



Additional dataset activities

Exploring Aggregate Data

Exploring Aggregate Data

This section on exploring aggregate data is split into four activities;

- Activity 1: Producing summary statistics,
- Activity 2: Deriving Variables,
- Activity 3: Charting the data and adding a trend line and
- Activity 4: Accessing and downloading OECD Factbook data.

You will use a basic statistical package, Excel to carry out some straightforward data analysis tasks on an international time series aggregate dataset. The data used here are from the **OECD Factbook 2007**, an online resource that provides free data and commentary on world economic, social and environmental trends. By the end of these activities, you will be able to:

- produce summary statistics;
- derive a variable;
- produce a chart in Excel;
- add trend lines and moving averages to an aggregate time series;
- access and download aggregate data from the OECD Factbook.

Activity 1: Producing summary statistics

Open the workbook by going to the File menu in Excel, or by double clicking on the Workingdataset.xls file. When you open this workbook you will see a number of worksheets – OECD Factbook data download, Summary Statistics, R & D Chart, GDP Chart, Derived and chart data. Use the tabs at the bottom of the workbook to navigate through the worksheets and click on the red tab to view the OECD Factbook data download worksheet:

	A	B	C	D	E	F
	Country	Year	GDP (Billion US Dollars, current prices and PPPs)	GDP Expenditure on R&D (As a percentage of GDP)		
1						
2	Germany	1980	752.3			
3	Germany	1981	827.3	2.43		
4	Germany	1982	874.2	2.5		
5	Germany	1983	923.1	2.5		
6	Germany	1984	984.8	2.5		
7	Germany	1985	1038.7	2.68		
8	Germany	1986	1086.1	2.7		
9	Germany	1987	1131.7	2.8		
10	Germany	1988	1214	2.79		
11	Germany	1989	1309.1	2.79		
12	Germany	1990	1431.2	2.67		
13	Germany	1991	1556.9	2.47		
14	Germany	1992	1628.2	2.35		
15	Germany	1993	1652.3	2.28		
16	Germany	1994	1731.9	2.18		
17	Germany	1995	1800.7	2.19		
18	Germany	1996	1857.3	2.19		
19	Germany	1997	1904.3	2.24		
20	Germany	1998	1957.8	2.27		
21	Germany	1999	2004.8	2.4		
22	Germany	2000	2101.3	2.45		
23	Germany	2001	2169.9	2.46		
24	Germany	2002	2235.9	2.49		
25	Germany	2003	2387.5	2.52		

The OECD Factbook data download datasheet contains the time series data for Germany, UK, US and Japan on the following indicators;

Gross Domestic Product (GDP): GDP is a measure of the total economic activity of a country and is a key indicator of the economic health or otherwise of a nation. Note the GDP's in this datasets are all measured in the same units (Billions of US Dollars)

GDP Expenditure on Research and Development (R&D): Advanced economies compete technologically, and R&D expenditure relative to GDP is a key measure of government and private sector efforts to pursue this strategy.

These indicators were downloaded from the OECD Factbook 2007 under the 'Macroeconomic Trends' and 'Science and Technology' headings. You will learn how to access and download this freely available data later on.

