FACTFILE:
GCSE ECONOMICS
UNIT 3.1
INTERPRETING ECONOMIC DATA

Rewarding Learning

Interpreting Economic Data

Learning Outcomes

Students should be able to:

- interpret a range of simple economic data presented in a range of formats, such as graphs, charts, tables and diagrams (this includes demonstrating a basic understanding of index number form).

Economic data can be presented in several different ways. As part of the study of economics students can expect to interpret data, e.g. to describe trends in economic variables such as inflation or unemployment, compare sizes of businesses or economies and so on.

Table

Tables are one of the most frequently-used and simple methods of setting out data. Properly-labelled rows and columns can show clear information which can be quickly and easily understood and interpreted.

A simple example is shown in Table 1.

Table 1
Cars registered
in the UK (millions)
2005–16

2005	27.5
2006	27.6
2007	28.0
2008	28.2
2009	28.2
2010	28.4
2011	28.5
2012	28.7
2013	29.1
2014	29.6
2015	30.3
2016	31.8

Source www.gov.uk

Table 1 can be made more useful by adding a third column which shows the percentage change for each year. This gives a much clearer view of the trend in car ownership by making the figures smaller.

Table 2
Cars registered in the UK
2005–16

	(millions)	% change
2005	27.5	1.9
2006	27.6	0.4
2007	28.0	1.4
2008	28.2	0.7
2009	28.2	0.0
2010	28.4	0.7
2011	28.5	0.4
2012	28.7	0.7
2013	29.1	1.4
2014	29.6	1.7
2015	30.3	2.4
2016	30.9	2.0

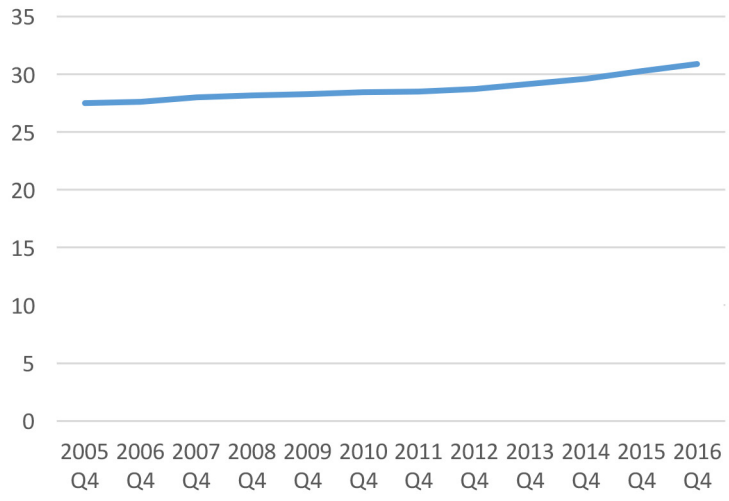
Source www.gov.uk

The main disadvantages of tables are that they can be visually boring and do not necessarily illustrate trends or comparisons as well as other methods of presenting data.

Line-graph

Line-graphs are most commonly used to show trends over time i.e. as **time-series graphs**. For example the data in Table 1 could be more attractively shown as in Figure 1.

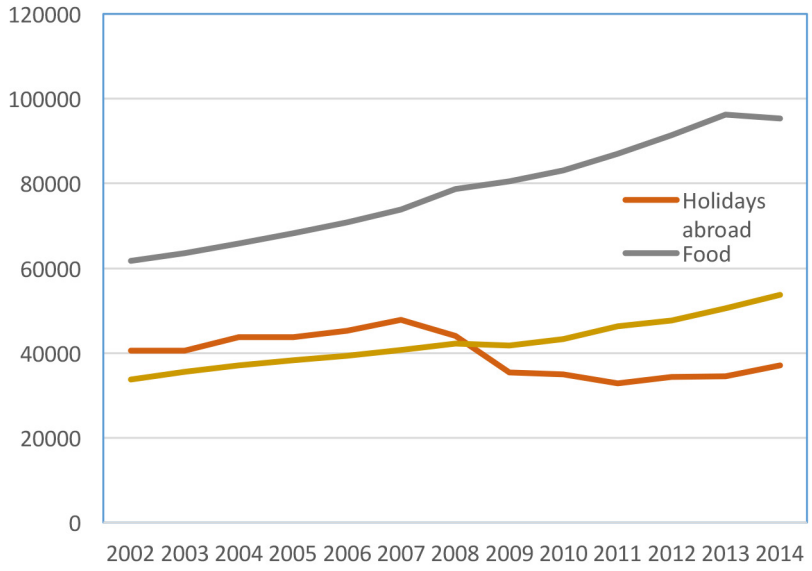
Figure 1 – UK car ownership
2005–16
millions



