

Class: TY BSc

Subject : Model Documentation Analysis & Reporting

Subject Code: PUSASQF503

Chapter: Unit 4

Chapter Name: Communication

Today's Agenda

1. Presenting results
 1. Guideline for Visual aids
 2. Common methods of graphical presentation

1 Presenting Results

Communication of results and conclusions in an effective manner is important.

You should create appropriate data visualisations to communicate the key conclusions of an analysis.

1.1 Guidelines for Visual Aids



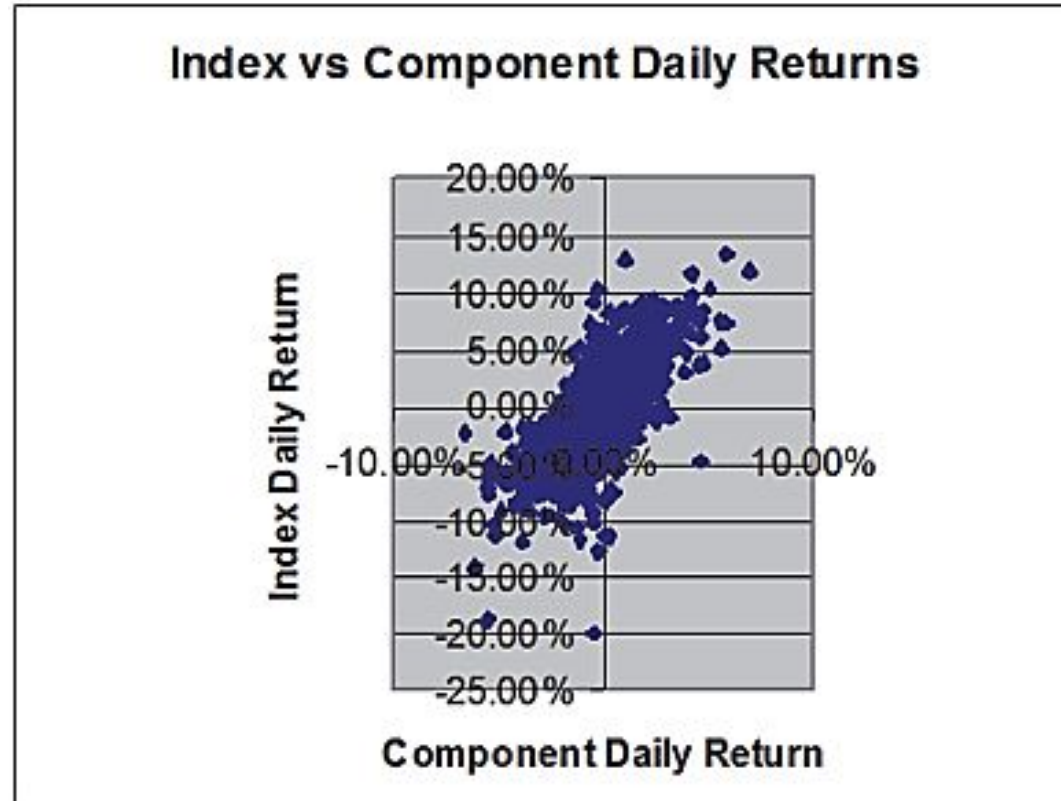
A good visual aid should:

- present the key information clearly
- use an appropriate presentational device
- emphasize the important features
- be clearly labelled
- show the units of measurement used
- use appropriate scales (not too spread out or too cramped)
- not contain irrelevant distractions.



Question

Have a look at the graph below.
Identify at least 6 ways in which
it could be improved.



Solution

- The graph is not at all clear. It is far too cluttered.
- The graph area (ie the grey part) is too small. It needs to be 'stretched' horizontally.
- The percentage labels should be reduced in size so that they don't dominate the graph and so that you can see exactly where 10% is on the horizontal axis.
- The percentage labels should be shown with fewer decimal places (eg 10% instead of 10.00%).
- The vertical axis should be repositioned so that the data points don't overwrite the values on the axis.
- A smaller marker should be used for the individual points so that they don't blur together.
- A different shape (eg a dot instead of a diamond) might be better.

In fact, the axes on this graph are labelled the wrong way round too!