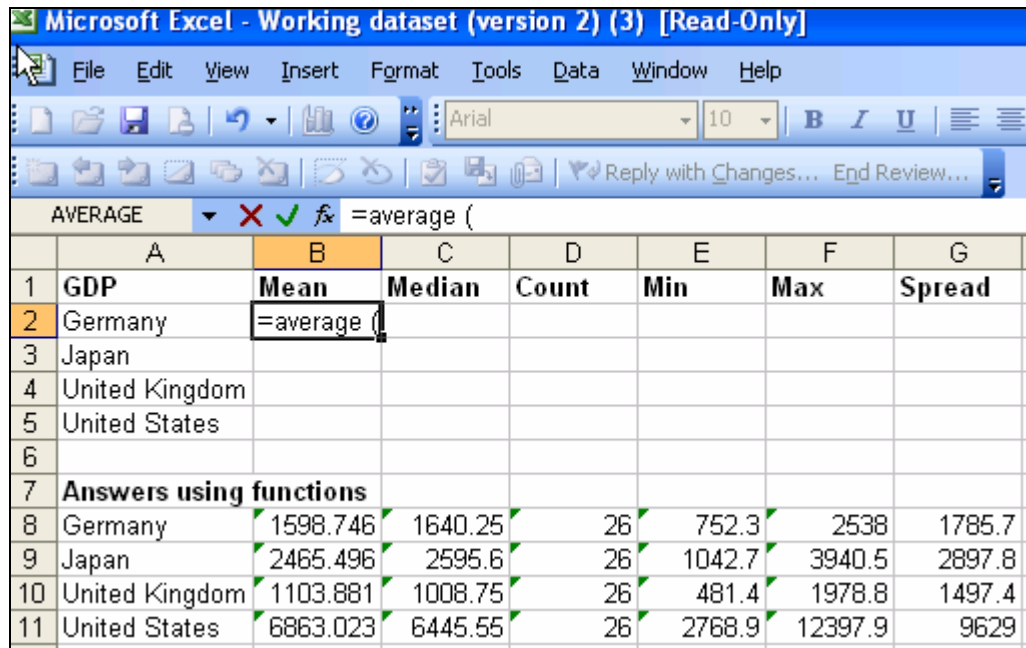
In this first exercise, we are going to produce some basic summary descriptive statistics for the GDP data. Descriptive statistics are used to summarise the basic features of the sample and the data values, such as how many data points there are and the spread of the data values.

Select the Summary Statistics tab from the bottom of the worksheet:

	A	B	C	D	E	F	G
1	GDP	Mean	Median	Count	Min	Max	Spread
2	Germany						
3	Japan						
4	United Kingdom						
5	United States						
6							
7	Answers using functions						
8	Germany	1598.746	1640.25	26	752.3	2538	1785.7
9	Japan	2465.496	2595.6	26	1042.7	3940.5	2897.8
10	United Kingdom	1103.881	1008.75	26	481.4	1978.8	1497.4
11	United States	6863.023	6445.55	26	2768.9	12397.9	9629
12							
13							
14							

We will first look at the mean for each country. The **arithmetic mean** or simple average is calculated by adding up all the values in each series and then dividing by the number of values. Excel has a function, AVERAGE that will calculate the mean for you.

Fill in the Mean for German GDP by selecting the cell B2 in the Summary Statistics sheet and typing **=Average(** into the cell.



Microsoft Excel - Working dataset (version 2) (3) [Read-Only]

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AVERAGE X ✓ ✖ =average (

	A	B	C	D	E	F	G
1	GDP	Mean	Median	Count	Min	Max	Spread
2	Germany	=average (
3	Japan						
4	United Kingdom						
5	United States						
6							
7	Answers using functions						
8	Germany	1598.746	1640.25	26	752.3	2538	1785.7
9	Japan	2465.496	2595.6	26	1042.7	3940.5	2897.8
10	United Kingdom	1103.881	1008.75	26	481.4	1978.8	1497.4
11	United States	6863.023	6445.55	26	2768.9	12397.9	9629

Return to the OECD Factbook data download sheet to select your data. Use the left hand mouse button on your mouse to select the cells for German GDP from 1980 to 2005. Note how Excel fills in the function and data range for you in the function bar.

	A	B	C	D
1	Country	Year	GDP (Billion US Dollars)	GDP Expenditure
2	Germany	1980	752.3	
3	Germany	1981	827.3	
4	Germany	1982	874.2	
5	Germany	1983	923.1	
6	Germany	1984	984.8	
7	Germany	1985	1038.7	
8	Germany	1986	1086.1	
9	Germany	1987	1131.7	
10	Germany	1988	1214	
11	Germany	1989	1309.1	
12	Germany	1990	1431.2	
13	Germany	1991	1556.9	
14	Germany	1992	1628.2	
15	Germany	1993	1652.3	
16	Germany	1994	1731.9	
17	Germany	1995	1800.7	
18	Germany	1996	1857.3	
19	Germany	1997	1904.3	
20	Germany	1998	1957.8	
21	Germany	1999	2004.8	
22	Germany	2000	2101.3	
23	Germany	2001	2169.9	
24	Germany	2002	2235.9	
25	Germany	2003	2387.5	
26	Germany	2004	2468.1	
27	Germany	2005	2538	
28	Japan	1980	1042.7	

