Working with the Asset Allocation Module in Morningstar Direct℠

Overview

The Asset Allocation module in Morningstar Direct℠ allows users to determine how much of a portfolio to invest in cash, stocks, bonds, alternatives, and other asset classes. To keep users from having to repeat this process for every model portfolio or investment, the Asset Allocation module allows users to create a series of asset mixes to be reused in a variety of cases.

Additionally, the Asset Allocation module allows users to forecast potential outcomes for an asset mix, and model the risk associated with an asset class lineup. Finally, advisors can also use a Presentation Studio template embedded within the Asset Allocation module to create a meaningful report to analyze the asset class lineup.

This guide includes the following topics:

Understanding Basic Information about Asset Allocation in Morningstar Direct

Overview

This section explains some introductory concepts about asset allocation and the work that's done for this type of task in Morningstar Direct. The following sections are covered here:

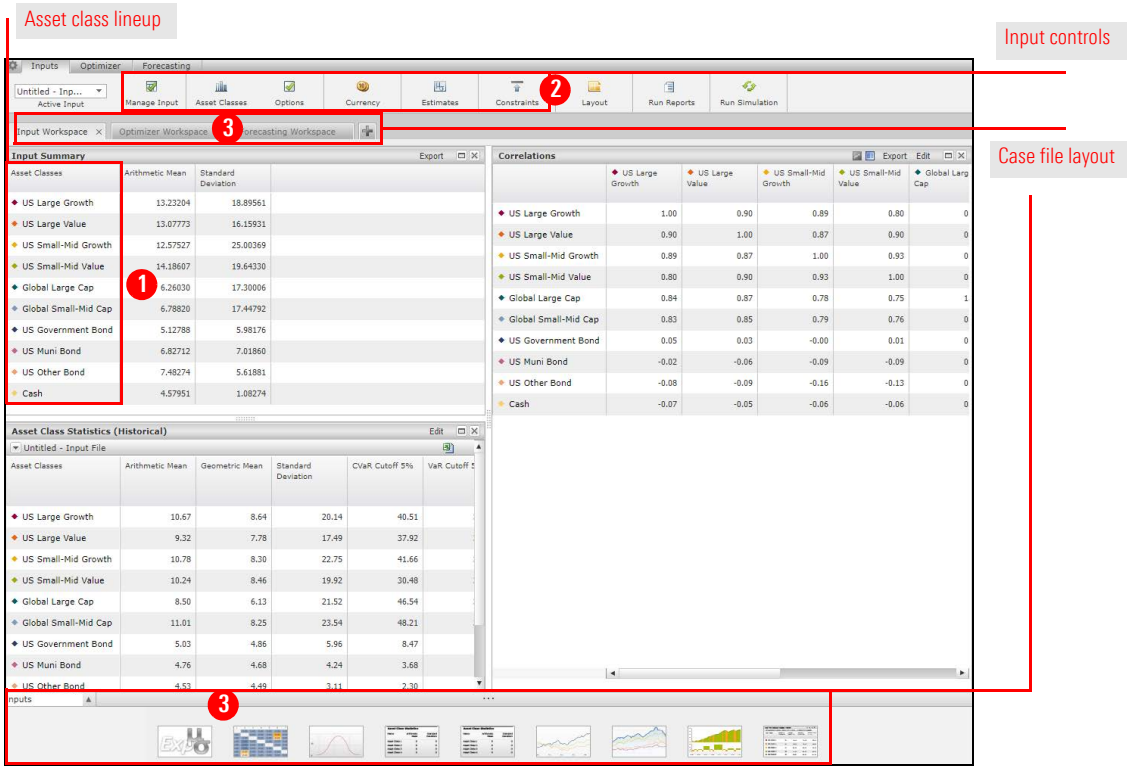
- What is the general workflow of using the Asset Allocation module? on page 5, and
- How is the work of asset allocation done? on page 6.

What is the general workflow of using the Asset Allocation module?

Using the Asset Allocation module includes the following general tasks:

1. Build a set of asset classes to be analyzed. This does not entail assigning a weight to these asset classes, but merely giving each asset class a name and associating it with a representative index. Also, users can elect to use a pre-built set of asset classes from Morningstar, rather than needing to construct one from scratch.
2. Create an Input file, which consists of the asset class set selected, capital market assumptions (of risk and return) for those asset classes, the distribution model and return methodology being used, and constraints assigned to the asset classes. Users can design their own set of inputs, or use one included in Morningstar Direct.
3. Design the Case file for the analysis of the asset allocation. The Case file consists of the actual asset mix(es) being used, the Efficient Frontier, Forecasting information, and a series of workspaces (tabs), which in turn are composed of charts and tables.

   ☞ Note: Users can also elect to generate a Presentation Studio report illustrating the asset allocation lineup designed in the Asset Allocation module.



How is the work of asset allocation done?

Asset Allocation traditionally relies on two facets: Log-normal distributions to build assumptions of asset class risk and return, and mean-variance optimization to identify efficient asset mixes providing the greatest expected return for a given amount of expected risk – the series of portfolios known as the efficient frontier.

When developing asset-class assumptions, Morningstar Direct users have access to three distribution models:

- traditional log-normal distribution
- an enhanced version of log-normal known as the Johnson model, and
- the historical-data-based bootstrap method.

Log-Normal distribution, which is traditionally used for modeling asset classes, underestimates the chance of extreme events and it is considered thin-tailed. The Johnson distribution model has the ability to capture those extreme events by accounting for skewness and kurtosis, and it is considered fat-tailed.

Users can also use bootstrap historical data, applying these distribution models, to create asset class assumptions. (For the sake of simplicity, this document focuses on the Log-Normal model.)

Once asset allocation assumptions are established, users can run optimization to build efficient frontiers with various return and risk measures. After identifying optimal asset mixes, users can forecast the future performance of those asset mixes using Wealth and Return Percentiles, Wealth and Return Histograms, Target Wealth and Returns, and Probability of Loss. Users can apply inflation adjustment, cash flows, and rebalancing to forecasting for a more specific prediction of future returns and risk.

Constructing a Set of Asset Classes

Overview

This section shows users how to create a set of asset classes to be analyzed. The following exercises are offered here:

- Customize an existing set of asset classes on page 7, and
- Create a custom set of asset classes on page 10.

Exercise 1: Customize an existing set of asset classes

The first step in using the Asset Allocation module is to select the asset classes to be used in an asset allocation lineup. Users can create a set of asset classes in one of the following ways:

- Use an existing asset class set and make whatever additions or deletions are needed, then save it with a unique name, or
- Manually add each asset class for an asset class set, and map it to a representative index or other benchmark.

  ☞ Note: When creating an asset class set from scratch, users can also use a saved investment list of indexes or ETFs from Morningstar Direct for this purpose.

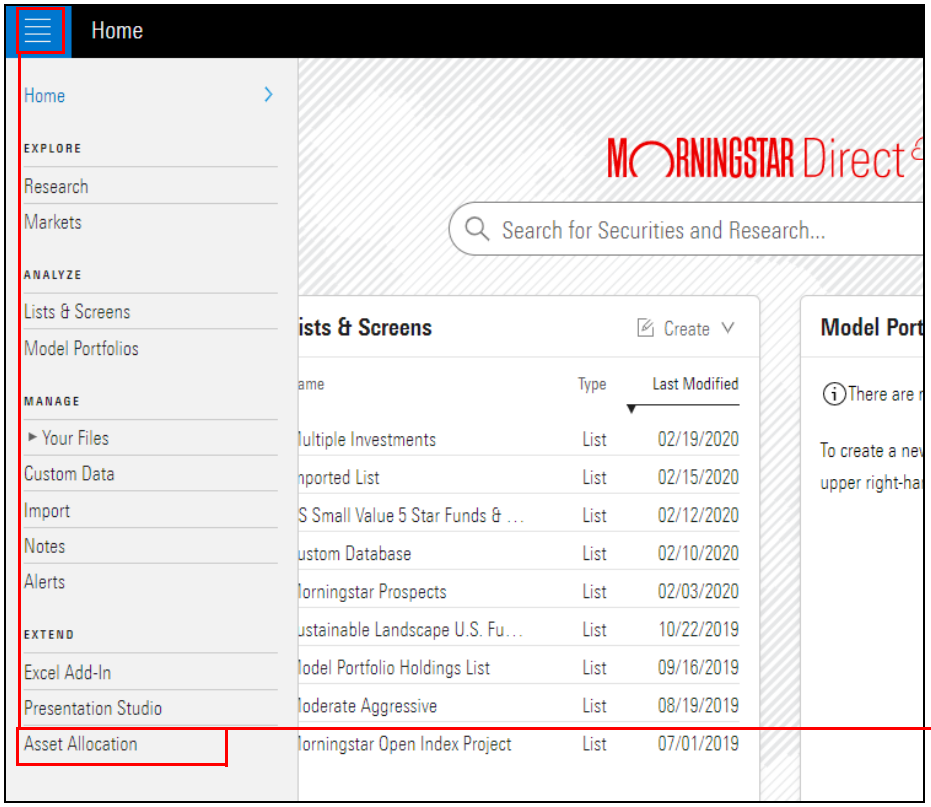
This exercise shows users how to modify an existing asset class set to create a new one. Although the Asset Allocation module is available in the desktop edition of Morningstar Direct, creating asset class sets is the only activity done here; the remaining asset allocation functionality is done in a browser window. The browser version of the Asset Allocation module also allows users to create asset class sets, so users are best to simply begin the work in the web-based edition of Morningstar Direct rather than in the desktop edition.

To create an asset class set from an existing asset class set, do the following:

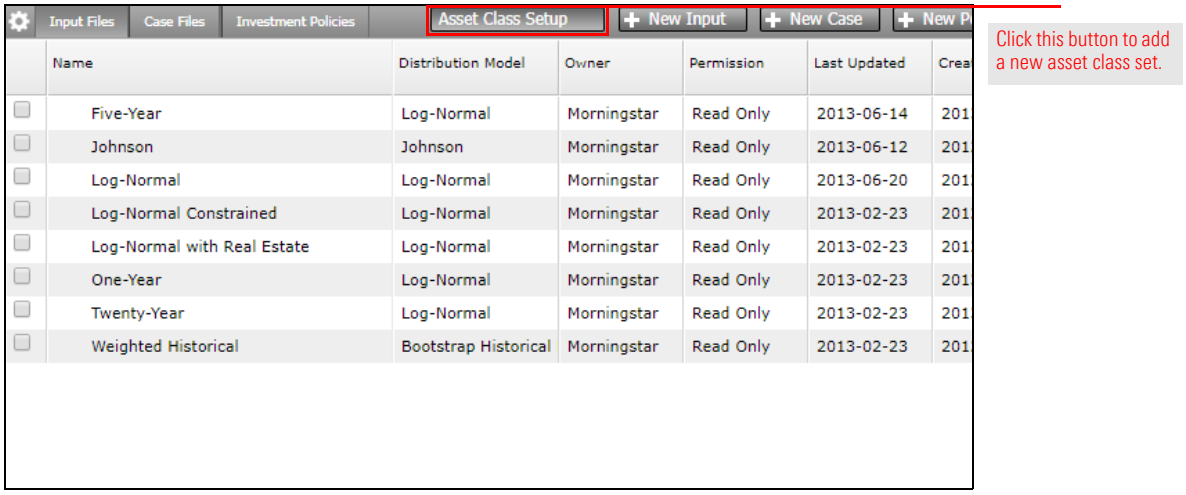
1. Open a browser window, and go to http://direct.morningstar.com.

   ☞ Note: When logging into the web-based version of Morningstar Direct, it's recommended to use Chrome in incognito mode. although Internet Explorer can also be used.

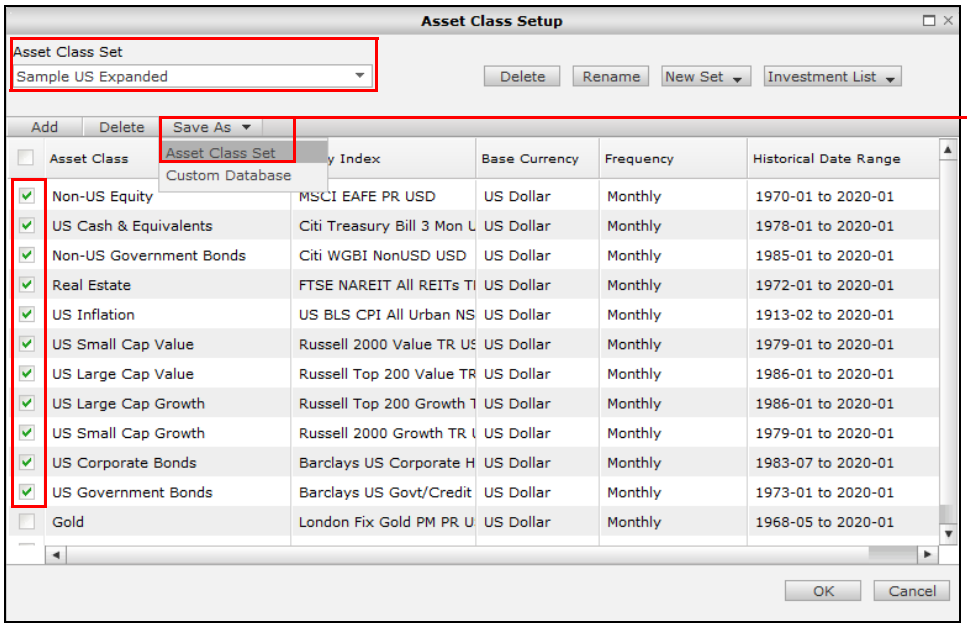
2. **Hover the cursor** over the **menu**, then select **Asset Allocation**. The module opens in a new tab.



3. On the toolbar above the grid view, click **Asset Class Setup**. The Asset Class Setup window opens.



4. From the **Asset Class Set** drop-down field, select **Sample US Expanded**.
5. Check the **Select All box** to the left of the Asset Class column header. All asset classes should be selected.
6. **Uncheck** the box for Gold, as this asset class will not be included in the asset class set.
7. Click **Save As** > **Asset Class Set**. The Asset Class Set Name dialog box opens.



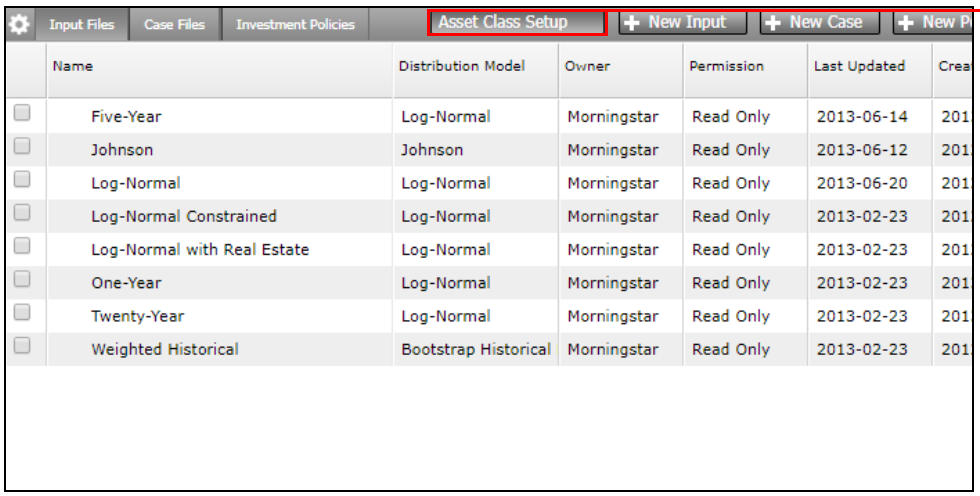
Be sure the correct asset classes are selected, then use the Save As menu to select Asset Class Set.