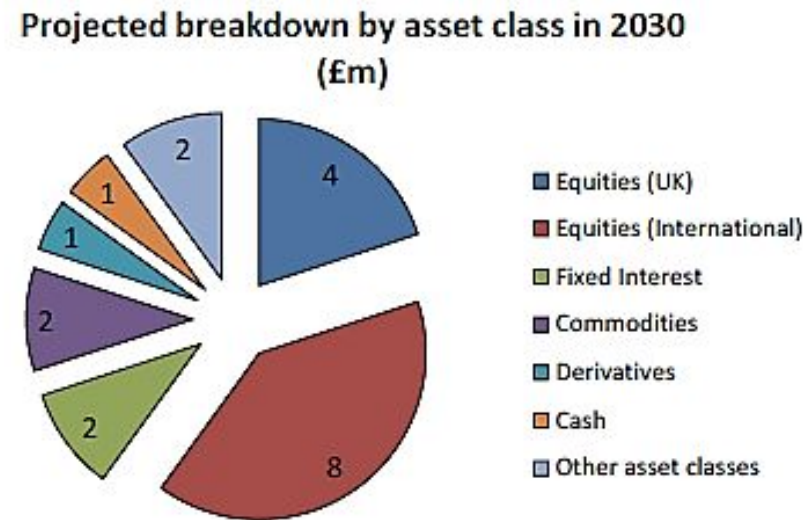
1.2 Common methods of graphical presentation

In Excel, graphs are called 'charts' and each set of values shown is called a 'series'.

If you are working in Excel and select the **Insert** menu tab in Excel, you will see most of the commonly used methods of graphical presentation. The ones that are likely to be the most useful in an assessment are described below.

1. Pie charts

Pie charts can be effective when used to present small amounts of very basic data. For this reason they are commonly used in newspaper articles, television reports and on the internet.



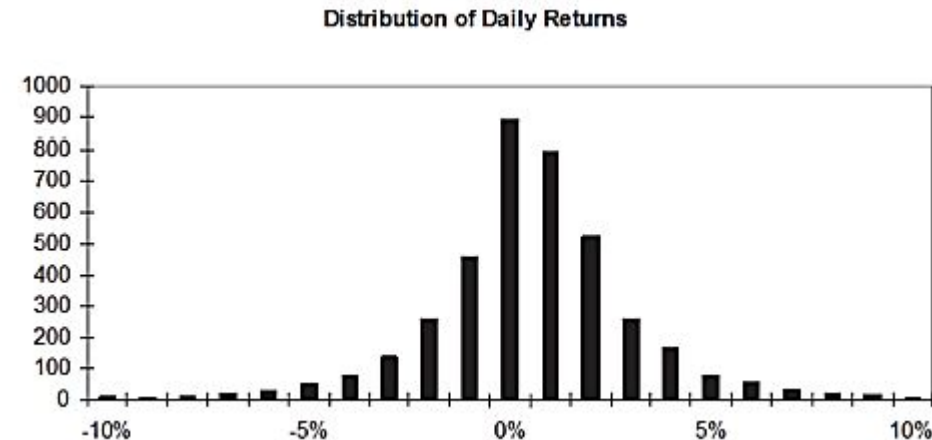
1.2 Common methods of graphical presentation

2. Bar charts

These are commonly used to show the statistical distribution of the values of a single variable. The height of each bar shows the 'count' for each value.

A *histogram* is a bar chart where the frequencies are represented by the *areas* of the bars.

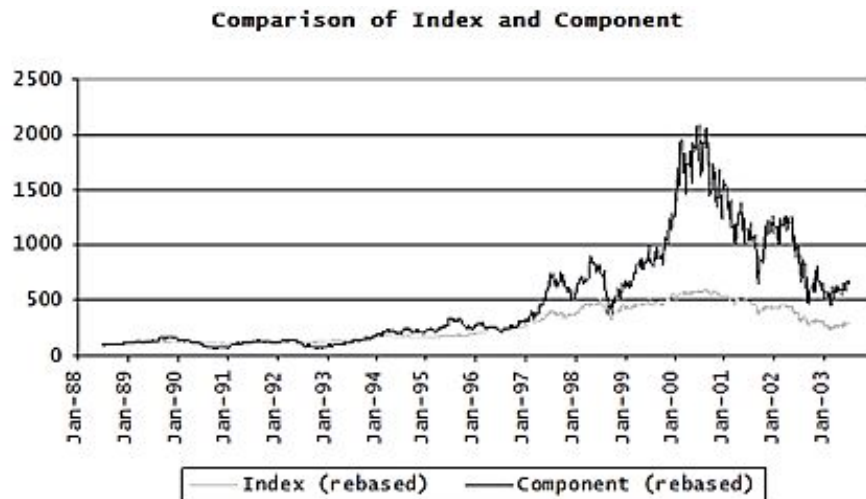
Excel also offers more advanced forms of bar charts, such as 'clustered bar charts', which allow you to display two or more data sets together using bars arranged side-by-side with different colours for each data set. These can be useful for presenting 'new-versus-old' results or for comparing different scenarios



