar, click **Column Management**. The Column Management window opens.



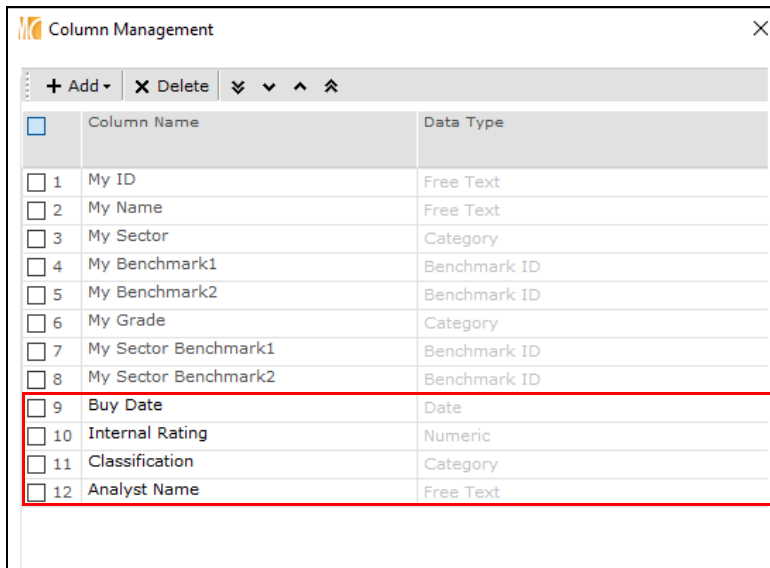
3. Click **Add**, then select **Date**. A new row is added in the window.



4. Name the data point **Buy Date**.

- Repeat steps 3-4 to create the following custom data points:

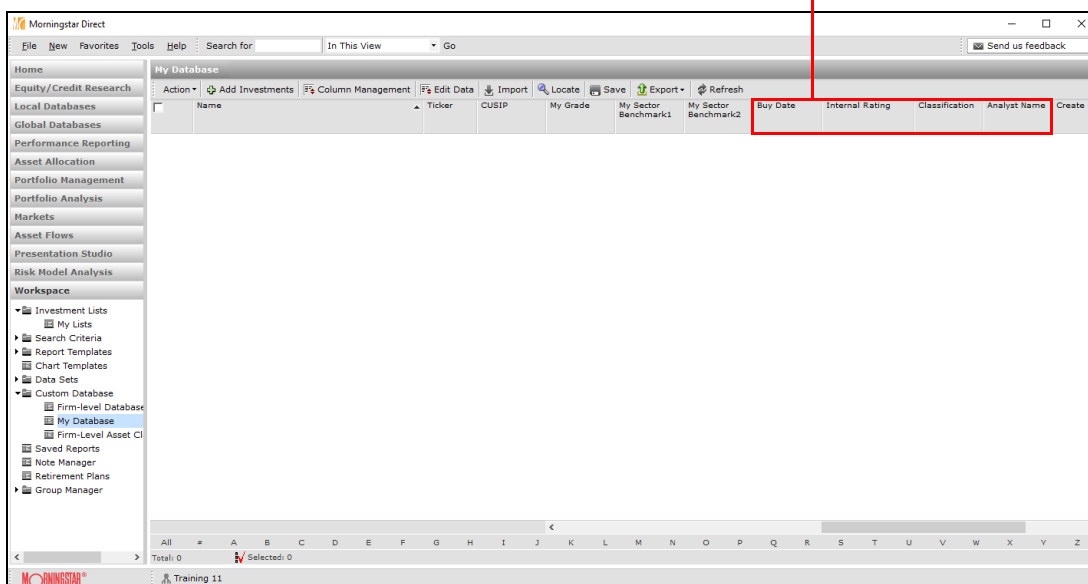
Type	Name
Numeric	Internal Rating
Category	Classification
Free Text	Analyst Name



The list of custom data points can be re-organized by selecting the checkbox to the left of an item's name and using the arrows on the toolbar to change a row's position.

- Click **OK**. The new columns appear in the grid view.

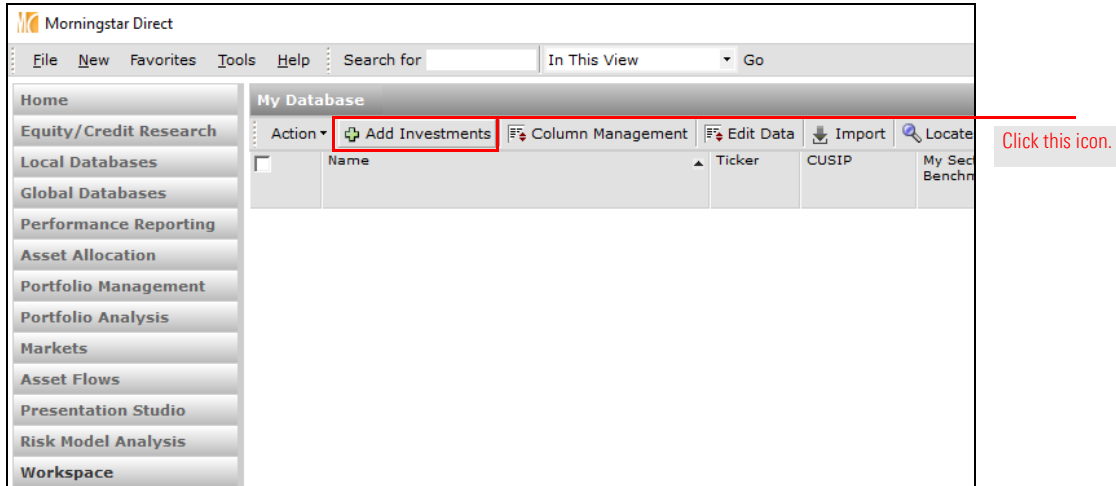
Note the new column headers here.



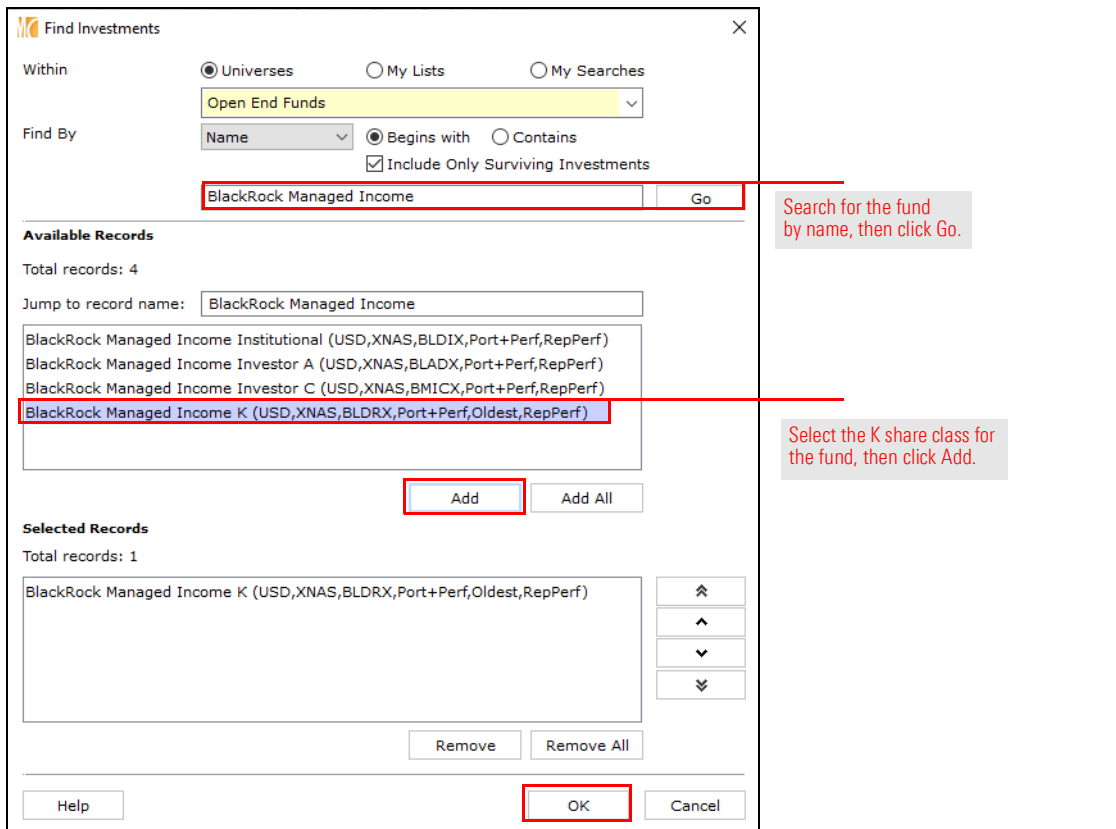
Data can now be added to the newly created custom data points. The first step is to select the investments for which data should be entered. To add investments to the grid, do the following:

Exercise 2: Manually input values for custom data points

1. From the toolbar, click **Add Investments**. The Find Investments dialog box opens.



2. A specific investment will be used for this exercise. Do the following:
 - A. Search for **BlackRock Managed Income**, then click **Go**.
 - B. Select the **K share class** of the fund, then click **Add**.
 - C. Click **OK** to return to the grid view.

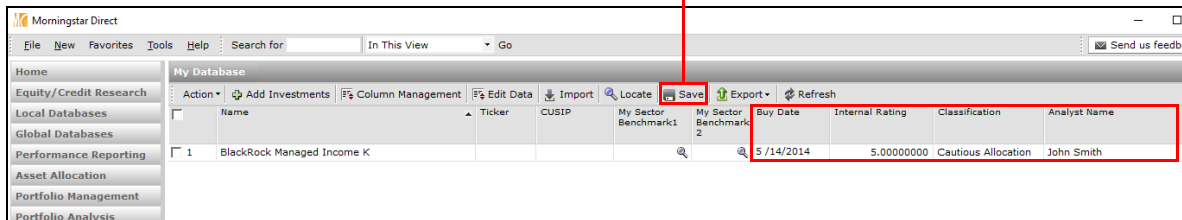


3. Click in each custom data cell and enter the information from the following table:

For this custom data point...	Enter this value...
Buy Date	05/14/2014
Internal Rating	5
Classification	Cautious Allocation
Analyst Name	John Smith

4. Click **Save**. The data has now been saved.

Click this icon to save the custom data entered.



With the Custom Database, users can also bring in custom discrete data points via an import from a Microsoft® Excel® file. The file in question requires the identifier of the relevant securities and the data in separate columns, as in the following example:

Exercise 3: Import data for discrete data points

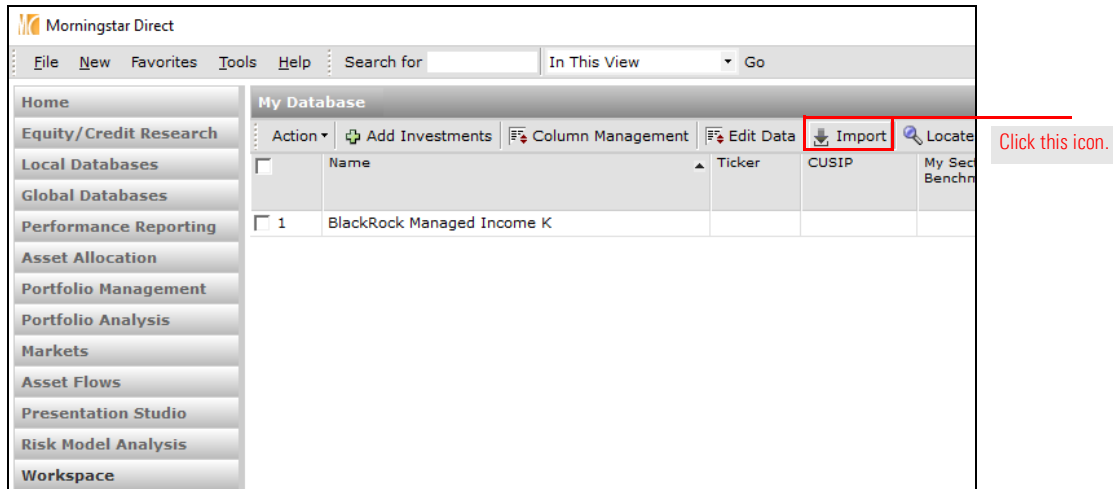
	A	B	C	D	E	F	G
1	Name	Ticker	Benchmark	Asset Class	Analyst Name	Internal Rating	Buy Date
2	American Funds American Balanced A	ABALX	XIUSA04G92	Moderate Allocation	Markus Oates	6	07/25/2014
3	BlackRock Managed Income K	BLDRX	XIUSA000MC	Conservative Allocation	Charles MacDonald	7	7/24/2013
4	Hartford Balanced Income Y	HBLYX	XIUSA04GU0	Moderate Conservative Allocation	John Smith	5	5/14/2014
5	MFS Aggressive Growth Allocation I	MIAGX	XIUSA04G92	Aggressive Allocation	Charles MacDonald	4	6/4/2018
6	MFS Growth Allocation I	MGWIX	XIUSA04G92	Moderate Aggressive Allocation	Andre Dupont	6	9/29/2015

The following table explains the columns used in this exercise:

This column...	Was included because...
Name	The Name column is not compulsory for an import and is purely informational here
Ticker	An identifier is compulsory for an import, which is why Ticker is included here ☞ Note: FundID, ISIN or CUSIP could also be used as identifiers
Benchmark	The SecID (Morningstar Security ID) of a benchmark to be assigned to a fund will be included
Asset Class	Each fund needs to be assigned to an asset class
Analyst Name	A made-up name of an analyst at your firm responsible for covering each fund will be assigned
Internal Rating	A made-up rating needs to be assigned to each fund
Buy Date	A buy date for each fund will be assigned

Over time, as custom discrete data points are created, columns can be added or removed from the sample import file. When importing, users can choose to import all columns or only specific ones. To proceed with the import exercise, do the following:

1. Download the [Excel file](#) used in this exercise.
2. In Morningstar Direct, from the toolbar on the **My Database** page, click **Import**. The Import dialog box opens.