8. Name the asset class set **Custom US Expanded**, then click **OK**.
9. On the Asset Class Setup window, click **OK** to close it.

Exercise 2: Create a custom set of asset classes

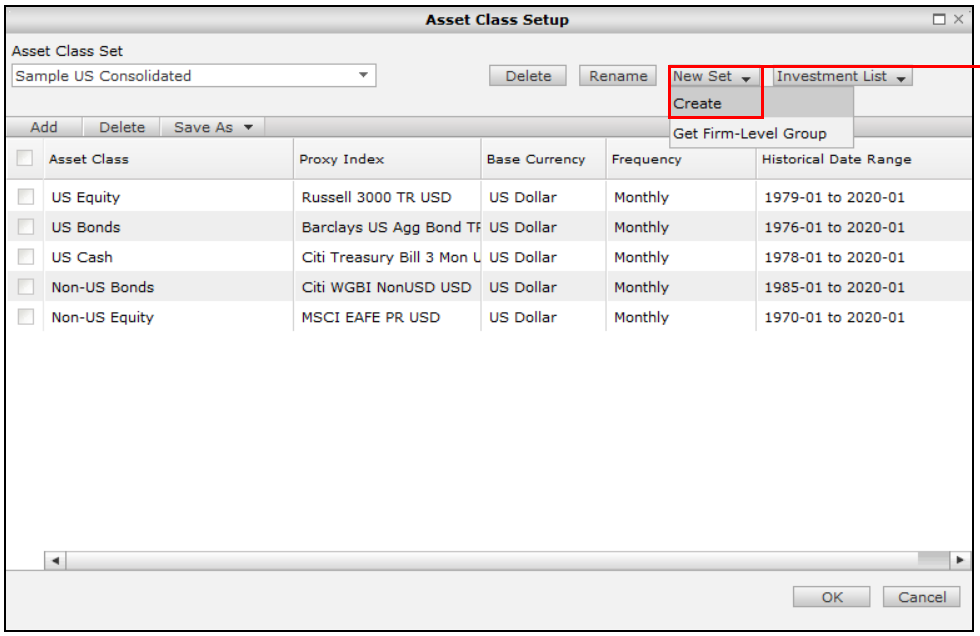
To create a unique set of asset classes from scratch, do the following:

1. Click the **Asset Class Setup** button on the toolbar above the spreadsheet grid. The Asset Class Setup window opens.



Name	Distribution Model	Owner	Permission	Last Updated
Five-Year	Log-Normal	Morningstar	Read Only	2013-06-14
Johnson	Johnson	Morningstar	Read Only	2013-06-12
Log-Normal	Log-Normal	Morningstar	Read Only	2013-06-20
Log-Normal Constrained	Log-Normal	Morningstar	Read Only	2013-02-23
Log-Normal with Real Estate	Log-Normal	Morningstar	Read Only	2013-02-23
One-Year	Log-Normal	Morningstar	Read Only	2013-02-23
Twenty-Year	Log-Normal	Morningstar	Read Only	2013-02-23
Weighted Historical	Bootstrap Historical	Morningstar	Read Only	2013-02-23

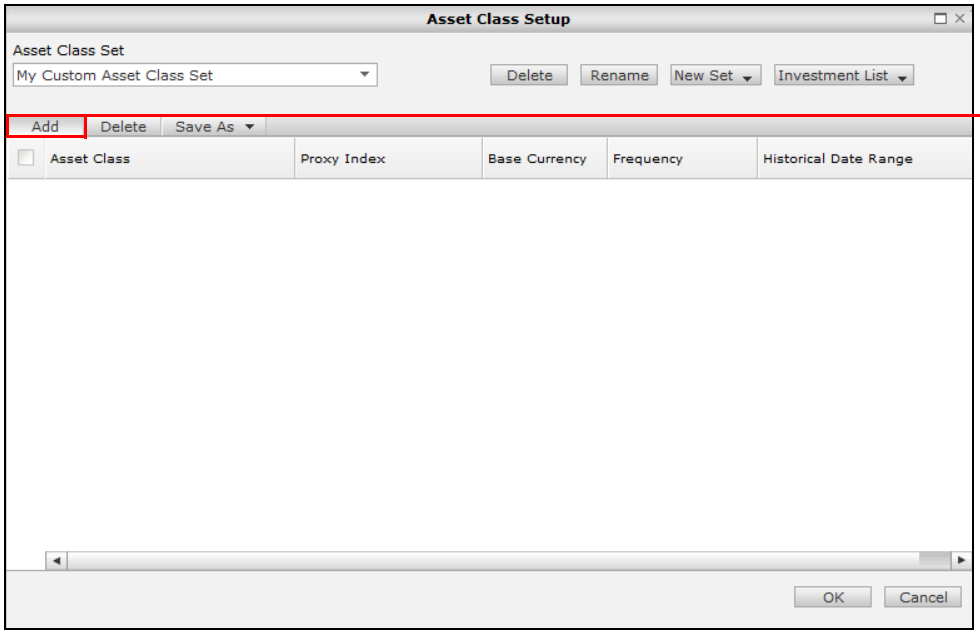
2. Click **New Set** > **Create**. The Asset Class Set Name dialog box opens.



Asset Class	Proxy Index	Base Currency	Frequency	Historical Date Range
US Equity	Russell 3000 TR USD	US Dollar	Monthly	1979-01 to 2020-01
US Bonds	Barclays US Agg Bond TF	US Dollar	Monthly	1976-01 to 2020-01
US Cash	Citi Treasury Bill 3 Mon U	US Dollar	Monthly	1978-01 to 2020-01
Non-US Bonds	Citi WGBI NonUSD USD	US Dollar	Monthly	1985-01 to 2020-01
Non-US Equity	MSCI EAFE PR USD	US Dollar	Monthly	1970-01 to 2020-01

3. Enter the name **My Custom Asset Class Set**, then click **OK**.

4. Click **Add**. The Add Asset Class dialog box opens.



5. For the **Asset Class Name** and **Proxy Index** fields, use the following table to populate the asset classes:

   ☞ Note: To select an index, click once on its **name**, then click **OK** to add the asset class.

Asset Class Name	Proxy Index
US Large Growth	Russell 1000 Growth TR USD
US Large Value	Russell 1000 Value TR USD
US Small-Mid Growth	Russell 2000 Growth TR USD
US Small-Mid Value	Russell 2000 Value TR USD
Global Large Cap	MSCI ACWI Ex USA Large NR USD
Global Small-Mid Cap	MSCI ACWI Ex USA Mid NR USD
US Government Bond	S&P US Treasury TIPS TR USD
US Muni Bond	BBgBarc Municipal TR USD
US Other Bond	BBgBarc US Agg Bond TR USD
Cash	FTSE Treasury Bill 3 Mon USD

6. Repeat steps 4-5 until all asset classes have been added.
7. When all of the asset classes have been added to the set, click **OK** to close the Asset Class Setup window.

Creating an Input File

Overview

With an Input file, users choose the settings by which a set of asset classes are constructed, including the time horizon an asset class set should be calculated from when determining expected risk and return values. Establishing these inputs the first step in analyzing and optimizing the allocation among the asset classes in the set.

> ☞ Note: Updating the Input file also includes changing other variables, such as optimizing asset mixes for risk or return. This function is covered in later exercises.

An Input file contains the following information:

- Asset classes
- Expected return methodology
- Capital market assumptions
- Distribution models
- Constraints
- Currency settings, and
- Inflation series.

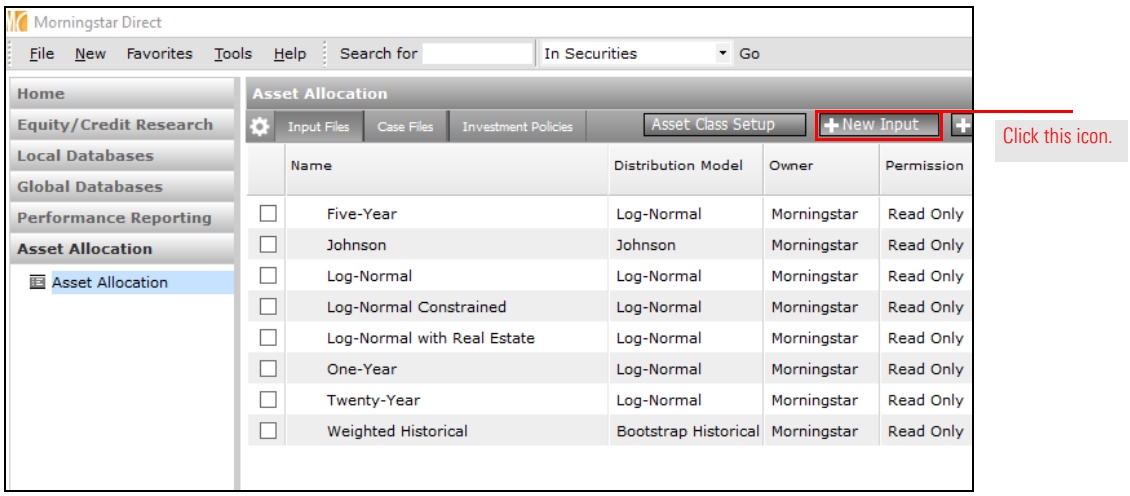
This section offers the following exercises and information to help users learn how to modify these Input settings as part of the asset allocation work, and how to understand the layout of the Asset Allocation interface:

- Create an input file on page 13
- What does the Asset Allocation window show? on page 14
- What does the Input Workspace show by default? on page 14
- Set the time horizon for analysis on page 15
- Analyze the correlation among asset classes on page 18, and
- Save the Input file on page 19.

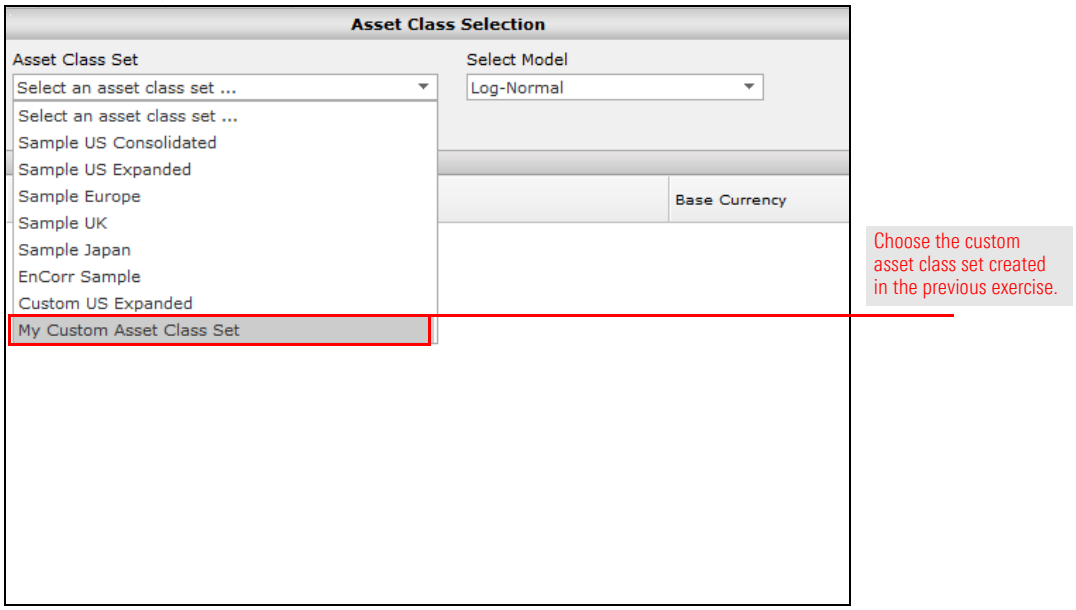
Exercise 3: Create an input file

To create an input file, do the following:

1. From the Asset Allocation page, on the toolbar above the grid view, click **New Input**. The Asset Class Selection dialog box opens.



2. From the **Select an Class Set** drop-down field, select **My Custom Asset Class Set**. The asset class set is now displayed in the dialog box, and the Select Model field should be set to Log-Normal.



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

   ☞ Note: This window can also be used to add or delete asset classes from the asset class set.

4. Click **OK** to close the Input Settings window. A browser window opens, and the Inputs tab is selected, as well as the Input Workspace sub-tab.
5. If needed, **maximize** the new browser window.

What does the Asset Allocation window show?

The Asset Allocation window is really three distinct elements working together. At the top, is a toolbar. The icons here change based on the tab selected at the top of the window. The majority of the window is taken up by the following areas:

- Inputs
- Optimizer, and
- Forecasting.

These tabs are meant to be used in this order when creating an asset allocation. When a user selects a tab, the corresponding toolbar is selected as well. The components on a tab can be expanded, and some allow users to toggle between seeing information in a table vs. a chart.

Finally, at the bottom of the window is a components panel. Users can drag-and-drop these items onto a tab at any time. The selections here vary based not on which tab at the top is active, but rather on the option selected from the associated menu in the bottom-left corner.

What does the Input Workspace show by default?

Three components show by default on the Input Workspace on the Input tab. Each is explained in the following table:

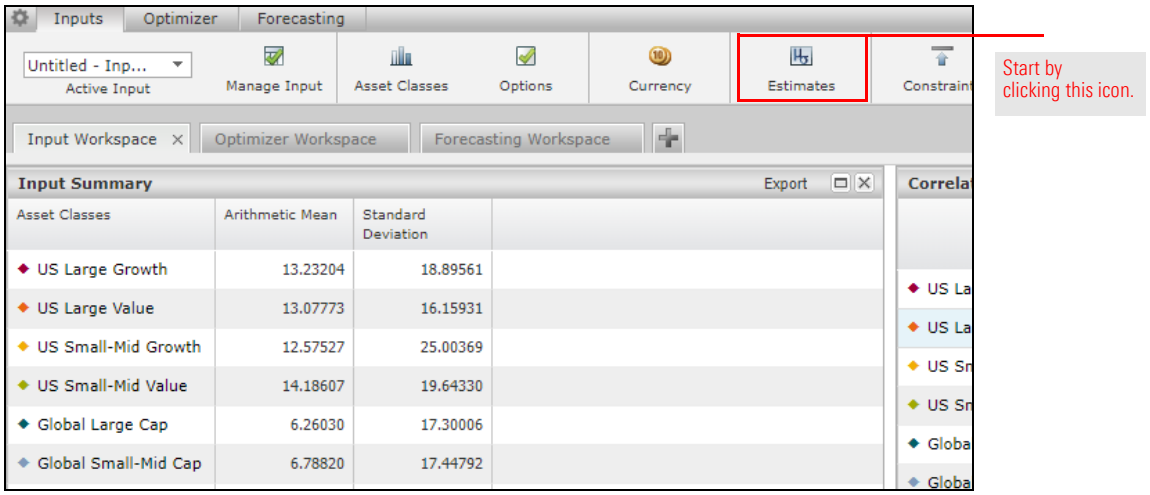
Component	Description
Input Summary	This component shows the average return and standard deviation for each asset class in the asset class set. The only action a user can take here is to export the data to Microsoft® Excel®.
Asset Class Statistics (Historical)	This component shows more detailed statistics for the asset classes in the set. The settings can be edited to control what is displayed here.
Correlations	This component shows users how closely correlated the returns are between different asset classes in the set. The less correlation between asset classes, the better. The more asset classes included in an asset class set, the more likely it will be that one or more are highly correlated with one another.

