

## CHAPTER 2

## CHARTS

InFocus

WPL\_P809

You can display rows and columns of data in a table on a slide. Alternatively, you can display the same data by creating a **chart** based on the data.

Because charts let you present data in a visual format, you will find a chart is not only more visually appealing than a table but its data is often easier to understand.

**In this session you will:**

- ✓ learn how to insert a chart
- ✓ learn how to change the chart type
- ✓ learn how to apply a style to a chart
- ✓ learn how to change the layout of a chart
- ✓ gain an understanding of the main chart elements
- ✓ learn how to modify chart data
- ✓ learn how to delete data series
- ✓ learn how to manually change the layout of chart elements
- ✓ learn how to manually format chart elements
- ✓ learn how to work with pie charts.

# INSERTING A CHART



There are several ways to insert a chart into PowerPoint. You can click on the **Insert Chart** icon in a content placeholder or click on **Insert Chart** in the **Illustrations** group on the **Insert**

tab. After selecting the most appropriate chart type, an **Excel** window will open into which you enter (or copy) the desired data. PowerPoint will then create the chart using the data.

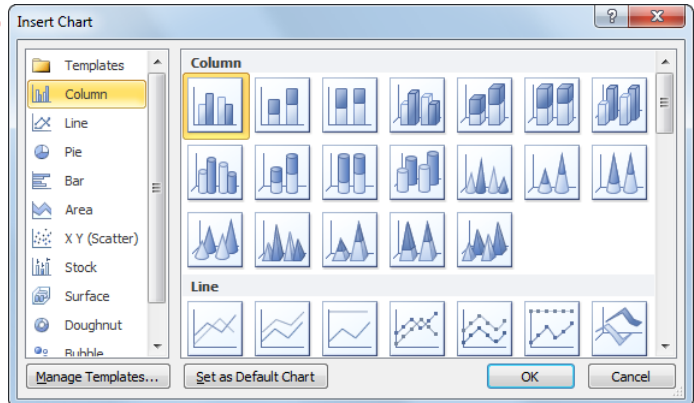
## Try This Yourself:

**Open File**

Before starting this exercise you **MUST** open the file P809 Charts\_1.pptx...

- 1 Navigate to and display slide 2 in the **Slides** window
- 2 Click on **Insert Chart**  in the content placeholder to open the **Insert Chart** dialog box
- 3 Click on **Column**, then click on **[OK]** to create a chart and open an **Excel** spreadsheet  
You have to enter the desired chart data into the **Excel** spreadsheet....
- 4 Click in cell **B1** in **Excel** and type the data as shown, pressing **[Tab]** to move to the next cell  
The blue line shows the data that will be included in the chart, but we don't want to include the data in row 5...
- 5 Drag the bottom right corner of the blue range rectangle up until row 5 is excluded, then release the mouse button
- 6 Click on **close**  to close the worksheet and maximise the **PowerPoint** window  
The chart will be inserted

2



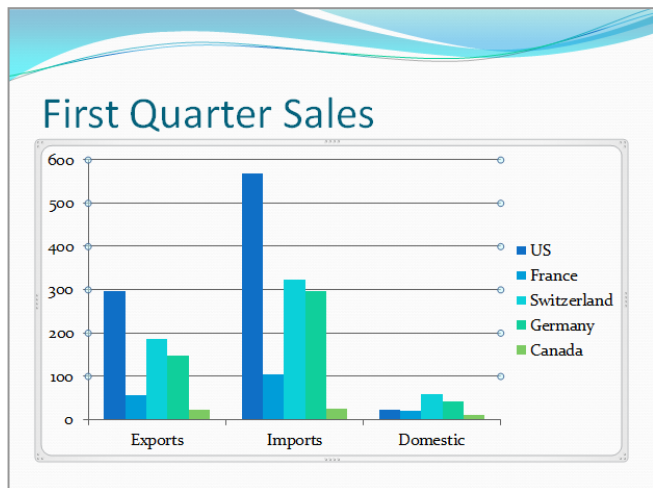
4

	A	B	C	D	E	F	G
1		US	France	Switzerland	Germany	Canada	
2	Exports	297	57	185	148	22	
3	Imports	567	104	323	297	24	
4	Domestic	23	21	59	41	10	
5	Category 4	4.5	2.8	5			
6							

5



	A	B	C	D	E	F	G
1		US	France	Switzerland	Germany	Canada	
2	Exports	297	57	185	148	22	
3	Imports	567	104	323	297	24	
4	Domestic	23	21	59	41	10	
5	Category 4	4.5	2.8	5			
6							

6




## For Your Reference...

To **insert a chart**:

1. Click on **Insert Chart**  on the **Insert** tab or **Insert Chart**  in a content placeholder
2. Select the chart type and click on **[OK]**
3. Enter the data in **Excel**, then click on **Close**

## Handy to Know...

- If you want to insert a chart onto a slide that has no content placeholder, click on the **Insert** tab, then click on **Insert Chart**  on the **Illustrations** group to open the **Insert Chart** dialog box.