- To the right of the File Name field, click the **magnifying glass** icon to select the Excel file downloaded in step 1.
- Confirm the Universe field is set to **My Database**, and the Custom Data Type field is set to **Current Data**.
- Use the following table to map the columns on the left to the columns on the right:

This Custom Security Data Point field...	Should be matched to this Import File Column Definition...
Security ID	Column B (Ticker)
Security Name	Column A (Name)
Buy Date	Column G (Buy Date)
My Sector Benchmark1	Column C (Benchmark)
Classification	Column D (Asset Class)
Analyst Name	Column E (Analyst Name)
Internal Rating	Column F (Internal Rating)

Import - Morningstar Direct ✕

Custom Database

Please browse to the location of your data source file in the "File Name" selection box below. The "Custom Security Data Points" correspond to the columns you have built in your "Custom Database" grid. If you would like to add a new data point, please add it in the "Column Management" area of your "Custom Database" grid prior to importing. Please make sure you select the correct target universe for your imported data. Finally, select the columns that correspond to your data source file in the "Import File Column Definition" area. Click OK to start the import process or Cancel to exit.

File Name

Date Format

Security ID Type

Header Row

Universe

Custom Data Type

Custom Security Data Point	Import File Column Definition
Security ID	Column B (Ticker)
Symbol	Select...
Security Name	Select...
Buy Date	Select...
My ID	Select...
My Name	Select...
My Sector	Select...
My Benchmark1	Select...
My Benchmark2	Select...
My Grade	Select...
My Sector Benchmark1	Select...

Making a selection for this field is required.

- Leave the rest of the rows set to "Select...". Click **Import**. The Import dialog box closes, and the Import blotter opens. Check the data prior to saving it to the Custom Database.

Import - Morningstar Direct

Custom Database
Please browse to the location of your data source file in the "File Name" selection box below. The "Custom Security Data Points" correspond to the columns you have built in your "Custom Database" grid. If you would like to add a new data point, please add it in the "Column Management" area of your "Custom Database" grid prior to importing. Please make sure you select the correct target universe for your imported data. Finally, select the columns that correspond to your data source file in the "Import File Column Definition" area. Click OK to start the import process or Cancel to exit.

File Name: C:\Users\clowry\Downloads\SampleImportFile.xlsx

Date Format: MM/DD/YYYY

Security ID Type: Auto Detect

Header Row

Universe: My Database

Custom Data Type: Current Data

Custom Security Data Point	Import File Column Definition
My Name	Select...
My Sector	Select...
My Benchmark1	Select...
My Benchmark2	Select...
My Grade	Select...
My Sector Benchmark1	Select...
My Sector Benchmark2	Select...
Classification	Column D (Asset Class)
Analyst Name	Column E (Analyst Name)
Internal Rating	Column F (Internal Rating)

Buttons: Help, **Import**, Cancel

Click this button after all fields are mapped for importing.

- Click **Post** to submit it.

Import - Morningstar Direct - Training 11

Blotter: Custom Data (0/5)

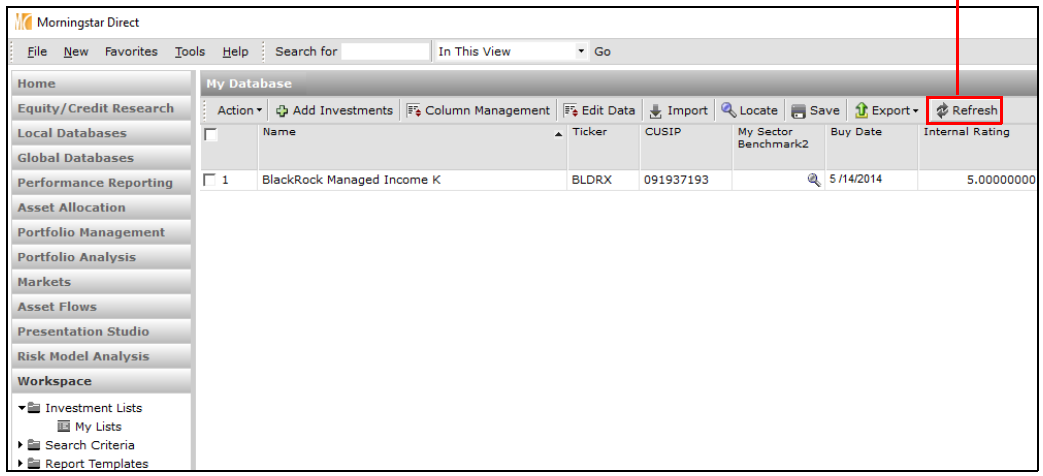
Action	Status	Security ID	Buy Date	Classification	Analyst Name	Internal Rating
<input type="checkbox"/>		ABALX	7/25/2014	Moderate Alloc	Markus Oates	6.00
<input type="checkbox"/>		BLDRX	7/24/2013	Conservative	Charles MacDo	7.00
<input type="checkbox"/>		HBLYX	5/14/2014	Moderate Cons	John Smith	5.00
<input type="checkbox"/>		MIAGX	6/4/2018	Aggressive All	Charles MacDo	4.00
<input type="checkbox"/>		MGWIX	9/29/2015	Moderate Aggr	Andre Dupont	6.00

Click this icon to post the imported data.

- When the confirmation prompt appears, click **OK**.
- Close** the Import window to return to the Morningstar Direct window.

10. On the toolbar, click **Refresh**. The imported funds and their data appear in the grid.

Click this icon to see the rows and data that were imported.



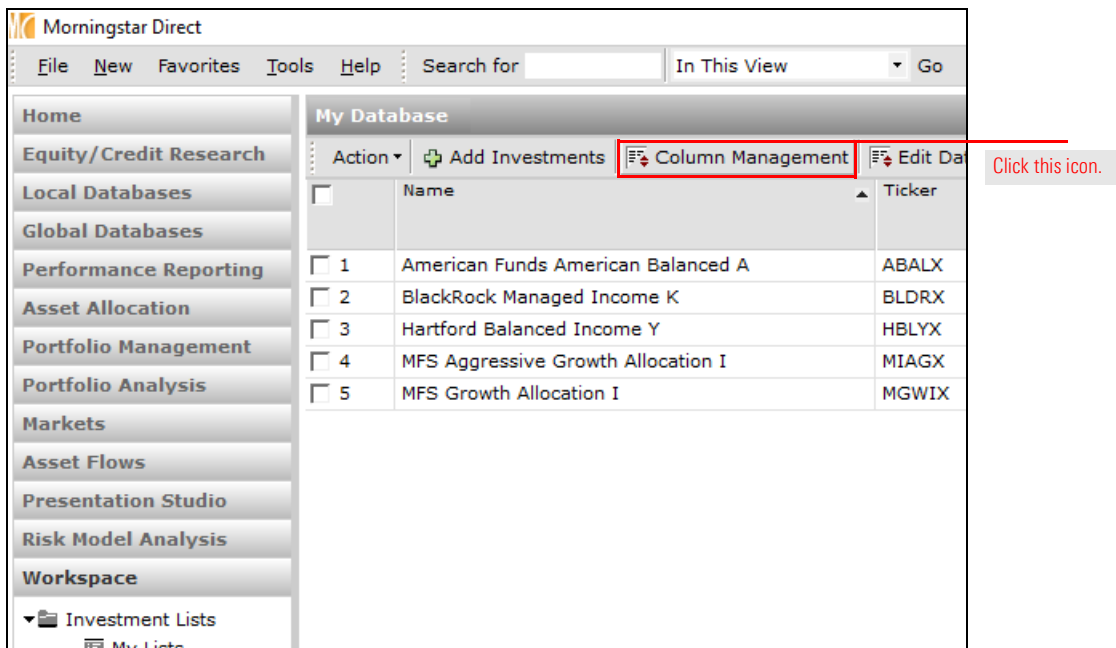
The Custom Database enables users to create custom time series data points. These data points can then be used in Presentation Studio with the Time Series charts and tables, and they can also be displayed as data in the Workspace and Performance Reporting grid views.

Exercise 4: Create custom time series data points

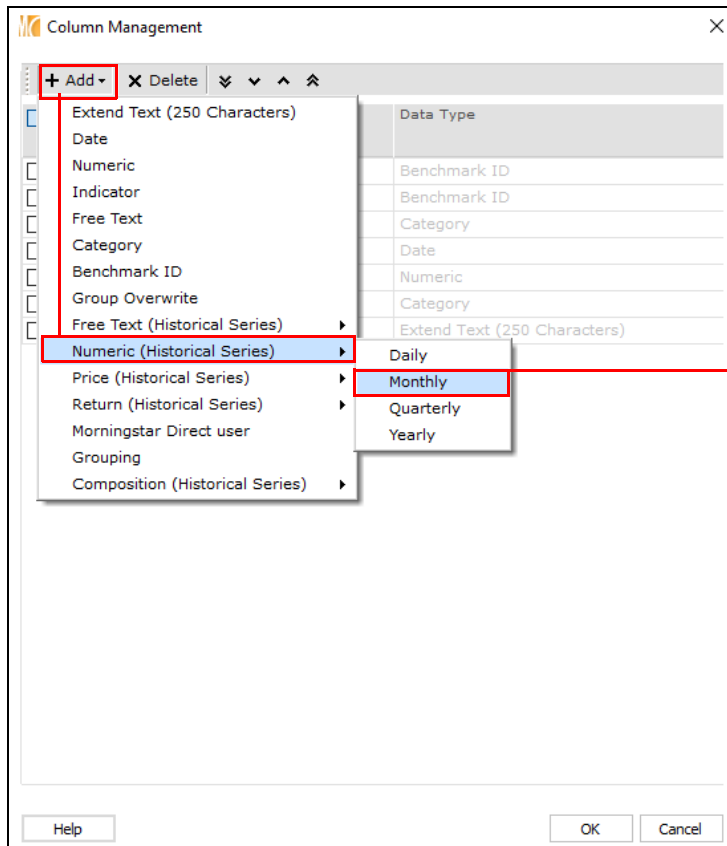
Note: This exercise is valid only for Free Text, Numeric, Price, and Return Historical Series data points.

This exercise shows users how to create a historical monthly internal rating data point; populating the data point follows in the next exercise. Do the following:

1. The **My Database** page within the Workspace module should be selected. From the toolbar, click **Column Management**. The Column Management dialog box opens.

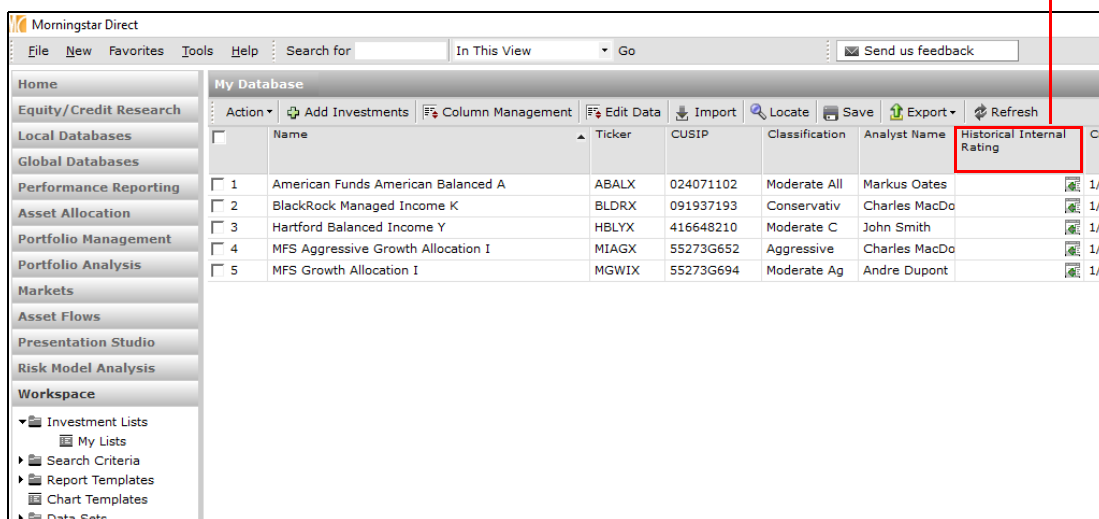


- Click **Add > Numeric (Historical Series) > Monthly**.



Select the highlighted options.

- Name this data point **Historical Internal Rating**.
- Click **OK**. The data point has been added to the grid view.



Note the new custom data point here.

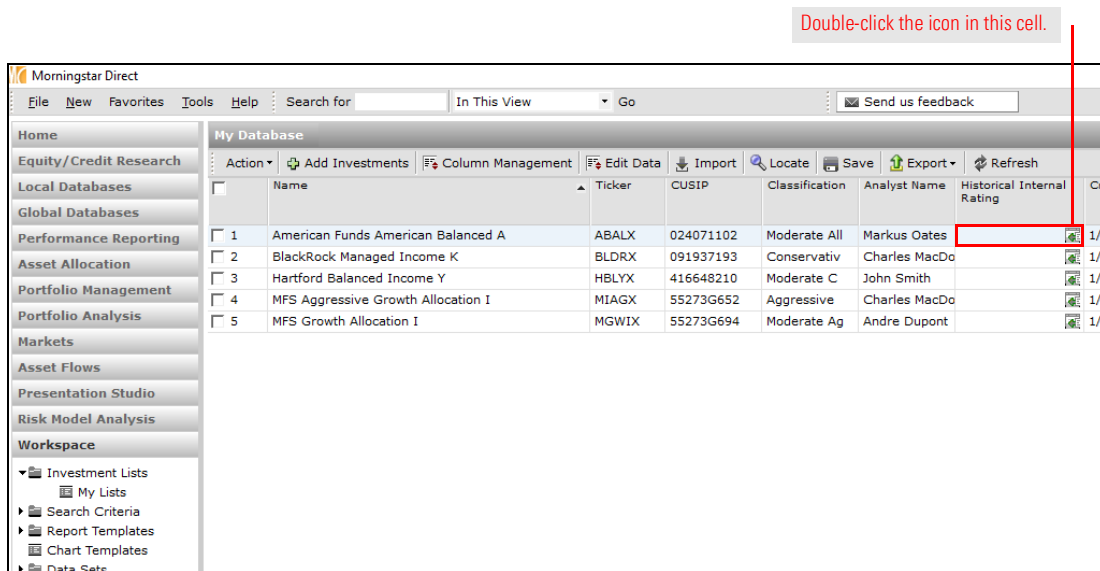
- Click **Save**. Values for this custom data point will be entered in the next exercise.