Exercise 4: Set the time horizon for analysis

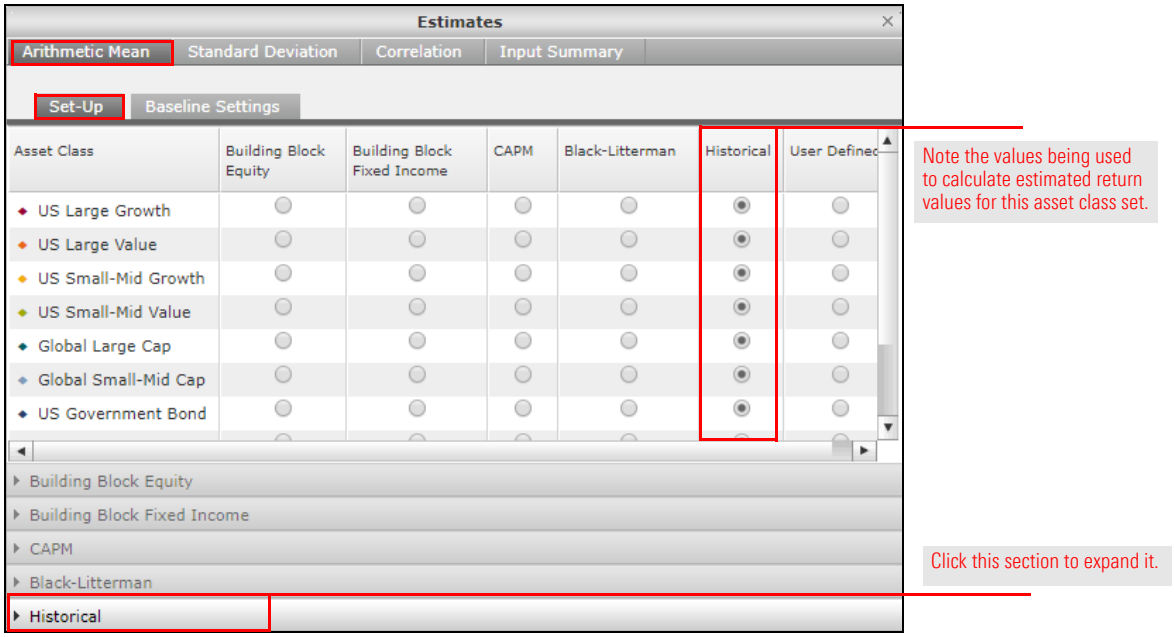
After new Inputs are created, the first step is to check the time horizon for the analysis. By default, historical values for risk and return are used for calculating these same estimates for the asset classes selected, but the values here can be changed.

To update the estimated values for the asset class set, do the following:

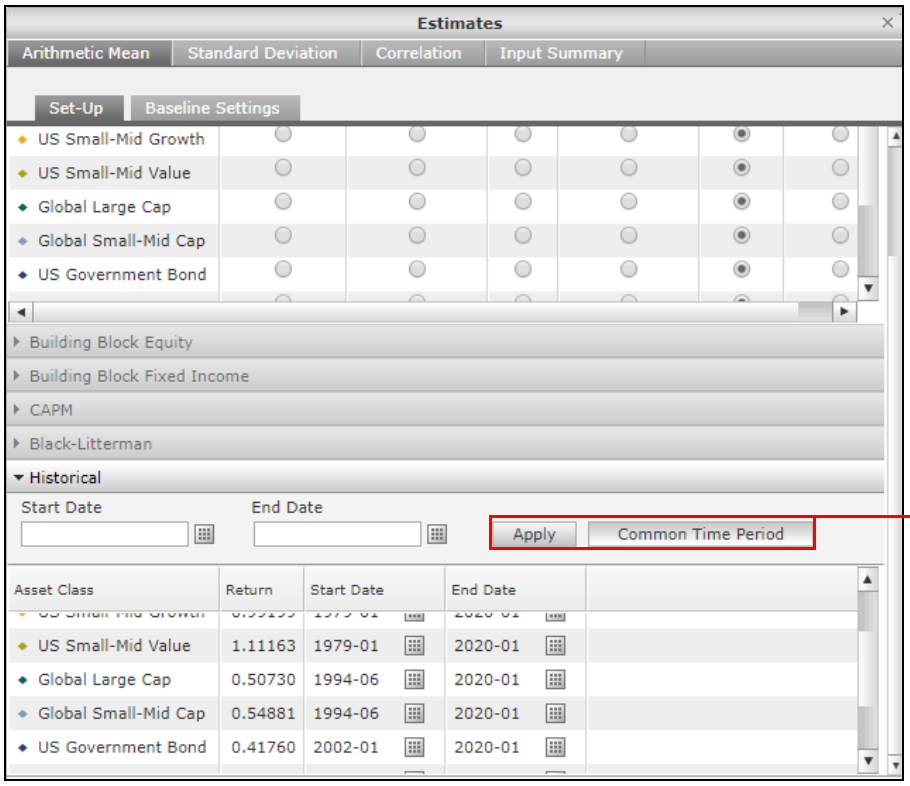
1. From the Input toolbar, click **Estimates**. The Estimates window opens.



2. From the Set-Up sub-tab on the Arithmetic Mean tab, **expand** the **Historical** section.



3. The Start Date for calculating the mean return for each asset class is listed; note that a number of different dates are present. The Input Summary tab on this window uses these time periods to calculate each asset class's arithmetic mean return. To run an analysis using a common time period (namely, the earliest common start date among the asset classes), click **Common Time Period**. then click **Apply**. The Start Date for each asset class updates to display the common start date.

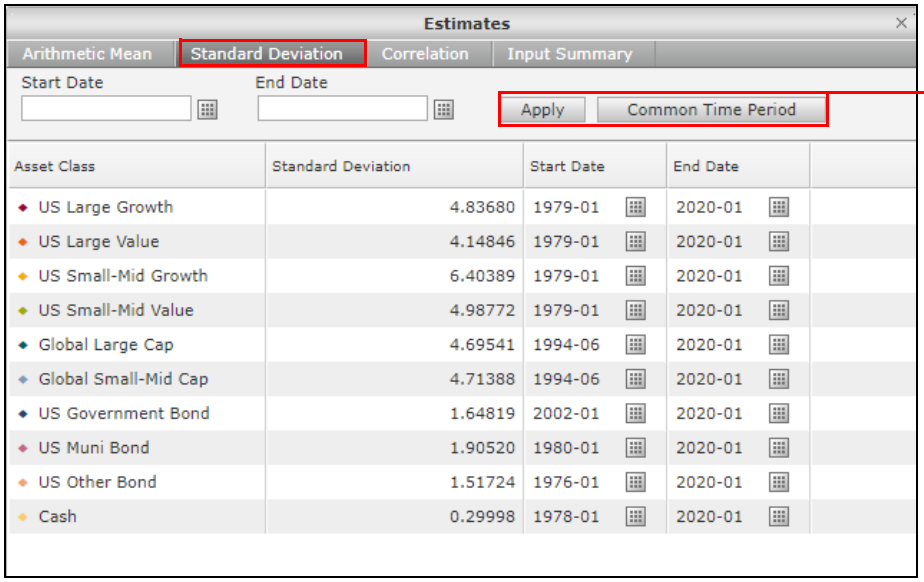


Use these buttons to apply a common start date for calculating the mean return for all asset classes in the set.

4. Click the **Standard Deviation** tab.

5. Click **Common Time Period**. then click **Apply**. The Start Date for each asset class updates to display the common start date. The Start Date for each asset class updates to display the common start date.

   ☞ Note: Do not click OK or close the Estimates window, as the next exercise still requires use of this resource.

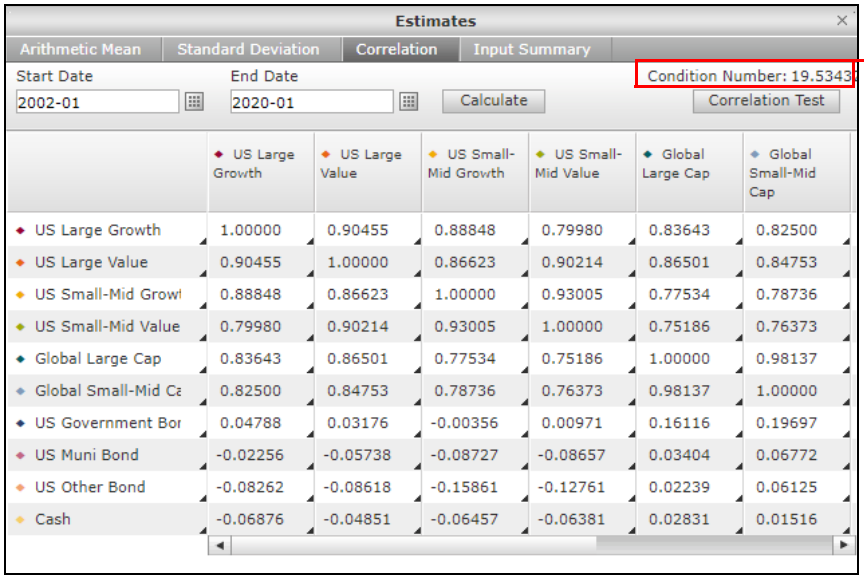


Asset Class	Standard Deviation	Start Date	End Date
US Large Growth	4.83680	1979-01	2020-01
US Large Value	4.14846	1979-01	2020-01
US Small-Mid Growth	6.40389	1979-01	2020-01
US Small-Mid Value	4.98772	1979-01	2020-01
Global Large Cap	4.69541	1994-06	2020-01
Global Small-Mid Cap	4.71388	1994-06	2020-01
US Government Bond	1.64819	2002-01	2020-01
US Muni Bond	1.90520	1980-01	2020-01
US Other Bond	1.51724	1976-01	2020-01
Cash	0.29998	1978-01	2020-01

Exercise 5: Analyze the correlation among asset classes

When analyzing an asset class set, it is important to check the correlation among them, to ensure no overlap exists.

1. The Estimates window should still be open. Click the **Correlation** tab. A common time period should be applied to all asset classes.
2. A Condition Number displays in the top-right corner of the tab. This number should be below 20. Anything higher signifies too much overlap between asset classes. If the Condition Number is too high, consider closing this window to remove overlapping asset classes, or change representative indexes used for an asset class.



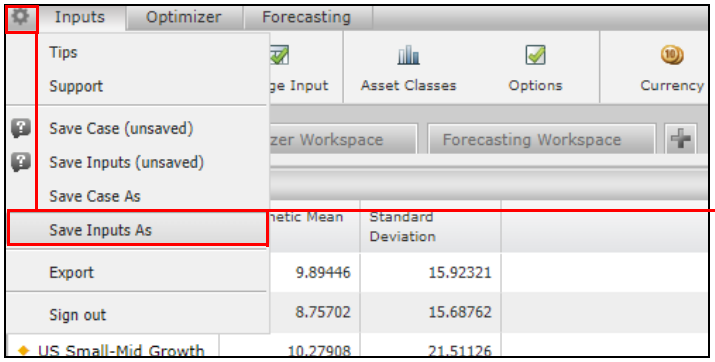
	US Large Growth	US Large Value	US Small-Mid Growth	US Small-Mid Value	Global Large Cap	Global Small-Mid Cap
US Large Growth	1.00000	0.90455	0.88848	0.79980	0.83643	0.82500
US Large Value	0.90455	1.00000	0.86623	0.90214	0.86501	0.84753
US Small-Mid Growt	0.88848	0.86623	1.00000	0.93005	0.77534	0.78736
US Small-Mid Value	0.79980	0.90214	0.93005	1.00000	0.75186	0.76373
Global Large Cap	0.83643	0.86501	0.77534	0.75186	1.00000	0.98137
Global Small-Mid Ca	0.82500	0.84753	0.78736	0.76373	0.98137	1.00000
US Government Bor	0.04788	0.03176	-0.00356	0.00971	0.16116	0.19697
US Muni Bond	-0.02256	-0.05738	-0.08727	-0.08657	0.03404	0.06772
US Other Bond	-0.08262	-0.08618	-0.15861	-0.12761	0.02239	0.06125
Cash	-0.06876	-0.04851	-0.06457	-0.06381	0.02831	0.01516

3. Click **OK** to close the Estimates window. The Input Summary and Asset Class Statistics (Historical) components on the Input Workspace recalculate.

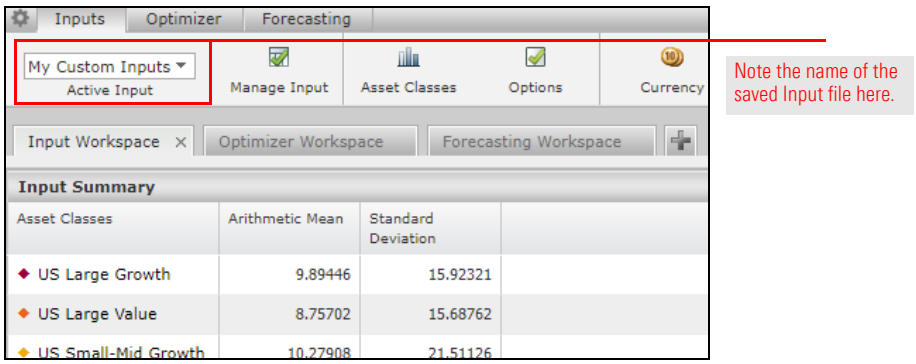
Exercise 6: Save the Input file

Now that the Inputs have been updated, users will see in upcoming exercises how to modify the Case file. This includes, in part, picking and modifying the tables and charts appearing on the various tabs in the interface. Before doing that, however, it will be useful to save the Input file itself, so it can be reused with a variety of Case files. In other words, users can design multiple page layouts and plug in the same set of input assumptions. To save the Input file, do the following:

1. In the top-left corner of the Morningstar Asset Allocation window, click the **Settings** icon, then choose **Save Inputs As**. The Save Input File dialog box opens.



2. Type **My Custom Inputs**, then click **OK**.
3. When the confirmation message opens, click **OK**. The name of the Input file appears in the Active Input drop-down field. This field allows users to flip between different Input files within the same Case file.



Modifying the Case File

Overview

The Case file in the Asset Allocation module refers to more that just the layout of the charts and tables in the various workspaces. The following capabilities are also included as part of a Case file:

- The associated Inputs file(s)
- Asset mixes
- Optimization settings, and
- Forecasting settings, such as initial assets and cash flows.