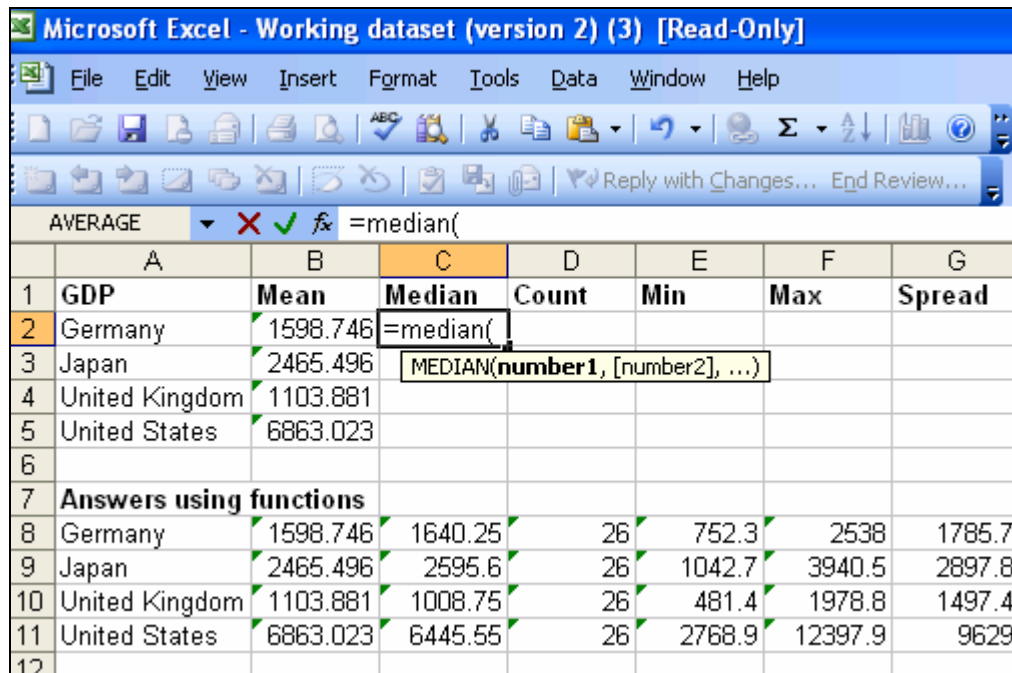
Close the bracket in the function bar and press **return**.

	A	B	C	D
1	Country	Year	GDP (Billion US Dollars)	GDP Expenditure
2	Germany	1980	752.3	
3	Germany	1981	827.3	
4	Germany	1982	874.2	
5	Germany	1983	923.1	
6	Germany	1984	984.8	
7	Germany	1985	1038.7	
8	Germany	1986	1086.1	
9	Germany	1987	1131.7	
10	Germany	1988	1214	
11	Germany	1989	1309.1	
12	Germany	1990	1431.2	
13	Germany	1991	1556.9	
14	Germany	1992	1628.2	
15	Germany	1993	1652.3	
16	Germany	1994	1731.9	
17	Germany	1995	1800.7	
18	Germany	1996	1857.3	
19	Germany	1997	1904.3	
20	Germany	1998	1957.8	
21	Germany	1999	2004.8	
22	Germany	2000	2101.3	
23	Germany	2001	2169.9	
24	Germany	2002	2235.9	
25	Germany	2003	2387.5	
26	Germany	2004	2468.1	
27	Germany	2005	2538	
28	Japan	1980	1042.7	

Excel returns you to the Summary Statistics sheet and fills in the average value for your selected data.