# CHANGING THE CHART TYPE


Sometimes you may use different types of charts to represent the same data. Or, you may decide, for example, that your data would be better displayed in a pie chart rather than a column

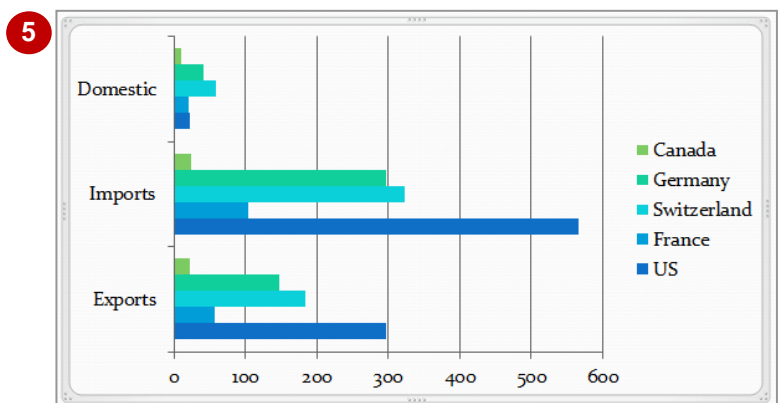
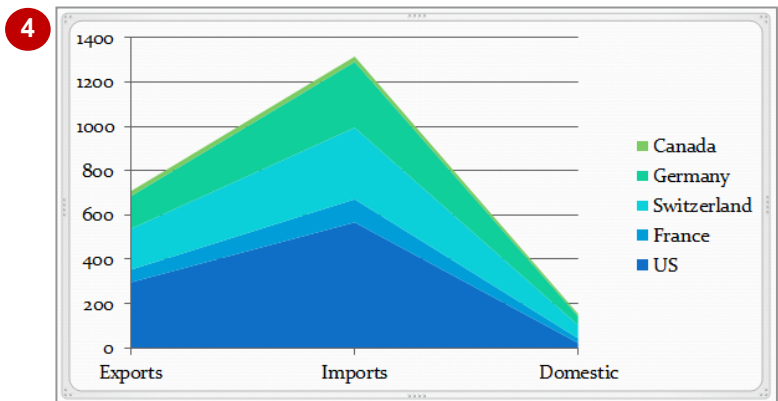
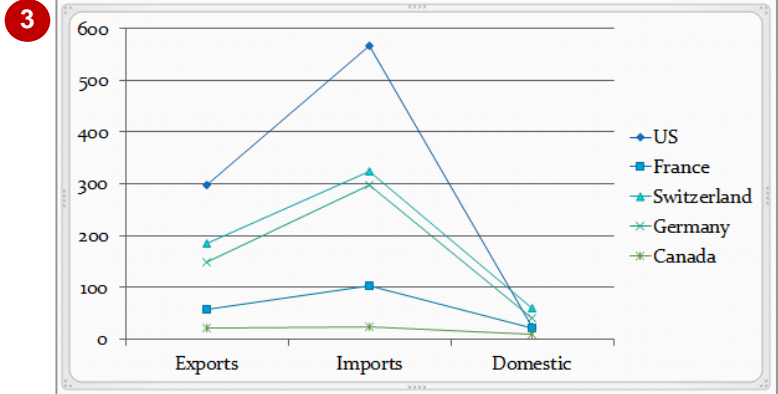
chart. You can easily convert an existing chart to a different chart type in PowerPoint. You can also use this feature to test different chart types until you find the one that will best represent your data.

## Try This Yourself:

**Same File**


Continue using the previous file with this exercise, or open the file *P809 Charts\_2.pptx...*

- 1 Navigate to and display slide 2 in the **Slides** window if required, then click in the chart to activate the chart  
*The placeholder will display which means the chart is editable...*
- 2 Click on the **Chart Tools: Design** tab, then click on **Change Chart Type**  in the **Type** group to open the **Change Chart Type** dialog box
- 3 Click on **Line** in the left pane, then click on **Line with Markers** to select this chart type, then click on **[OK]** to apply the change
- 4 Repeat steps 2 and 3 to change the chart to a **Stacked Area** chart (under **Area**)  
*Probably not the best way to represent our data...*
- 5 Repeat steps 2 and 3 to change the chart to a **Clustered Bar** chart (under **Bar**)  
*Our data is represented clearly in this chart type*



## For Your Reference...

To **change the chart type**:

1. Click on the chart, then click on the **Chart Tools: Design** tab and click on **Change Chart Type**  in the **Type** group
2. Select the chart type
3. Click on **[OK]**

## Handy to Know...

- Some chart types will not be suitable for your data. In this exercise, for example, you could not change the chart type to a **pie chart**, as pie charts represent data for only one data series, and we have defined six data series (countries).

# APPLYING A CHART STYLE

One advantage of applying a **theme** to a presentation is that each **object** you insert – be it a table, shape or chart – will be formatted with a default **style** that reflects the theme elements,

such as the theme colours. In addition to the default chart style, you can apply one of many other built-in styles to your charts to ensure they complement your presentation.

## Try This Yourself:

Same  
File

Continue using the previous file with this exercise, or open the file P809 Charts\_3.pptx...