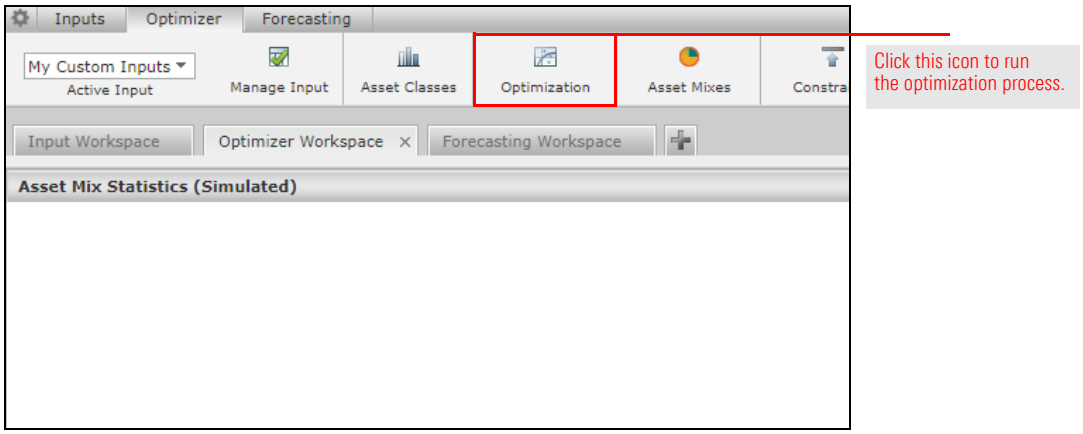
This section offers the following exercises in support of learning how to work with a Case file:

Exercise 7: Optimize the asset allocation set

Having established the capital market assumptions and correlations among asset classes, the system can now build an Efficient Frontier using Mean-Variance Optimisation (MVO). Each frontier shows a series of 100 different asset mixes providing the greatest expected return (Y-axis) for a specified level of risk (X-axis).

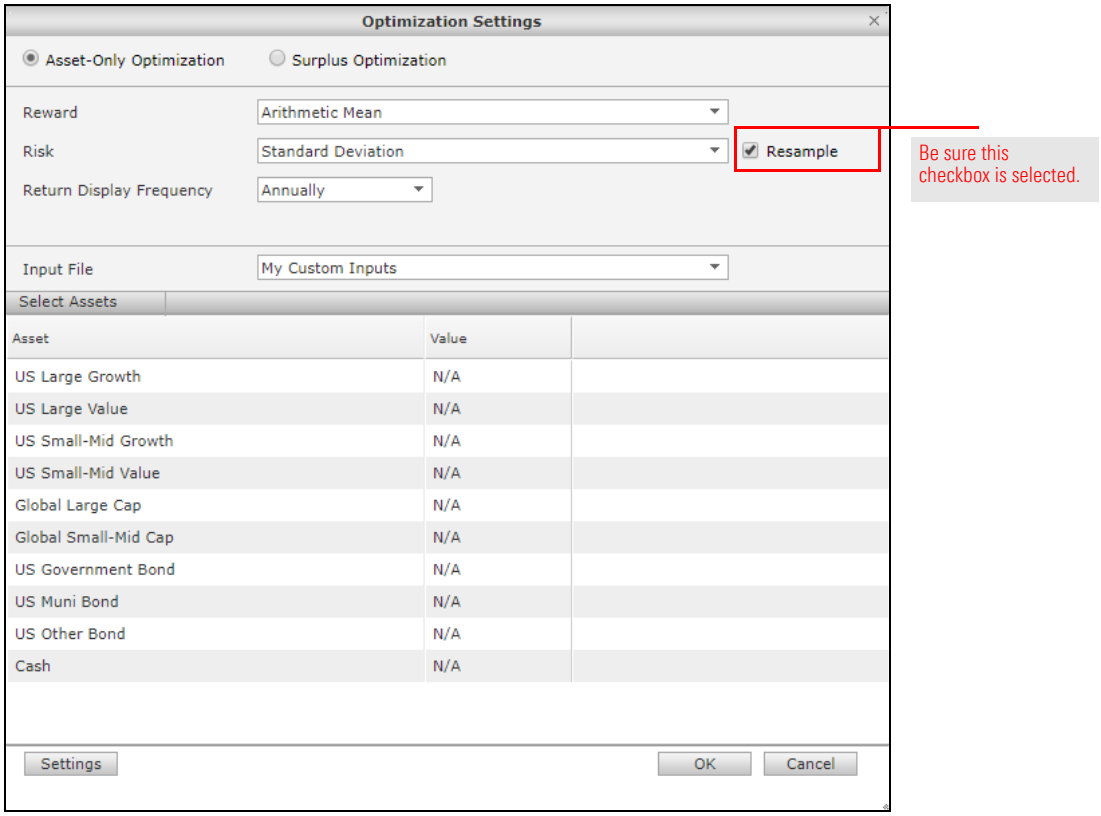
To run the simulation, do the following:

1. To access the Efficient Frontier, click the **Optimizer Workspace** tab.
2. From the toolbar, click **Optimization**. The Optimization Settings window opens.



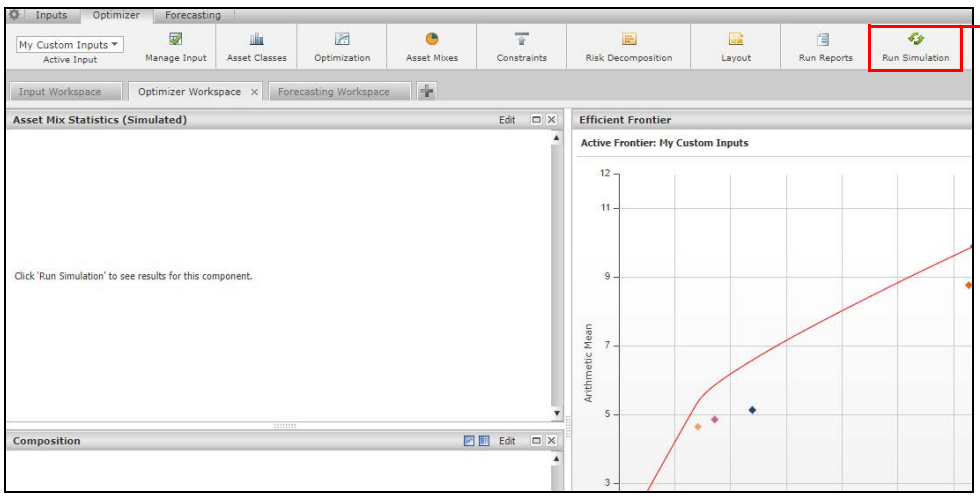
3. To the right of Risk drop-down field, select the **Resample checkbox**.

   ☞ Note: Resampling produces more diversified and robust portfolios on the Efficient Frontier, where the system recognizes that capital market assumptions are forecasts and not a "sure thing."



Be sure this checkbox is selected.

4. Click **OK**. The Efficient Frontier reloads on the screen.
5. From the toolbar, click **Run Simulation**.



Click this icon to update the page.

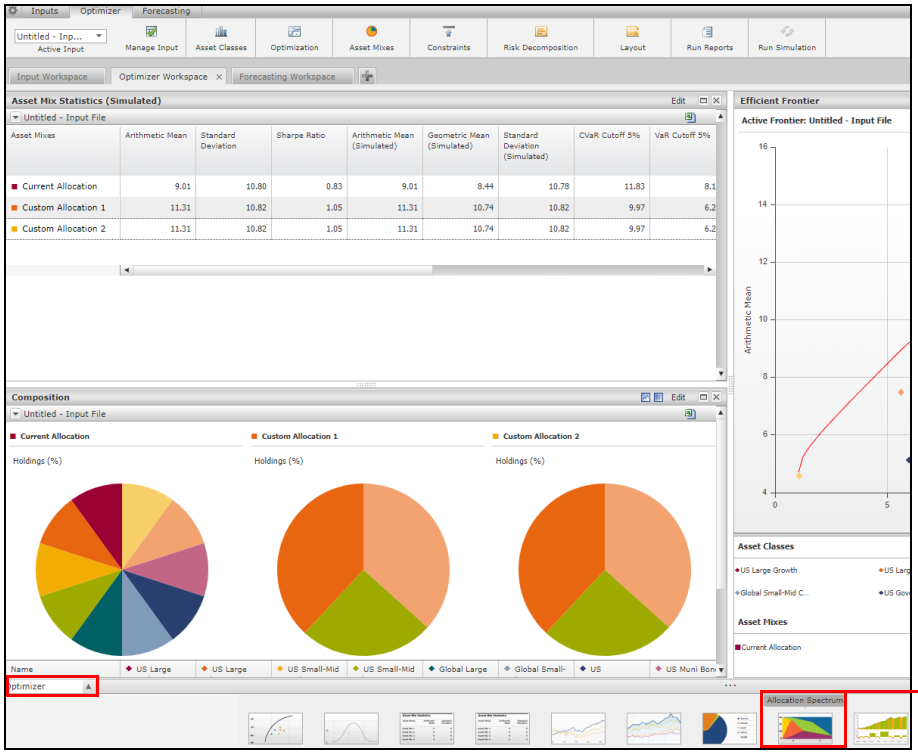
6. **Hover the cursor** over various points on the Efficient Frontier to see the corresponding asset mix for that location.

Exercise 8: Add and modify the Allocation Spectrum component

The Allocation Spectrum component provides additional insight on the possible risk and return outcomes of the various asset allocation mixes available. Each color on the chart represents a different asset class. As with the Efficient Frontier chart, the Allocation Spectrum contains 100 different asset mixes, with the more conservative ones to the left, and the more aggressive ones to the right.

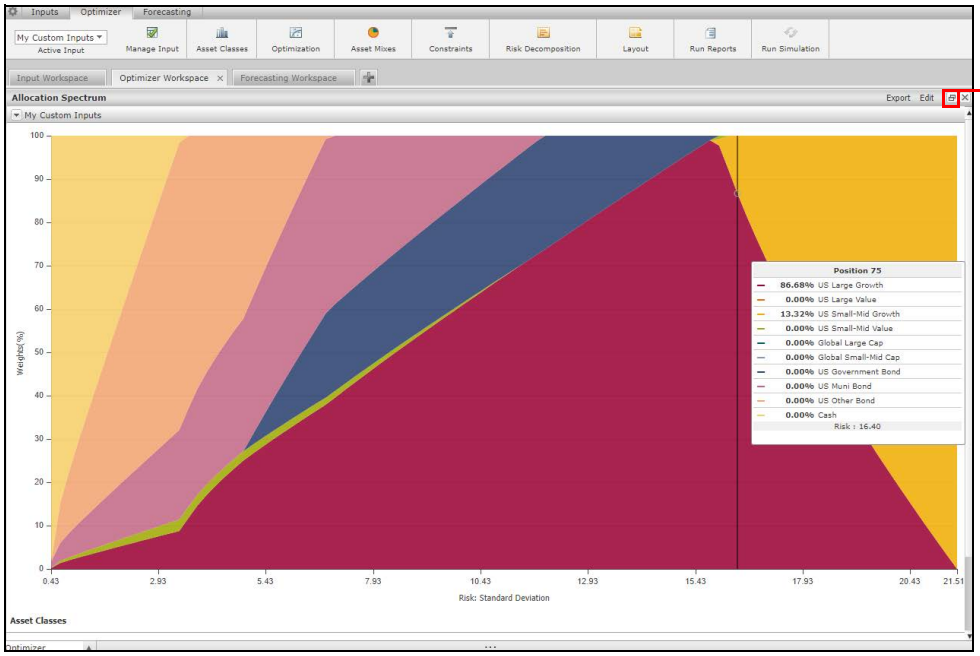
To include this component on the Optimizer Workspace, do the following:

1. From the **Components** menu in the bottom-left corner of the window, select the **Optimizer** components.
2. **Click-and-drag** the **Allocation Spectrum** component beneath the Efficient Frontier component.

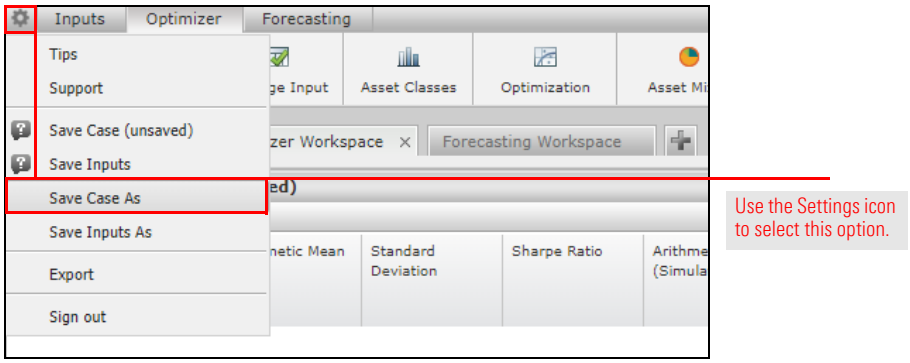


Select the correct set of components, then drag-and-drop this chart beneath the Efficient Frontier.

3. Click the **Maximize** icon in the component, then **hover the cursor** over it, to see the various asset allocations available. Note that as risk increases, the exposure to a number of asset classes is 0%.



4. Click the **Restore** icon to resize the component.
5. To save the change of including the Allocation Spectrum component on the Optimizer Workspace, click the **Settings** icon, then select **Save Case As**.



6. Name the Case file **My Custom Case File**, then click **OK**.
7. When the confirmation message opens, click **OK**.

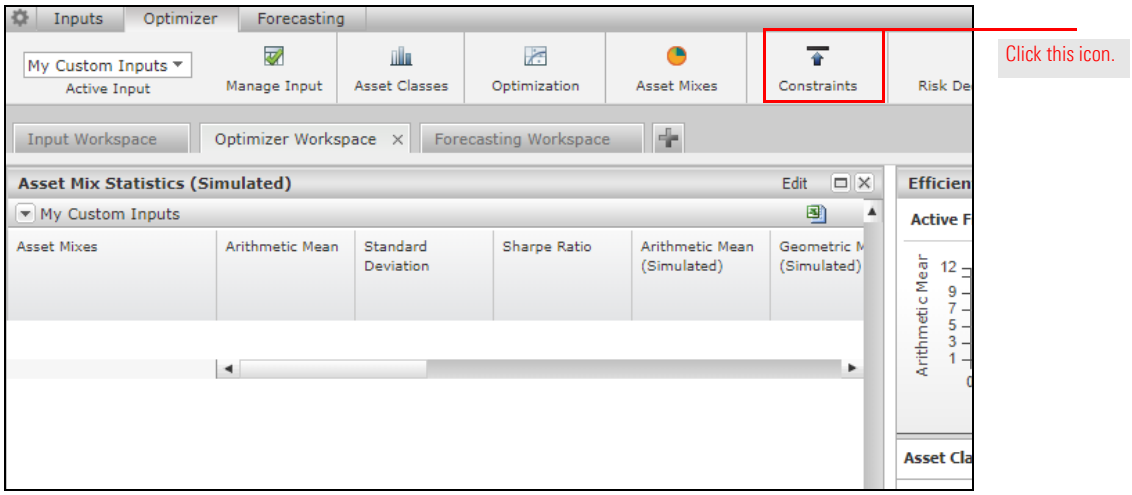
Exercise 9: Set constraints for an asset allocation

Setting constraints can be not just a useful exercise when creating an asset mix, but also a necessary one, in order to ensure each asset class has a minimum representation in a client's asset allocation, as well as to keep an asset class from being overrepresented. However, be careful when setting constraints, because too narrow of a constraint will significantly shrink the Efficient Frontier, and leave that many fewer asset mixes from which to select.