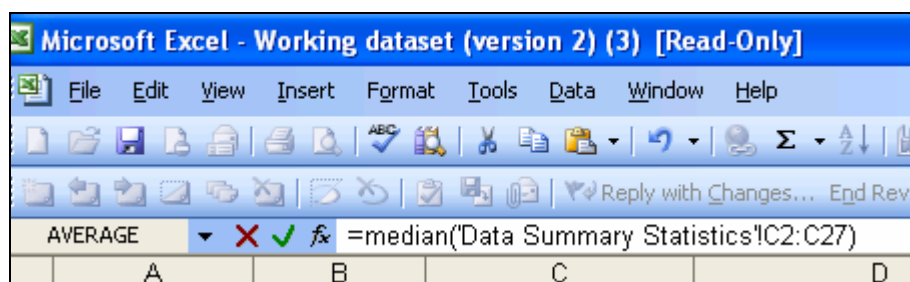
Repeat the above process to fill in the mean GDP values for Japan, US and the UK. Make sure your answer match the **Answers using functions**

We will now find the **median** values of GDP for each country. The median is the middle value in a set of data, when the data are arranged in ascending order. Excel already has a function to work out the median value of a data series. In the Summary Statistics sheet, type **=median(** into the Germany median cell, C2.



	A	B	C	D	E	F	G
1	GDP	Mean	Median	Count	Min	Max	Spread
2	Germany	1598.746	=median(
3	Japan	2465.496	MEDIAN(number1, [number2], ...)				
4	United Kingdom	1103.881					
5	United States	6863.023					
6							
7	Answers using functions						
8	Germany	1598.746	1640.25	26	752.3	2538	1785.7
9	Japan	2465.496	2595.6	26	1042.7	3940.5	2897.8
10	United Kingdom	1103.881	1008.75	26	481.4	1978.8	1497.4
11	United States	6863.023	6445.55	26	2768.9	12397.9	9629
12							

Again, use the tab to return to the Data Summary Statistics sheet to select your data. Use the left hand mouse button on your mouse to select the cells for German GDP from 1980 to 2005. Once more, Excel fills in the function and data range for you in the function bar. Close the bracket and press **return**.



	A	B	C	D

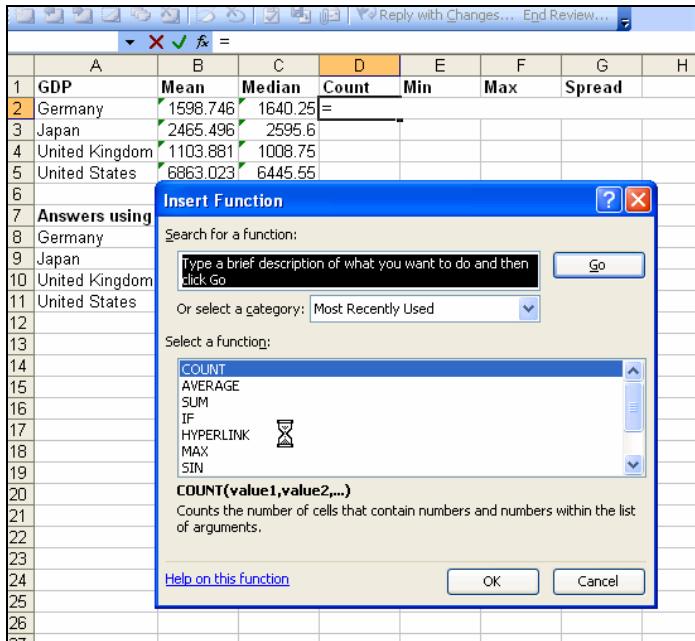
Excel returns you to the Summary Statistics sheet with the median value inserted.

Repeat the process to generate median values for GDP for the three other countries.

	A	B	C	D	E	F	G
1	GDP	Mean	Median	Count	Min	Max	Spread
2	Germany	1598.746	1640.25				
3	Japan	2465.496	2595.6				
4	United Kingdom	1103.881	1008.75				
5	United States	6863.023	6445.55				
6							
7	Answers using functions						
8	Germany	1598.746	1640.25	26	752.3	2538	1785.7
9	Japan	2465.496	2595.6	26	1042.7	3940.5	2897.8
10	United Kingdom	1103.881	1008.75	26	481.4	1978.8	1497.4
11	United States	6863.023	6445.55	26	2768.9	12397.9	9629
12							

The next column on the datasheet is **Count**. Count simply tells you the number of data points in each series. You can fill in the Count column by using the process carried out in the previous activities and **=Count()**. Alternatively, like all the functions in Excel, you can also use the menu.

