



Custom PBI Column Chart

Aka `stackedHistogramLined`

User Manual

February 17, 2022

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Getting Started

This guide is designed to provide you with a detailed understanding of how to use this chart.

You can navigate directly to section headers by clicking on the corresponding name in the **Table of Contents**. Links will also be found throughout this guide [like this](#).

You may find the following resources helpful:

Microsoft Power BI Documentation: <https://docs.microsoft.com/en-us/power-bi/>

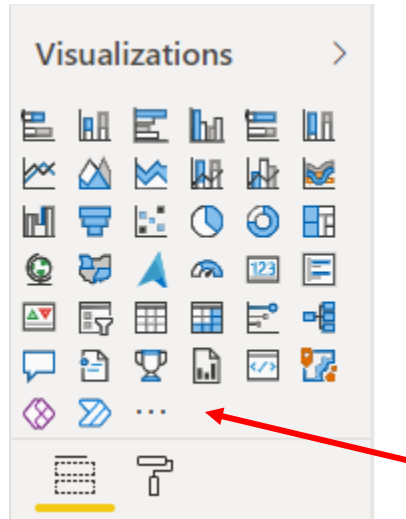
Github Repository: <https://github.com/jesse-xia/stackedHistogramLined>

Background

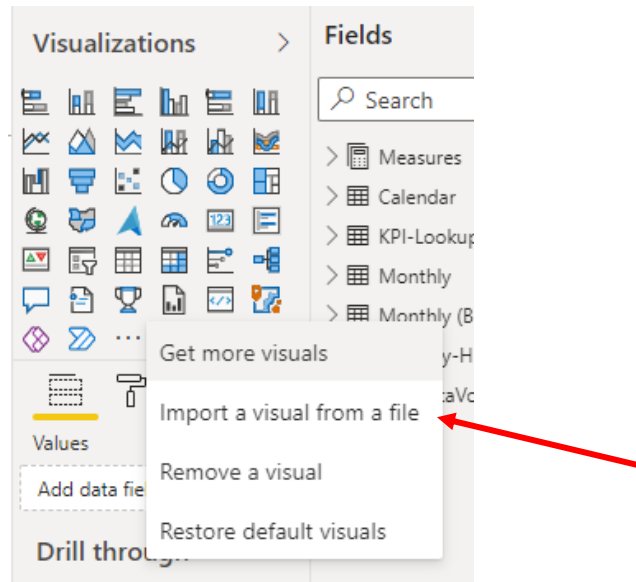
Since shifting our monthly report over to Power BI, default Power BI charts have been limiting – many features offered in Excel and PowerPoint were not available in Power BI. The Custom PBI Column Chart aims to solve this issue by extending the capabilities of default Power BI visuals and delivering something that is interactive, easy to use, visually informative, and aesthetically pleasing. This chart is designed to display historical KPI data to be presented in a monthly report. It builds upon the functionality of a regular Power BI chart by adding additional visual indicators and customizable options.

Setup

To import a custom visual, click on the three dots in the **Visualizations** panel.

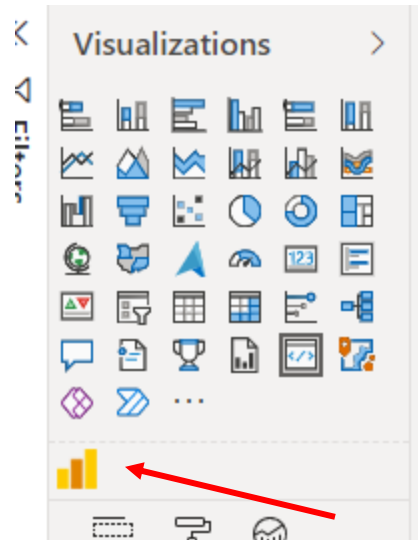


From the dropdown, select **Import a visual from a file**.



Find and select **stackedHistogramLined** from your filesystem and click **Open**.

You should now see a new icon in your visualizations panel.

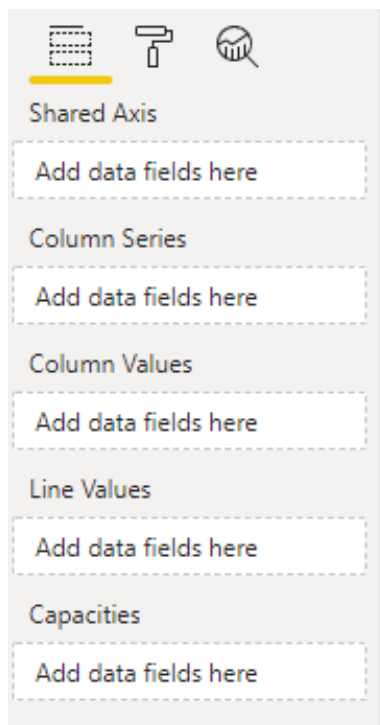


Clicking on this icon will insert the visual into your report.

Adding Data

After inserting the visual, it will not display anything until it is populated with data.

Underneath the **Visualizations** panel, you'll find several empty fields.



Shared Axis – X-axis values that will be displayed on the chart.