Also, although constraints are being set within the context of working with a Case file, note that these are actually saved as part of the Input file so the latter will need to be saved at the end of the exercise.

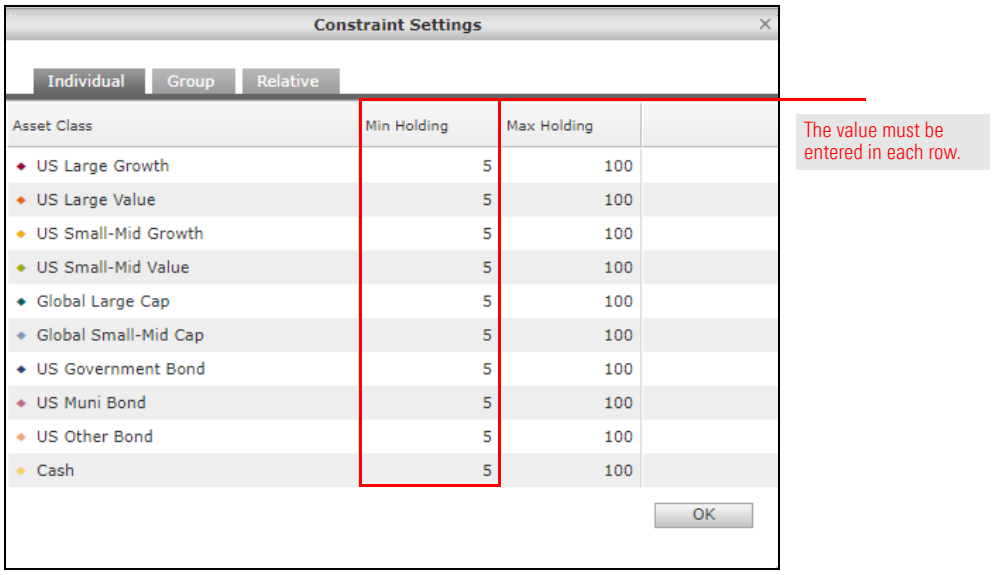
To set constraints for an asset allocation set, do the following:

1. From the toolbar, click **Constraints**. The Constraint Settings window opens.



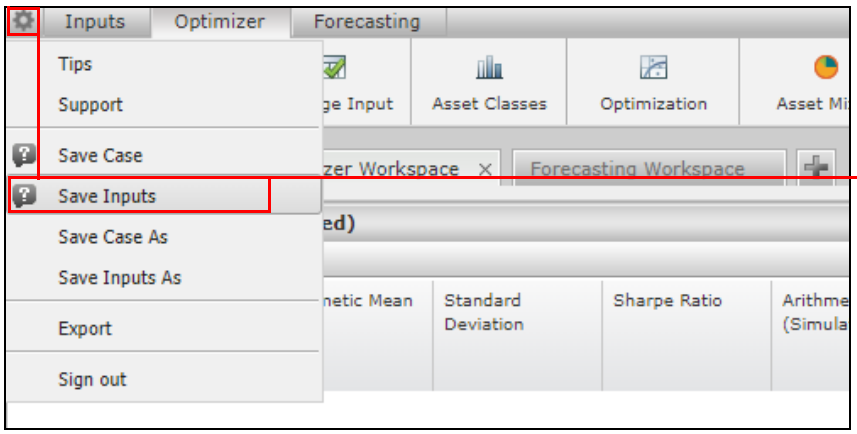
2. In the **Min Holding** column, type **5** for each row.

   ☞ Note: Leave the Max Holding value as 100 for each row.



3. Click **OK**. The Efficient Frontier and the Allocation Spectrum charts update.

4. To save these constraints, click the **Settings** icon, then select **Save Inputs**.

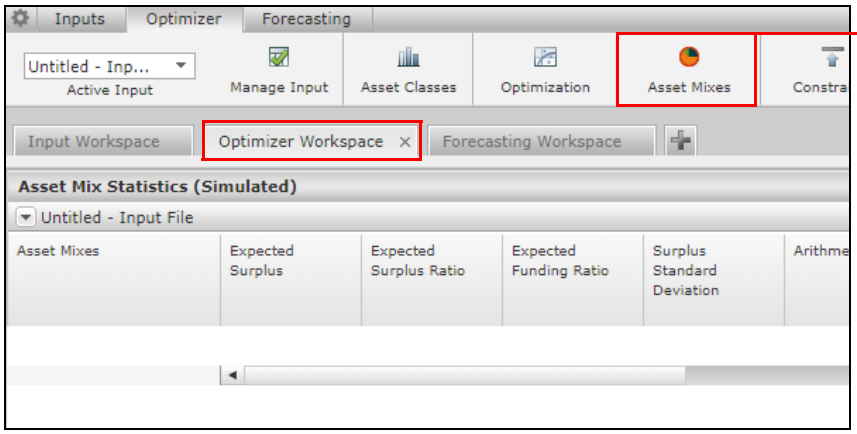


Exercise 10: Input an asset mix

When the Optimizer Workspace tab is selected, the Efficient Frontier component initially shows only the asset classes from the asset class set being used. The other two default components are blank; they do not populate until the asset mixes are entered. This exercise shows users how to enter an existing asset allocation, and then optimize it for risk and return.

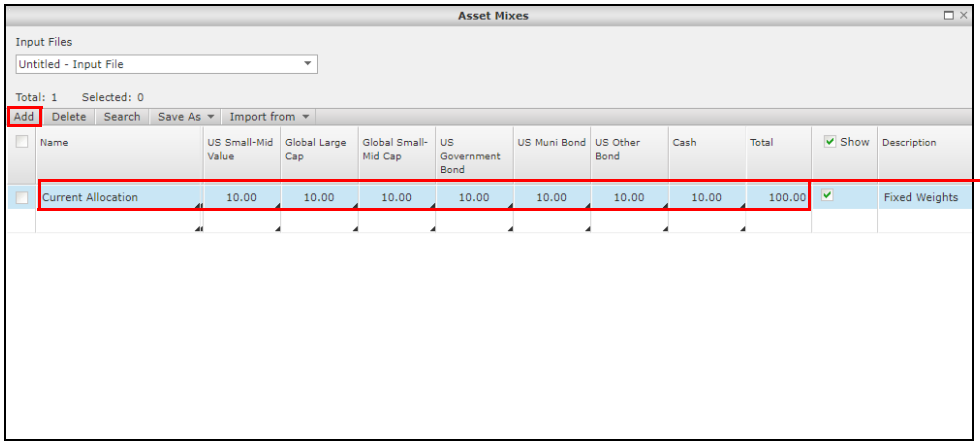
To input a client's existing asset mix, do the following:

1. Click the **Optimizer Workspace** tab.
2. From the toolbar on the Optimizer Workspace, click the **Asset Mixes** icon. The Asset Mixes dialog box opens.



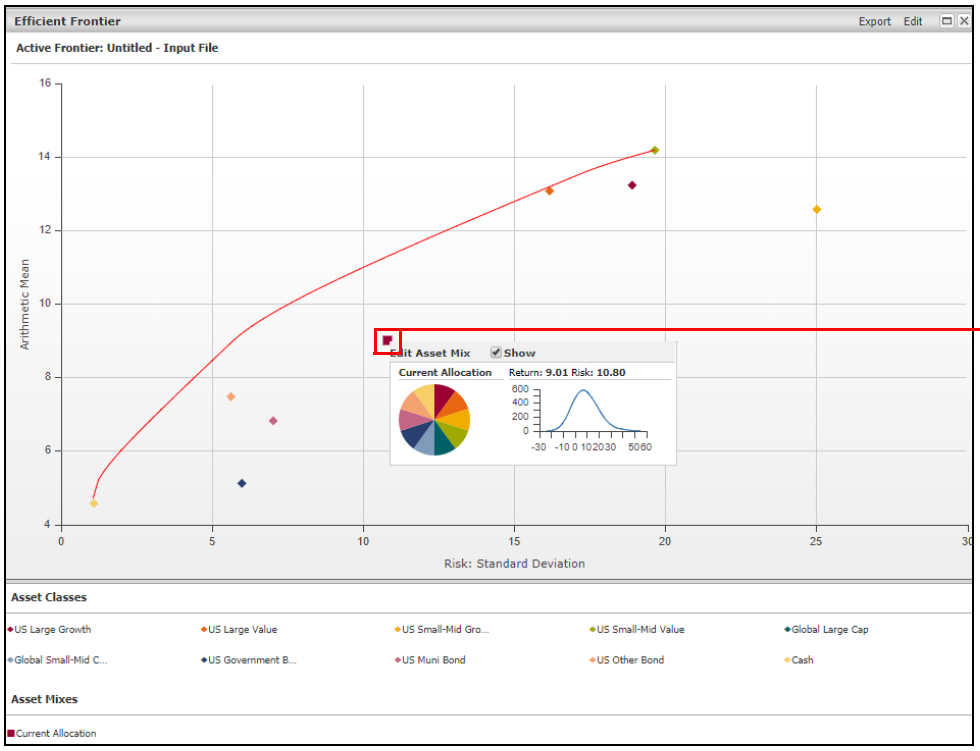
3. Click **Add**. A row is added to the dialog box.
4. In the **Name** field, type **Current Allocation**.

5. In each asset class field enter **10**.



Use the Add button to input the allocation to each asset class.

6. Click **OK**. Note the location of the current allocation relative to the Efficient Frontier.



Hover the cursor over the Current Allocation icon to see the asset class breakdown.

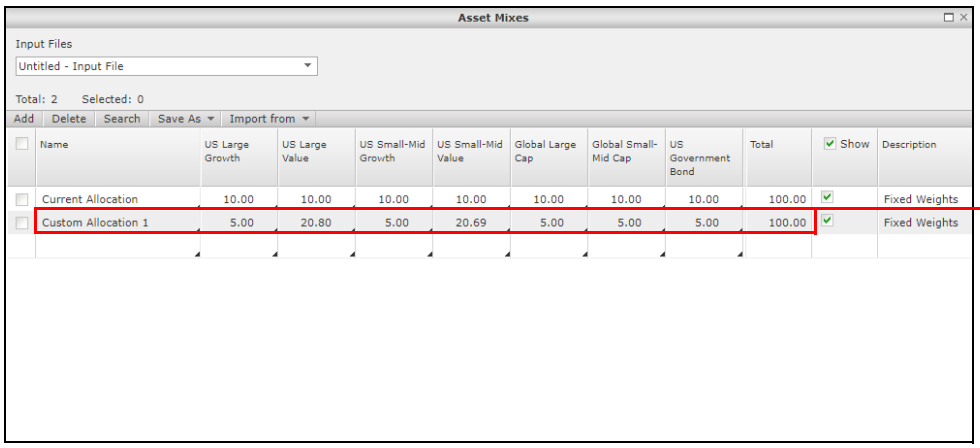
Exercise 11: Create additional asset allocation mixes

To create an additional asset mix, the following options are available:

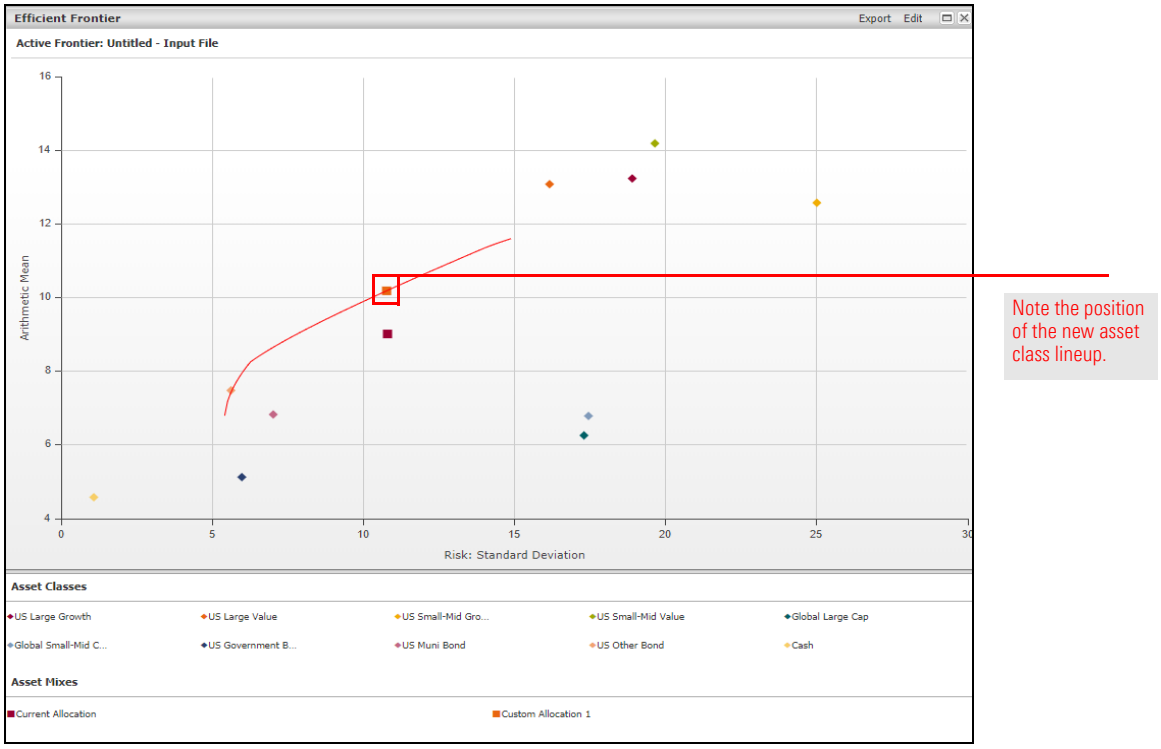
- manually enter an asset allocation, as in the previous exercise
- click a spot on the Efficient Frontier, or
- search for an asset class mix that matches a value, such as a client's existing standard deviation or return.

To create a new asset class on the Efficient Frontier component, do the following:

1. Position your mouse on the Efficient Frontier line, above the client's existing asset mix, as close to the center of it as possible, then **click once on the Efficient Frontier line**. The Asset Mixes dialog box opens.
2. In the **Name** field, type **Custom Allocation 1**.