Select **Insert > Function** from the menu bar and choose COUNT from the Select a Function box:



Click **OK** and the **Function Arguments** box appears. Leave this box open and go back to the **OECD Factbook data download** sheet using the tabs at the bottom of the page. Select the values for German GDP as before, and click **OK** in the Functions Argument box. Repeat the process for Japan, US and the UK. The count for all the series should be the same, i.e. **26**. Carrying out a count is a basic way to check for missing values, that the data has been entered correctly, and that you are working with the same time series for your different countries.

Complete the Min and Max columns using the techniques you have learned above and the MIN and MAX functions in Excel.

	A	B	C	D	E	F	G
1	GDP	Mean	Median	Count	Min	Max	Spread
2	Germany	1598.746	1640.25	26	752.3	2538	
3	Japan	2465.496	2595.6	26	1042.7	3940.5	
4	United Kingdom	1103.881	1008.75	26	481.4	1978.8	
5	United States	6863.023	6445.55	26	2768.9	12397.9	
6							
7	Answers using functions						
8	Germany	1598.746	1640.25	26	752.3	2538	1785.7
9	Japan	2465.496	2595.6	26	1042.7	3940.5	2897.8
10	United Kingdom	1103.881	1008.75	26	481.4	1978.8	1497.4
11	United States	6863.023	6445.55	26	2768.9	12397.9	9629

The final column in the summary statistics section is looking at the spread of values within each series i.e. the maximum value less the minimum. Rather than use a function, we are going to compute this directly by subtracting the value in the Min column from the value in the Max column.

Select the Germany Spread cell (G2) and enter the formula:

=F2-E2

	MAX						
	A	B	C	D	E	F	G
1	GDP	Mean	Median	Count	Min	Max	Spread
2	Germany	1598.746	1640.25	26	752.3	2538	=F2-E2
3	Japan	2465.496	2595.6	26	1042.7	3940.5	
4	United Kingdom	1103.881	1008.75	26	481.4	1978.8	
5	United States	6863.023	6445.55	26	2768.9	12397.9	
6							
7	Answers using functions						
8	Germany	1598.746	1640.25	26	752.3	2538	1785.7
9	Japan	2465.496	2595.6	26	1042.7	3940.5	2897.8
10	United Kingdom	1103.881	1008.75	26	481.4	1978.8	1497.4
11	United States	6863.023	6445.55	26	2768.9	12397.9	9629

Press **return**, and the value 1785.7 pastes itself in. To copy the formula into the other Spread cells, hover over the bottom left hand corner of the G2 cell until the cursor turns into a black cross (the **fill handle**), then

F	G
Max	Spread
2538	1785.7

Using the left mouse button, drag the cursor down over the remaining spread cells.

E	F	G
Min	Max	Spread
752.3	2538	1785.7
1042.7	3940.5	
481.4	1978.8	
2768.9	12397.9	

This pastes the same relative formula e.g. F3-E3, F4-E4 etc into the selected cells.

E	F	G
Min	Max	Spread
752.3	2538	1785.7
1042.7	3940.5	2897.8
481.4	1978.8	1497.4
2768.9	12397.9	9629

Take a look at your summary statistics results:

GDP	Mean	Median	Count	Min	Max	Spread
Germany	1598.746	1640.25	26	752.3	2538	1785.7
Japan	2465.496	2595.6	26	1042.7	3940.5	2897.8
United Kingdom	1103.881	1008.75	26	481.4	1978.8	1497.4
United States	6863.023	6445.55	26	2768.9	12397.9	9629
Answers using functions						
Germany	1598.746	1640.25	26	752.3	2538	1785.7
Japan	2465.496	2595.6	26	1042.7	3940.5	2897.8
United Kingdom	1103.881	1008.75	26	481.4	1978.8	1497.4
United States	6863.023	6445.55	26	2768.9	12397.9	9629