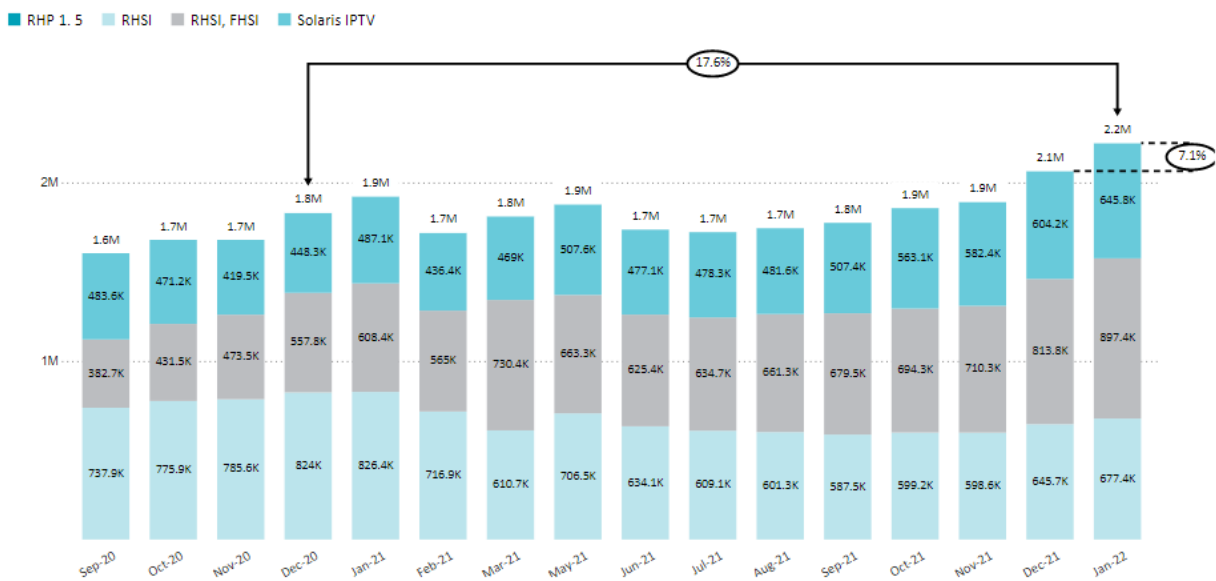
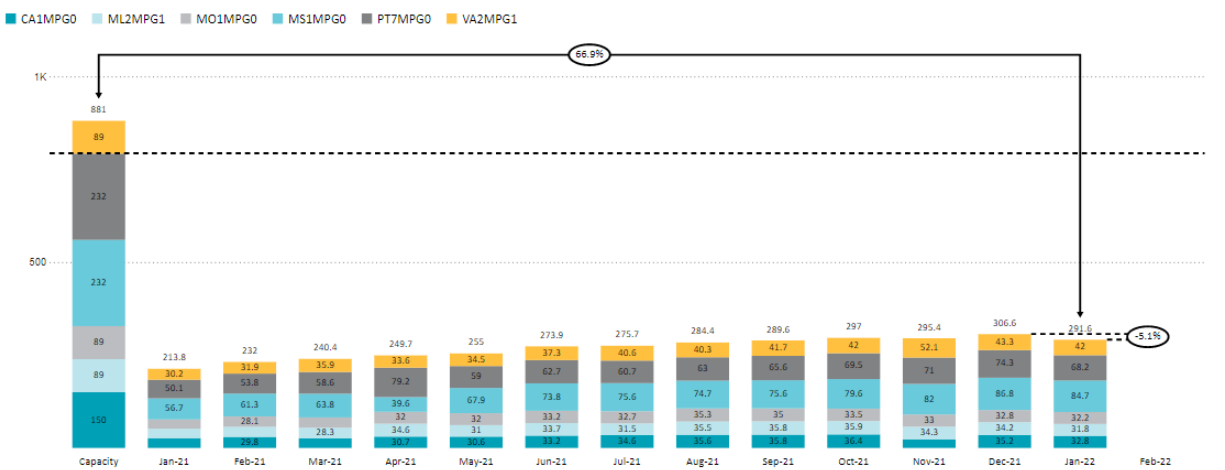
Column Series – Categories that will display along the y-axis of the chart.

Column Values – Data values that will display along the y-axis of the chart.

Line Values – Values that determine the “threshold”, a line that will span the width of the chart.

Capacities – Capacities are displayed alongside the regular column values as its own separate column.

Sample Charts

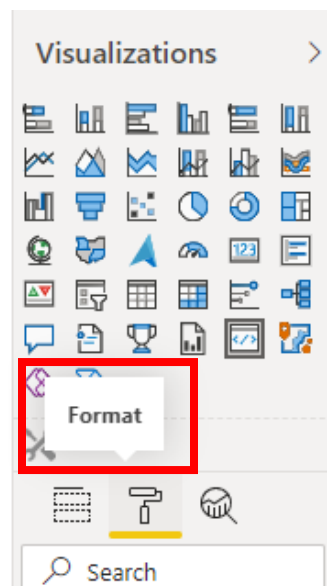


Custom PBI Column Chart

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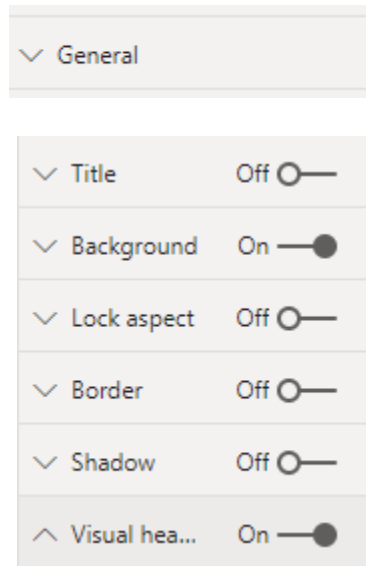
Features & Settings

This section will cover all configurable options offered by this visual. After clicking on the visual, these options can be found in the **Visualizations** pane under **Format**.



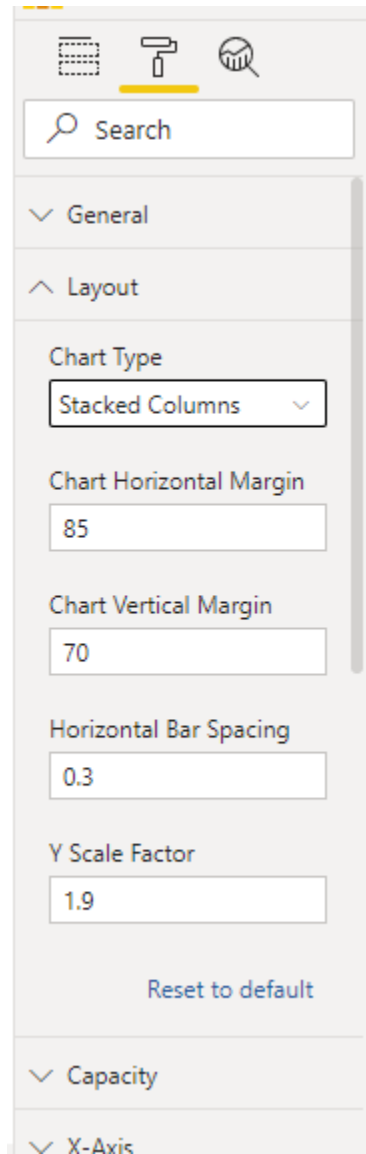
Default Settings

The default settings offered by Power BI include **General**, **Title**, **Background**, **Border**, **Shadow**, **Lock Aspect**, and **Visual Header**. These settings will not be covered in this manual as they are not unique to this visual. Additionally, settings that are self-explanatory or commonly found in other tools will not be covered, as these are obvious and easy to understand.



Layout

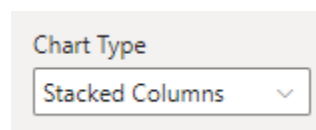
Defines the general structure of the chart.