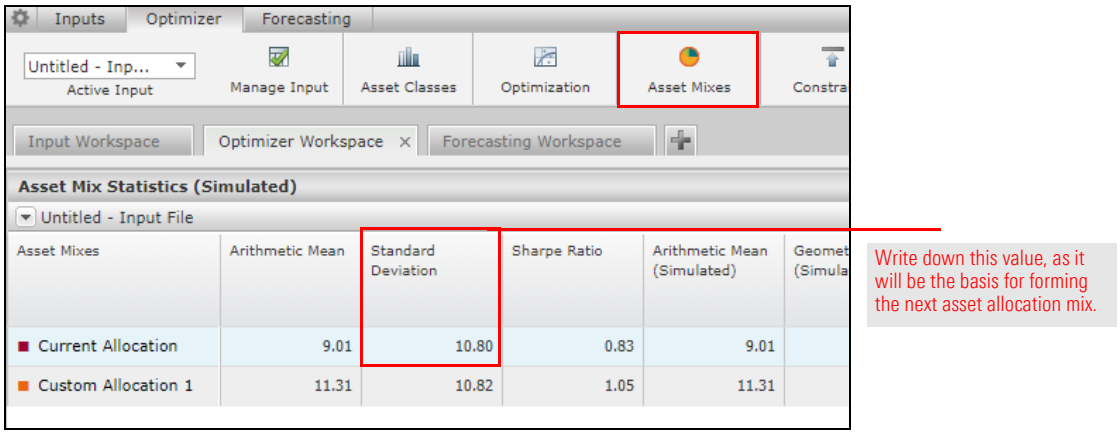


3. Click **OK**. On the Efficient Frontier component, note the location of this new asset allocation relative to the client's original asset mix.

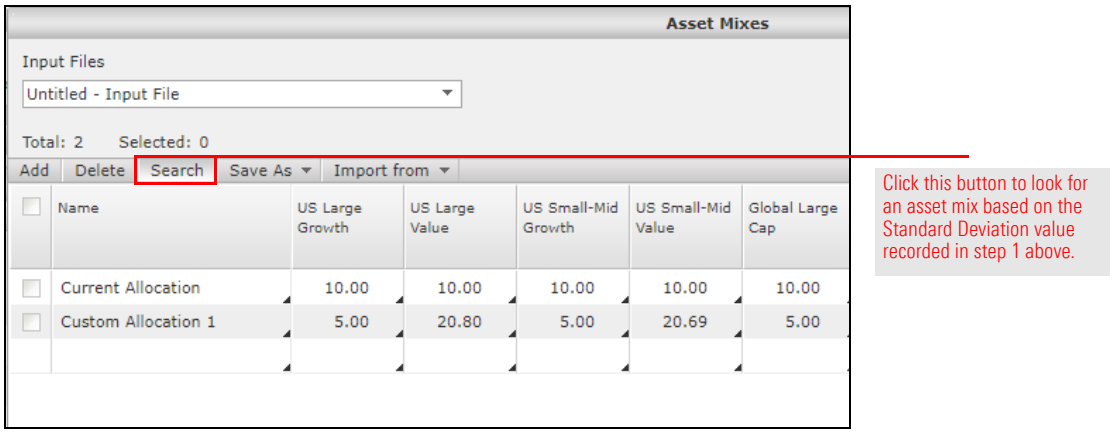


To select an asset mix based on an existing value in a current asset mix, do the following:

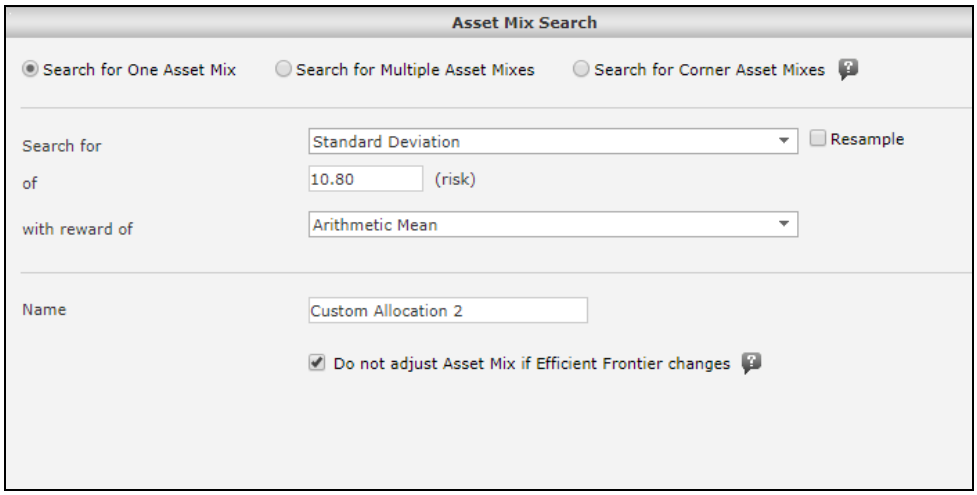
1. From the Asset Mix Statistics (Simulated) component, in the Current Allocation row, write down the **Standard Deviation value**.
2. Click the **Asset Mixes** icon. The Asset Mixes dialog box opens.



3. Click the **Search** button. The Asset Mix Search dialog box opens.



4. From the **Search for** drop-down field, select **Standard Deviation**.
5. In the **of** field, type the **Standard Deviation value** from step 1.
6. In the Name field, type **Custom Allocation 2**.



7. Click **OK** to close the Asset Mix Search dialog box.
8. Click **OK** to close the Asset Mix dialog box. The new asset allocation lineup appears in the three components on the workspace.

Exercise 12: Evaluate the total risk for a set of asset classes

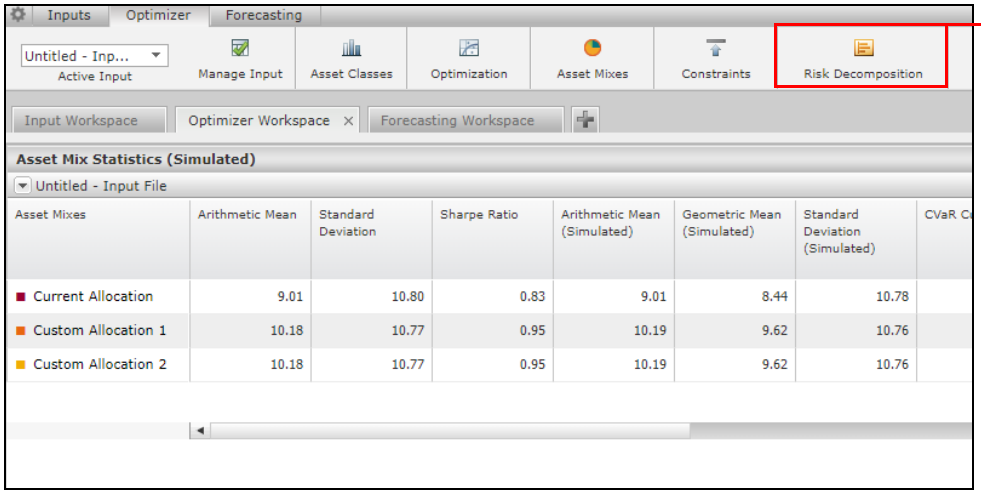
The next two exercises teach users how to make use of the Risk Decomposition table. Risk decomposition refers to breaking down the distribution of risk in an asset allocation lineup. From which asset classes does the most or least risk come from? How can an asset allocation lineup be altered in order to increase or decrease overall risk?

Risk decomposition gives users the ability to identify how the risk portion of a specific Asset Mix breaks down and how it can change if the allocation to each asset class is altered. Risk decomposition includes the following components:

- What asset classes contribute to the overall standard deviation (Total Risk), and
- What asset classes contribute to the overall tracking error (Active Risk).

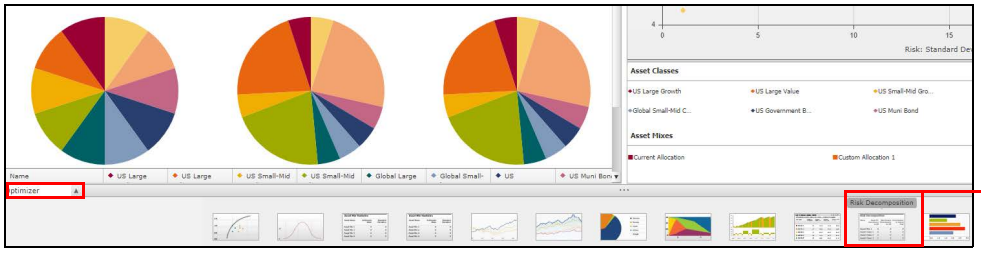
To evaluate the total risk decomposition for an asset class set, the Risk Decomposition table must be added to the Optimizer Workspace. Do the following:

1. From the toolbar in the Optimizer Workspace, click the **Risk Decomposition** icon. The Risk Decomposition dialog box opens.



Click this icon to begin the risk comparison.

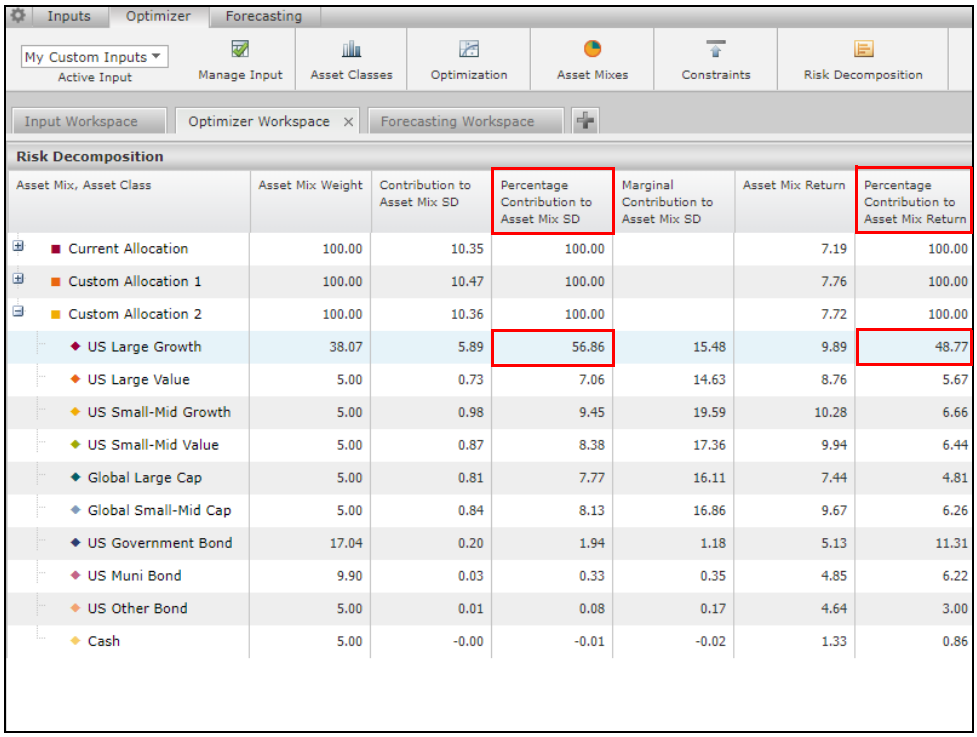
2. The Benchmark (Optional) field can be left as "None." A benchmark is not needed when calculating total risk, but is needed when calculating active risk. Click **OK**.
3. The components menu in the bottom-left corner of the screen should show the **Optimizer** components.
4. **Click-and-drag** the **Risk Decomposition** component beneath the Efficient Frontier component.



Click-and-drag this table beneath the Efficient Frontier.

5. Click the **Maximize** icon in the component.
6. **Collapse** the **Client Current Allocation** asset mix.

7. Note the values in the Percentage Contribution to Asset Mix SD column. Which asset class has the largest value here? How does it compare to the value in the Percentage Contribution to Asset Mix Return? Is the amount of risk being taken being compensated with return, or no? If not, consider reallocating weights among the asset classes.
8. **Expand** the **Custom Allocation 2** asset mix.



Risk Decomposition

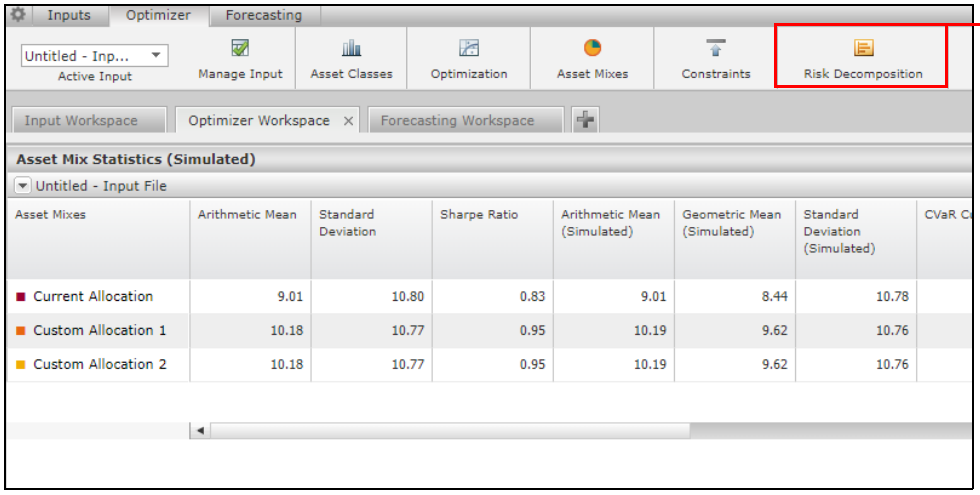
Asset Mix, Asset Class	Asset Mix Weight	Contribution to Asset Mix SD	Percentage Contribution to Asset Mix SD	Marginal Contribution to Asset Mix SD	Asset Mix Return	Percentage Contribution to Asset Mix Return
Current Allocation	100.00	10.35	100.00		7.19	100.00
Custom Allocation 1	100.00	10.47	100.00		7.76	100.00
Custom Allocation 2	100.00	10.36	100.00		7.72	100.00
US Large Growth	38.07	5.89	56.86	15.48	9.89	48.77
US Large Value	5.00	0.73	7.06	14.63	8.76	5.67
US Small-Mid Growth	5.00	0.98	9.45	19.59	10.28	6.66
US Small-Mid Value	5.00	0.87	8.38	17.36	9.94	6.44
Global Large Cap	5.00	0.81	7.77	16.11	7.44	4.81
Global Small-Mid Cap	5.00	0.84	8.13	16.86	9.67	6.26
US Government Bond	17.04	0.20	1.94	1.18	5.13	11.31
US Muni Bond	9.90	0.03	0.33	0.35	4.85	6.22
US Other Bond	5.00	0.01	0.08	0.17	4.64	3.00
Cash	5.00	-0.00	-0.01	-0.02	1.33	0.86

Compare each asset class' contribution to risk to its contribution to return.