Custom time series data points have an icon within the cell; users can easily click this icon to input data manually, or use the Import function to fill in the data. This exercise shows users how to input the historical monthly internal ratings manually.

Exercise 5: Input data for time series custom data points

To manually enter data for a historical time series data point, do the following:

1. For the American Funds American Balanced A fund, **double-click** the **icon** in the Historical Internal Rating column. The Historical Data Points dialog box opens.



2. Click **+ Add**. A row is added.
3. In the **Effective Date** field, type **2019-12**.
4. In the **Historical Internal Rating** field, type **5**.
5. Click **+ Add** three more times to enter the following values:

Effective Date	Historical Internal Rating
2019-11	6
2019-10	7
2019-09	8

Be sure to add all four rows here.

6. Click **OK** to return to the Custom Database grid view.
7. Click **Save**.

With the Custom Database, users can also import values for custom series data points from Microsoft® Excel®.

Exercise 6: Import data for custom time series data points

Note: This method is not valid for the Composition (historical Series) data point. To see how to use the Composition data point, please refer to [Exercise 7 on page 24](#).

The file being used as the import source requires the following columns:

- ▶ an identifier for each security, one below the other
- ▶ dates, and
- ▶ a value for the custom data point for each date.

See the following example:

	A	B	C
1	Ticker	Date	Historical Internal Rating
2	ABLAX	2019-12	6
3	ABLAX	2019-11	5
4	ABLAX	2019-10	6
5	ABLAX	2019-9	7
6	ABLAX	2019-8	7
7	ABLAX	2019-7	7
8	ABLAX	2019-6	6
9	ABLAX	2019-5	6
10	ABLAX	2019-4	6
11	ABLAX	2019-3	7
12	ABLAX	2019-2	7
13	ABLAX	2019-1	7
14	BLDRX	2019-12	7
15	BLDRX	2019-11	8
16	BLDRX	2019-10	8
17	BLDRX	2019-9	8
18	BLDRX	2019-8	7
19	BLDRX	2019-7	7
20	BLDRX	2019-6	7
21	BLDRX	2019-5	6
22	BLDRX	2019-4	6
23	BLDRX	2019-3	6
24	BLDRX	2019-2	5
25	BLDRX	2019-1	5
26	HBLYX	2019-12	5
27	HBLYX	2019-11	6
28	HBLYX	2019-10	7
29	HBLYX	2019-9	8
30	HBLYX	2019-8	8
31	HBLYX	2019-7	8
32	HBLYX	2019-6	8
33	HBLYX	2019-5	7
34	HBLYX	2019-4	7
35	HBLYX	2019-3	6
36	HBLYX	2019-2	6
37	HBLYX	2019-1	6
38	MIAGX	2019-12	4
39	MIAGX	2019-11	4
40	MIAGX	2019-10	4

Only these three columns are required when importing a single time series custom data point.

To import custom time series data, do the following:

1. Download the [Excel file](#) used in this exercise.
2. In Morningstar Direct, from the toolbar on the **My Database** page, click **Import**. The Import dialog box opens.
3. To the right of the File Name field, click the **magnifying glass** icon to select the Excel file downloaded in step 1.
4. Confirm the Universe field is set to **My Database**, and the Custom Data Type field is set to **Current Data**.
 - ☞ Note: Leave the Security ID Type set to Auto Detect to ensure multiple types of identifiers can be recognized under the same column.
5. Set the **Date Format** to **YYYY-MM-DD**, to match the Microsoft® Excel® file.
6. The **Universe** field should read **My Database**.
7. Set the **Custom Data Type** field to **Historical Series – Monthly**.
8. Map the **Date** column in the Excel file to the **Effective Date** data point, and the **Security ID** and **Historical Internal Rating** data points to their respective columns.

Import - Morningstar Direct

Custom Database
Please browse to the location of your data source file in the "File Name" selection box below. The "Custom Security Data Points" correspond to the columns you have built in your "Custom Database" grid. If you would like to add a new data point, please add it in the "Column Management" area of your "Custom Database" grid prior to importing. Please make sure you select the correct target universe for your imported data. Finally, select the columns that correspond to your data source file in the "Import File Column Definition" area. Click OK to start the import process or Cancel to exit.

File Name: V:\SHARE\SALES\ISS\Direct\Direct Training Program\Trainin!

Date Format: YYYY-MM-DD

Security ID Type: Auto Detect

Header Row

Universe: My Database

Custom Data Type: Historical Series - Monthly

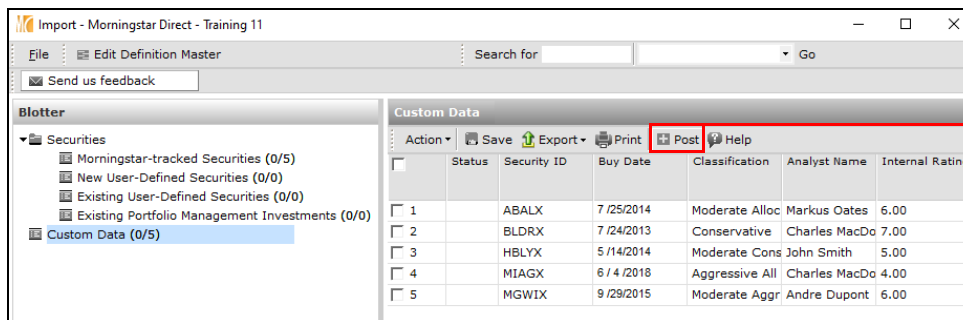
Custom Security Data Point	Import File Column Definition
Security ID	Column A (Ticker)
Symbol	Select...
Security Name	Select...
Effective Date	Column B (Date)
Historical Internal Rating	Column C (Historical Internal Rating)

Buttons: Help, Import, Cancel

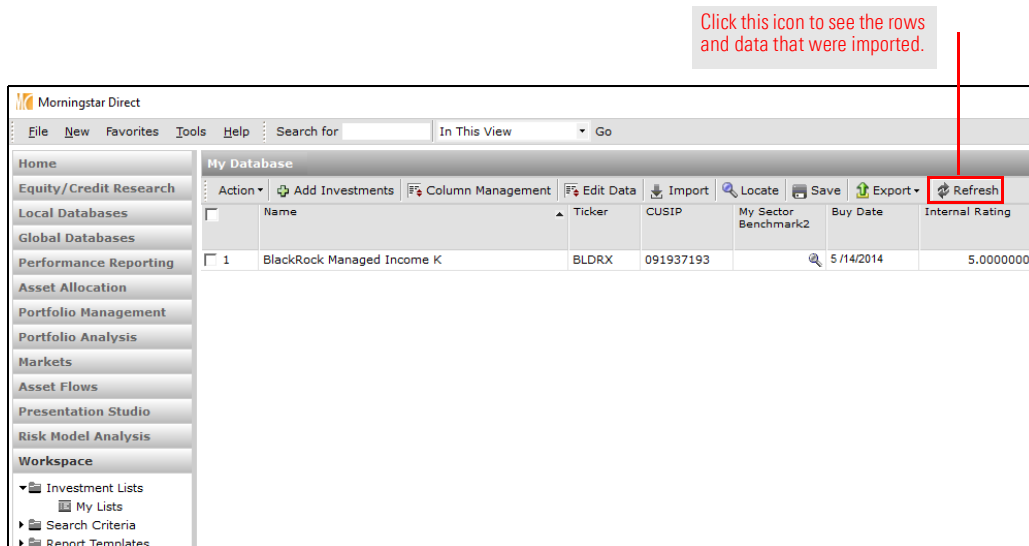
Note the mappings being used here.

9. For the rest of the custom data points, map only the data to be updated; leave the other fields as "Select...".

10. Click **Import**. The Import dialog box closes, and the Import blotter opens. Check the data prior to saving it to the Custom Database.
11. Click **Post** to submit the data.



12. When the confirmation prompt appears, click **OK**.
13. **Close** the Import window to return to the Morningstar Direct window.
14. On the toolbar, click **Refresh**. The imported funds and their data appear in the grid.



The Composition data point is the last custom time series data point available in the Custom Database is the Composition data point. This data point can be used to input a set of custom weightings among asset classes for use with the Pie Chart component in Presentation Studio templates.

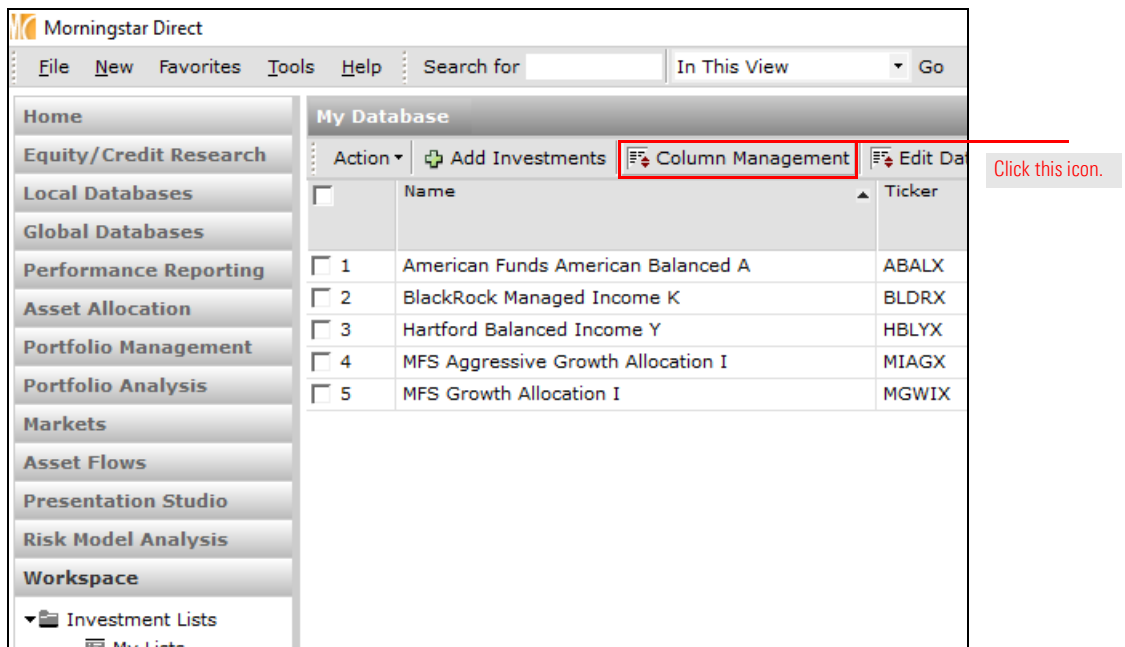
Exercise 7: Add a custom Composition data point

Despite being a historical series data point, no import function exists for Composition data, and values need to be inputted manually. This exercise shows users how to enter the historical monthly asset allocation breakdown for the American Funds American Balanced A fund. The process involves the following two steps:

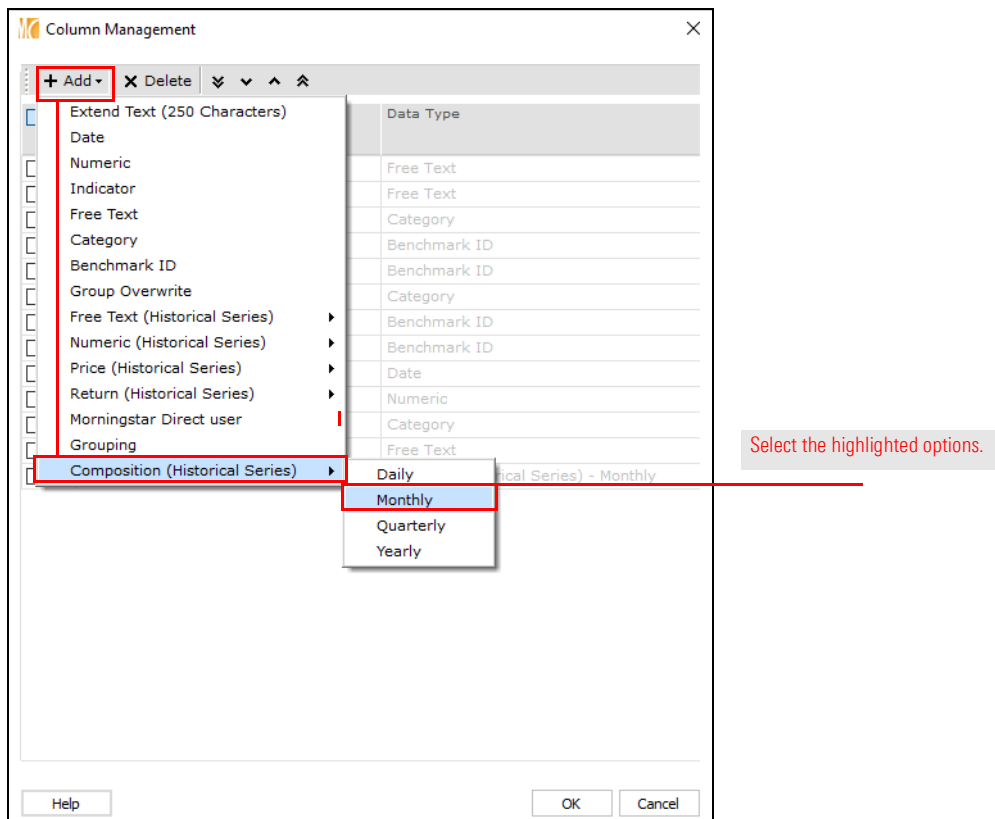
1. Assign a date for the composition breakdown.
2. Name the asset classes for the composition, and assign a weight to each.