Source: ONS

Figure 1 is one of the simplest types of line-chart. Line-charts are often used to compare different variables or sizes, as in Figure 2.

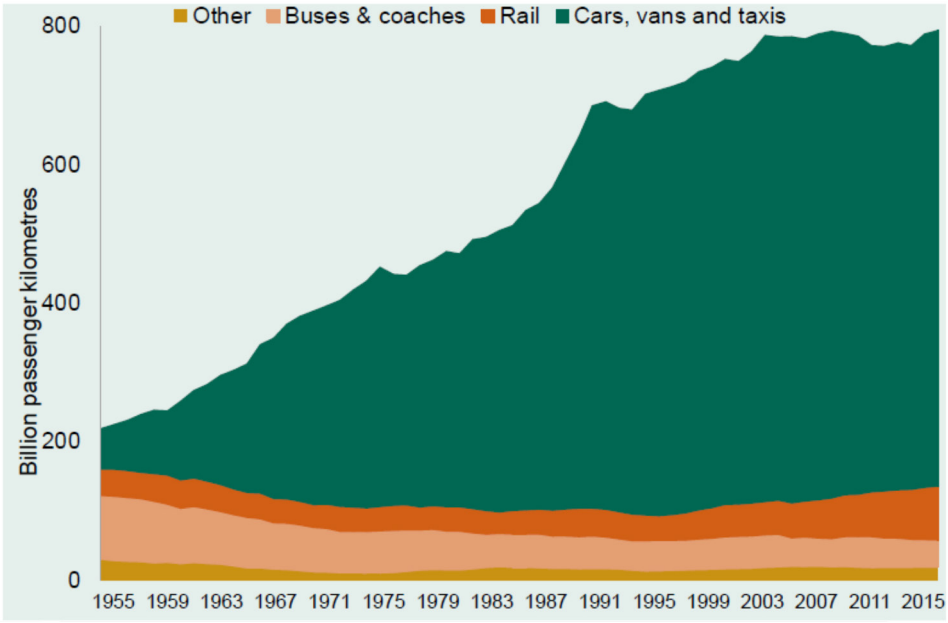
Figure 2 – UK spending on selected items 2002–14
£million



Source: ONS

Line-charts may be designed as area charts, as shown in Figure 3 below.

Figure 3 – UK Transport by method 1955–2015
(billion passenger–kilometres)



Source: ONS

Bar chart

Bar charts are used to compare different quantities by drawing bars or lines of different lengths to show quantities.

As in Figure 5 bar charts can also show trends.