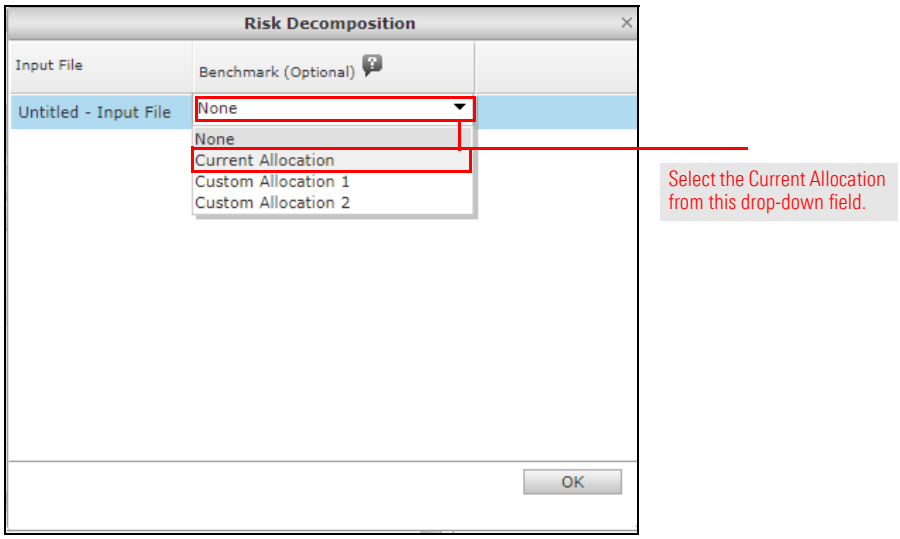
Exercise 13: Evaluate the active risk for a set of asset classes

In order to calculate the active risk (tracking error) for an asset class set, another asset mix is needed to serve as the benchmark from which deviation is measured. To calculate the active risk for an asset class mix, do the following:

1. From the toolbar in the Optimizer Workspace, click the **Risk Decomposition** icon. The Risk Decomposition dialog box opens.

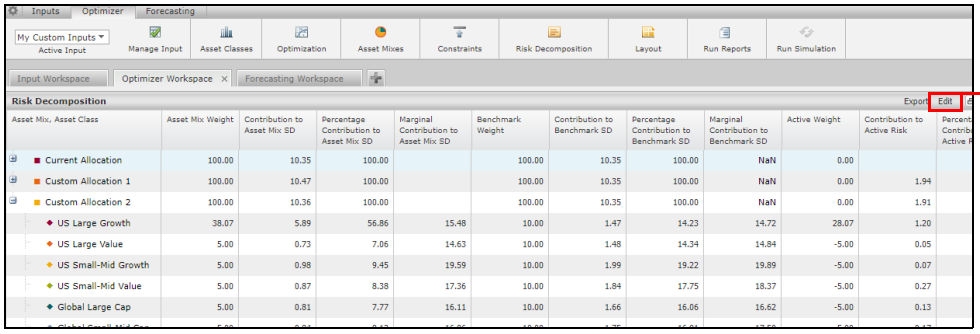


2. From the **Benchmark (Optional)** drop-down field, select **Current Allocation**.



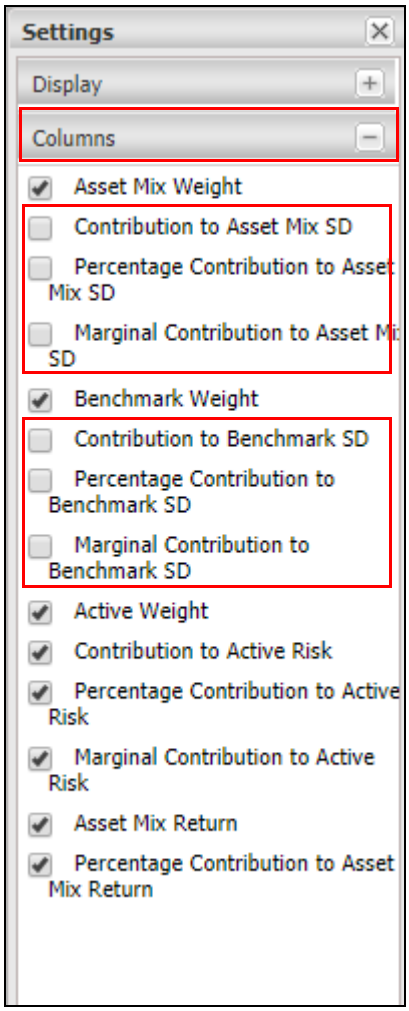
3. Click **OK**. The Risk Decomposition table refreshes and additional columns appear in the table. The table can be customized to remove some data columns from view.
4. **Collapse** the **Client Current Allocation** asset mix.

5. In the Risk Decomposition component, click **Edit** > **Settings**. The Settings dialog box opens.



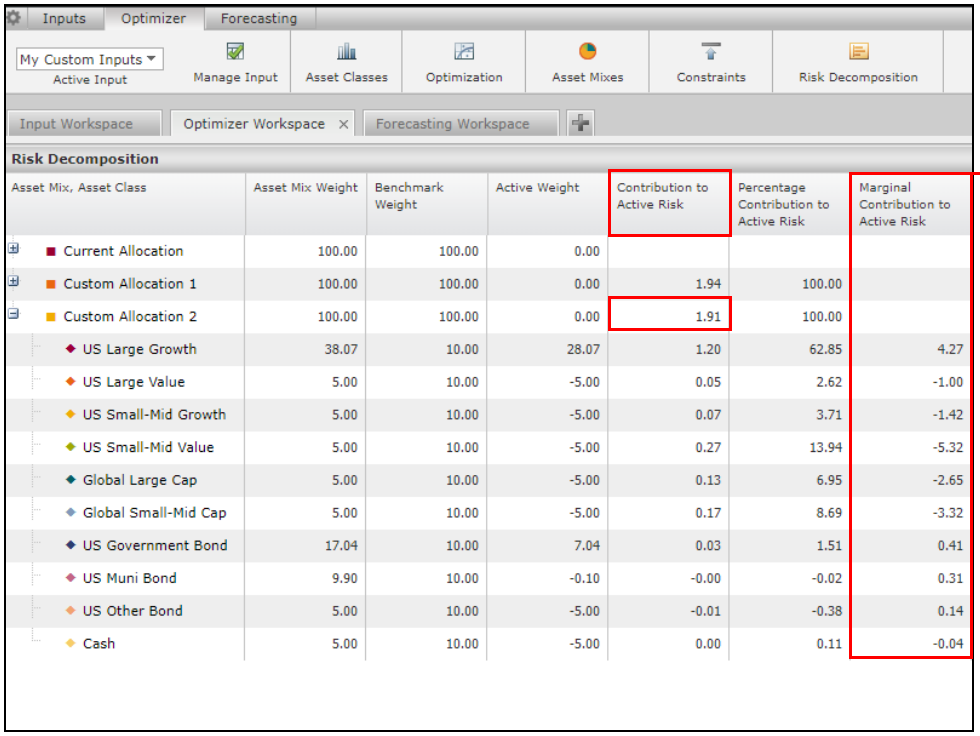
Click this button to change the columns showing in the table.

6. **Expand** the **Columns** section.
7. Hide the following standard-deviation related data points by **deselecting** the following columns:
   - Contribution to Asset Mix SD
   - Percentage Contribution to Asset Mix SD
   - Marginal Contribution to Asset Mix SD
   - Contribution to Benchmark SD
   - Percentage Contribution to Benchmark SD, and
   - Marginal Contribution to Benchmark SD.



Take note of which columns have been hidden.

8. **Close** the Settings dialog box.
9. Consider the following questions:
   - What is the overall Contribution to Active Risk for the asset mix?
   - Which asset class has the highest Marginal Contribution to Active Risk?
   - Which has the lowest Marginal Contribution to Active Risk? Consider moving weight from asset classes with the highest Marginal Risk to the those with the lowest value in that column.



Asset Mix, Asset Class	Asset Mix Weight	Benchmark Weight	Active Weight	Contribution to Active Risk	Percentage Contribution to Active Risk	Marginal Contribution to Active Risk
Current Allocation	100.00	100.00	0.00			
Custom Allocation 1	100.00	100.00	0.00	1.94	100.00	
Custom Allocation 2	100.00	100.00	0.00	1.91	100.00	
US Large Growth	38.07	10.00	28.07	1.20	62.85	4.27
US Large Value	5.00	10.00	-5.00	0.05	2.62	-1.00
US Small-Mid Growth	5.00	10.00	-5.00	0.07	3.71	-1.42
US Small-Mid Value	5.00	10.00	-5.00	0.27	13.94	-5.32
Global Large Cap	5.00	10.00	-5.00	0.13	6.95	-2.65
Global Small-Mid Cap	5.00	10.00	-5.00	0.17	8.69	-3.32
US Government Bond	17.04	10.00	7.04	0.03	1.51	0.41
US Muni Bond	9.90	10.00	-0.10	-0.00	-0.02	0.31
US Other Bond	5.00	10.00	-5.00	-0.01	-0.38	0.14
Cash	5.00	10.00	-5.00	0.00	0.11	-0.04

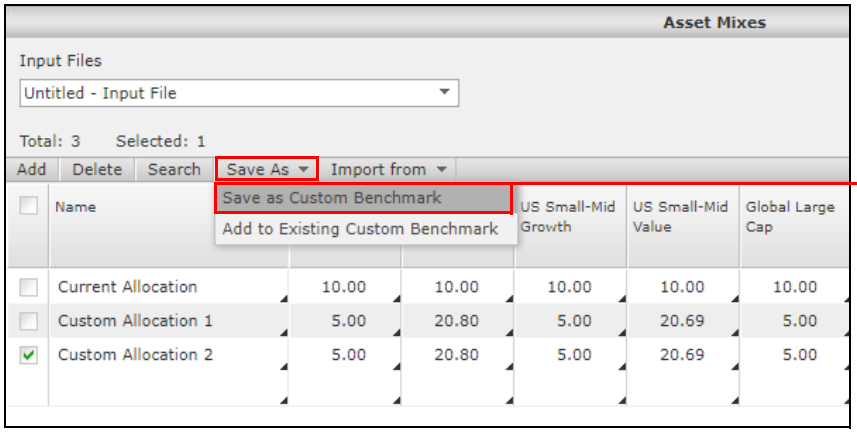
Take note of the asset classes with the highest and lowest values here.

10. Click the **Restore** icon to resize the component.

Exercise 14: Save an asset mix as a custom benchmark

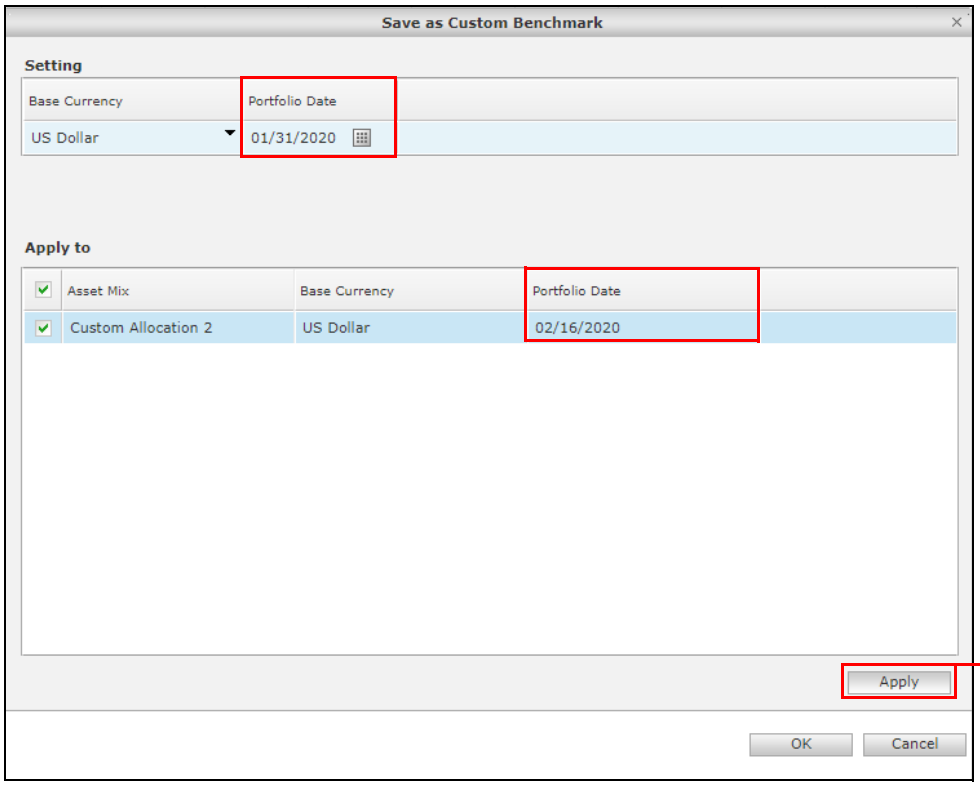
To save an asset allocation as a custom benchmark, do the following:

1. From the toolbar on the Optimizer Workspace, click the **Asset Mixes** icon. The Asset Mixes dialog box opens.
2. Check the **box** to the left of **Custom Allocation 2**.
3. Click the **Save As** button, then select **Save as Custom Benchmark**. The Save as Custom Benchmark dialog box opens.



Use this command to save the selected asset mix as a custom benchmark in Morningstar Direct.

4. Change the **Portfolio Date** field at the top to the **most recent month-end date**.
5. Check the **box** to the left of **Custom Allocation 2**.
6. Click **Apply**. The Portfolio Date in the Apply to area changes to match that in the Setting area.



It is only after Apply is clicked that the two highlighted dates will match.

7. Click **OK** to close the Save as Custom Benchmark dialog box.
8. When the confirmation message opens, click **OK**.
9. Click **OK** to close the Asset Mixes dialog box.

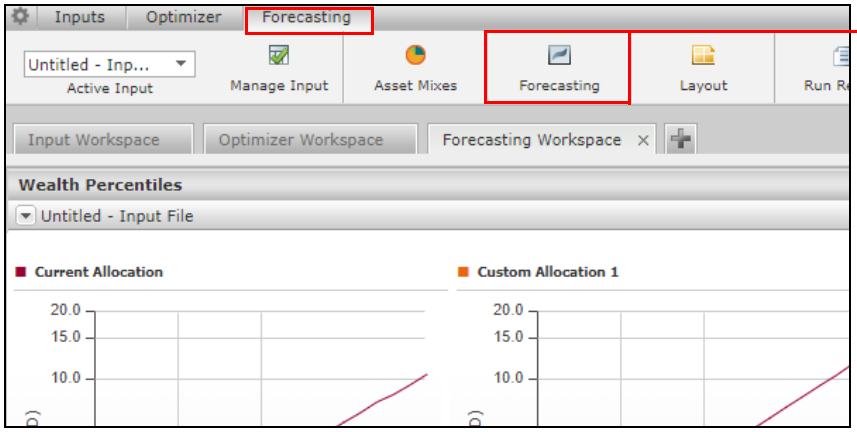
Exercise 15: Forecast returns for an asset mix

The Forecasting Workspace shows potential investment outcomes if a client were to put money into an asset allocation lineup. Four components are included by default here. Several settings can be updated in these components, including toggling between graphs and tables, changing the initial investment amounts, and deciding whether to map an accumulation scenario or a draw-down scenario.