This exercise shows users how to create a historical Composition data point; populating the data point follows in the next exercise. Do the following:

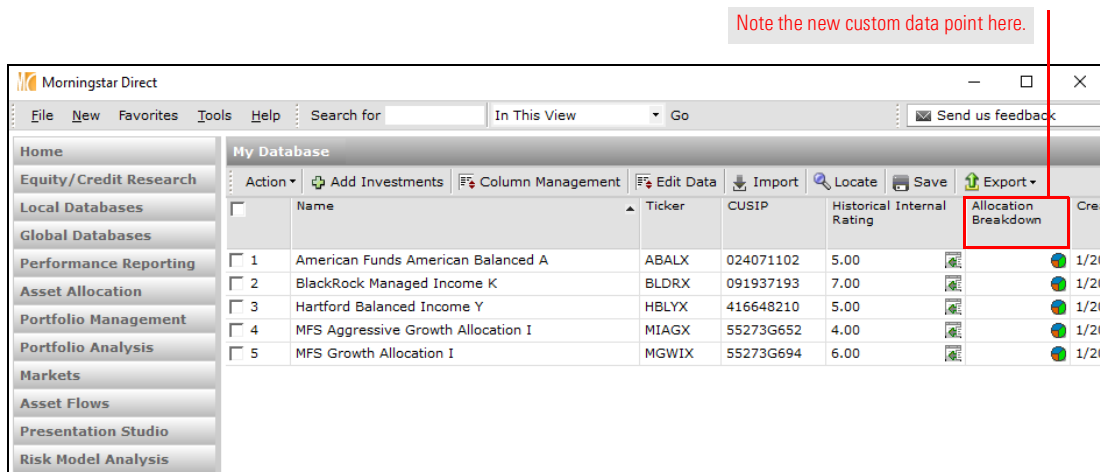
1. The **My Database** page within the Workspace module should be selected. From the toolbar, click **Column Management**. The Column Management dialog box opens.



- Click **Add > Composition (Historical Series) > Monthly**.



- Name this data point **Allocation Breakdown**.
- Click **OK**. The data point has been added to the grid view.

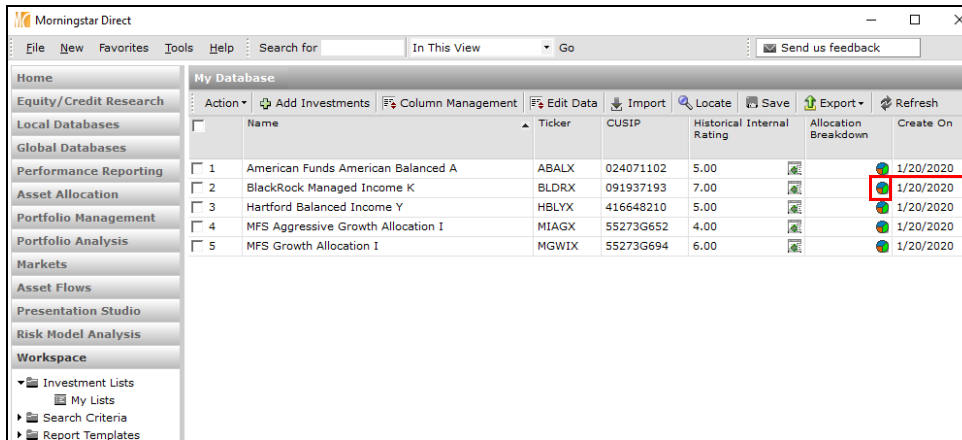


- Click **Save**. Values for this custom data point will be entered in the next exercise.

Now that the Composition time series data point has been added to the Custom Database, the data can be entered. To input the data, do the following:

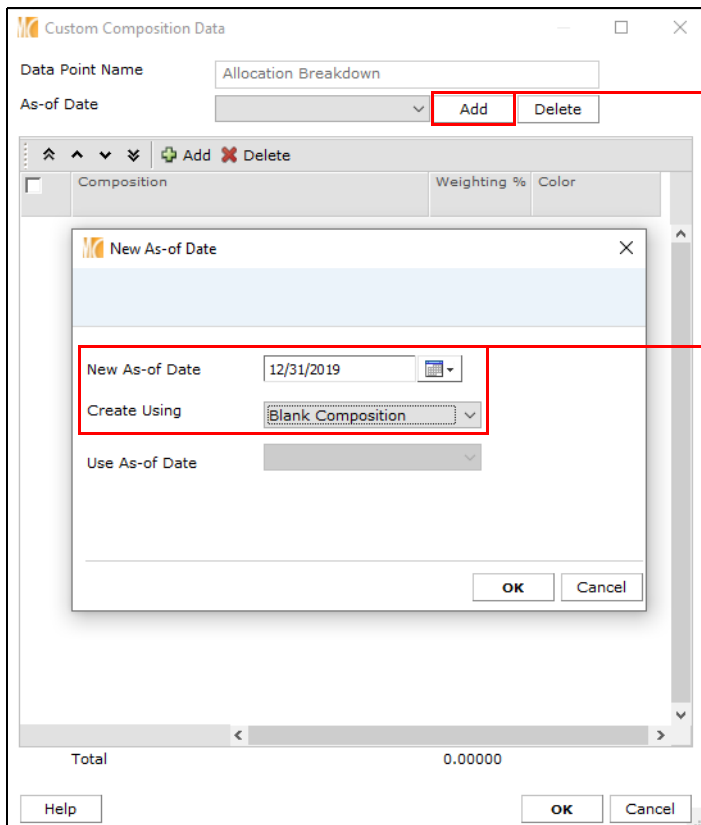
Exercise 8: Enter data for a Composition custom data point

1. For the BlackRock Managed Income K fund **double-click** the **pie chart icon** in the Allocation Breakdown column. The Custom Composition Data window opens.



Double-click this icon.

2. The first step is to enter a date for the composition data. To the right of the As-of-Date field, click **Add**. The New As-of-Date dialog box opens.
3. In the **New-As-of-Date** field, select **12/31/2019**.
4. From the **Create Using** drop-down field, select **Blank Composition**.

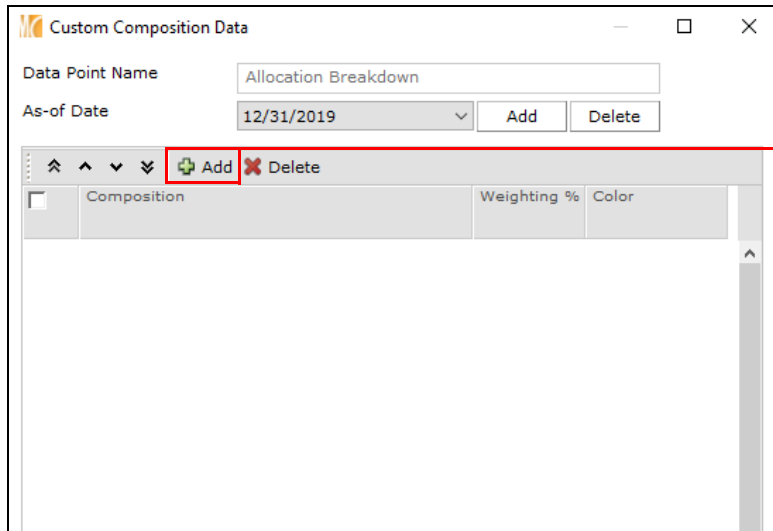


Click this button to add a date for an investment's custom composition.

Be sure the correct values are entered here.

5. Click **OK**.

- The next step is to define the asset classes for the composition date, both in terms of the names of the asset classes, and the weighting to be assigned to each one. In the Custom Composition Data dialog box, click the **Add** icon five times.

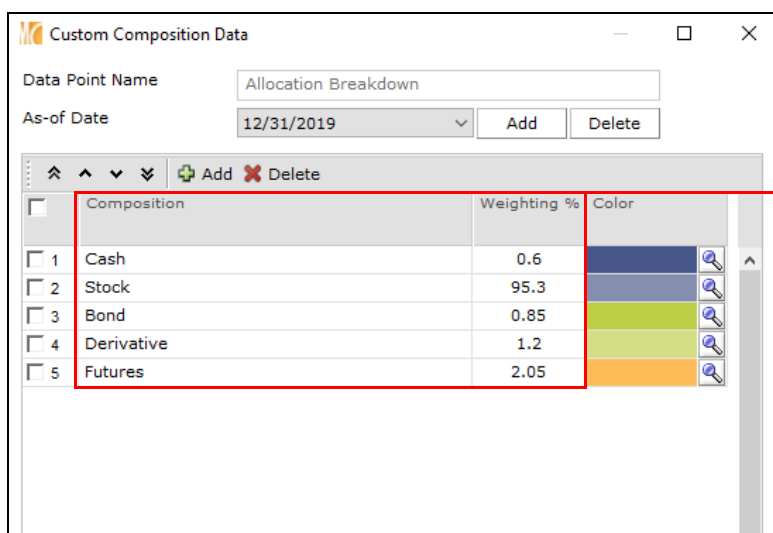


Click this icon to add the asset classes for the fund's composition.

- Use the following table to input the data for 12/31/2019:

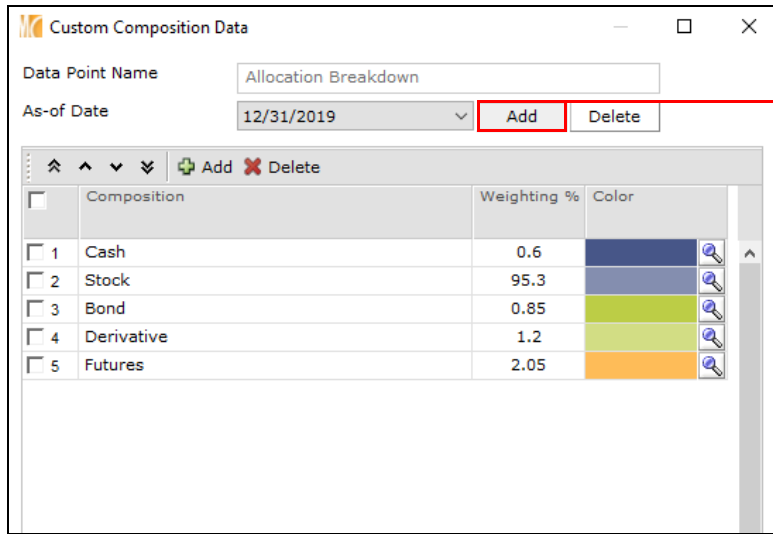
Asset Class	Weighting
Cash	0.60
Stock	95.30
Bond	0.85
Derivative	1.20
Futures	2.05

Note: Use the **magnifying glass** icon to the right of each asset class to assign a certain color to an asset class.



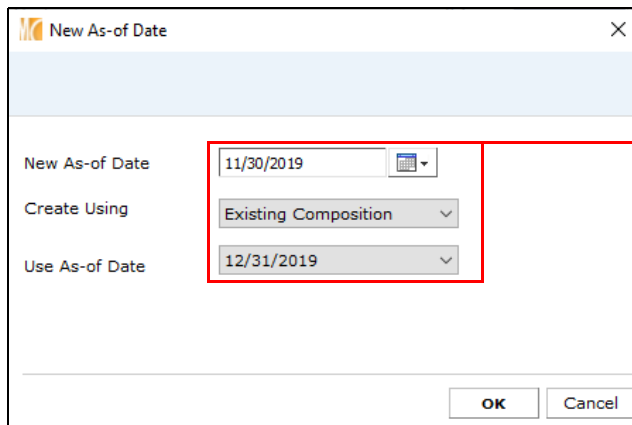
Note the names and values to enter here.

- To enter the composition for a previous month, next to the As-of-Date field, click **Add**. The New As-of-Date dialog box opens.



Click this button to add a date for an investment's custom composition.

- From the **New-As-of-Date** field, select **11/30/2019**.
- Be sure the **Create Using** drop-down field has **Existing Composition** selected.
- Be sure the **Use As-of-Date** drop-down field has **12/31/2019** selected.

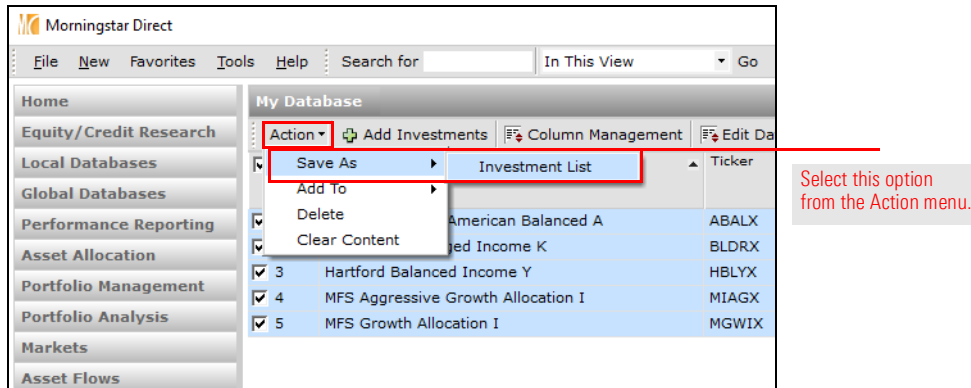


Note the value in each field here.

- Click **OK**.
- Use the following table to input the data for 11/30/2019:

Asset Class	Weighting
Cash	0.50
Stock	95.30
Bond	0.85
Derivative	1.30
Futures	2.05

14. Click **OK**. The date of the most recent composition data now appears in the grid view.
15. From the toolbar, click **Save**.
16. Check the **Select all** box to highlight all investments.
17. From the **Action** menu, select **Save As > Investment List**.



