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Visualizing trend data

The term **trend data** refers to displaying and comparing the change in value over time. Power BI provides many options in this category, each with its own focus. The idea for each of the visuals is to draw attention to the total value across a length of time. Create a new report page called Trend Data, and dive right in to see what the differences are between the following options:

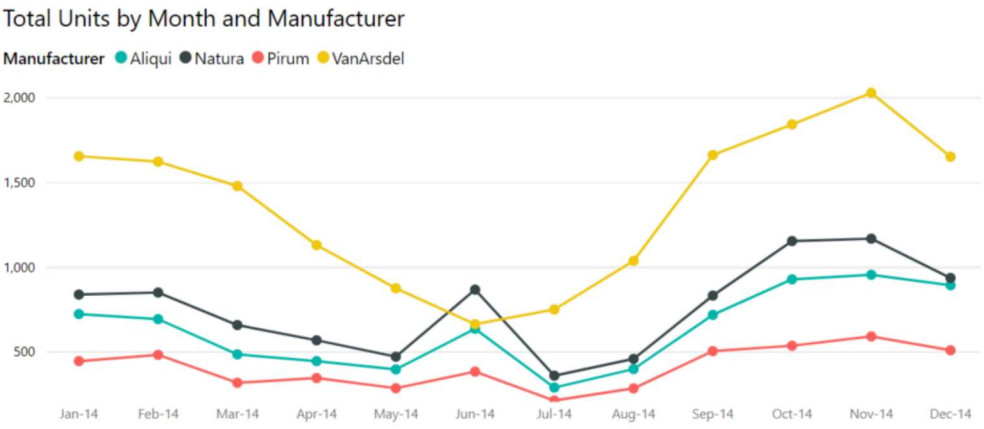
- Line and area charts
- Combo charts
- Ribbon charts
- Waterfall charts
- Funnel charts

To begin, let's explore the line and area charts. These are the most commonly used charts for visualizing trend data, and the ones that the visualizations report consumers are likely most familiar with already.

Line and area charts

The **Line chart** is the most basic of the options when it comes to analyzing data over time. The **Area chart** and **Stacked area chart** are based on the **Line chart**; the difference is that the area between the axes and the line is filled in with colors to show volume.

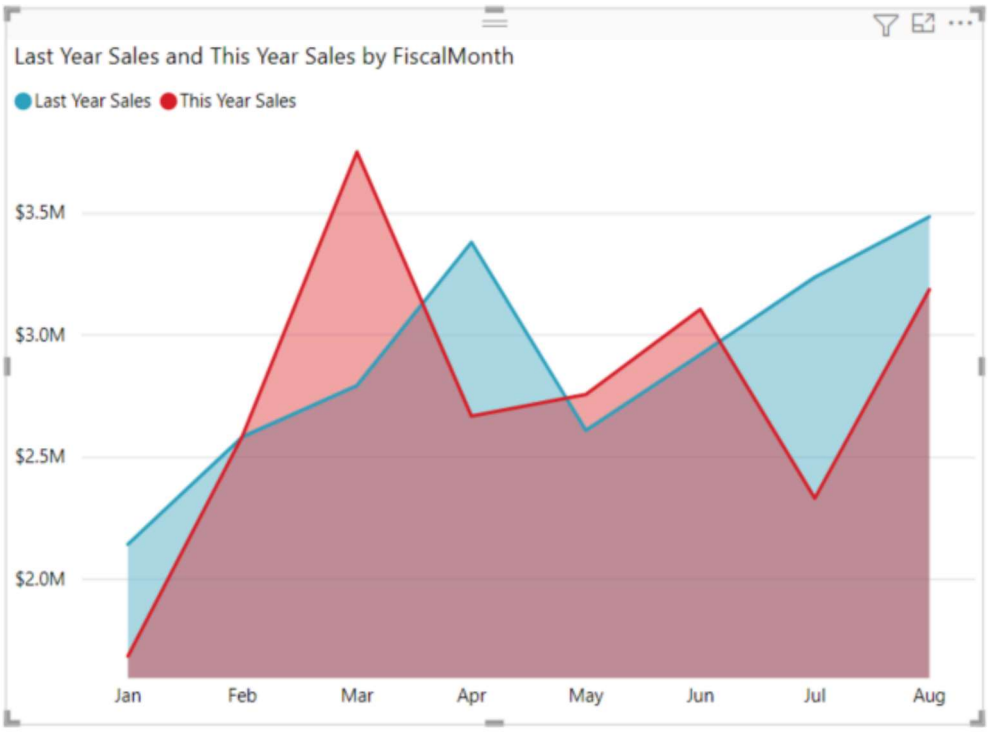
A line chart is a series of data points that are represented by dots and connected by straight lines. A line chart may have one or many lines. Line charts have an x and a y axis.