The screenshot shows a settings panel for a chart. At the top, there are three icons: a grid, a bar chart, and a pie chart. Below them is a search bar with a magnifying glass icon and the text 'Search'. The panel is divided into sections by expandable/collapsible headers. The 'General' section is collapsed, while 'Layout' is expanded. Under 'Layout', there are several settings: 'Chart Type' is a dropdown menu currently showing 'Stacked Columns'; 'Chart Horizontal Margin' is a text input field with the value '85'; 'Chart Vertical Margin' is a text input field with the value '70'; 'Horizontal Bar Spacing' is a text input field with the value '0.3'; and 'Y Scale Factor' is a text input field with the value '1.9'. Below these inputs is a 'Reset to default' button. Further down, the 'Capacity' and 'X-Axis' sections are visible but collapsed.

Chart Type

Switches between **Clustered** and **Stacked** column charts.



This is a close-up of the 'Chart Type' dropdown menu. It shows the label 'Chart Type' above a dropdown box that currently displays 'Stacked Columns' with a downward-pointing arrow on the right side.

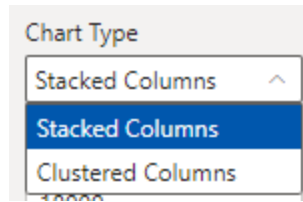
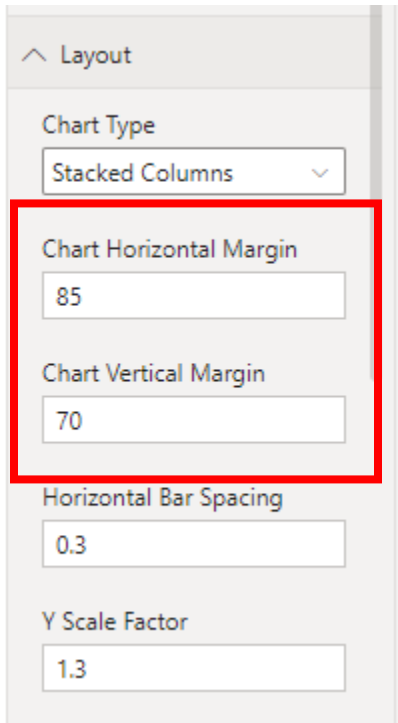


Chart Horizontal/Vertical Margin

The margins define the whitespace around the inside border of the visual.



Horizontal Bar Spacing

Sets the amount of whitespace between the bars, expressed as a percentage of the bar width. For example, a value of 0.3 indicates that the spacing between bars should be equal to 30% of the width of one bar.

^ Layout

Chart Type
Stacked Columns

Chart Horizontal Margin
85

Chart Vertical Margin
70

Horizontal Bar Spacing
0.3

Y Scale Factor
1.3

This screenshot shows a settings panel titled 'Layout'. It contains five configuration options: 'Chart Type' (a dropdown menu set to 'Stacked Columns'), 'Chart Horizontal Margin' (a text input field with the value '85'), 'Chart Vertical Margin' (a text input field with the value '70'), 'Horizontal Bar Spacing' (a text input field with the value '0.3'), and 'Y Scale Factor' (a text input field with the value '1.3'). The 'Horizontal Bar Spacing' field is highlighted with a red rectangular border.

Y Scale Factor

Allows you to adjust the default scaling of the max y-value. The max y-value will be set to largest column multiplied by the y scale factor.

^ Layout

Chart Type
Stacked Columns

Chart Horizontal Margin
85

Chart Vertical Margin
70

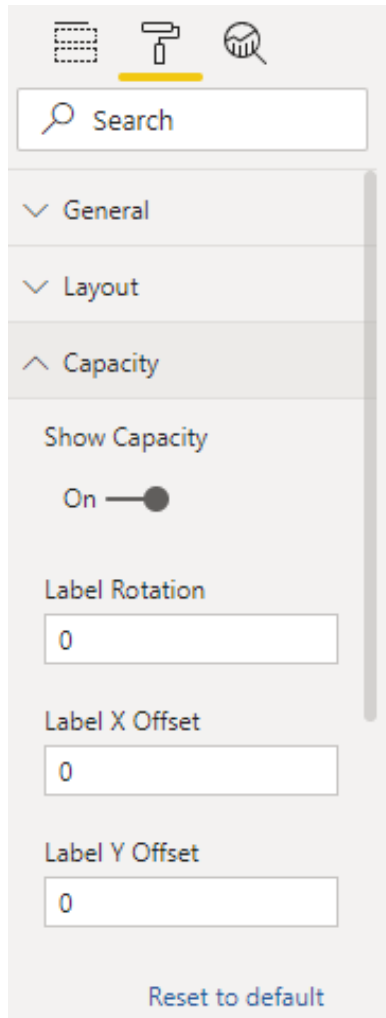
Horizontal Bar Spacing
0.3

Y Scale Factor
1.3

This screenshot shows the same 'Layout' settings panel as above. In this view, the 'Y Scale Factor' field, which contains the value '1.3', is highlighted with a red rectangular border.

Capacity

Adjusts settings specifically for the capacity column.



The screenshot shows a settings panel with a top toolbar containing three icons: a grid, a T-shaped tool, and a magnifying glass. Below the toolbar is a search bar with a magnifying glass icon and the text "Search". The panel has three expandable sections: "General" (collapsed), "Layout" (collapsed), and "Capacity" (expanded). The "Capacity" section contains the following settings:

- Show Capacity:** A toggle switch currently set to "On".
- Label Rotation:** A text input field containing the value "0".
- Label X Offset:** A text input field containing the value "0".
- Label Y Offset:** A text input field containing the value "0".

At the bottom of the "Capacity" section is a blue link labeled "Reset to default".

Label X/Y Offset

Label x/y offset allows you adjust the x/y position of the axis labels relative to their original position.

Capacity

Show Capacity

On ☒

Label Rotation

0

Label X Offset

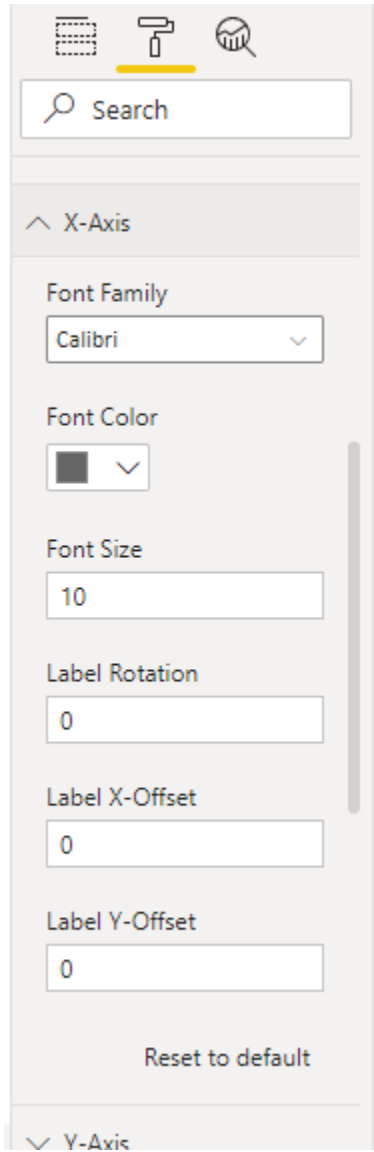
0

Label Y Offset

0

X-Axis

Adjusts the horizontal axis of the chart.