18. Name the list **Custom Database**. The list opens in the My List page.

Leveraging Custom Data in Other Modules

This section explains how to leverage custom data in the following modules:

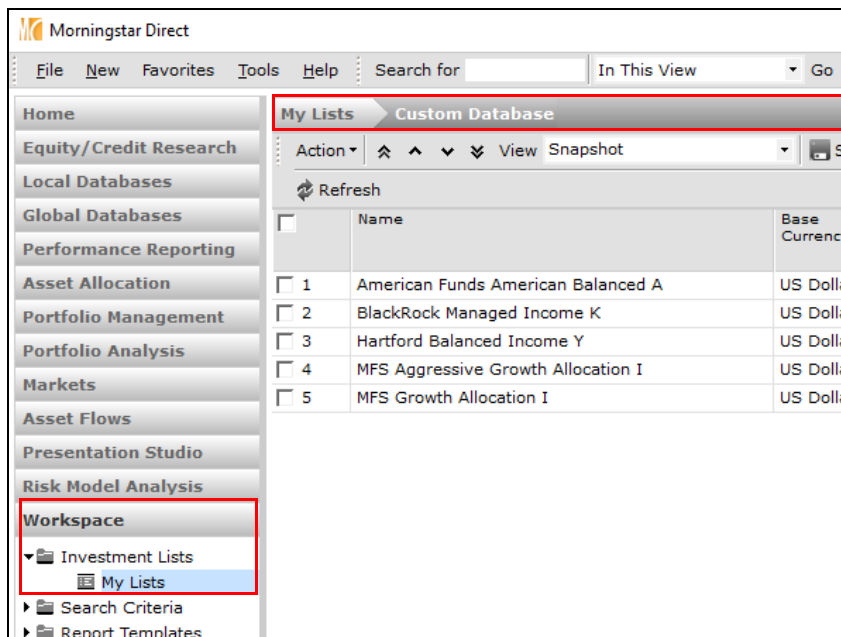
- ▶ Workspace ([Exercise 9 on page 30](#))
- ▶ Performance Reporting ([Exercise 10 on page 32](#))
- ▶ Morningstar Excel Add-In (begins with [Exercise 14 on page 42](#)), and
- ▶ Presentation Studio ([Exercise 15 on page 43](#)).

Overview

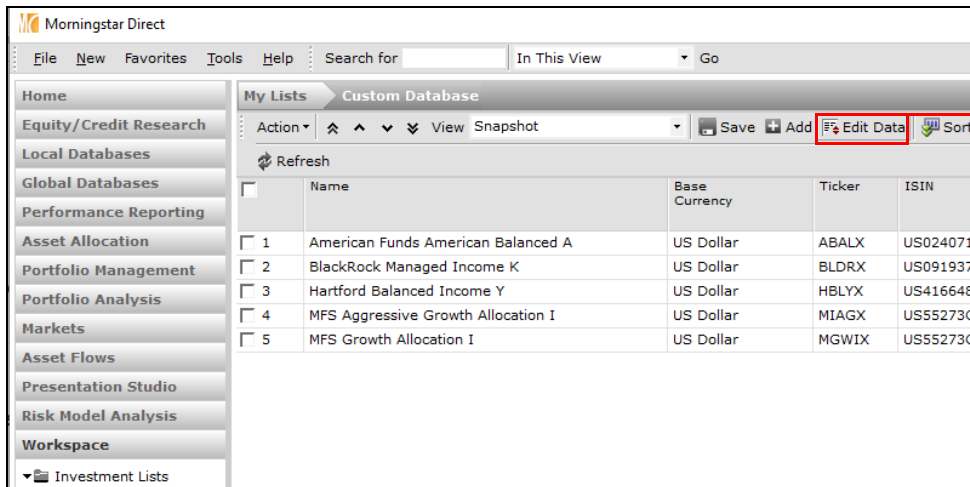
This exercise explains where to leverage custom data points in the Workspace module. All discrete data points can be displayed in the grid view in Workspace on both the Investment Lists and Search Criteria pages. To see this, do the following:

Exercise 9: View custom data in the Workspace module

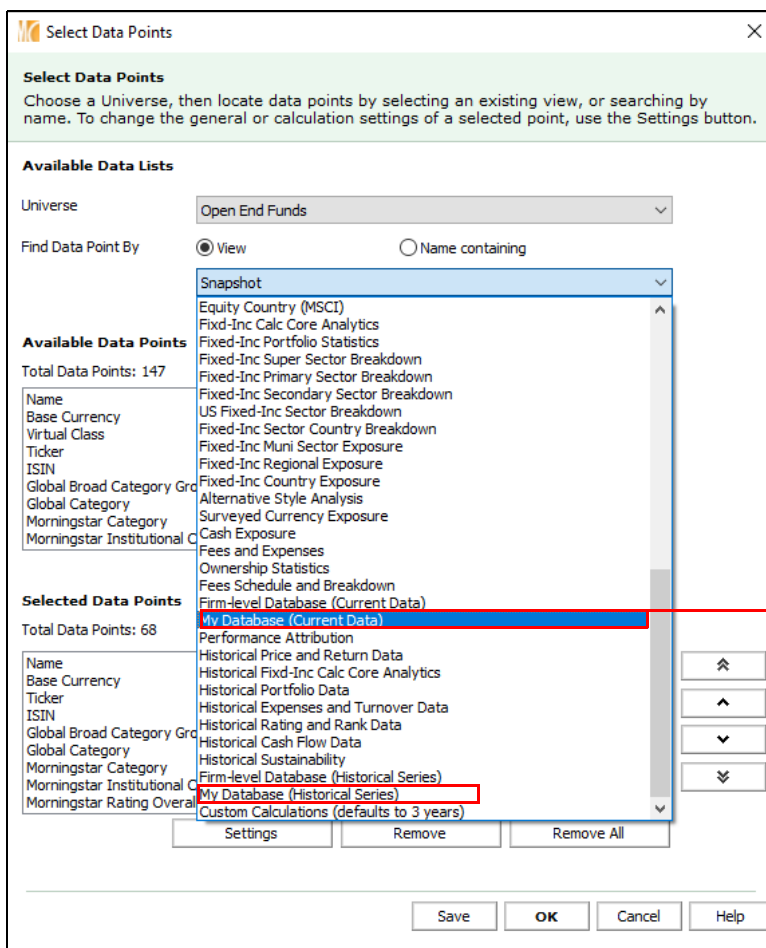
1. The Workspace module should be selected. If the Custom Database list is not already open, select **Investment Lists > My Lists**.
2. **Open** the **Custom Database** list.




3. Click **Edit Data**. The Select Data Points dialog box opens.



4. The **Universe** field should be **Open End Funds**, and the option button for **View** should be selected. From the **Find Data Points By** drop-down field, select **My Database (Current Data)**.



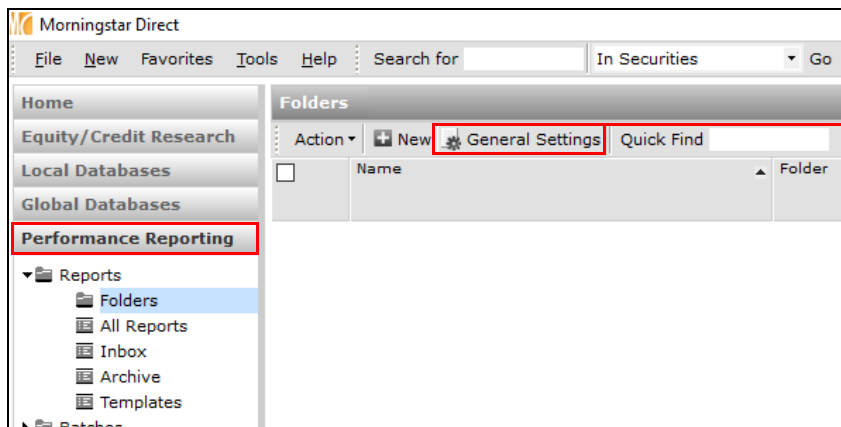
5. Click **Add All**.

6. From the **Find Data Points By** drop-down field, select **My Database (Historical Series)**.
7. Click **Add All**.
 Note: If desired, click **Save** to name the data set.
8. Click **OK** to close the dialog box.
9. **Scroll right** to see the custom data points.

In Performance Reporting, users can display custom data via the Supplementary dialog box. A couple of other areas also allow users to leverage custom data points in the Performance Reporting module. In this exercise, the General Settings for the module will be configured to use the Buy Date custom data point as a start date for calculating performance. Do the following:

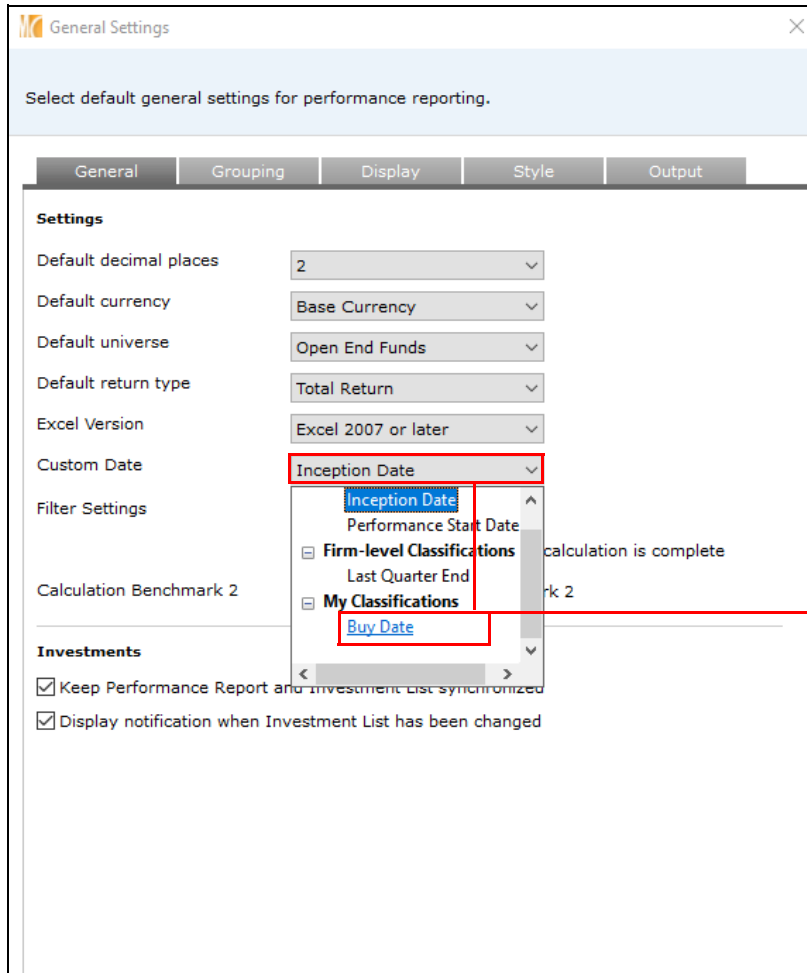
Exercise 10: Adjust the general settings for performance reporting to use custom data points

1. Select the **Performance Reporting** module.
2. Click **General Settings**. The General Settings window opens.



Use this icon to change settings for all future performance reports that are created.

- The General tab should be selected. From the **Custom Date** drop-down field, select **Buy Date**.

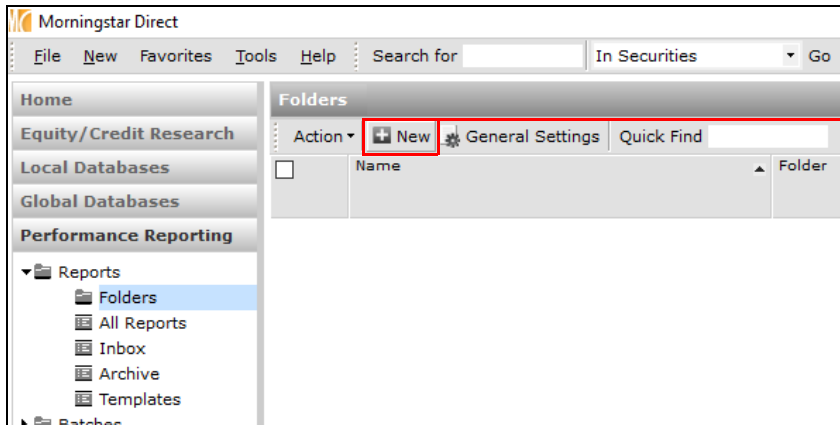


- Click **OK** to close the General Settings window.

To create a performance report using the holdings of the Custom Database list, do the following:

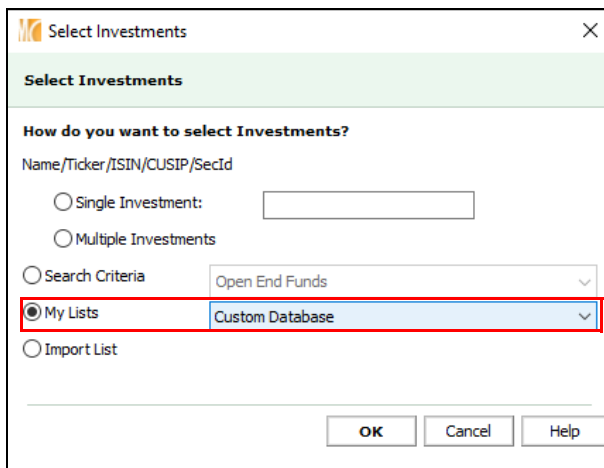
Exercise 11: Use a custom data point as a benchmark

1. The Performance Reporting module should be selected. Click **New**. The Select Investments dialog box opens.



Click this icon to create a performance report.

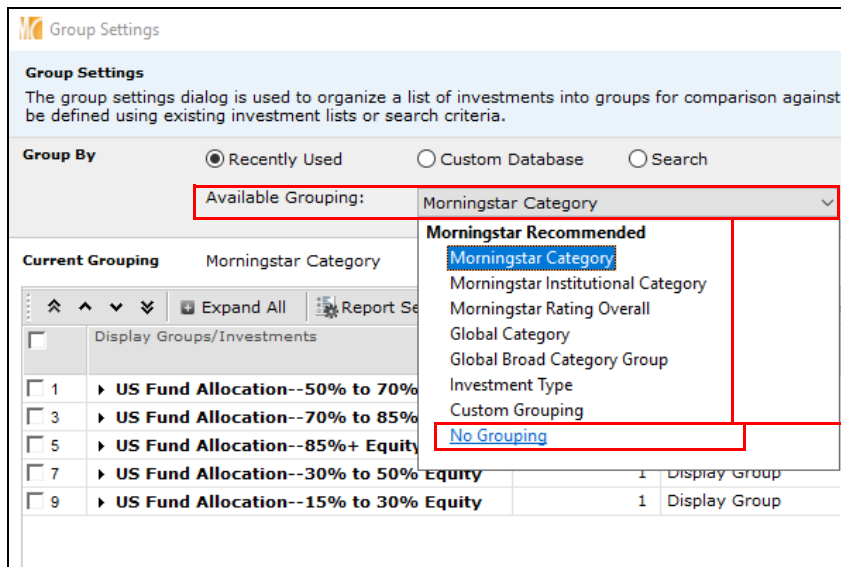
2. Using the **My Lists** drop-down field, select **Custom Database**.