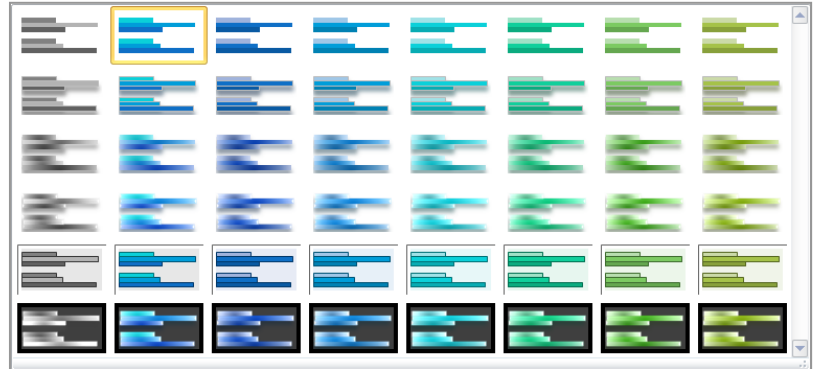
- 1 Navigate to and display slide 2 in the **Slides** window if required, then click in the chart to activate the chart

- 2 Click on the **Chart Tools: Design** tab, then click on **More** in the **Chart Styles** group to display the **Chart Styles** gallery

The gallery displays a range of complementary styles for the applied chart type. The currently-applied style is highlighted in orange...

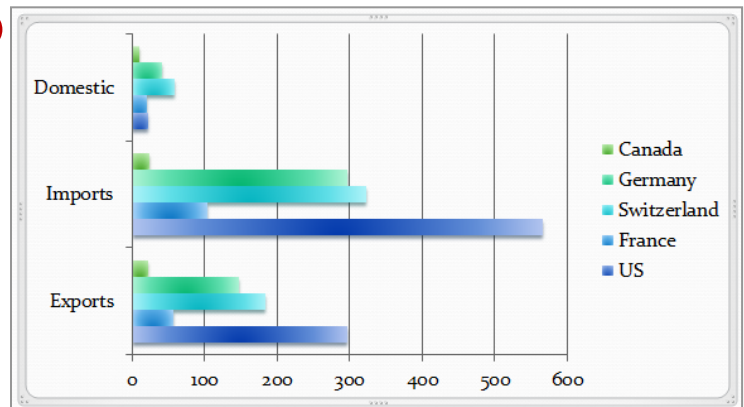
- 3 Click on **Style 18** to apply this style to the chart

This style adds a shadow plus a gradient fill to the bars



2

3



## For Your Reference...

To **apply a chart style**:

1. Click on the chart
2. Click on the **Chart Tools: Design** tab, then click on **More** in the **Chart Styles** group
3. Click on the desired style

## Handy to Know...

- If you have formatted a chart and you would like to apply that same formatting to future charts, you can save the chart as a template. To do this, click on the **Chart Tools: Design** tab, then click on **Save as Template**. Once saved, your template will be listed under **Templates** in the **Chart Type** dialog box.

# CHANGING THE CHART LAYOUT

After creating a chart, you can instantly change the layout of its various elements to one of the predefined layouts (known as **quick layouts**) provided by PowerPoint. Depending on the chart

type, you can choose to display or hide the legend, chart titles, axes' titles, data labels, data tables and gridlines. You can also change the location of the legend.

## Try This Yourself:

**Same File**

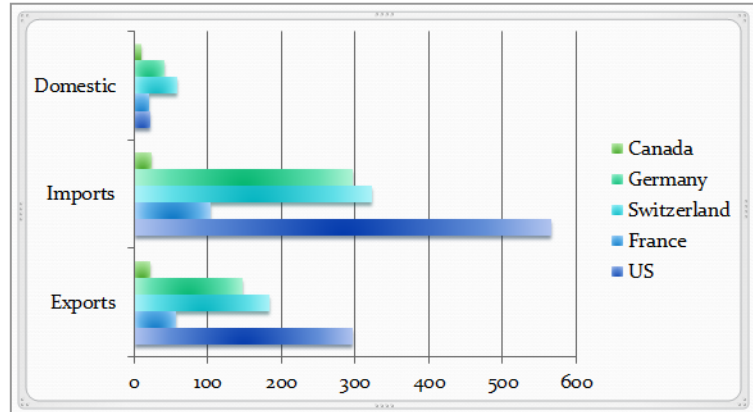
Continue using the previous file with this exercise, or open the file *P809 Charts\_4.pptx...*

**1** Navigate to and display slide **2** in the **Slides** window if required, then click in the chart to activate the chart

**2** Click on the **Chart Tools: Design** tab, then click on **More** in the **Chart Layouts** group to open the **Chart Layouts** gallery for the current chart type

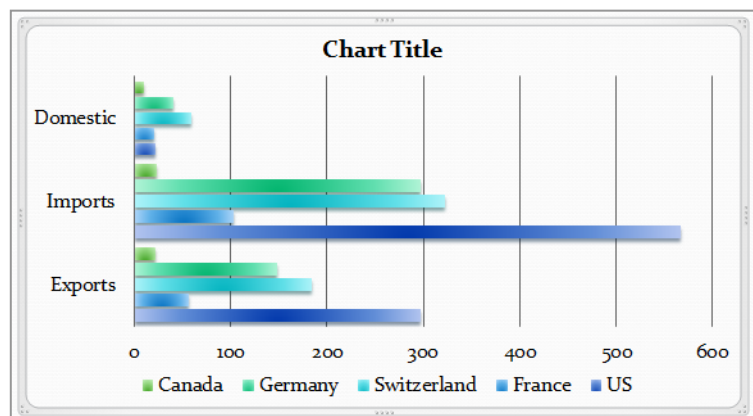
Although no options are highlighted, Layout 10 is the default layout for this chart...