Figure 4
Effect of price changes on Consumer Price Index 2016

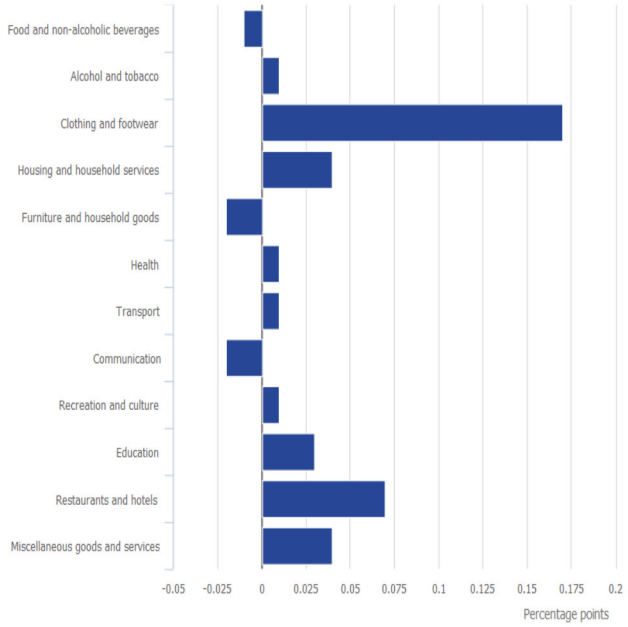
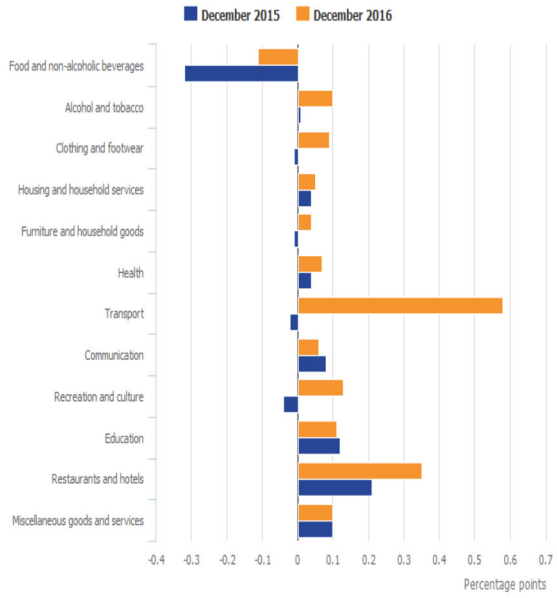


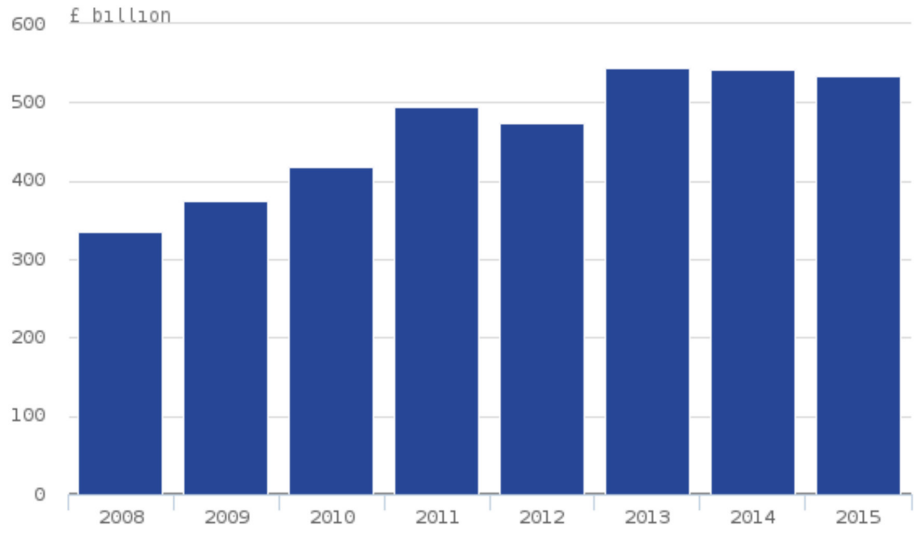
Figure 5
Effect of price changes on Consumer Price Index 2015-2016



Source: ONS

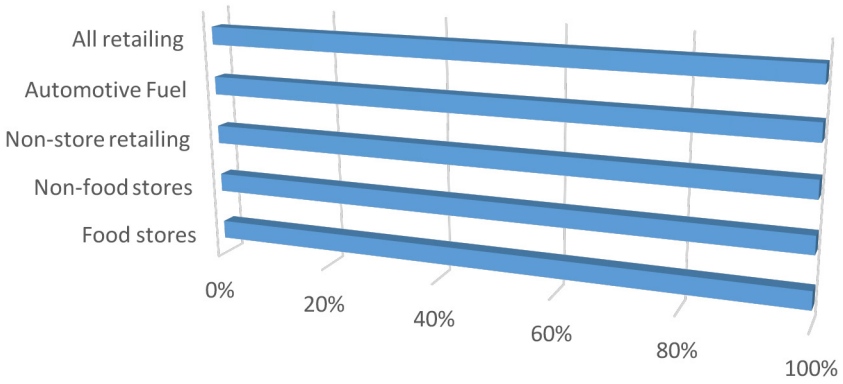
Bar charts can be drawn in many different ways. Figures 6–8 give some examples.