Be sure this list is selected for the report.

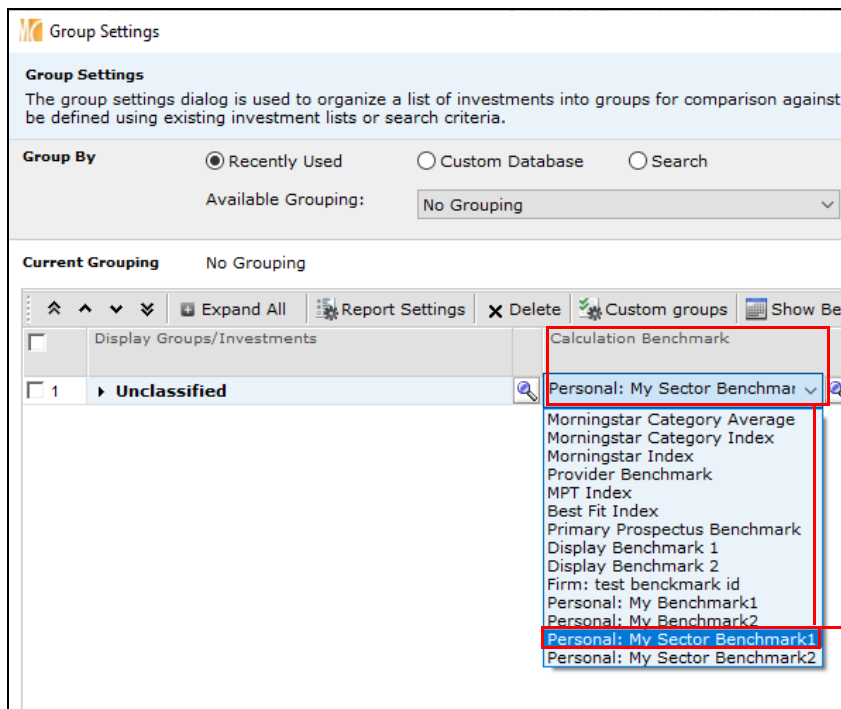
3. Click **OK**. The Group Settings window opens.

- From the **Available Grouping:** drop-down field, select **No Grouping** to set a single group of funds.



Select this option to remove groupings on the report.

- Click **Update**. When the confirmation message appears, click **OK**.
- In the first row, **scroll right** to set the **Calculation Benchmark** field to **Personal: My Sector Benchmark1**. This allows the report to calculate an Excess Return value for the investments compared to the benchmark assigned to each investment in the Custom Database.



Select this option from the Calculation Benchmark field.

- Click **OK** to close the Group Settings window. The Select Column dialog box opens.
- Select **User Defined**, then click **OK**. The Performance Column Setup window opens.

The Date custom discrete data point will be used to calculate performance for each investment (starting with the Buy Date). Each fund’s excess return compared to the benchmark assigned in the Custom Database also needs to be included.

Exercise 12: Use a custom date data point in a performance report

Do the following:

1. The Time Periods tab should be selected. From the **Start Date** drop-down field, select **Custom Date**.
2. Click **Add Columns**. The time period is added to the Selected Time Periods field.

Select this option for the Start Date.

Click this button to add the Custom Date to the report.

3. Select the **Data Points** tab. Return is the default statistic, and a Buy Date data point has been added. The Buy Date data point will display the start date for each investment in the report.
4. To see how the investments performed compared to their respective benchmarks over that time period, **scroll down** in the **Data Points** field and select **Excess Return**.
5. Ensure the **Use Calculation Benchmark 1** check box is selected and click **Add**.

Performance Column Setup

Data Points
This tab is used to add, edit or remove calculation data points to time period(s) on the performance report.

Time Periods | **Data Points** | Ranks

Time Period: Custom Date - 12/31/2019

Data Points

- Efficiency Ratio (geo)
- Estimated Fund-level Net Flow (Daily)
- Estimated Fund-level Net Flow (Monthly)
- Estimated Net Cash Flow - Share Class
- Excess Return**
- Excess Return (geo)
- First Date
- First Value

Use Calculation Benchmark 1
 Use Calculation Benchmark 2

Add

Selected Data Points

- Buy Date
- Return
- Excess Return

Manage Columns | Settings | Remove

Apply add/remove to all time periods

Help | **OK** | Cancel

Be sure to select this tab.

Select this data point, then click Add.

6. Click **OK** to close the Performance Column Setup window. The Supplementary Columns window opens.

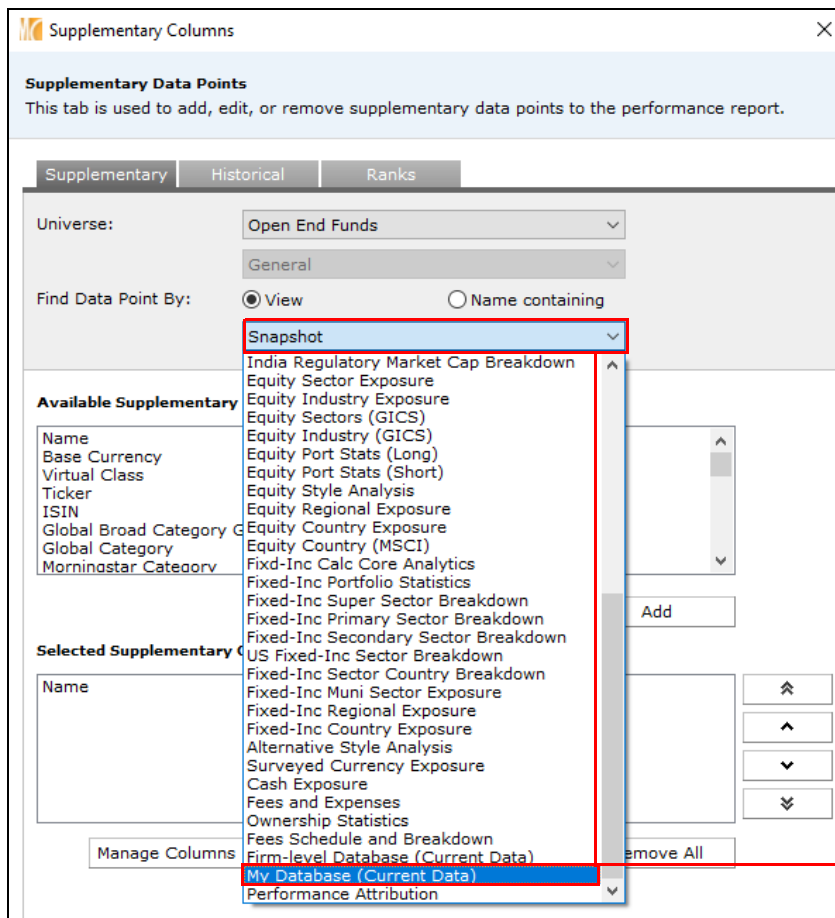
The next step is to add both the custom discrete and historical data points to the report. The Historical tab in the Supplementary Data Points window allows users to retrieve the custom historical series data points created in the Custom Database. As a reminder, this concerns the following historical series data points:

- ▶ Free Text
- ▶ Numeric
- ▶ Price, and
- ▶ Return.

Exercise 13: Add the discrete and historical custom data points to the performance report

To add the discrete and historical data points, do the following:

1. The Supplementary tab should be selected. From the **Find Data Point By** drop-down field, **scroll down** to select **My Database (Current Data)**.



Select this option from this drop-down field.

2. **Double-click** each of the following data points:

- ▶ My Sector Benchmark1
- ▶ Buy Date
- ▶ Internal Rating
- ▶ Classification, and
- ▶ Analyst Name.

Supplementary Columns

Supplementary Data Points
This tab is used to add, edit, or remove supplementary data points to the performance report.

Supplementary | Historical | Ranks

Universe: Open End Funds
General

Find Data Point By: View Name containing
My Database (Current Data)

Available Supplementary Columns

- My Grade
- My Sector Benchmark1
- My Sector Benchmark2
- Buy Date
- Internal Rating
- Classification
- Analyst Name

Add

Selected Supplementary Columns

Name	
My Sector Benchmark1	▲
Buy Date	▲
Internal Rating	▼
Classification	▼
Analyst Name	▼

Manage Columns Settings Remove Remove All

All of these discrete custom data points should be added to the report.

3. To add the historical internal rating data point created in the Custom Database, click the **Historical** tab.

- 4. From the **Find Data Point By** drop-down field, **scroll down** to select **My Database (Historical Series)**.

The screenshot shows the 'Supplementary Columns' dialog box with the 'Historical' tab selected. The 'Universe' is set to 'Open End Funds' and 'General'. Under 'Find Data Point By', the 'View' radio button is selected. The dropdown menu is open, showing a list of options. 'All Standard Data Points' is highlighted in blue at the top of the list, and 'My Database (Historical Series)' is highlighted in blue at the bottom. A red box highlights the entire dropdown menu. A red line points from the text 'Select this option from the drop-down field.' to the 'My Database (Historical Series)' option.

Select this option from the drop-down field.

5. Select the **Historical Internal Rating**.
6. Set the **Start Date** field to **1 year ago**.
7. Set the **End Date** field to **Last Month End**.
8. Click **Add**.

Supplementary Columns

Select historical data points to add to the performance report.
Select data point and specify desired time range to add historical data to report.

Supplementary | Historical | Ranks

Universe: Open End Funds
General

Find Data Point By: View Name containing
Go

Available Historical Columns
Historical Internal Rating

Number of columns: 12 Add

Historical Date Range

Start Date	1 year ago	01/01/2019
End Date	Last Month End	12/31/2019

Selected Historical Columns
Historical Internal Rating (1 year ago - Last Month End)

Manage Columns Settings Remove

Order time period latest first

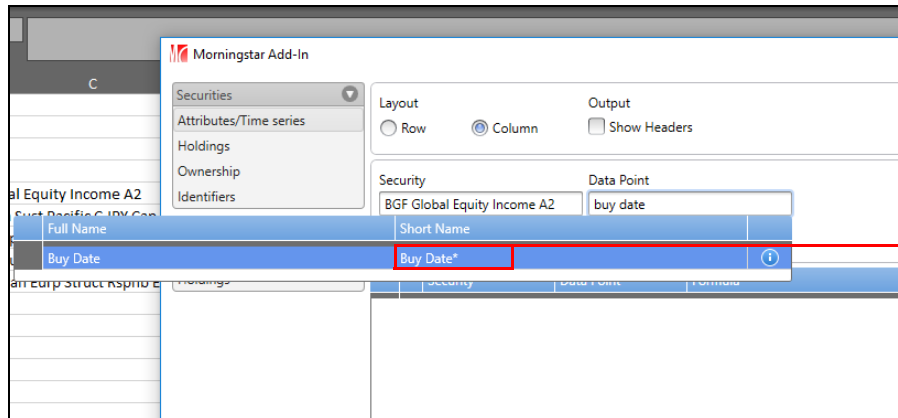
Help OK Cancel

Note the settings for these fields.

9. Click **OK** to close the Supplementary Columns window.
10. Click **Calculate** to view the report. When prompted, save the report with the name **Custom Data Performance Report**.

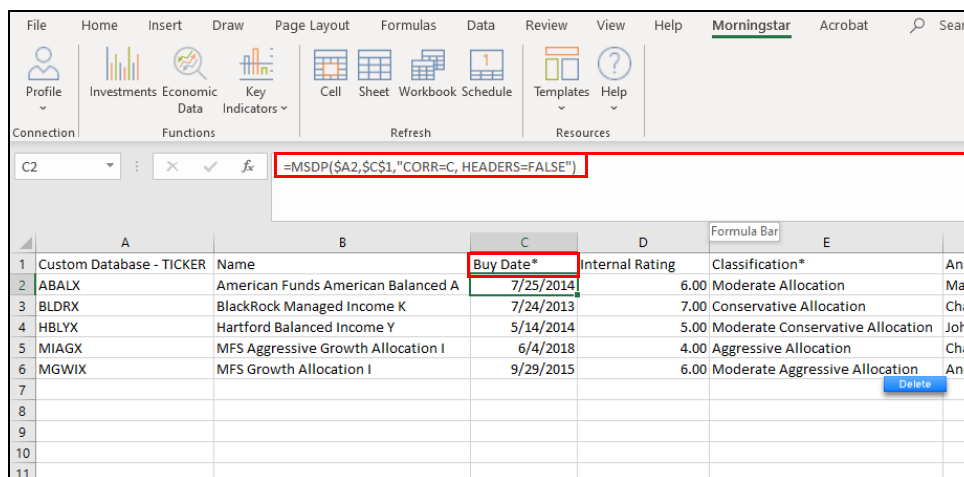
Custom Data can also be used in the [Morningstar Excel Add-In](#). Use the Investment button from the Morningstar toolbar to easily access and create formulas using the custom data points. When searching for data points in the Data Point field, custom data points are marked with an asterisk after the name.

Exercise 14: Retrieve custom data using the Morningstar Excel Add-In



Note the asterisk denoting a custom data point.

Use the MSDP formula to retrieve discrete custom data points:



When using cell reference for a custom data point's name in a column header, be sure to include the asterisk at the end of the data point's name.