**3** Click on **Layout 3**  
By moving the legend below the chart, the chart can extend across the slide allowing additional values (potentially) to appear on the horizontal X axis. This layout has also displayed the chart title, which in our case, is superfluous since the slide title is the same as the chart title. But that's ok, as you can quickly delete it on the **Chart Tools: Layout** tab



**1**

**2**



**3**

## For Your Reference...

To **change** the **chart layout**:

1. Click on the chart
2. Click on the **Chart Tools: Design** tab, then click on **More** in the **Chart Layouts** group
3. Click on the desired layout

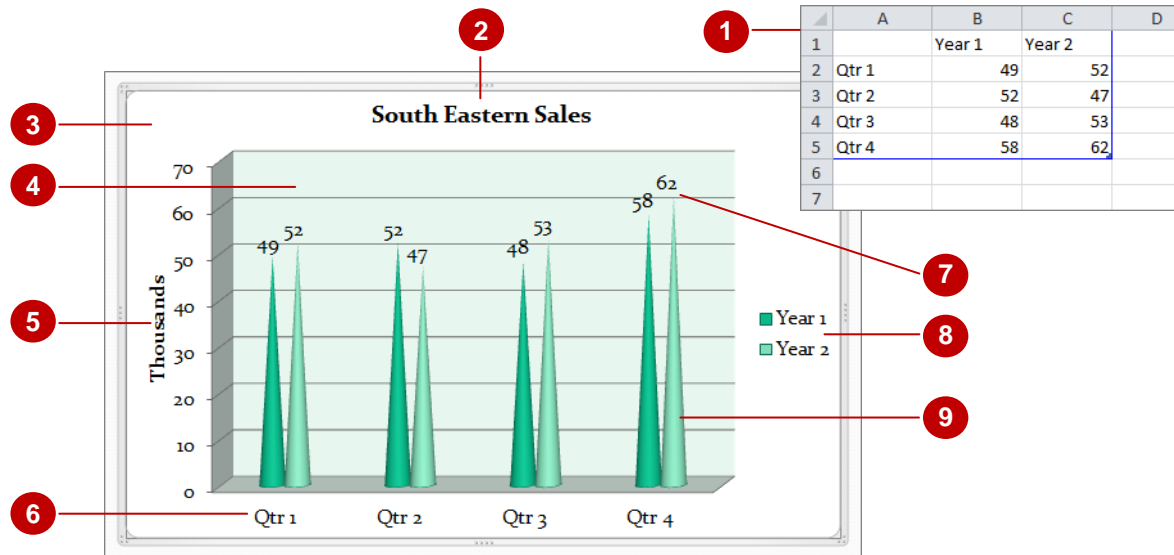
## Handy to Know...

- The number and style of the quick layouts that appear in the **Chart Layouts** gallery will depend on the current chart type.

# CHART ELEMENTS

Charts are made up of many **chart elements** – the chart area, data series, data labels, axes and more. Each of these elements can be individually formatted, moved, and in some cases, hidden or

shown, to create exactly the chart you want for your presentation. The following diagram and accompanying text describes some of the main elements in a chart.



- 1 **Excel Worksheet** When a chart is opened for editing, the data that is used to draw the chart is displayed in an **Excel worksheet**. Changes to the information in the Excel worksheet are immediately reflected in the chart.
- 2 **Chart Title** The name of the chart.
- 3 **Chart Area** The **chart area** contains the entire chart and all of its elements.
- 4 **Plot Area** In a **2-D chart**, the **plot area** is the area bounded by the axes and includes the data series. In a **3-D chart**, the **plot area** is the area bounded by the axes and includes the **data series**, **category names** and **axes titles**. In the example above, it also includes the horizontal **gridlines**.
- 5 **Vertical (Value) Axis** An **axis** is a line that borders one side of the plot area providing a frame of reference for measurement or comparison in a chart. For most charts, data values are plotted along the **value axis**, which is usually vertical (the **Y axis**). In the example above, a **vertical (value) axis title** has also been included.
- 6 **Horizontal (Category) Axis** Categories are usually plotted along the **category axis**, which is usually horizontal (the **X axis**).
- 7 **Data Labels** A **data label** is a label that provides additional information about a **data marker**, which represents a single data point or value that originates from a worksheet cell. Data labels can be applied to a single data marker, an entire data series or all data markers in a chart.
- 8 **Legend** The **legend** is a box that identifies the patterns or colours assigned to the data series or categories in a chart.
- 9 **Data Series** A **data series** is a group of related data points plotted in a chart. They originate from the rows or columns on the underlying Excel worksheet. Each data series in a chart has a unique colour or pattern. You can plot one or more data series in a chart. Pie charts have only one data series.