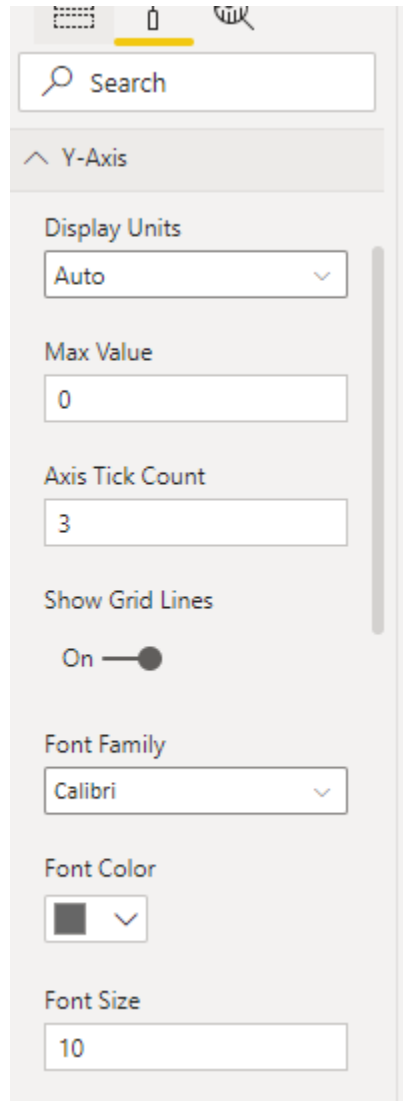
The image shows a settings panel for the X-Axis of a chart. At the top, there are three icons: a dashed box, a paintbrush, and a magnifying glass. Below these is a search bar with the word "Search" and a magnifying glass icon. The panel is titled "X-Axis" with an expand/collapse arrow. The settings include:

- Font Family:** A dropdown menu currently set to "Calibri".
- Font Color:** A color selection box showing a dark gray square and a dropdown arrow.
- Font Size:** A text input field containing the value "10".
- Label Rotation:** A text input field containing the value "0".
- Label X-Offset:** A text input field containing the value "0".
- Label Y-Offset:** A text input field containing the value "0".

At the bottom of the X-Axis section is a "Reset to default" button. Below the X-Axis section, the "Y-Axis" section is partially visible, indicated by a collapse arrow.

Y-Axis

Adjusts the vertical axis on the left side of the chart.



The image shows a vertical settings panel for the Y-Axis. At the top, there is a search bar with a magnifying glass icon and the text "Search". Below this is a header section labeled "Y-Axis" with a chevron icon. The settings are organized into several sections: "Display Units" with a dropdown menu set to "Auto"; "Max Value" with a text input field containing "0"; "Axis Tick Count" with a text input field containing "3"; "Show Grid Lines" with a toggle switch set to "On"; "Font Family" with a dropdown menu set to "Calibri"; "Font Color" with a color selection box showing a black square and a dropdown arrow; and "Font Size" with a text input field containing "10". A vertical scrollbar is visible on the right side of the panel.

Max Value

Defines the maximum value of the scale along the y-axis. It'll be automatically adjusted based on the magnitude of the data, though it'll appear as 0 in the input box until another value is entered.

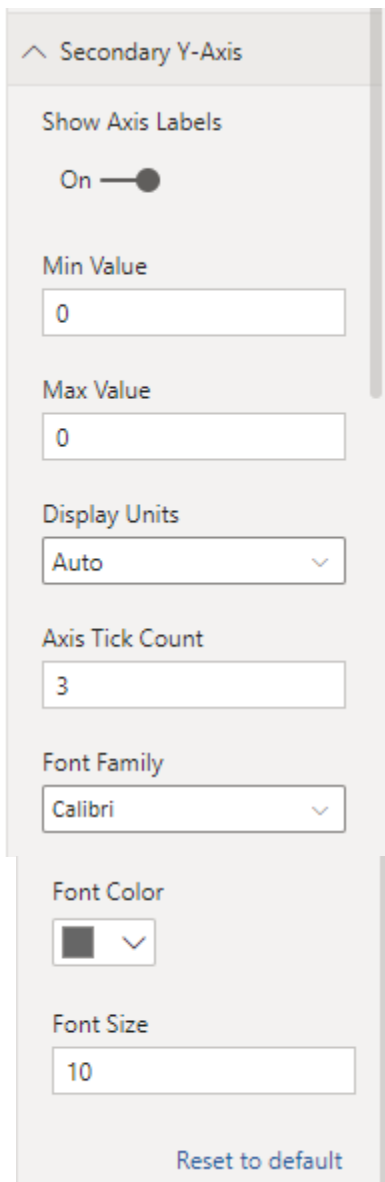
The image shows a vertical settings panel for a Y-axis. At the top is a header with an upward arrow and the text 'Y-Axis'. Below this are several settings: 'Display Units' with a dropdown menu set to 'Auto'; 'Max Value' with a text input field containing '0'; 'Axis Tick Count' with a text input field containing '3'; 'Show Grid Lines' with a toggle switch set to 'On'; 'Font Family' with a dropdown menu set to 'Calibri'; 'Font Color' with a color selection box showing a dark gray square; and 'Font Size' with a text input field containing '10'. The 'Max Value' and 'Axis Tick Count' fields are highlighted with red rectangular boxes.

Axis Tick Count

Sets the number of labelled values along the y-axis scale. The number of ticks is determined by dividing the range (from 0 to the **Max Value**) by the desired tick count. If the tick count does not divide evenly, the value will automatically be rounded to the nearest whole number.

Secondary Y-Axis

Configures the secondary y-axis on the right side of the chart, which can be used to position the threshold.