Summary statistics provide some basic checks on the data you are working with and give you important information about your dataset. The **mean** and **median** tell you something about the typical values or central tendency of the data. For example, it is clear from this task that the United States GDP surpasses that of the other three large economies combined. The **means** and **medians** for each country are also fairly similar. This tells you that the data is not skewed but has a reasonably even distribution about the average values. If the **counts** were different between the series, it would alert you to the fact that you had some missing data or were perhaps comparing different series! Here they are all the same, 26. The **Min** and **Max** values look reasonable and economically logical (e.g. no negative GDP values) and give you an idea of how **dispersed** the data are. These basic calculations can identify potential case outliers and are an important first set in any statistical analysis.

Activity 2: Deriving variables

In this activity we will look at how to derive a variable. A derived variable is one that has been created out of the original values in the dataset. Researchers are often looking for a particular derived variable in a databank. Even if the derived variable does not exist as a series title in the dataset, it might be easily constructed using Excel or a statistical package. Always try to think about whether the series you are searching for is available in an alternative form. For instance, if you are looking for GDP annual percentage growth and only GDP is available, you can simply calculate its values. This is also true for percentages. Many researchers are looking for indicators expressed as a proportion of a country's GDP. Even if this is not given, a simple calculation – dividing the value by the GDP - can potentially allow for greater comparability across countries and save you the time you would have spent trying to find the data elsewhere.

In this case, we will to derive the growth of a variable from the values in individual years. The change in GDP between successive years, or GDP growth, is an indicator that is widely used to assess how well an economy is being managed. The growth in GDP between year1 and year2 is expressed as a percentage:

$$\frac{\text{GDP}(\text{year2}) - \text{GDP}(\text{year1})}{\text{GDP}(\text{year1})} \times 100$$

Open workingdataset.xls file and select the OECD Factbook data download worksheet. Go to the first available column (column E) and type in **GDP Growth** as the variable heading. Leaving the top cell blank, and click in the next cell down and type in the formula **=((C3 - C2)/C2)*100**. This will take the value in cell C3 (German GDP in 1981) subtract the value in cell C2 (German GDP in 1980) and express the difference as a growth rate using the formula above. Note that the top cell is left blank for this new variable as we are looking at the growth between two successive years.

D	E	F
GDP Expenditure on R&D (As a percentage of GDP)	GDP Growth	
2.43	$=((C3-C2)/C2)*100)$	
2.5		

Press **enter** to generate the value. Use the **fill handle** technique you used in the first activity to fill the rest of the German GDP growth column. Your answers should be the same as the values in column I in the **Derived and chart data** worksheet:

	A	B	C	D	E
1	Country	Year	GDP (Billion US Dollars, current prices and PPPs)	GDP Expenditure on R&D (As a percentage of GDP)	GDP Growth
2	Germany	1980	752.3		
3	Germany	1981	827.3	2.43	9.96942709
4	Germany	1982	874.2	2.5	5.669043878
5	Germany	1983	923.1	2.5	5.593685655
6	Germany	1984	984.8	2.5	6.683999567
7	Germany	1985	1038.7	2.68	5.473192526
8	Germany	1986	1086.1	2.7	4.563396553
9	Germany	1987	1131.7	2.8	4.198508425
10	Germany	1988	1214	2.79	7.272245295
11	Germany	1989	1309.1	2.79	7.833607908
12	Germany	1990	1431.2	2.67	9.327018562
13	Germany	1991	1556.9	2.47	8.782839575
14	Germany	1992	1628.2	2.35	4.579613334
15	Germany	1993	1652.3	2.28	1.480162142
16	Germany	1994	1731.9	2.18	4.817527083
17	Germany	1995	1800.7	2.19	3.972515734
18	Germany	1996	1857.3	2.19	3.14322208
19	Germany	1997	1904.3	2.24	2.530555107
20	Germany	1998	1957.8	2.27	2.809431287

OECD Factbook data download worksheet.

Repeat this process to generate the GDP growth values for Japan, the UK and US.