# MODIFYING CHART DATA




The **data** on which a chart is based is stored in an Excel worksheet. When you click on the **Edit Data** tool, the worksheet will open in Excel allowing you to modify it just like other Excel

worksheets. To change chart data, you simply click in the cell with the data that you want to change and type the new information. PowerPoint will then update the chart to reflect the changes.


## Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file P809 Charts\_5.pptx...

- 1 Click anywhere on the chart on **Slide 2** to select it, then click on the **Chart Tools: Design** tab
- 2 Click on **Edit Data**  in the **Data** group to open the worksheet containing the underlying data for the chart in Microsoft Excel
- 3 Click in cell **C4** and type **39**
- 4 Press  to move to cell **D4** and type **73**
- 5 Repeat the above steps to change the **Domestic** value for **Germany** and **Canada** to **59** and **17** respectively
- 6 Click in cell **A5**, then drag across to cell **D5** to select the four unwanted entries, then press 

*Although these entries did not appear in the chart as they were below the bottom range border, it is simply tidier and less confusing with them gone...*

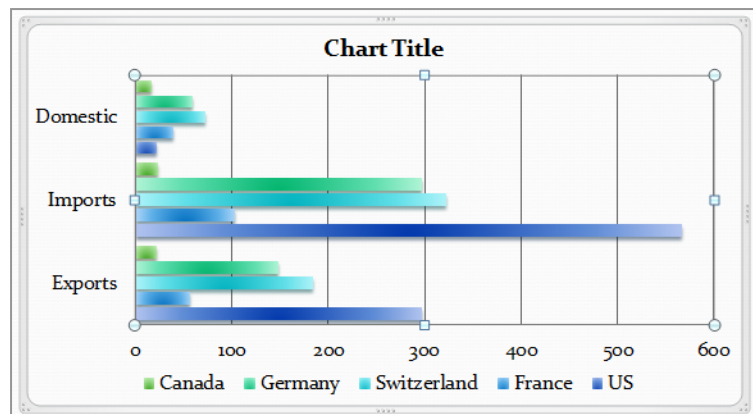
- 7 Click on **close**  to close Excel and return to PowerPoint

2

	A	B	C	D	E	F	G
1		US	France	Switzerland	Germany	Canada	
2	Exports	297	57	185	148	22	
3	Imports	567	104	323	297	24	
4	Domestic	23	21	59	41	10	
5	Category 4	4.5	2.8	5			
6							
7							
8		To resize chart data range, drag lower right corner of range.					
9							

5


	A	B	C	D	E	F	G
1		US	France	Switzerland	Germany	Canada	
2	Exports	297	57	185	148	22	
3	Imports	567	104	323	297	24	
4	Domestic	23	39	73	59	17	
5	Category 4	4.5	2.8	5			
6							
7							
8		To resize chart data range, drag lower right corner of range.					
9							



7

## For Your Reference...

To **modify** chart **data**:

1. Click on the chart
2. Click on **Edit Data**  in the **Data** group on the **Chart Tools: Design** tab
3. Change the values in the cells as desired
4. Close Excel

## Handy to Know...

- You can format the data in the worksheet using the functions on the **Home** tab, such as applying bold or colour to the text. But these formatting changes will not flow through to the PowerPoint chart.

# DELETING DATA SERIES




A big advantage of using a tool like PowerPoint to make visual presentations of numeric data is that when the data changes you can easily reflect those changes in a PowerPoint chart. By

displaying the underlying data, you can delete an unwanted **data series** using the normal Excel functions.

## Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file P809 Charts\_6.pptx...

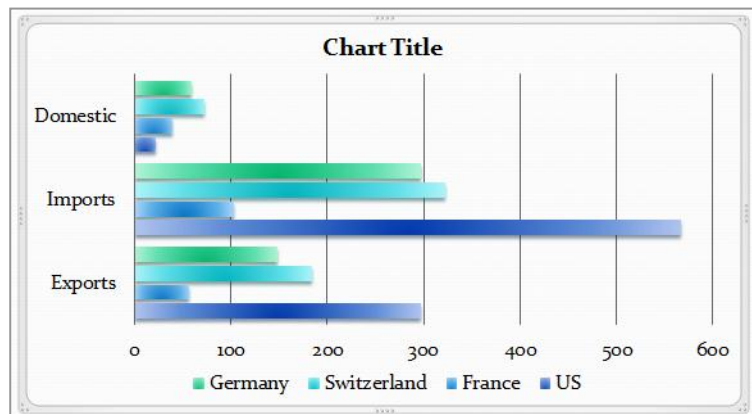
- 1 Click anywhere on the chart on **Slide 2** to select it, then click on the **Chart Tools: Design** tab
- 2 Click on **Edit Data**  in the **Data** group to open the worksheet containing the underlying data for the chart in Microsoft Excel
- 3 Click in cell **F2**  
*Let's remove the data series for Canada...*
- 4 Click on the drop arrow  for **Delete** in the **Cells** group and select **Delete Sheet Columns**  
*The column of data will be removed and the data range rectangle will reduce to exclude column F...*
- 5 Click on **close**  to close Excel and return to PowerPoint