Figure 6 – UK e-commerce sales, 2008 to 2015



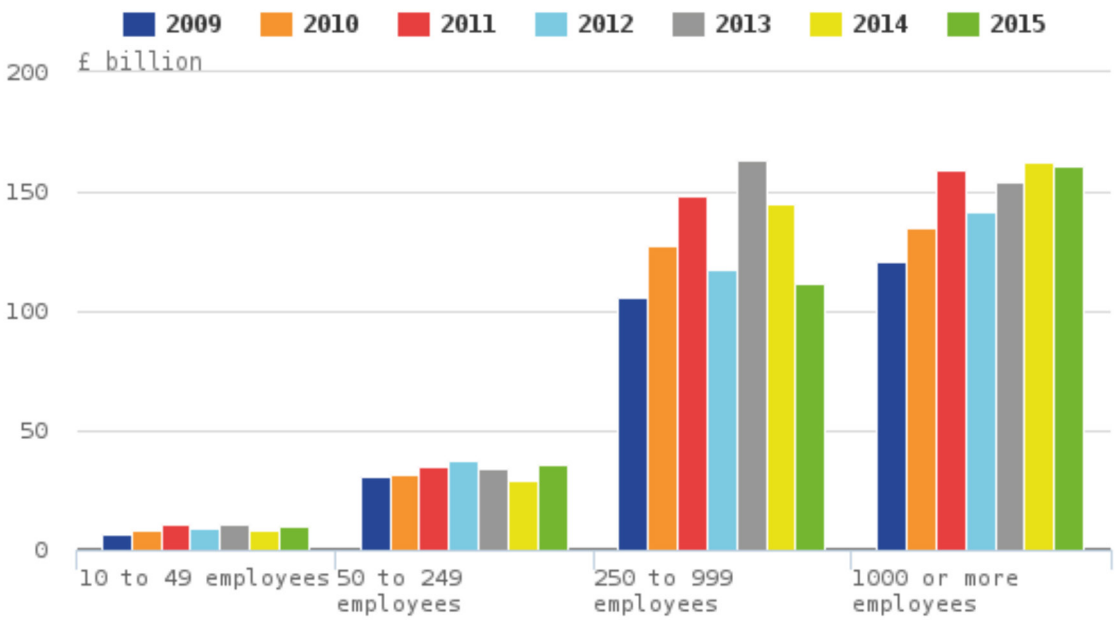
Source: ONS

Figure 7 – Sales Growth in UK retailing 2015–16 %



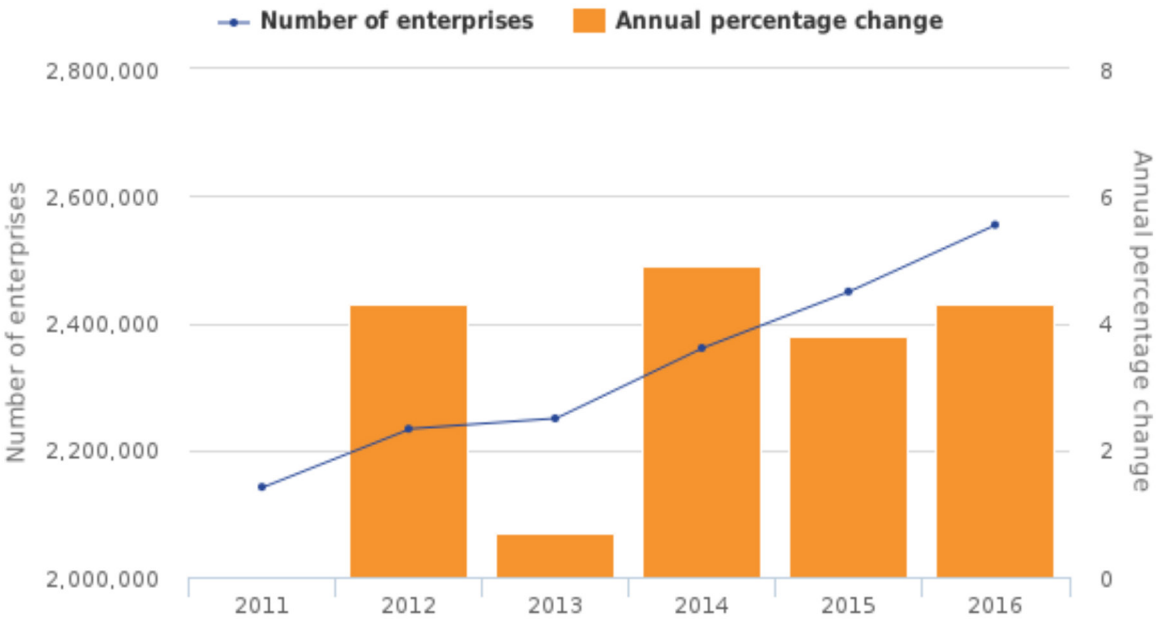
Source: ONS

Figure 8 – Value of UK e-commerce sales by size of business 2009–2015



A bar chart may sometimes be combined with a line graph, as in Figure 9.

Figure 9 – UK Businesses 2011-16
(number and annual growth)

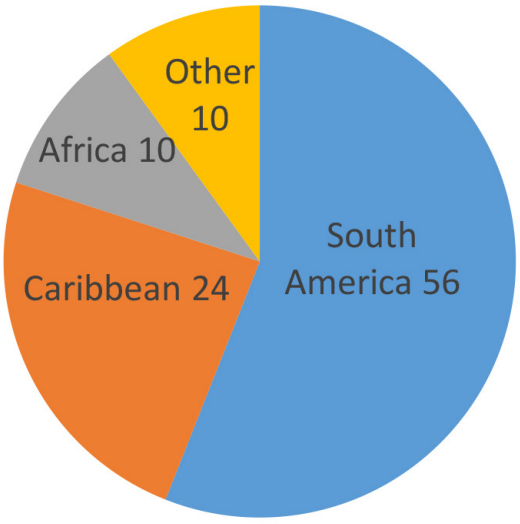


Source: ONS

Pie chart

Pie charts are used to show proportions of a whole, e.g. market share of different businesses or, as in Figure 10 the origins of UK banana imports.

Figure 10 – UK imports of bananas by world region 2015 (%)



Source: UK Department for Environment, Food & Rural Affairs

Pictogram

Pictograms are visual representations of data, designed to be attractive rather than for reading data precisely.

Figure 11 – UK banana consumption (thousand tonnes)

2008	2012	2018 (forecast)
863	801	820

Source: UK Department for Environment, Food & Rural Affairs

Index numbers

Index numbers are used when it is necessary to reduce numbers (usually large ones) to a common base for easy comparison.

For example Table 3 shows the value of UK exports to the European Union between 2005 and 2015.

Table 3 – UK exports to the European Union between 2005 and 2015 £ million)

Year	UK exports to EU (£ million)
2005	110 300
2006	135 962
2007	113 161
2008	121 467
2009	109 364
2010	123 367
2011	137 641
2012	123 239
2013	123 557
2014	121 872
2015	120 359

Index numbers are used to simplify comparisons between years, usually by making the numbers smaller.

- One year is nominated as a base year. The value for this year (in this case UK exports to the EU) is given a value of 100. In Table 4 2008 is used as the base year.
- Other years' values are then compared to the base year and given a value as a percentage of the base year. For example exports in 2009 were 10% less than those in 2008. This means that they were 90% of the 2008 level and are therefore given a value of 90.
- By 2011 exports had risen to £137 641 million. This was 13.3% higher than 2008 so this year has an index figure of 113.3.