Growth in GDP does not result in an increase in purchasing power if the growth is simply due to a rise in inflation. So, rather than this nominal, or unadjusted, rate of growth of GDP, in practice economists use growth rates that are free of direct effects of inflation, or **real GDP** growth. Real GDP growth reveals the change of economic output after adjusting for inflation by dividing the nominal GDP by a price deflator.

The OECD Factbook provides data on real GDP growth and this can be found in the **Derived and chart data** worksheet. The next variable we are going to derive is the **differential** between real and nominal GDP growth.

The price differential of GDP is the difference between the real and nominal GDP growth rates so the formula to generate this variable is simply:

Nominal GDP – Real GDP

So we can generate a **Differential column** by inputting a formula in the same way we generated the growth rates. Go to the **OECD Factbook data download** worksheet and type in **Differential** as the variable heading in column G. Enter the formula **=E3-F3** into cell G3. This takes the **GDP Growth** value and subtracts the **Real GDP Growth** value to give the differential.

E	F	G	H
GDP Growth	Real GDP	Differential	
	1.4		
9.96942709	0.5	=E3-F3	

Again, use the fill handle to extend the formula to all years for the series:

	A	B	C	D	E	F	G
1	Country	Year	GDP (Billion US Dollars, current prices and PPPs)	GDP Expenditure on R&D (As a percentage of GDP)	GDP Growth	Real GDP Growth	Differential
2	Germany	1980	752.3			1.4	
3	Germany	1981	827.3	2.43	9.96942709	0.5	9.46942709
4	Germany	1982	874.2	2.5	5.669043878	-0.4	6.069043878
5	Germany	1983	923.1	2.5	5.593685655	1.6	3.993685655
6	Germany	1984	984.8	2.5	6.683999567	2.8	3.883999567
7	Germany	1985	1038.7	2.68	5.473192526	2.3	3.173192526
8	Germany	1986	1086.1	2.7	4.563396553	2.3	2.263396553
9	Germany	1987	1131.7	2.8	4.198508425	1.4	2.798508425
10	Germany	1988	1214	2.79	7.272245295	3.7	3.572245295
11	Germany	1989	1309.1	2.79	7.833607908	3.9	3.933607908
12	Germany	1990	1431.2	2.67	9.327018562	5.3	4.027018562
13	Germany	1991	1556.9	2.47	8.782839575	5.1	3.682839575
14	Germany	1992	1628.2	2.35	4.579613334	2.2	2.379613334
15	Germany	1993	1652.3	2.28	1.480162142	-0.8	2.280162142
16	Germany	1994	1731.9	2.18	4.817527083	2.7	2.117527083
17	Germany	1995	1800.7	2.19	3.972515734	1.9	2.072515734
18	Germany	1996	1857.3	2.19	3.14322208	1	2.14322208
19	Germany	1997	1904.3	2.24	2.530555107	1.8	0.730555107
20	Germany	1998	1957.8	2.27	2.809431287	2	0.809431287
21	Germany	1999	2004.8	2.4	2.400653795	2	0.400653795
22	Germany	2000	2101.3	2.45	4.813447725	3.2	1.613447725
23	Germany	2001	2169.9	2.46	2.264645696	1.2	1.064645696

OECD Factbook data download worksheet.