3

	A	B	C	D	E	F	G
1		US	France	Switzerland	Germany	Canada	
2	Exports	297	57	185	148	22	
3	Imports	567	104	323	297	24	
4	Domestic	23	39	73	59	17	
5							
6							
7							
8		To resize chart data range, drag lower right corner of range.					
9							

4



	A	B	C	D	E	F	G
1		US	France	Switzerland	Germany		
2	Exports	297	57	185	148		
3	Imports	567	104	323	297		
4	Domestic	23	39	73	59		
5							
6							
7							
8		To resize chart data range, drag lower right corner of range.					
9							




5

## For Your Reference...

To **delete** a **data series**:

1. Click on the chart, then click on **Edit Data**  on the **Chart Tools: Design** tab
2. Click in the column to be deleted
3. Click on the drop arrow  for **Delete** and select **Delete Sheet Columns**
4. Close Excel

## Handy to Know...

- If you want to add another data series to your chart, open the Excel worksheet and click in the column before which you want to insert the new column. Click on the drop arrow  for **Insert** in the **Cells** group and select **Insert Sheet Columns**.



# CHANGING THE LAYOUT OF CHART ELEMENTS

PowerPoint provides numerous standard layouts for the selected chart type. While these may be fine for some situations, you can manually alter the layout of the various chart elements until you

achieve the desired result. For example, you can add, remove or position labels including axis titles and legends. You can also display or hide trendlines, turn the plot area on or off, and more.

## Try This Yourself:

Same  
File


Continue using the previous file with this exercise, or open the file P809 Charts\_7.pptx...

1

Click anywhere on the chart on **Slide 2** to select it, then click on the **Chart Tools: Layout** tab

Let's remove the chart title...


2

Click on **Chart Title**  in the **Labels** group and select **None**

The chart will expand to use the space where the chart title was.

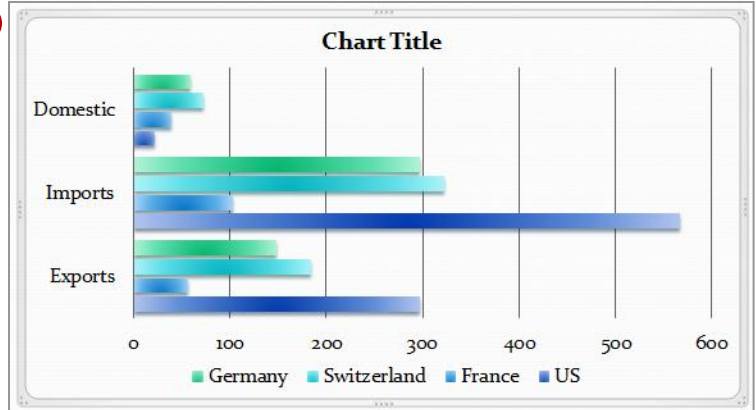
Because some of the bars are fairly small, let's add data labels to clarify the figures a bit...

3

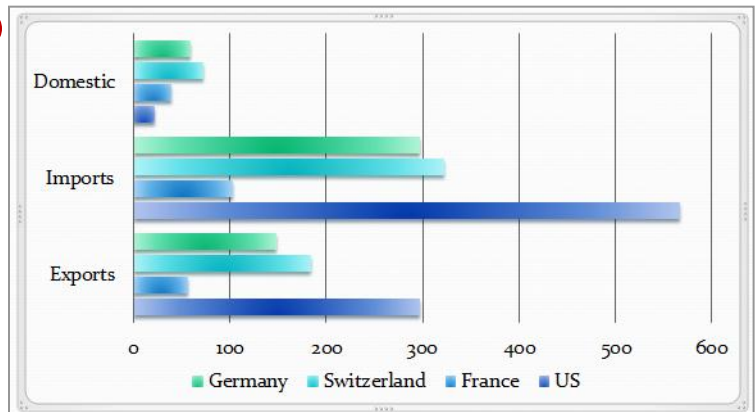
Click on **Data Labels**  in the **Labels** group and select **Outside End**

Data labels will appear to the right of each bar showing their actual value

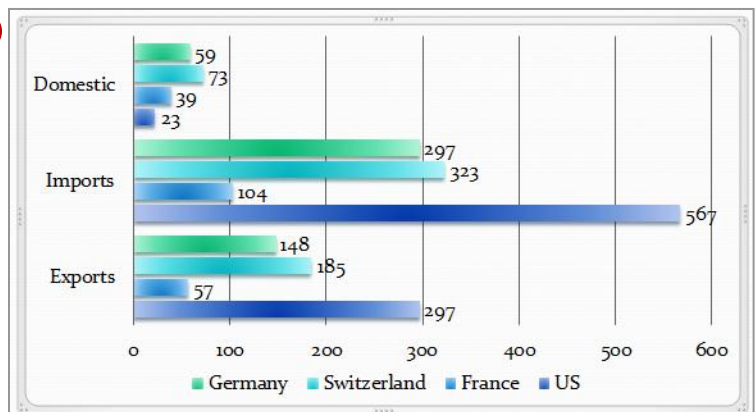
1



2



3




## For Your Reference...

To manually **change** the **layout** of chart **elements**:

1. Click on the chart
2. Click on the **Chart Tools: Layout** tab
3. Make the desired changes

## Handy to Know...

- You can display a **trendline** on some charts by clicking on **Trendline**  in the **Analysis** group on the **Chart Tools: Layout** tab. A **trendline** is a line that shows the trends in a data series, such as a line sloping upwards to represent increased sales over a period of time.