1.2 Common methods of graphical presentation

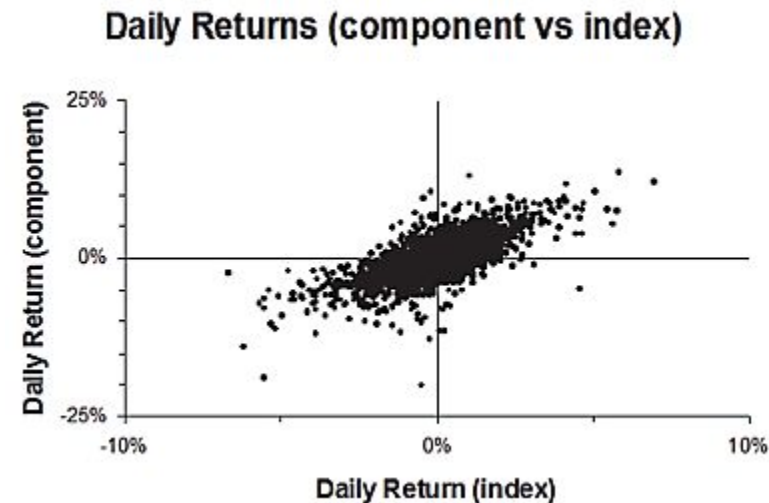
3. Line charts

These are commonly used to show the relationship between the values of one or more variables whose values depend on a single independent variable. The independent variable is often time



4. Scatter Diagrams

These are commonly used to show the relationship between the values of two variables. The points show the (x,y) coordinates for each pair of values.



1.2 Common methods of graphical presentation

5. Tables

Often the most effective method of presenting results is to use a *table*, instead of a graph.

These are particularly useful for:

- comparing different scenarios (as an alternative to the clustered bar charts mentioned above)
- presenting results involving non-numerical variables
- presenting the values of a third variable whose value depends on two (or more) independent variables.

In a table involving very large quantities (eg monetary amounts such as £5,000,000) or very small quantities (eg mortality rates such as 0.00035), you should present your values in terms of the most appropriate unit size (eg £m or 'per 100,000').



Question

Which form of presentation would you use if you wanted to show:

- (a) the value of an investment portfolio that was valued at an irregular set of dates over the last 10 years
- (a) mortgage payments for a repayment mortgage and an endowment mortgage based on interest rates of 4%, 5%, 6%, 7% and 8%.
- (a) the inflation rate in four different countries for each of the last 10 years?

Solution

- (a) We can't use a line chart here because line charts treat the values on the x-axis (the irregular set of dates) just as labels and display the points equally spaced. However, we can achieve the effect we want by using a scatter plot, with time as the x-value and portfolio value as the y-value, and selecting 'Automatic' for the line option, which will join the points together. This will display the dates with the gaps between them in the correct proportions.
- (b) The numbers here are likely to be quite close together and we are probably most interested in the differences between the two types. So a simple table with columns headed 'interest rate', 'payment for a repayment mortgage' and 'payment for an endowment mortgage' would probably be the clearest. Alternatively, you could use a clustered bar chart.
- (c) We could use a line chart with one line for each country plotted against the year.

Recap

Key points regarding the presenting results

For your summary report:

- Present the relevant information in a clear and structured way.
- Don't include any irrelevant details.
- Make graphs / tables the 'centrepiece' with a brief introduction first and comments afterwards.
- Explain the features brought out by each graph or table.

For graphs:

- Choose the most appropriate presentational device.
- Emphasize the important features.
- Label your graph clearly (including the units of measurement used).
- Use appropriate scales in your graphs.

For tables:

- Label the rows and columns clearly.
- Use the most appropriate units (eg £m).