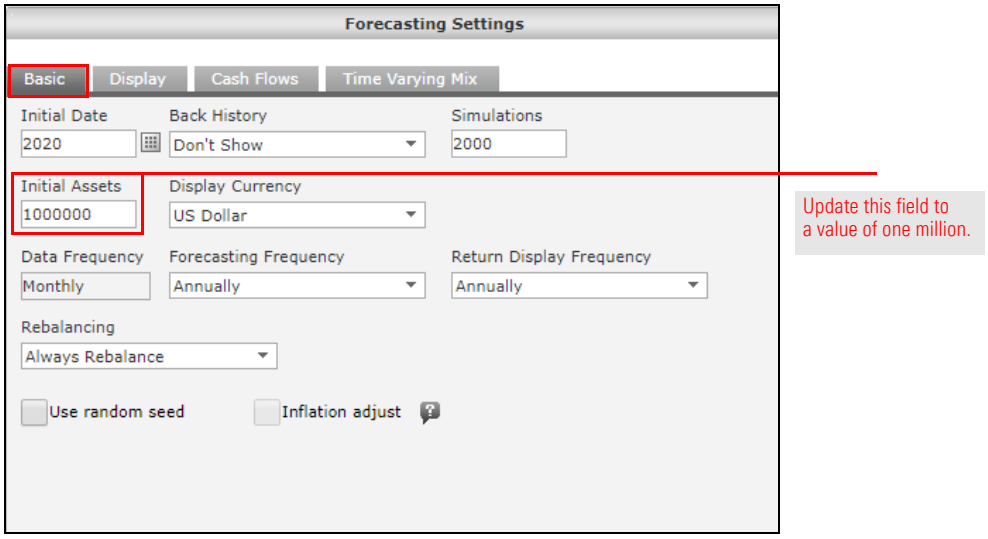
A wide variety of options is available when forecasting outcomes in the Asset Allocation module. For example, users can project what would happen if a client made regular contributions to an asset allocation, what would happen for someone in retirement who needed annual income, or a combination of contributions and withdrawals. This exercise shows users how to forecast the outcomes for a retirement withdrawal scenario, and then review what that cash flow will actually look like.

To use the Forecasting feature, do the following:

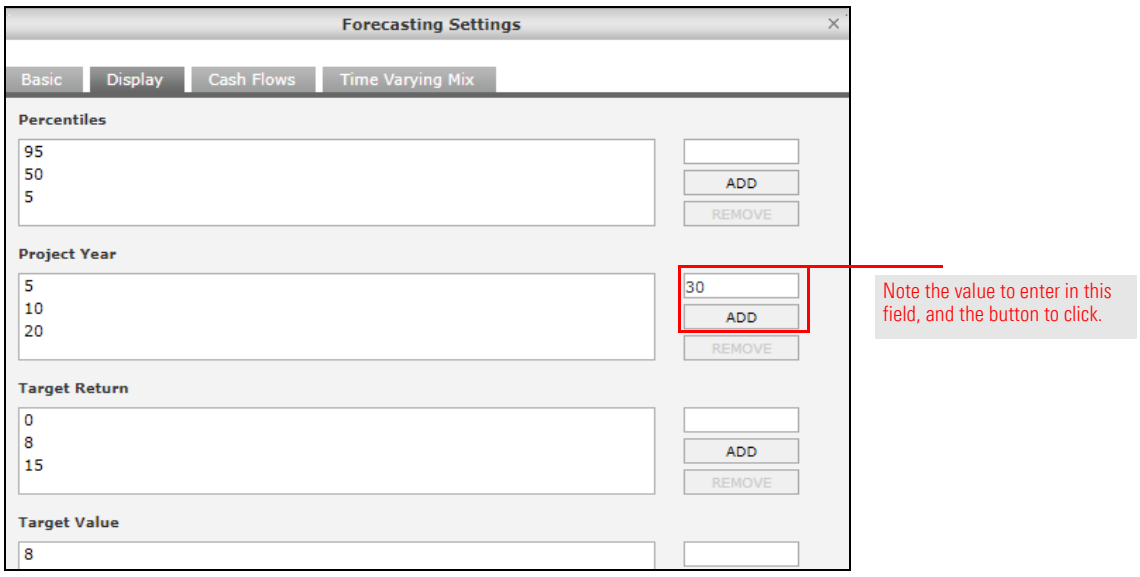
1. Click the **Forecasting Workspace**.
2. From the Forecasting toolbar, click the **Forecasting** icon. The Forecasting Settings window opens.



3. On the Basic tab, the Initial Assets field is set to $1. Because this exercise covers a decumulation scenario, change the **Initial Assets** field to **1000000**.

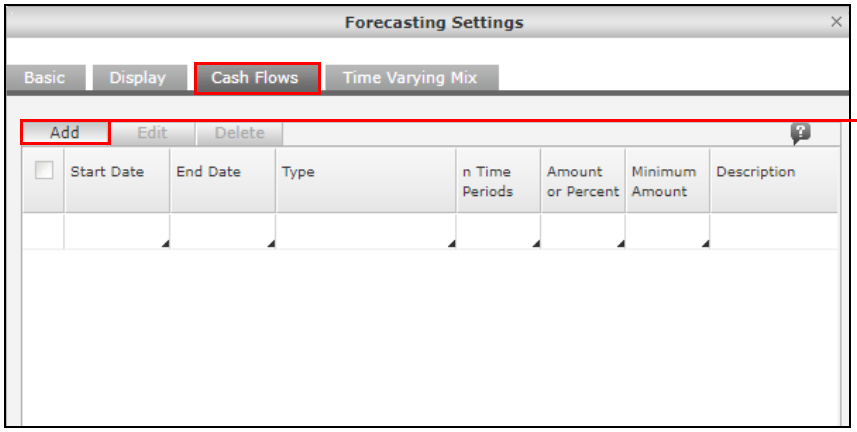


4. Click the **Display** tab.
5. The scenario should project out 30 years in the future, which is not an option by default. For the **Project Year** area, click in the input field, type **30**, then click **ADD**.



6. Click the **Cash Flows** tab.

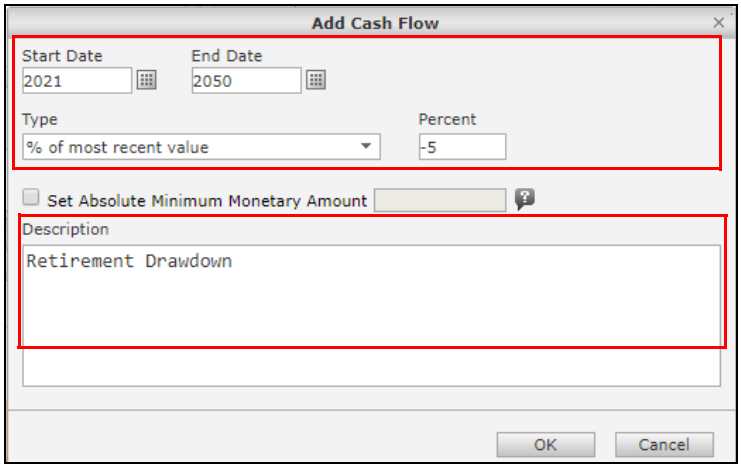
7. Click **Add**. The Add Cash Flow dialog box opens.



8. In the **Start Date** field, enter **2021**
9. In the **End Date** field, scroll right and enter **2050**.
10. From the **Type** drop-down field, select **% of most recent value**.
11. In the Percent field, type **-5**.

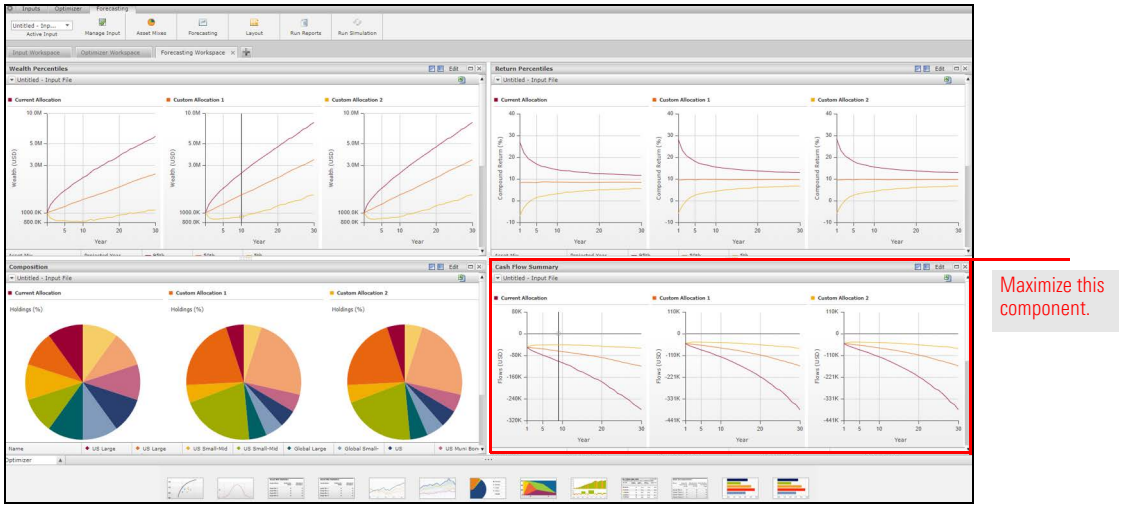
    ☞ Note: The value here needs to be negative, to correctly calculate the withdrawal amount.

12. In the **Description** field, type **Retirement Drawdown**.



13. Click **OK** to close the Add Cash Flow dialog box.
14. Click **OK** to close the Forecasting Settings window.

15. In the Cash Flow Summary component, click the **Maximize** icon. This component is described in the next section.



What does the Cash Flow Summary component show?

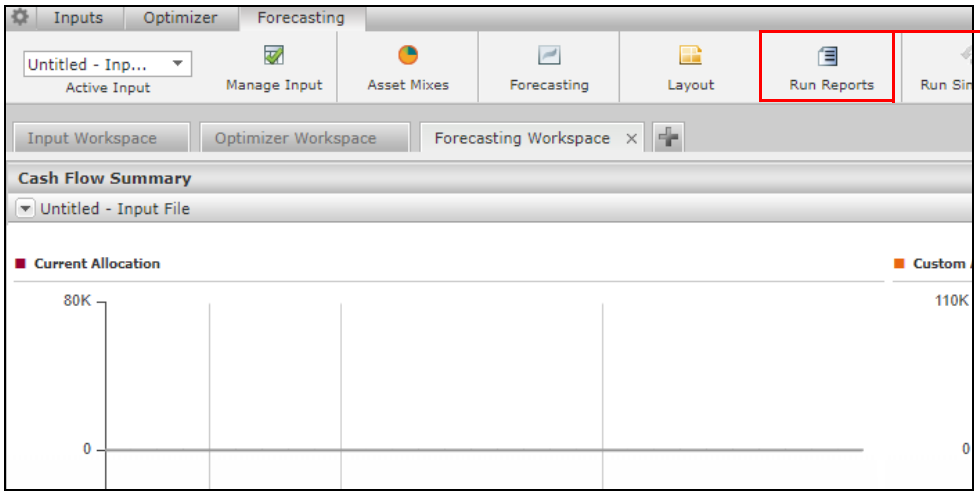
The Cash Flow Summary component shows how much money a client will potentially be able to withdraw on an annual basis if they adhere to the asset allocation over time. Note the following important points about this component:

- For each year, three possible outcomes are shown. The 95th percentile is the best possible outcome; only a 5% chance exists of this happening. The 5th percentile is the bear-market scenario. There's a 95% chance the client will have at least this much money in a particular year. The 50th percentile represents the midpoint of outcomes for any one year. Half of the outcomes were worse than this value, and half were better.
- Focus on the asset allocation being recommended, and compare it to the client's current asset allocation. For instance, what is the 5th Percentile value in year 30 for the Current Allocation vs. Custom Allocation 2?
- Move the cursor over each graph to see the outflow values for any particular year.

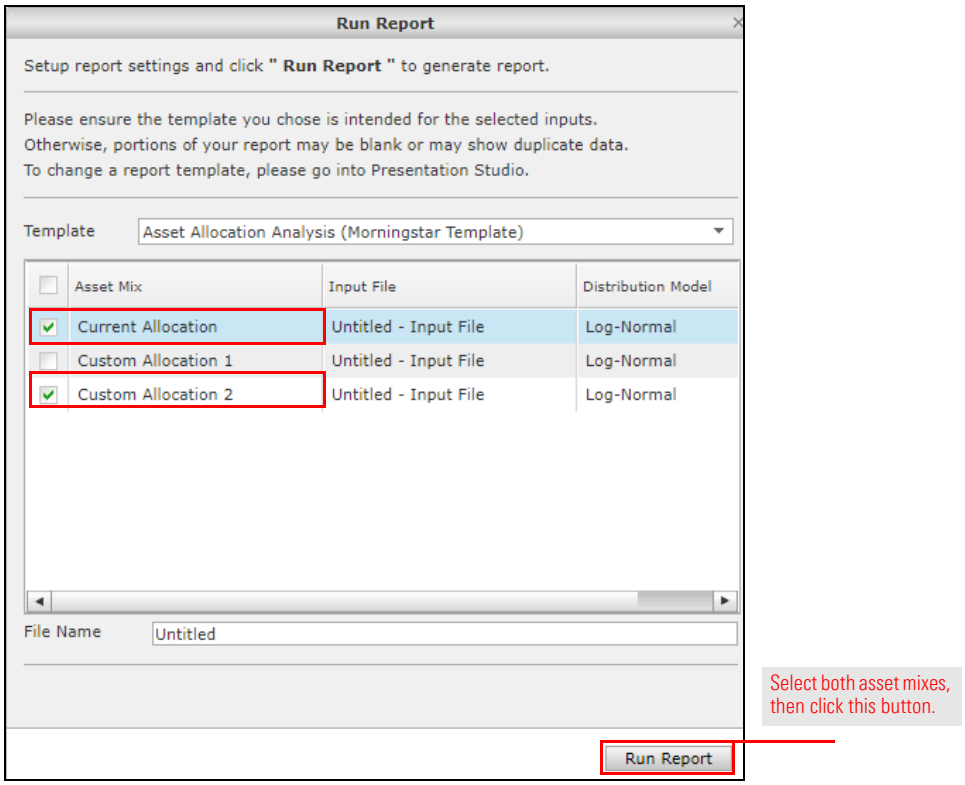
Exercise 16: Generate a report from the Asset Allocation module

To generate a report using a Presentation Studio template directly from the Asset Allocation module, do the following:

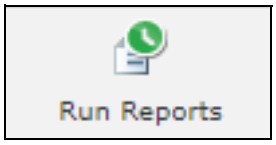
1. From the toolbar, click the **Run Reports** icon. The Run Report dialog box opens. The Template drop-down field should show the Asset Allocation Analysis (Morningstar Template).

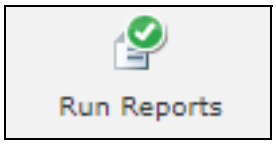


2. Check the **box** to the left of **Current Allocation** and **Custom Allocation 2**.
3. In the **File Name** field, type **Recommended Asset Allocation**.
4. Click **Run Report**. The dialog box closes, and a clock icon appears on the Run Report icon on the toolbar as the report is being processed.



5. When the report is ready, the Run Report icon shows a green check mark. To see the report, click the **Run Report** icon. The Run Report dialog box opens.





Note the change in appearance of this icon from when a report is generating (left), to when it is ready (right).

6. Click the **Report Complete:** link. The report will either be downloaded, or open in a new window, depending on the user's browser settings.

Click this link to see the report.

7. Click **Close** to close the Run Report dialog box.