# 




You can format individual chart elements such as the chart area, plot area, data series, axes, titles, data labels and legend. For example, you can format the text in a selected chart element using

WordArt; applying a different style; or selecting a specific text fill, text outline or text effects. You can also apply other formatting options as desired.

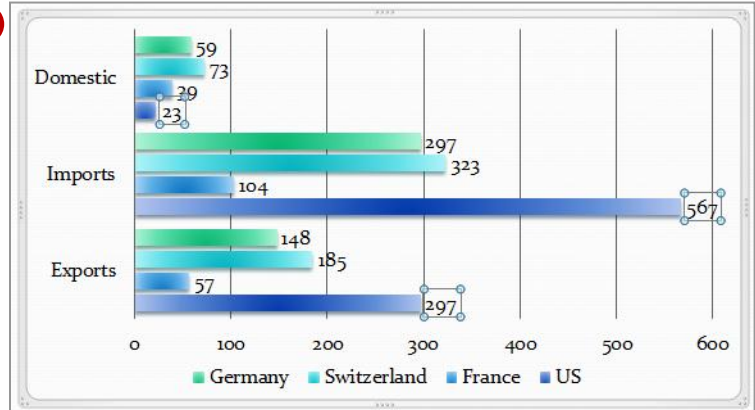
### 

Same  
File

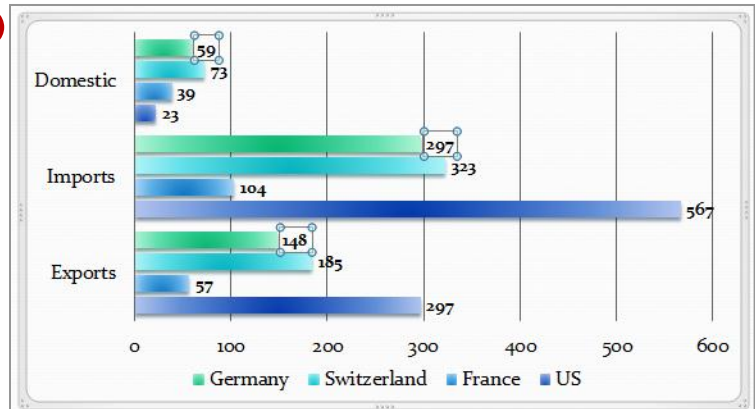
Continue using the previous file with this exercise, or open the file *P809 Charts\_8.pptx...*

- 1 Click anywhere on the chart on **Slide 2**, then click on the **Chart Tools: Format** tab
- 2 Click on the drop arrow  for **Chart Elements** in the **Current Selection** group and select **Series "US" Data Labels**
- 3 Right-click on one of the selected data labels and reformat it as **16pt, Bold** using the **Mini toolbar**
- 4 Repeat steps 2 and 3 to reformat the other data labels
- 5 Repeat step 2 to select the **Plot Area**, then click on **Format Selection**  in the **Current Selection** group to display the **Format Plot Area** dialog box
- 6 Click on **Gradient fill** under **Fill**, then click on **[Close]**
- 7 Click on the data series for the **US** (dark blue bar) – let's change the colour
- 8 Click on **Shape Fill**  in the **Shape Styles** group and select **Green, Accent 5** (row 1, col 9), then click away to see the result

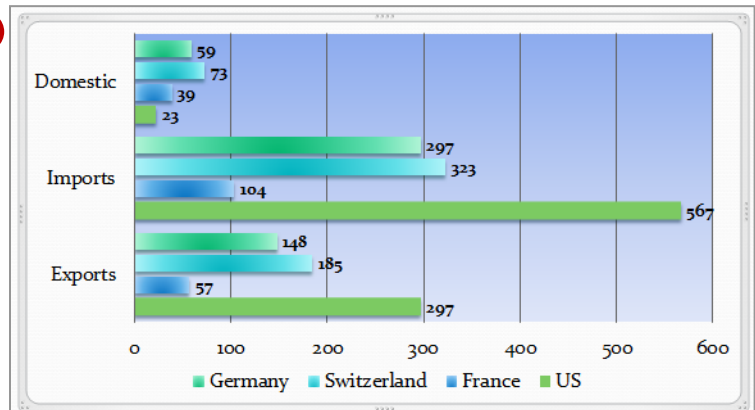
2



4



8



### 

To manually **format** chart **elements**:

1. Click on the chart
2. Click on the **Chart Tools: Format** tab
3. Select the element to be formatted in **Chart Elements** in the **Current Selection** group
4. Make the desired changes

### 

- Grouped elements, such as data series and data labels, contain individual elements that can be selected after you've selected the group. For example, to select a single data label, select the series data labels from the chart element list or by clicking on one of the labels, then click on the required data label.