The MSTs formula allows users to retrieve custom time series data points:

The screenshot shows a spreadsheet with the following data:

	A	B	C	D	E	F
1	Custom Database - TICKER	Name	Historical Internal Rating*			
2			Sep-19	Oct-19	Nov-19	Dec-19
3	ABALX	American Funds American Balanced A	8.00	7.00	6.00	5.00
4	BLDRX	BlackRock Managed Income K	5.00	5.00	6.00	6.00
5	HBLYX	Hartford Balanced Income Y	6.00	6.00	6.00	7.00
6	MIAGX	MFS Aggressive Growth Allocation I	5.00	5.00	5.00	5.00
7	MGWIX	MFS Growth Allocation I				
8						
9						
10						
11						

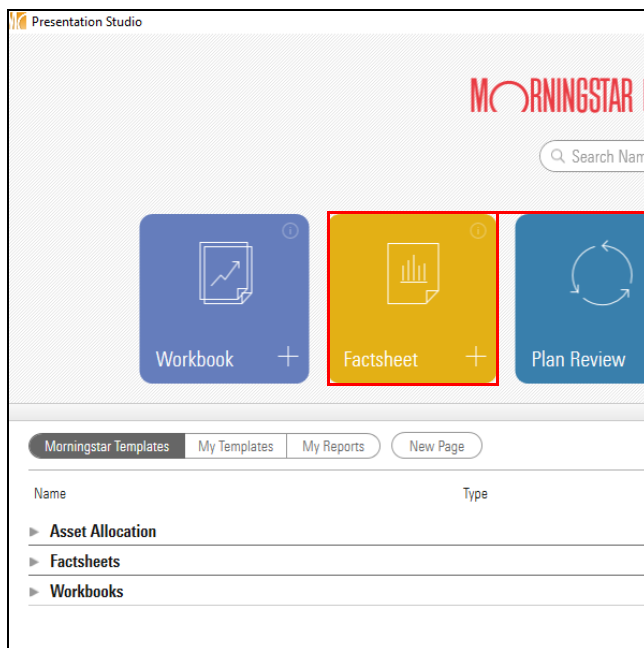
The formula in cell C3 is: `=MSTs($A3,$C$1,"2/1/2017","1/31/2020","CORR=R, DATES=FALSE, ASCENDING=TRUE, FREQ=M, DAYS=T, FILL=B, HEADERS=FALSE")`

For time series data points, remember to change the CORR value to R in order to see values for the same investment in a row, rather than columns.

Custom data can easily be integrated in [Presentation Studio factsheet](#) and workbook templates. This exercise shows users how to integrate both discrete and historical data points in various components. Do the following:

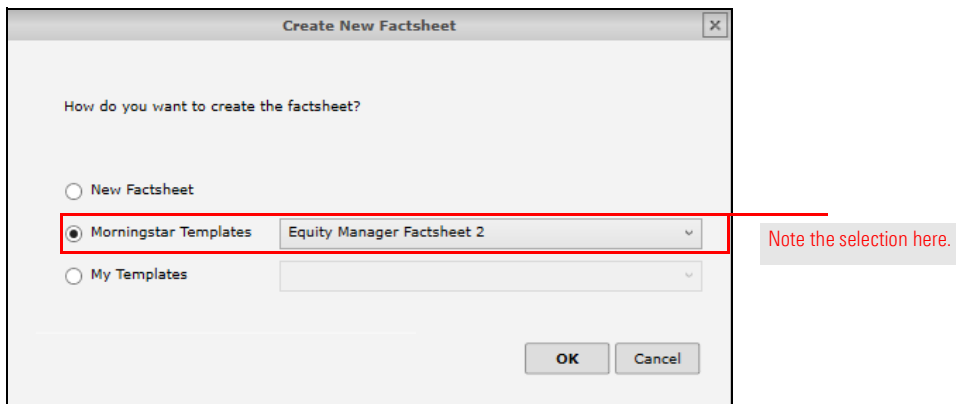
Exercise 15: Use custom data in Presentation Studio

1. Select the **Presentation Studio** module.
2. Click the **Factsheet tile**. The Create New Factsheet dialog box opens.

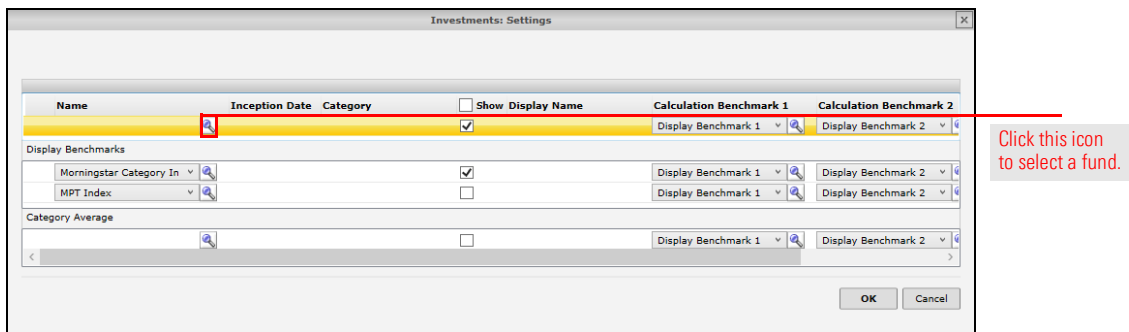


Click this tile to create template for a single investment.

3. Select **Morningstar Templates > Equity Manager Factsheet 2**.



4. Click **OK**. The Investments: Settings window opens.
5. Click the **magnifying glass icon** to the right of the Name field. The Find Investment dialog box opens.



6. Select option button for **My Lists**, then select **Custom Database** from the drop-down field.
7. Click **Go**.
8. Select **BlackRock Managed Income K**, then click **OK**. The Investment: Settings window is seen again.

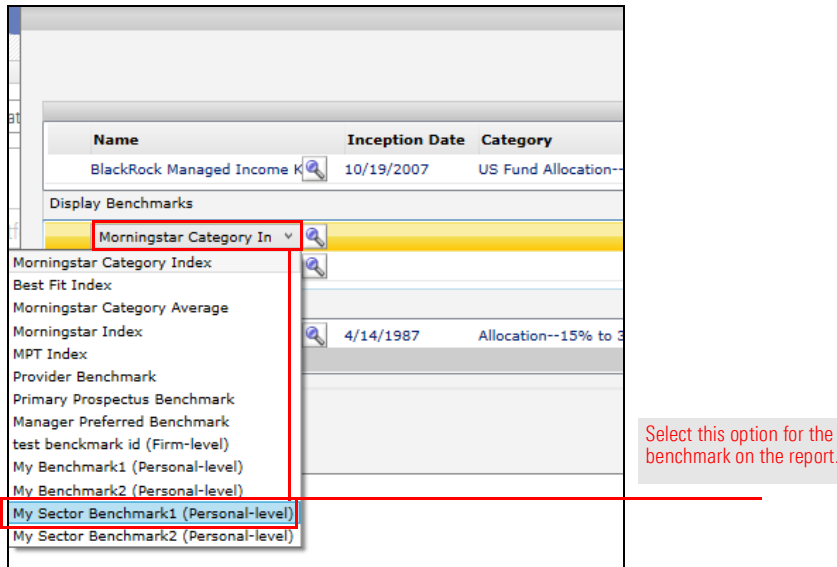
The screenshot shows the 'Find Investment' dialog box with the following elements:

- Within:** Radio buttons for 'Universes', 'My Lists' (selected), and 'My Searches'. A red box highlights the 'My Lists' button.
- Find By:** A dropdown menu set to 'Name'. Radio buttons for 'Begins with' (selected) and 'Contains'. A checked checkbox for 'Include Only Surviving Investments'. A red box highlights the 'Custom Database' option in the dropdown.
- Go:** A button to execute the search.
- Available Records:** A list of investment records. The record 'BlackRock Managed Income K (USD,XNAS,BLDRX,Port+Perf,RepPerf)' is highlighted in blue. A red box highlights this record.
- Buttons:** 'Help', 'OK' (highlighted with a red box), and 'Cancel'.

Two callout boxes provide instructions:

- 'Note the selected options here.' points to the 'My Lists' radio button and the 'Custom Database' dropdown.
- 'Select this fund, then click OK.' points to the highlighted 'BlackRock Managed Income K' record.

- From the drop-down field in the first row under the Display Benchmarks section, select **My Sector Benchmark1 (Personal-level)**.

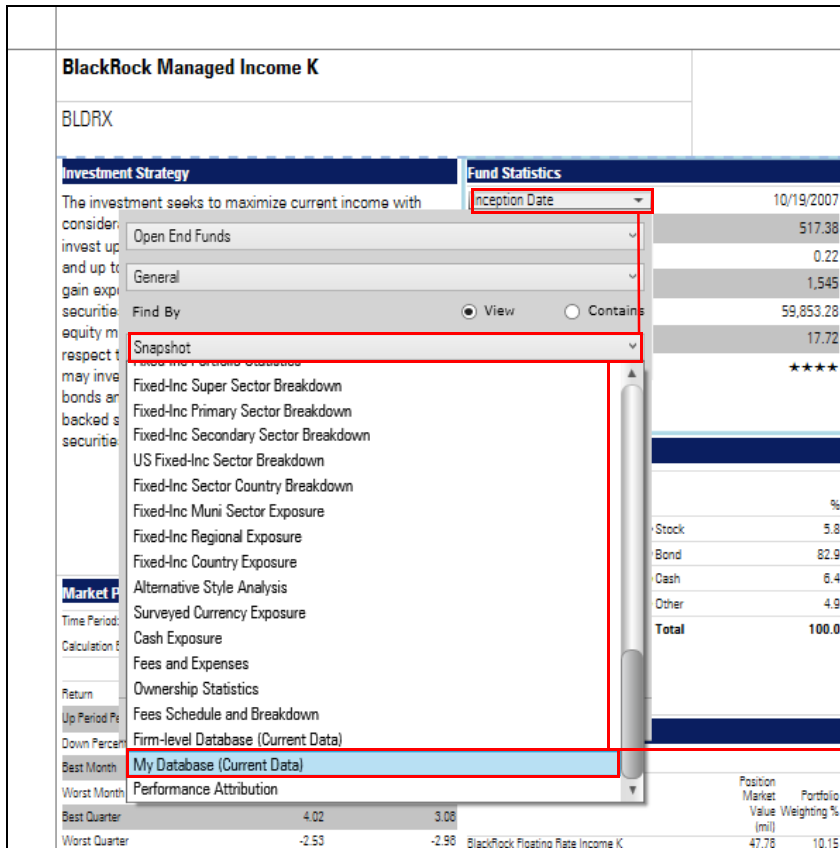


- Click **OK**. The report loads on screen. Note the use of the benchmark selected in several of the components.

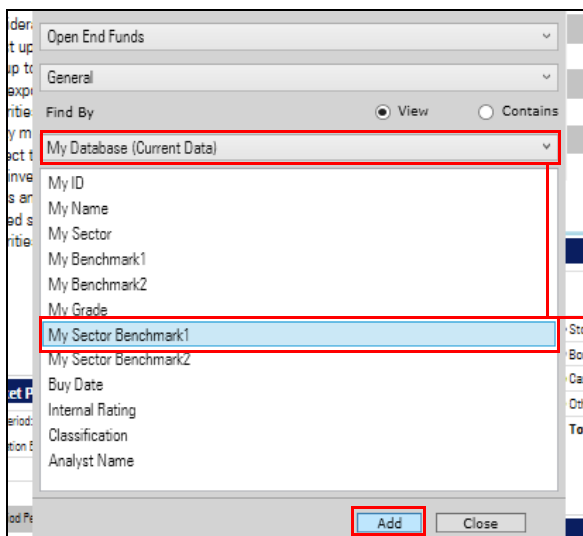
In this exercise, some components will be modified to integrate custom data. Custom discrete data points can be used in the Snapshot tables. The Fund Statistics table on this template uses the Operations - Single Investment table. Do the following:

Exercise 16: Include discrete custom data points on a template

1. Click the **Fund Statistics** table on the page to select it. The row labels activate as drop-down fields.
2. Change the **Inception Date** row by first pointing to **My Database (Current Data)**, then select **My Sector Benchmark1** and click **Add**.



Select this data set...



...then select this data point, and click Add.

3. Repeat steps 1 to 3 with the next few rows in the table to add these custom discrete data points:

- ▶ **Buy Date**
- ▶ **Internal Rating**
- ▶ **Classification** and
- ▶ **Analyst Name.**

Fund Statistics	
My Sector Benchmark1	BBgBarc US Agg Bond TR USD
Buy Date	7/24/2013
Internal Rating	7.00
Classification	Conservative Allocation
Analyst Name	Charles MacDonald
P/E Ratio	17.72
Morningstar Rating Overall	★★★★

Note the inclusion of the custom data points here.

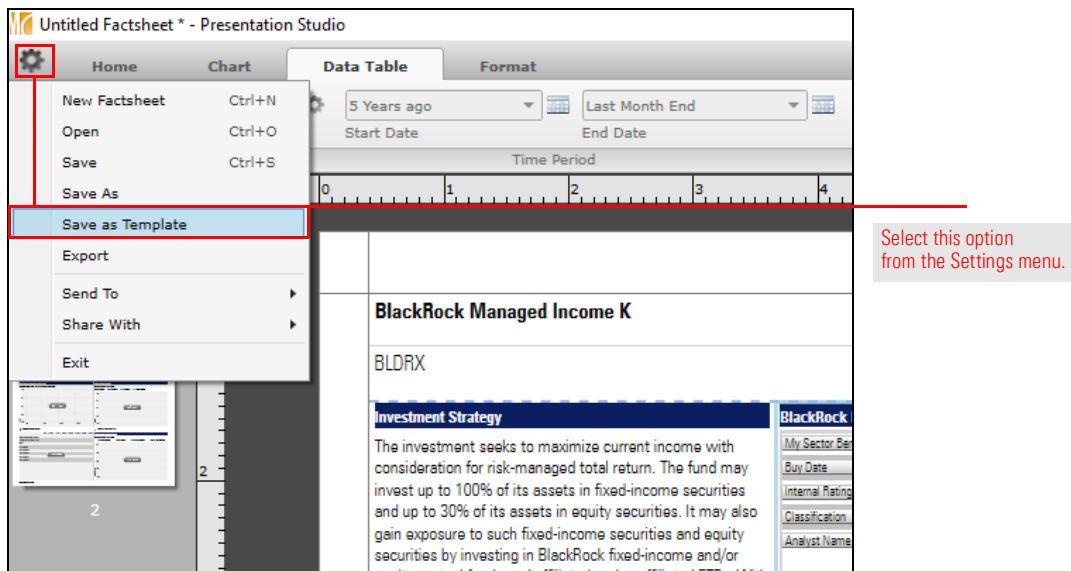
4. **Right-click** on each remaining row and select **Delete Row** to remove them.