The image shows a configuration panel for the 'Secondary Y-Axis'. It has a title bar with a chevron icon and the text 'Secondary Y-Axis'. Below the title bar, there are several settings: 'Show Axis Labels' with a toggle switch set to 'On'; 'Min Value' and 'Max Value' both set to '0' in input fields; 'Display Units' set to 'Auto' in a dropdown menu; 'Axis Tick Count' set to '3' in an input field; 'Font Family' set to 'Calibri' in a dropdown menu; 'Font Color' set to black with a color picker icon; and 'Font Size' set to '10' in an input field. At the bottom right, there is a 'Reset to default' link.

Secondary Y-Axis

Show Axis Labels

On ☒

Min Value

0

Max Value

0

Display Units

Auto

Axis Tick Count

3

Font Family

Calibri

Font Color

Font Size

10

[Reset to default](#)

Min/Max Value

Defines the minimum/maximum value of the scale along the axis.

Secondary Y-Axis

Show Axis Labels

On ☒

Min Value

0

Max Value

0

Display Units

Auto

Axis Tick Count

3

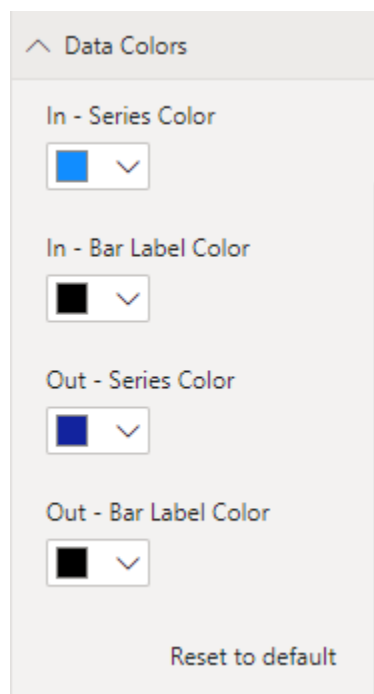
Font Family

Calibri

Data Colors

Data Colors is a setting offered by default Power BI charts, though some additional functionality has been added here. Under the **Data Colors** section, you'll find a list of all the data categories provided by the current dataset, alongside color selections for **Bar Label** and **Serie Color**.

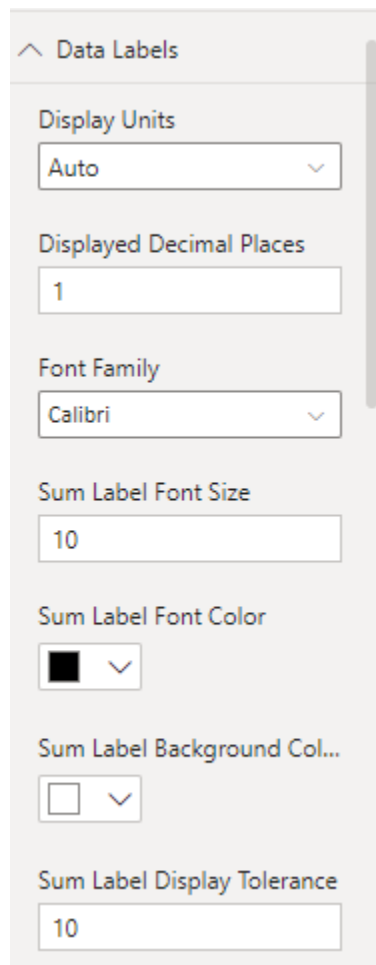
The **Bar Label Color** determines the color of the labels on the bars for a specific category. This is not to be confused with the **Bar Label Font Color** under the **Data Labels** section, which will uniformly adjust the label color for *all* categories. In most cases, the color specified under **Data Colors** will override the label color under **Data Label Settings**. (See developer notes for more details)



*Example of a particular **Data Colors** section. This will differ depending on your dataset.*

Data Labels

Allows you adjust the labels for the bars displayed on the chart. Labels positioned above the bars are referred to as “sum labels” while labels positioned on the bars are “bar labels”.



The image shows a settings panel titled "Data Labels" with a collapse icon (an upward-pointing chevron) to its left. The panel contains several configuration options:

- Display Units:** A dropdown menu with "Auto" selected.
- Displayed Decimal Places:** A text input field containing the number "1".
- Font Family:** A dropdown menu with "Calibri" selected.
- Sum Label Font Size:** A text input field containing the number "10".
- Sum Label Font Color:** A color selection control showing a black square and a dropdown arrow.
- Sum Label Background Col...:** A color selection control showing a white square and a dropdown arrow.
- Sum Label Display Tolerance:** A text input field containing the number "10".

Show Sum Labels

On —●

Show Sum Label Backgrou...

On —●

Show Bar Labels

On —●

Bar Label Font Color

■ ▼

Bar Label Font Size

10

Bar Label Display Tolerance

15

Reset to default

Sum Label Display Tolerance

Adjusts the available width for which sum labels will display. Sum labels will display only if the bar width + the display tolerance is greater than the width of the label text.

^ Data Labels

Display Units
Auto

Displayed Decimal Places
1

Font Family
Calibri

Sum Label Font Size
10

Sum Label Font Color
■

Sum Label Background Col...
□

Sum Label Display Tolerance
10

Bar Label Display Tolerance

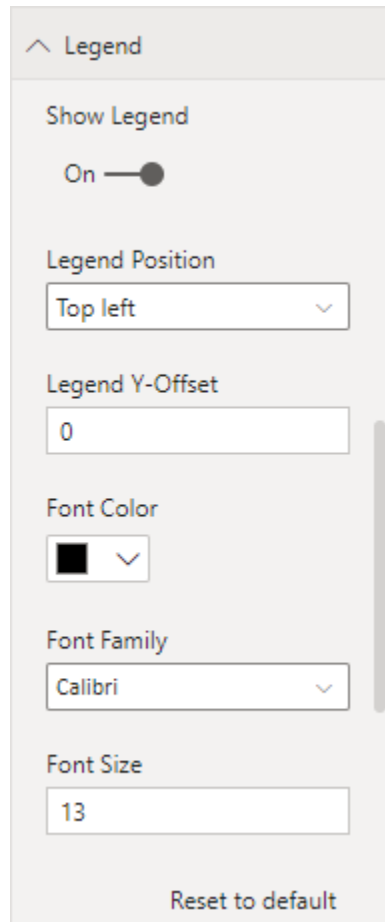
Adjusts the available width for which sum labels will display. Sum labels will display only if the bar width + the display tolerance is greater than the width of the label text.

The image shows a settings panel with the following options:

- Show Sum Labels: On (toggle switch)
- Show Sum Label Backgrou...: On (toggle switch)
- Show Bar Labels: On (toggle switch)
- Bar Label Font Color: Black (color picker)
- Bar Label Font Size: 10 (text input)
- Bar Label Display Tolerance: 15 (text input, highlighted with a red box)
- Reset to default (button)

Legend Settings

Adjusts the legend.