# WORKING WITH PIE CHARTS





Pie charts are one of the best ways to graphically represent a single series of data. You can do some pretty fancy things with pie charts, especially 3-D pie charts. For example, you can

move various pie wedges, or slices, around the screen individually placing them for emphasis. You can explode the chart to show individual portions and rotate it to place a slice in a specific position.

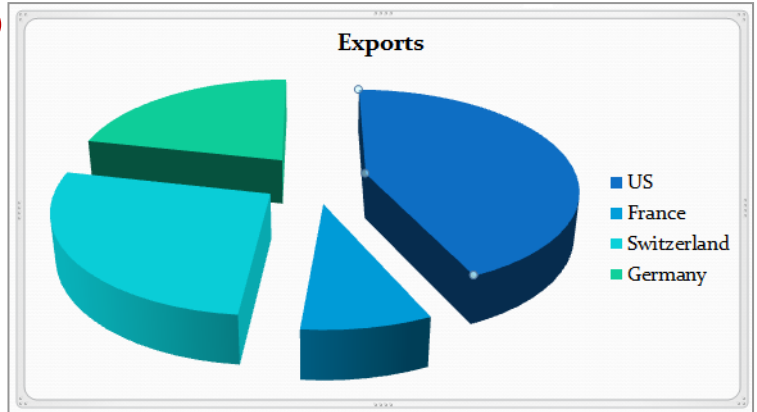
## Try This Yourself:

**Same File**

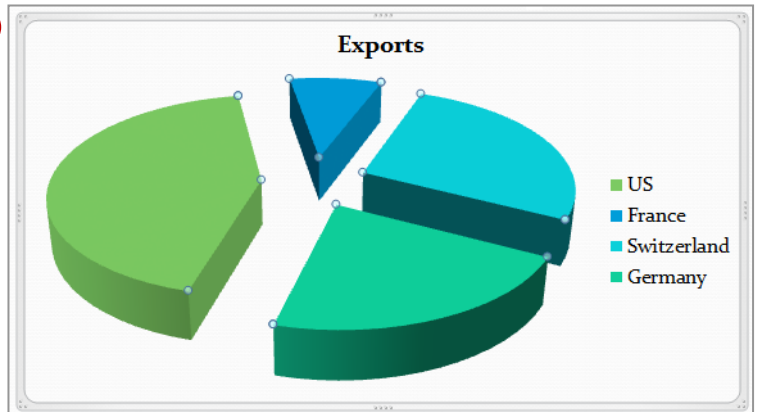
Continue using the previous file with this exercise, or open the file *P809 Charts\_9.pptx...*

- 1 Click anywhere on the pie chart on **Slide 3** to select it, then click on the **Chart Tools: Format** tab
- 2 Click twice slowly on the **US** slice of pie to select only it
- 3 Click on **Shape Fill**  in the **Shape Styles** group and select **Green, Accent 5** (row 1, col 9)
- 4 Click on the drop arrow  for **Chart Elements** in the **Current Selection** group and select **Series "Exports"**
- 5 Click on **Format Selection**  in the **Current Selection** group to display the **Format Data Series** dialog box
- 6 Drag the **Angle of first slice** slider to see how the chart rotates, then change it to **195**
- 7 Drag the **Pie Explosion** slider to see how the slices move, change it to **18**, then click on **[Close]**
- 8 Click on **Data Labels**  in the **Labels** group on the **Chart Tools: Layout** tab and select **Inside End** to insert data labels

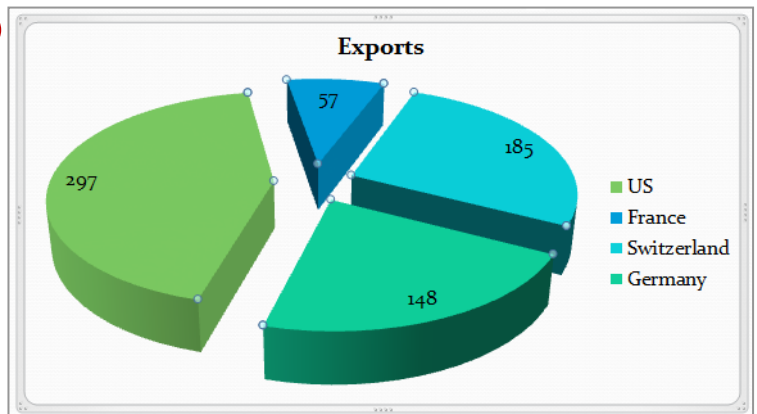
2



6




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## For Your Reference...

To **rotate a pie chart**:

1. Click on the chart, then click on the **Chart Tools: Layout** tab
2. Select the **Series**
3. Click on **Format Selection**  in the **Current Selection** group
4. Change the **Angle of first slice**

## Handy to Know...

- A **busted** pie chart (that is, one in which the different wedges are displayed apart from each other) can be easily rejoined and centred. Click on the pie chart to select it, hold down the mouse and drag each wedge towards the centre until they join in the centre.

NOTES:

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