Area chart

The basic area chart (also known as layered area chart) is based on the line chart. The area between axis and line is filled with colors to indicate volume.

Area charts emphasize the magnitude of change over time, and can be used to draw attention to the total value across a trend. For example, data that represents profit over time can be plotted in an area chart to emphasize the total profit.



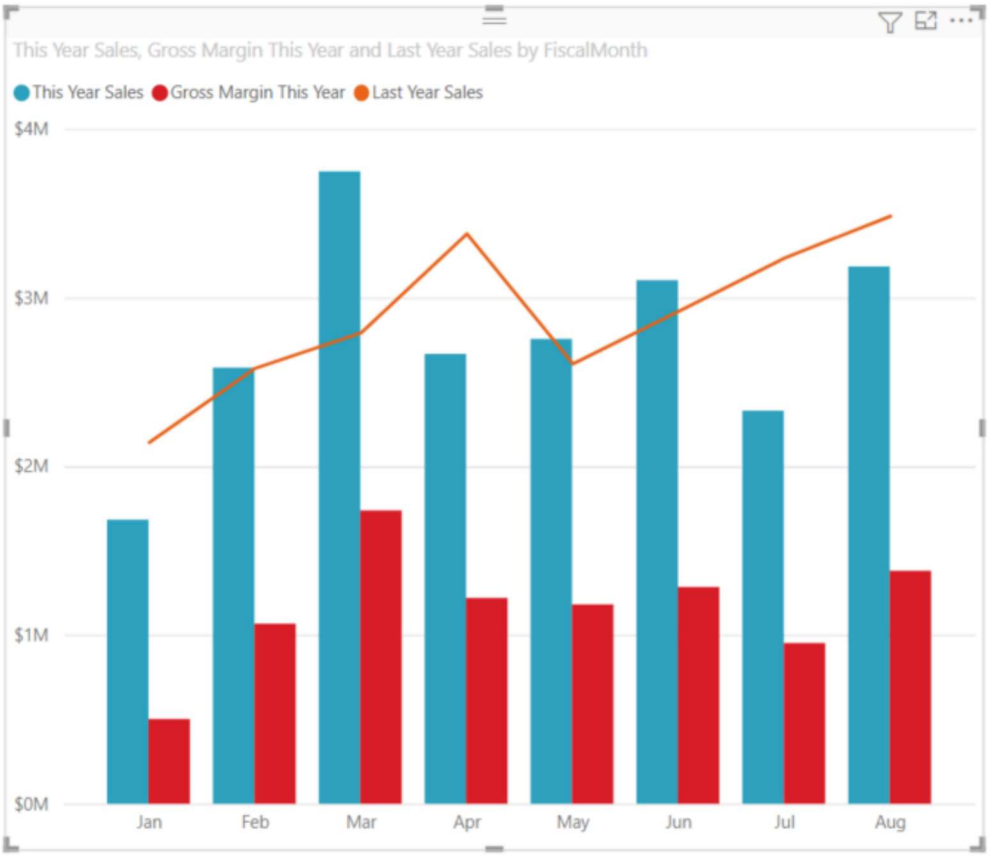
Basic area charts are a great choice:

- to see and compare the volume trend across a time series.
- for an individual series representing a physically countable set.

Combo charts

Click link to watch a video about combo charts.

As the name states, a **Combo chart** combines the **Line chart** and **Column chart** together in one visual. Users can choose to have either the **Stacked column** format or the **Clustered column** format. By combining these two visuals, you can make a very quick comparison of the data. The main benefit of this type of chart is that you can have one or two Y-axes. Two measures can either share the same Y-axis, like **Total Sales** and **Profit**, which are both numeric values, or they could be based on completely different values, like **Order Quantity** and **Profit**, which are numeric and percentage, respectively.