The image shows a 'Legend' settings panel with a light gray background. At the top, there is a header 'Legend' with a small upward-pointing arrow. Below the header, the settings are organized into sections. The first section is 'Show Legend', which has a toggle switch labeled 'On' that is currently turned on. The second section is 'Legend Position', which has a dropdown menu showing 'Top left'. The third section is 'Legend Y-Offset', which has a text input field containing the number '0'. The fourth section is 'Font Color', which has a color picker showing a black square and a dropdown arrow. The fifth section is 'Font Family', which has a dropdown menu showing 'Calibri'. The sixth section is 'Font Size', which has a text input field containing the number '13'. At the bottom of the panel, there is a 'Reset to default' button. A vertical scrollbar is visible on the right side of the panel.

Legend

Show Legend

On

Legend Position

Top left

Legend Y-Offset

0

Font Color

Font Family

Calibri

Font Size

13

Reset to default

Legend Position

Sets legend position.

Top Left: Displays in top left corner, horizontally.

Bottom Center: Displays centered at the bottom, horizontally.

Left: Displays along the left side, vertically.

^ Legend

Show Legend

On ☐

Legend Position

Top left

Legend Y-Offset

0

Font Color

☐ ☐

Font Family

Calibri

Font Size

13

Reset to default

Legend Position

Top left

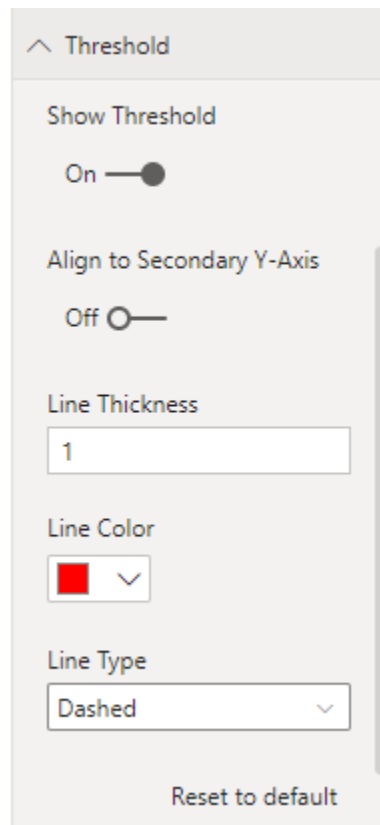
Top left

Bottom center

Left

Threshold

The threshold displays as a horizontal line spanning the width of the chart.



A settings panel titled "Threshold" with a chevron icon. It contains several controls: a "Show Threshold" toggle switch set to "On", an "Align to Secondary Y-Axis" toggle switch set to "Off", a "Line Thickness" input field with the value "1", a "Line Color" selector showing a red square, a "Line Type" dropdown menu set to "Dashed", and a "Reset to default" button at the bottom.

Align to Secondary Y-Axis

Sets the threshold to scale based off the secondary y-axis instead. By default, the threshold will scale based on the primary y-axis (on the left side). Toggling this option will allow you to manually adjust the displayed height of the threshold using the min/max values for the secondary y-axis.

Threshold

Show Threshold

On ☒

Align to Secondary Y-Axis

Off ☐

Line Thickness

1

Line Color

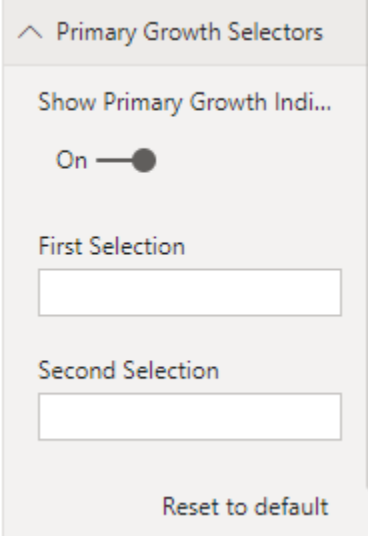
Line Type

Dashed

Reset to default

Primary Growth Selectors

Indicator values express the change from the first selection to the second selection as a percentage. The only exception occurs when the first selection is the capacity column, where the value displays the percent change from the second selection compared to the first.



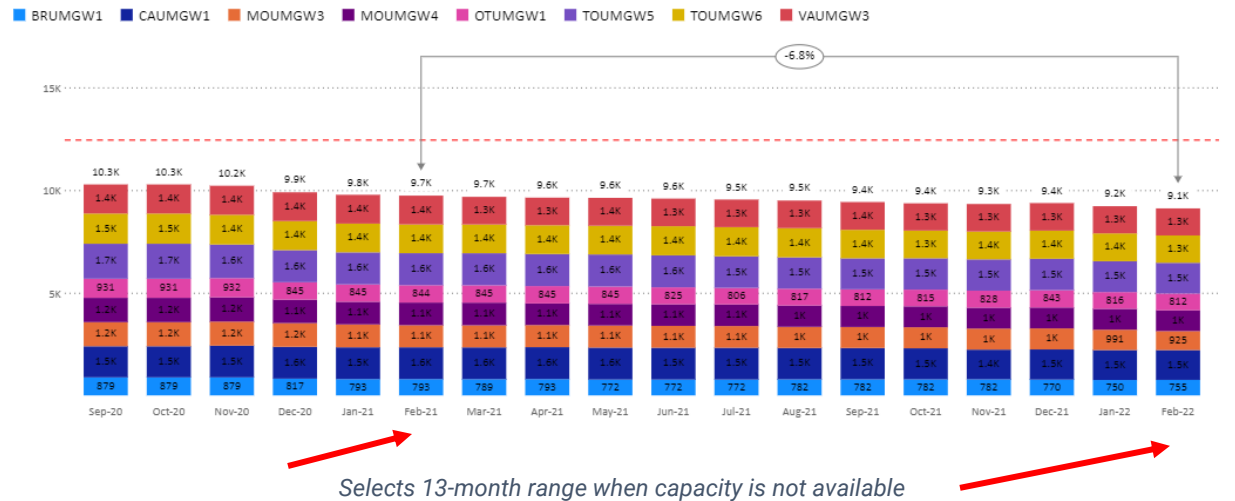
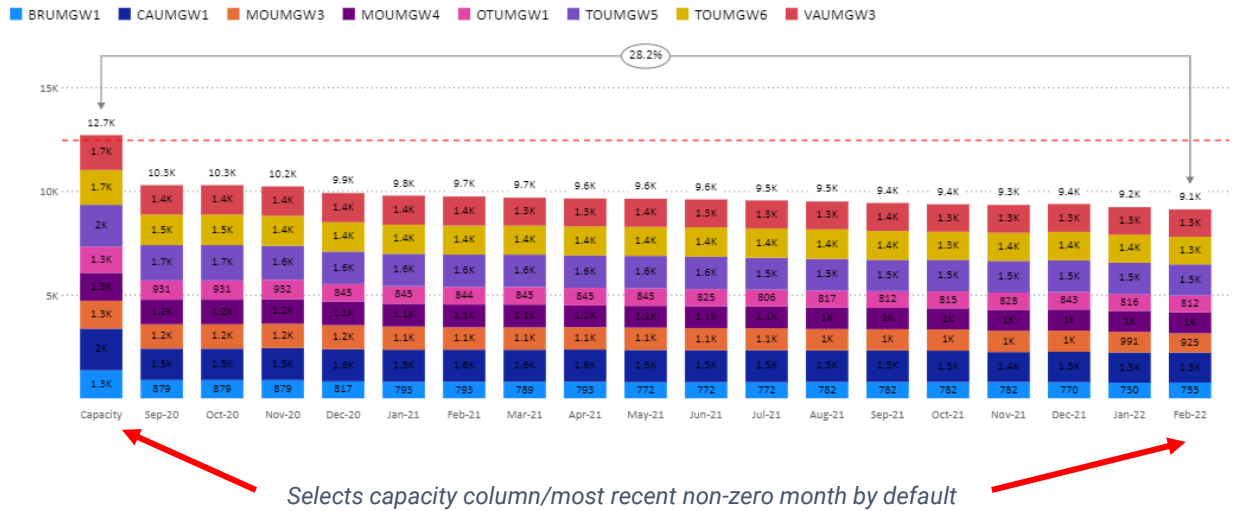
The image shows a control panel titled "Primary Growth Selectors" with a collapse icon. It contains a toggle switch for "Show Primary Growth Indi..." which is currently turned "On". Below the toggle are two text input fields labeled "First Selection" and "Second Selection". At the bottom of the panel is a button labeled "Reset to default".