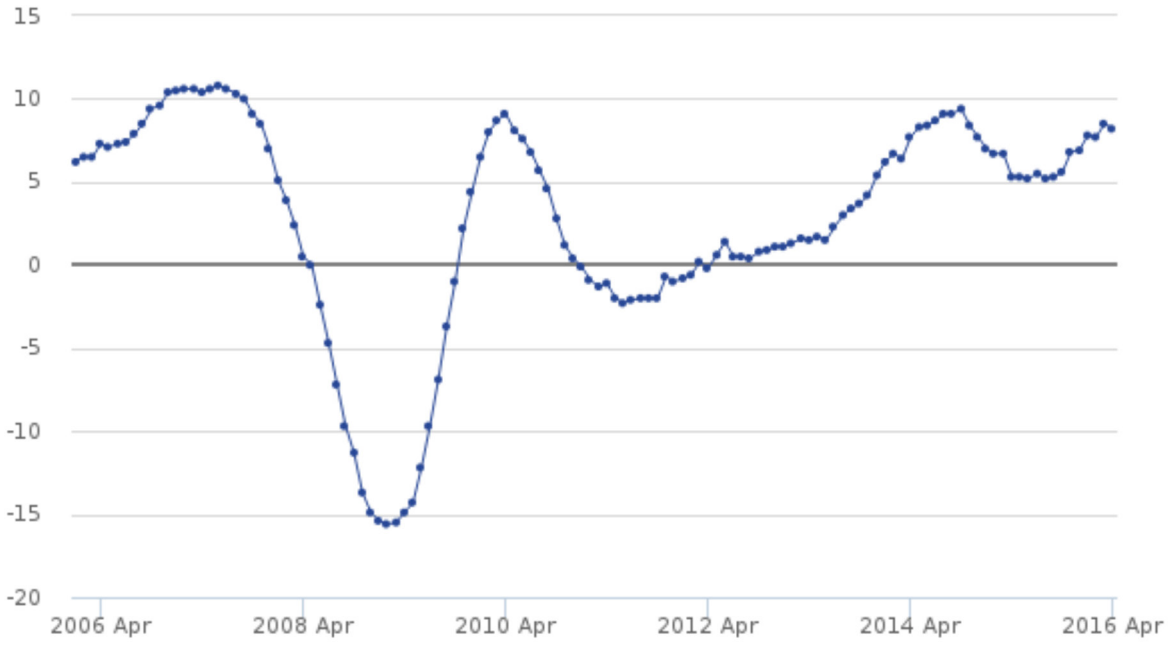
The complete list of index numbers (or indices) for 2005–2015 is shown in Table 4.

Table 4 – UK exports to the EU 2005–2015 (value and index numbers)

Year	UK exports to EU (£ million)	Index (2008 = 100)
2005	110 300	90.8
2006	135 962	111.9
2007	113 161	93.2
2008	121 467	100
2009	109 364	90.0
2010	123 367	101.6
2011	137 641	113.3
2012	123 239	101.5
2013	123 557	101.7
2014	121 872	100.3
2015	120 359	99.1