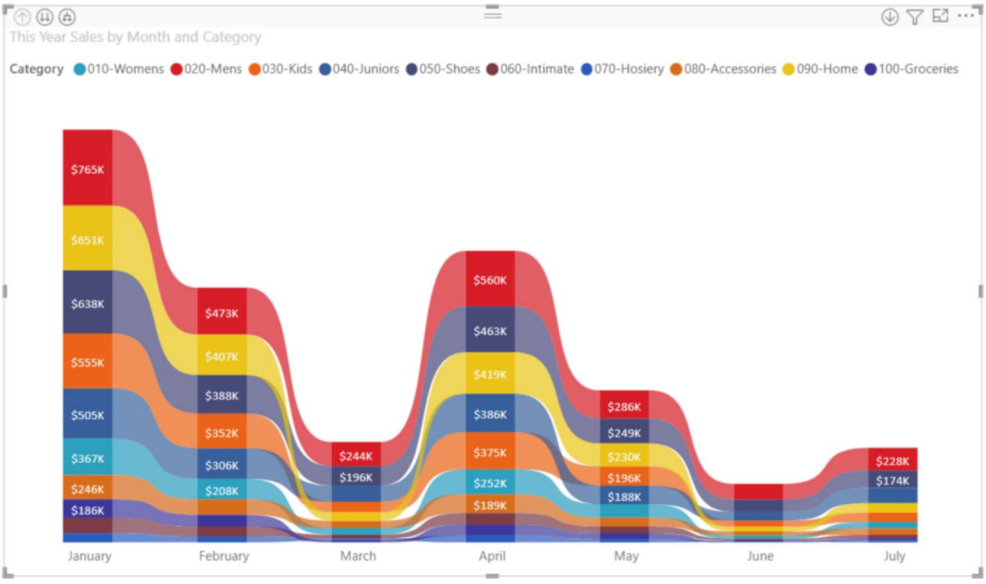


Combo charts are a great choice:

- when you have a line chart and a column chart with the same X axis.
- To compare multiple measures with different value ranges.
- To illustrate the correlation between two measures in one visualization.
- To check whether one measure meets the target defined by another measure
- To conserve canvas space.

Ribbon chart

The **Ribbon chart** is no different than the other visuals explored in this section; it is good at viewing data over time. What makes ribbon charts effective though is their ability to show rank change; the highest range or value is always displayed on the top for each of the time periods. The chart also does have a unique visual flowing appeal to it that is different than the other visuals.



Ribbon chart is NOT another version of the stacked column chart. It is much more powerful than stacked column chart. If you want to see the trend as well as the stacked values, then I highly recommend Ribbon chart. In this post, you've seen examples of comparing the result of this chart with others, and you can see there are stories that only this visual can tell.

Waterfall chart

Click link to watch a video about waterfall and funnel chart.

Waterfall charts show a running total as Power BI adds and subtracts values. These charts are useful for understanding how an initial value (like net income) is affected by a series of positive and negative changes.

The columns are color coded so you can quickly notice increases and decreases. The initial and the final value columns often start on the horizontal axis, while the intermediate values are floating columns. Because of this style, waterfall charts are also called bridge charts.

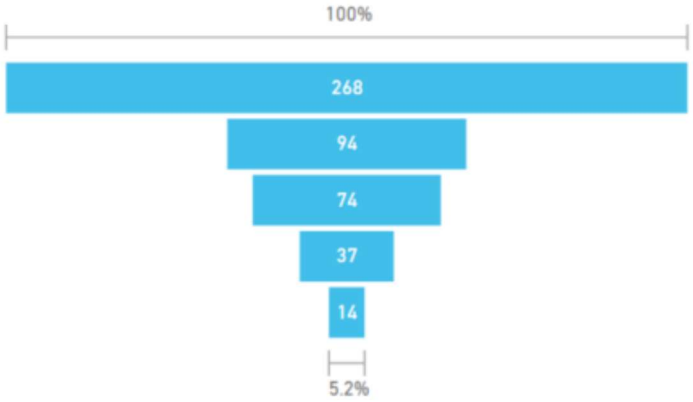
Waterfall charts are a great choice:

- When you have changes for the measure across time, a series, or different categories.
- To audit the major changes contributing to the total value.
- To plot your company's annual profit by showing various sources of revenue and arrive at the total profit (or loss).
- To illustrate the beginning and the ending headcount for your company in a year.
- To visualize how much money you make and spend each month, and the running balance for your account.

Funnel chart

A **funnel chart** helps you visualize a linear process that has sequential, connected stages. For example, a sales funnel that tracks customers through stages: Lead > Qualified Lead > Prospect > Contract > Close. At a glance, the shape of the funnel conveys the health of the process you're tracking.

Each funnel stage represents a percentage of the total. So, in most cases, a funnel chart is shaped like a funnel -- with the first stage being the largest, and each subsequent stage smaller than its predecessor. A pear-shaped funnel is also useful -- it can identify a problem in the process. But typically, the first stage, the "intake" stage, is the largest



Funnel charts are a great choice:

- When the data is sequential and moves through at least 4 stages.
- When the number of "items" in the first stage is expected to be greater than the number in the final stage.
- To calculate potential (revenue/sales/deals/etc.) by stages.
- To calculate and track conversion and retention rates.
- To reveal bottlenecks in a linear process.
- To track a shopping cart workflow.
- To track the progress and success of click-through advertising/marketing campaigns.

See also Exercise 19.

Visualizing KPI data

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◄ Lesson 5 Quiz

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Exercise 16 - Filtering visualizations and data ►