First/Second Selection (Stacked Column Chart)

The selectors allow you to select the column series or category that you would like to compare. Selections are always case- and punctuation- sensitive.

The selectors will accept the name of any column along the x-axis (typically in the form of month-year, ex. Nov-22). If the first selection is blank and capacity is a non-zero valid column, the first selection will default to the capacity column. If the second selection is blank, it will default to the most recent non-zero available month.

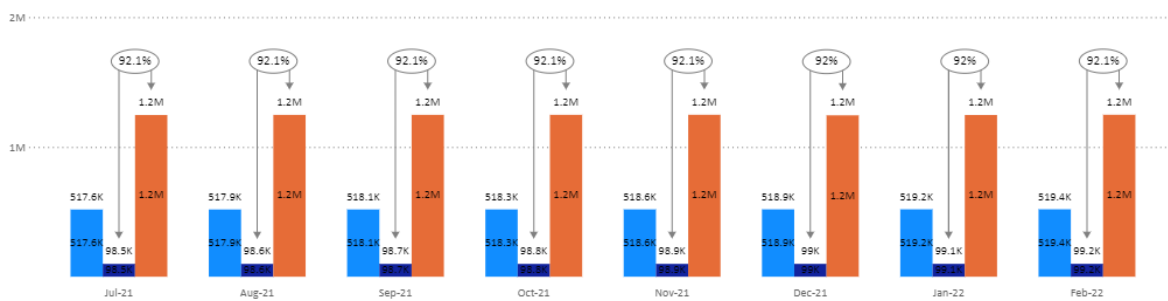
If capacity does not exist, the selections will default to the 13-month range. If that is not available, it will attempt to select the next largest range (12-month), and decrement until a valid selection is found.



First/Second Selection (Clustered Column Chart)

The selectors will accept the name of any category of values. By default, it will select the last two categories, with the second selection selecting the last category and the first selection selecting the second last category.

■ NB ■ NF ■ ON



Selects last two categories by default



Primary Growth Labels

Adjusts settings for primary growth labels.

^ Primary Growth Labels

Label Background Color

▼

Font Color

▼

Font Family

Calibri

▼

Font Size

11

Border Color

▼

Border Thickness

1

Label Offset Height

0

Label Height

Min Label Width

Show +/- Sign

On ☒

Toggle Background Shape

On ☒

[Reset to default](#)

Min Label Width

Sets the minimum label width. Labels will automatically resize to fit the content, though it will never go below the minimum label width.

Label Height

Min Label Width

Show +/- Sign

On ☒

Toggle Background Shape

On ☒

[Reset to default](#)

Label Offset Height

Adjusts the vertical position of the label relative to its original position.

^ Primary Growth Labels

Label Background Color

Font Color

Font Family
Calibri

Font Size
11

Border Color

Border Thickness
1

Label Offset Height
0

Primary Line Settings


Adjusts line settings for primary growth indicators.

 Primary Line Settings

Align Primary Indicators

Off 

Line Color

Line Offset Height

Line Thickness

Arrow Size

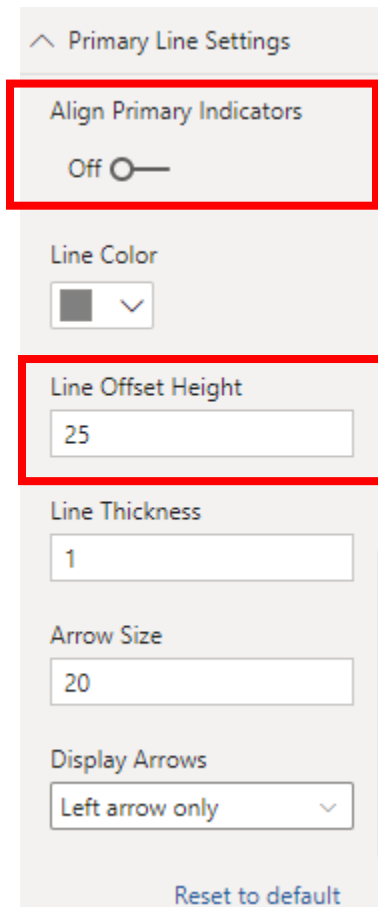
Display Arrows



[Reset to default](#)

Align Primary Indicators

Displays all primary indicators aligned at the top of the chart. This only applies to the clustered column chart.