Note: Be careful not to select the Delete option, as this will remove the entire table.

BlackRock Managed Income K - Operations	
My Sector Benchmark1	BBgBarc US Agg Bond TR USD
Buy Date	7/24/2013
Internal Rating	7.00
Classification	Conservative Allocation
Analyst Name	Charles MacDonald
Deferred Load	

Be sure to select this option.

- From the **Setting** icon in the upper-left corner, select **Save as Template**.



- Name the template **Custom Data Factsheet**, then click **Save**.
- When the confirmation message opens, click **OK**.

Next, the Asset Exposure pie (or donut) chart will be changed, to see how to integrate the custom composition entered in [Exercise 8 on page 26](#). To integrate the custom composition in a pie chart, do the following:

Exercise 17: Use a composition custom data point in a template

1. Click the **Asset Allocation** cell to select it. In the bottom-left corner of the window, the Chart Settings menu becomes available.
2. Click **Chart Settings**. The Chart Settings window opens.

BlackRock Managed Income K
BLDRX

Investment Strategy
The investment seeks to maximize current income with consideration for risk-managed total return. The fund may invest up to 100% of its assets in fixed-income securities and up to 30% of its assets in equity securities. It may also gain exposure to such fixed-income securities and equity securities by investing in BlackRock fixed-income and/or equity mutual funds and affiliated and unaffiliated ETFs. With respect to the fund's fixed-income investments, the fund may invest in fixed-income securities such as corporate bonds and notes, commercial and residential mortgage-backed securities, asset-backed securities, municipal securities, etc.

BlackRock Managed Income K - Operations
My Sector Benchmark1: B5gBarc US Agg Bond TR USD
Buy Date: 7/24/2013
Internal Rating: 7.00
Classification: Conservative Allocation
Analyst Name: Charles MacDonald

Market Performance
Time Period: 2/1/2015 to 1/31/2020
Calculation Benchmark: B5gBarc US Agg Bond TR USD

	Inv	Bmic
Return	4.11	3.01
Up Period Percent	65.00	50.33
Down Percent Ratio	0.68	0.00
Best Month	2.37	2.59
Worst Month	-1.49	-2.37
Best Quarter	4.02	3.08
Worst Quarter	-2.53	-2.90
Up Capture Ratio	81.77	100.00
Down Capture Ratio	18.27	100.00
R2	15.72	100.00

Source: Morningstar Direct

Asset Allocation
Portfolio Date: 12/31/2019

	%
Stock	5.8
Bond	82.9
Cash	6.4
Other	4.9
Total	100.0

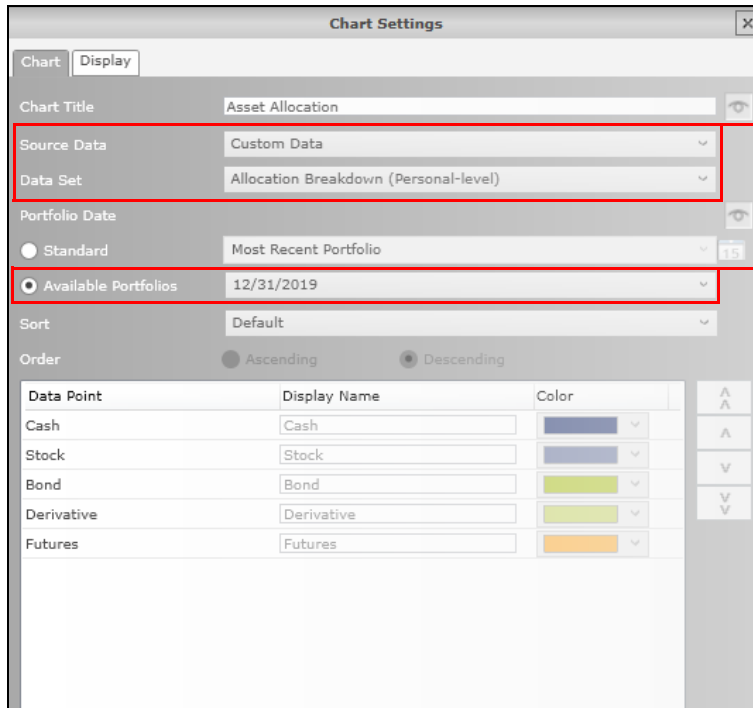
Top 10 Holdings
Portfolio Date: 12/31/2019

	Position	Market	Portfolio
	Value	Value	Weighting %
	(mil)	(mil)	
BlackRock Floating Rate Income K	47.76	10.15	9.61
iShares MBS ETF	45.95	9.61	9.61
BlackRock Allocation Target Shrs Ser A	28.03	5.95	5.95
BlackRock GNMA K	19.86	4.01	4.01
BlackRock Liquidity T-Fund Inst	9.09	1.93	1.93
iShares iBoxx \$ Invmt Grade Corp Bd ETF	8.00	1.76	1.76
iShares Core Dividend Growth ETF	5.00	1.13	1.13
WisdomTree International Equity ETF	2.00	0.47	0.47
CFO Funding 2017-II Ltd./CFO Funding 2017-II LLC S.15%	1.96	0.35	0.35
Allergan Funding SOS 0.45%	1.81	0.38	0.38

Snapshot | **Chart Settings** | [Icons]

Select this menu to change the chart.

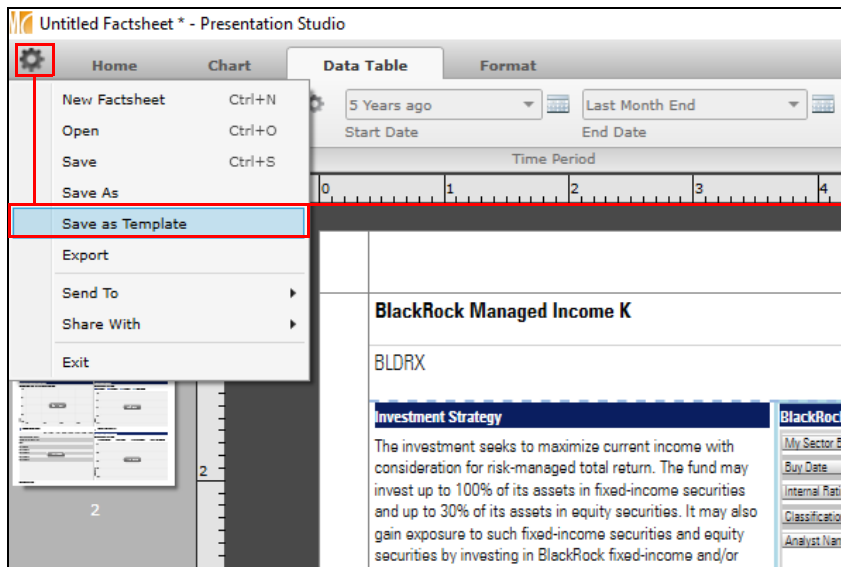
3. Change the **Source Data** drop-down field to **Custom Data**.
4. From the **Data Set** drop-down field, select **Asset Allocation Breakdown (Personal-level)**.
5. Select the option for **Available Portfolios**. The date 12/31/2019 should appear.



Note the selections for these two fields.

Be sure the correct portfolio date is selected here.

6. Click away to close the Chart Settings window. The custom asset allocation breakdown is now displayed in the report.
7. From the **Setting** icon in the upper-left corner, select **Save as Template**.



Select this option from the Settings menu.

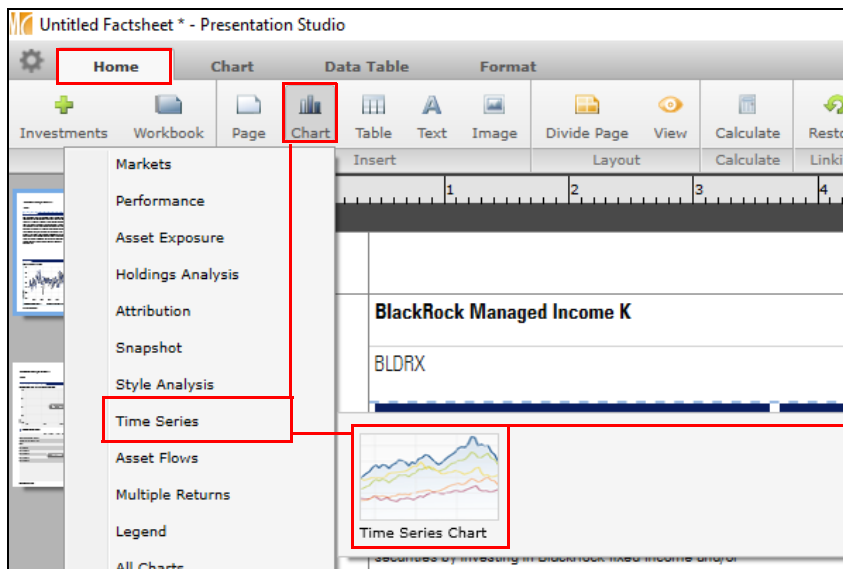
8. Select the **Custom Data Factsheet** template, then click **Save**.

9. When the overwrite warning opens, click **Yes**.
10. When the confirmation message opens, click **OK**.

As a final exercise in working with custom data in Presentation Studio, this exercise shows users how to use historical series data points using the Time Series components. The template in use has no time series components by default, so the Market Performance table in the bottom-left corner will be replaced with a Time Series chart to display the Historical Internal Rating data point. Do the following:

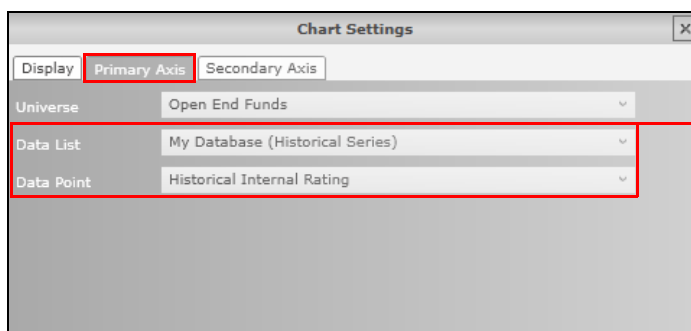
Exercise 18: Use custom historical time series data points

1. At the top of the screen, be sure the **Home** tab is selected.
2. Click **Chart > Time Series**, then **drag-and-drop** the **Time Series** chart into the cell occupied by the Market Performance table in the bottom-left corner of the first page.



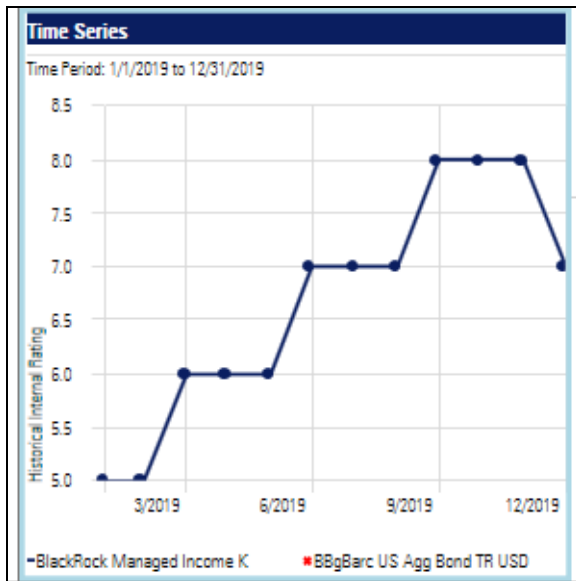
Drag-and-drop this chart to replace the Market Summary table.

3. In the bottom-left corner, click **Chart Settings**
4. Select the **Primary Axis** tab.
5. From the **Data List** drop-down field, select **My Database (Historical Series)**.
6. From the **Data Point** drop-down field, select **Historical Internal Rating**.



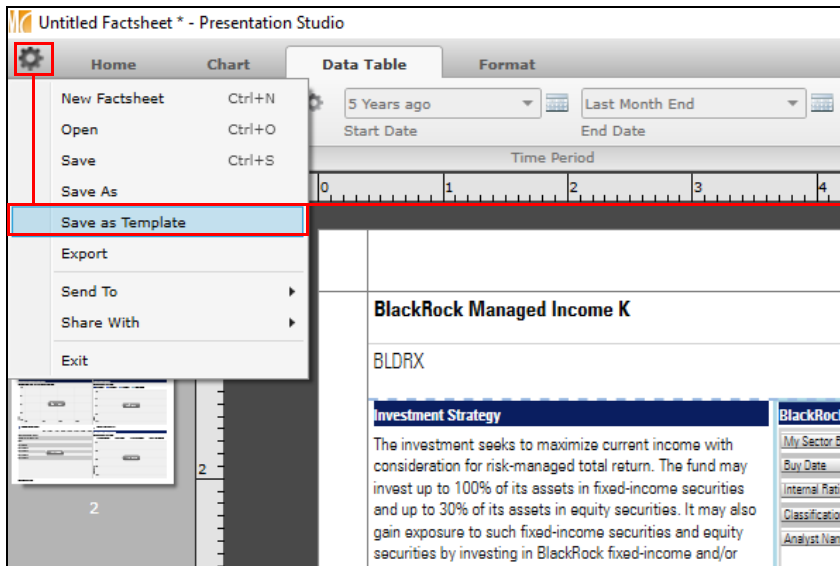
Note the selections from these two fields on the Primary Axis tab.

- Click away from the Chart Settings window to close it and view the changes.



Note the updated appearance of the chart.

- From the **Setting** icon in the upper-left corner, select **Save as Template**.



Select this option from the Settings menu.

- Select the **Custom Data Factsheet** template, then click **Save**.
- When the overwrite warning opens, click **Yes**.
- When the confirmation message opens, click **OK**.