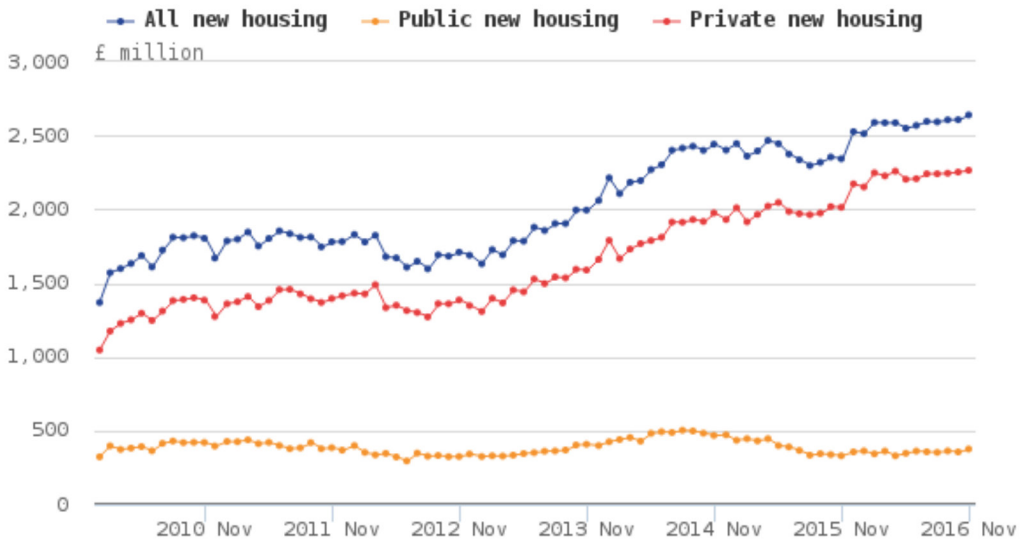
Activities

Figure 12 – Annual change in UK house prices 2006–16



1. Using Figure 12 describe the trend in UK house prices between 2006 and 2016. (Remember that the line shows the **percentage change** in house prices).

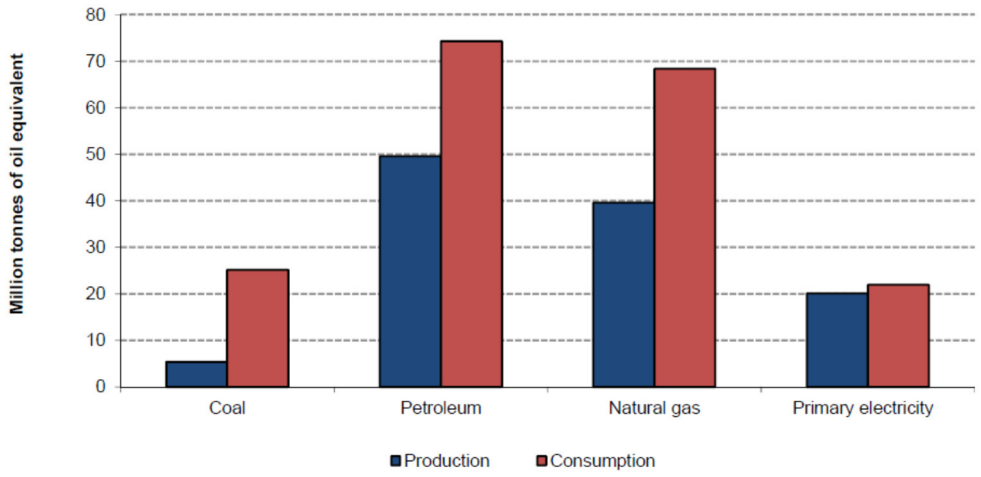
Figure 13 – New housing built in UK 2010–2016



Source: ONS

2. Explain the different trends in public and private new housing between 2010 and 2016.

Figure 14 – UK fuel consumption and production 2015



Source UK Digest of Energy Statistics

3. Explain the differences in UK consumption and production of different energy types in 2015.

Table 5 – EU production of fresh bread (€million) 2015

UK	Germany	France	Italy	Spain	Rest of EU
4.4	9.8	1.5	2.6	2.1	9.3

4. Use the data in the table to create a pie chart with appropriate title and labelling.

Table 6 shows the percentage of different types of businesses in the UK between 2011 and 2016.

Table 6 – UK Businesses 2011–16 (% of legal formats)

Year	Companies & public corporations	Sole traders & partnerships	Index companies & public corporations Index 2013 = 100	Index sole traders & partnerships Index 2013 = 100
2011	58.6	37.3		
2012	60.2	35.8		
2013	62.3	33.8	100	100
2014	64.2	32		
2015	66.8	29.5		
2016	68.8	27.4		

Source: ONS

5. Complete Table 6 by converting the figures to index numbers.

   For example to convert the 2011 figure for companies and public corporations the calculation is

   Index 2011 = 58.6 ÷ 62.3 x 100.