Primary Line Settings

Align Primary Indicators
Off ☐

Line Color

Line Offset Height
25

Line Thickness
1

Arrow Size
20

Display Arrows
Left arrow only

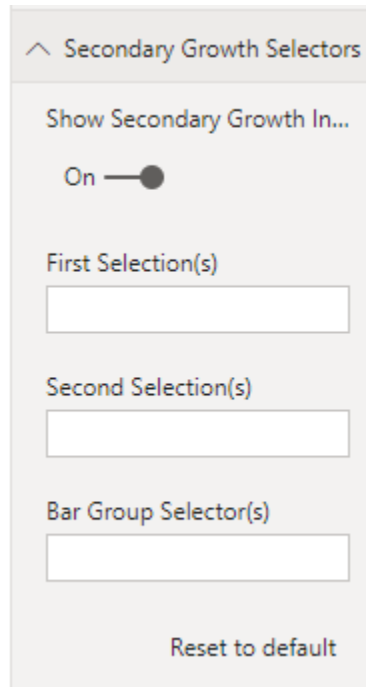
[Reset to default](#)

Line Offset Height

Sets the whitespace between the top of the bars and the start of the line.

Secondary Growth Selectors

Indicator values express the change from the first selection to the second selection as a percentage.



The image shows a user interface panel titled "Secondary Growth Selectors" with a collapse icon (an upward-pointing chevron). Below the title is a section labeled "Show Secondary Growth In..." which contains a toggle switch currently set to "On". Below this are three text input fields: "First Selection(s)", "Second Selection(s)", and "Bar Group Selector(s)". At the bottom of the panel is a button labeled "Reset to default".

First Selection(s)

The first selection allows you to select the first column series or category that you would like to compare. Selections are always case- and punctuation- sensitive. To select multiple items, separate the names with a comma.

In a stacked column chart, the first selection will accept the name of any column along the x-axis (typically in the form of month-year, ex. Nov-22). If no selection is provided, it will default to the second-from-last selectable column.

In a clustered column chart, the first selection will accept the name of any category of values. By default, it will select the second-from-last category.

Second Selection(s)

The second selection operates exactly like the first selection.

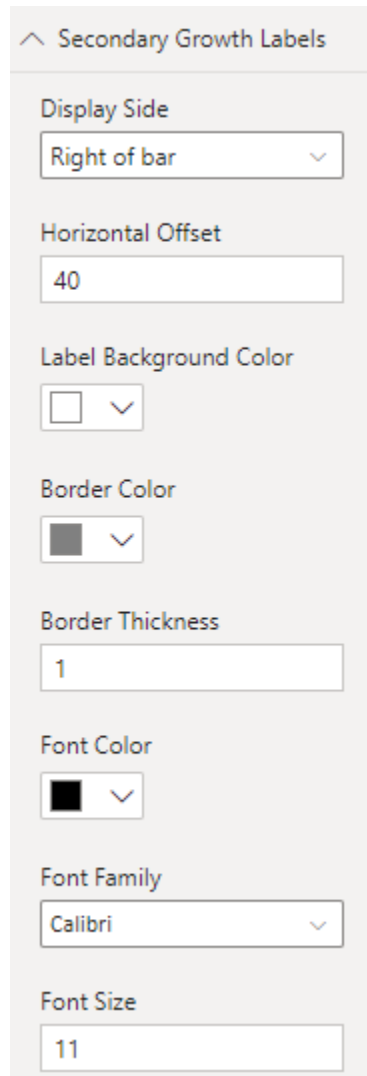
In both stacked and clustered forms, if no selection is provided, it will default to the last selectable column.

Bar Group Selector(s)

The “bar group” refers to a specific label along the x-axis (ex. period) where the secondary growth indicator will display. By default, the bar group selector will select the rightmost label (ex. most recent period). Entering any other value will automatically override the default selection. Multiple values are also acceptable. For example, if you wanted to display secondary growth indicators for both Jan-22 and Feb-22, you would enter both “Jan-22” and “Feb-22” separated by a comma. Selections are always case- and punctuation-sensitive

Secondary Growth Labels

Adjusts the label properties for the secondary growth indicators.



Secondary Growth Labels

Display Side
Right of bar

Horizontal Offset
40

Label Background Color
☐

Border Color
☐

Border Thickness
1

Font Color
☐

Font Family
Calibri

Font Size
11

The image shows a settings panel for 'Secondary Growth Labels'. It contains several configuration options: 'Display Side' is a dropdown menu set to 'Right of bar'; 'Horizontal Offset' is a text input field with the value '40'; 'Label Background Color' is a color selection box showing a white square; 'Border Color' is a color selection box showing a dark gray square; 'Border Thickness' is a text input field with the value '1'; 'Font Color' is a color selection box showing a black square; 'Font Family' is a dropdown menu set to 'Calibri'; and 'Font Size' is a text input field with the value '11'. A vertical scrollbar is visible on the right side of the panel.

Label Height

Min Label Width

Show +/- Sign
On ☒

Toggle Background Shape
On ☒

Reset to default

Horizontal Offset

Adjusts the horizontal position of the label relative to its original position.

Secondary Growth Labels

Display Side

Horizontal Offset

Label Background Color

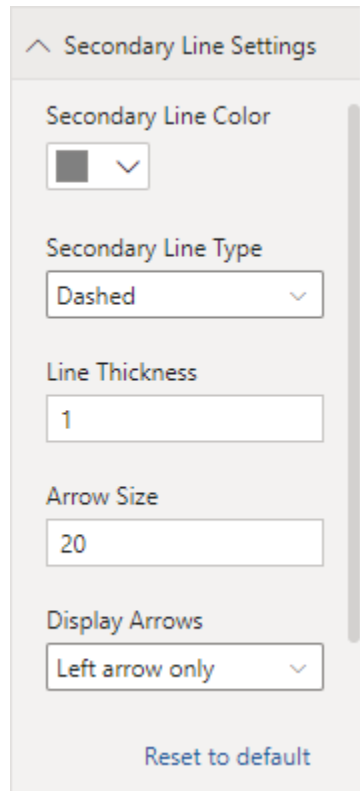
Border Color

Border Thickness

Font Color

Secondary Line Settings

Adjusts the line properties for the secondary growth indicators.



The image shows a settings panel titled "Secondary Line Settings" with a collapse icon (upward arrow) to its left. The panel contains five settings, each with a label and a control element: "Secondary Line Color" with a black square and a dropdown arrow; "Secondary Line Type" with a dropdown menu showing "Dashed"; "Line Thickness" with a text input field containing "1"; "Arrow Size" with a text input field containing "20"; and "Display Arrows" with a dropdown menu showing "Left arrow only". A "Reset to default" link is located at the bottom of the panel. A vertical scrollbar is visible on the right side of the panel.

Secondary Line Settings

Secondary Line Color

Secondary Line Type

Line Thickness

Arrow Size

Display Arrows

Reset to default

Changelog