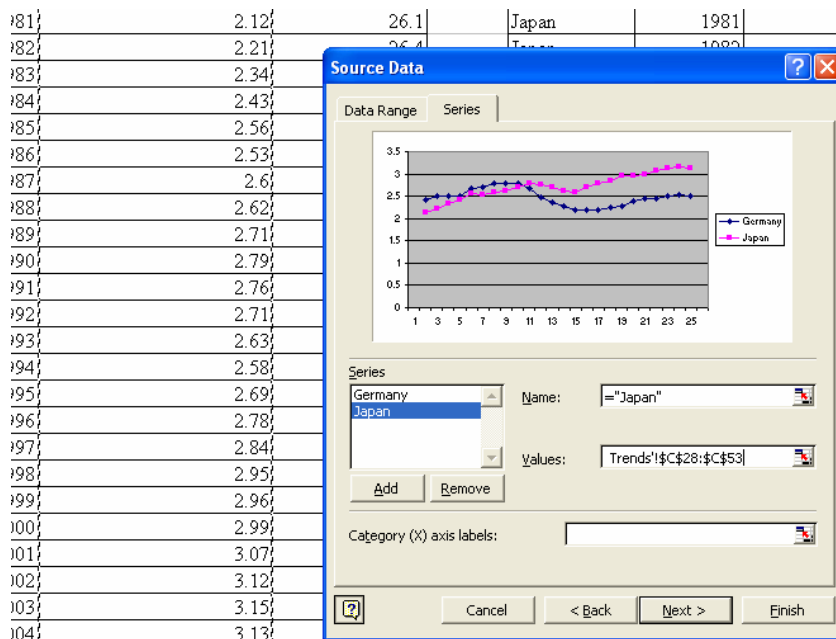
Note the real GDP growth values have a missing value for one of the years, 2002. This creates a null value in the differential for this year. Your answers should be the same as the values in column K in the **Derived and chart data** worksheet:

Activity 3: Charting the data and adding a trend line

In this activity we chart Research and Development Expenditure from 1980 – 2005 for Germany, Japan, US and UK.

Firstly, insert a new sheet in your Excel workbook. Click on the **Chart Wizard** button in the Excel toolbar, select **Line Chart** and click **Next**. You will now need to define which data you wish to chart – to do this, click on the Series tab > **Add**.

Define the series Name as **"Germany"** and in the Values input box click on the **Collapse Dialogue** button at the right hand side of the cell reference input box and then move to the **Derived and chart data** sheet to select your data.



Select all data in the **GDP Expenditure on R & D column** for Germany from 1980 - 2005 and hit **return**. The **Source Data** window will appear with a small view of the data you have plotted so far. Repeat the process of adding additional series to the chart for Japan, United States and the United Kingdom. Use the Category (X) axis labels box to add the years, and then click **Next**. Add a title of **Research and Development Expenditure 1980-2005**, an X axis label of **Years** and Y axis label of **As a percentage of GDP**. Click **Next** and you should then have a chart which

looks very similar to the one shown in the Excel workbook on the blue R&D chart tab, but without the moving average trend lines, which we will be adding later.

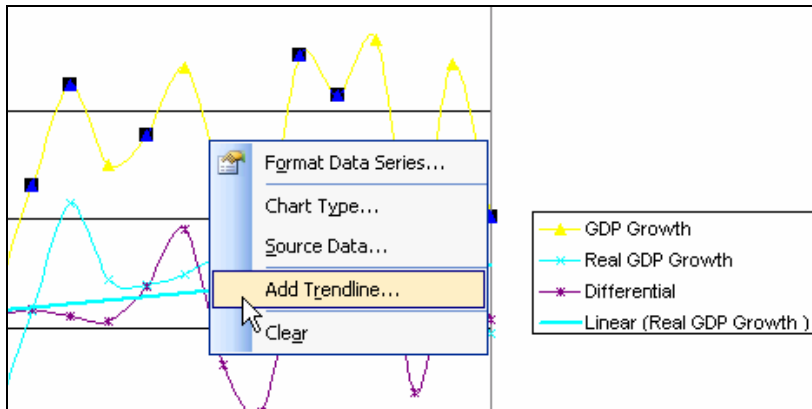
You will see that the graph shows R&D expenditure as a percent of GDP is relatively high in Japan. Japanese companies tend to have high levels of spending on research and development as the Japanese system of banking and finance, with its predominance of indirect financing and high number of corporate alliances allows firms to invest in the longer term. UK spending on R&D, again chiefly the province of large firms, has been on a slow decline since the mid 1980's. It now stands at around 1.9% of GDP compared with an average of 2.3 per cent across Europe.

Using the technique just described, you can now try to produce the chart shown (without the trend lines) on the GDP Chart tab - **Real and Unadjusted GDP growth for the United Kingdom**. The data for this chart has been subsetting for you and can be found in the **Derived and chart** data sheet in columns **m** to **r**.

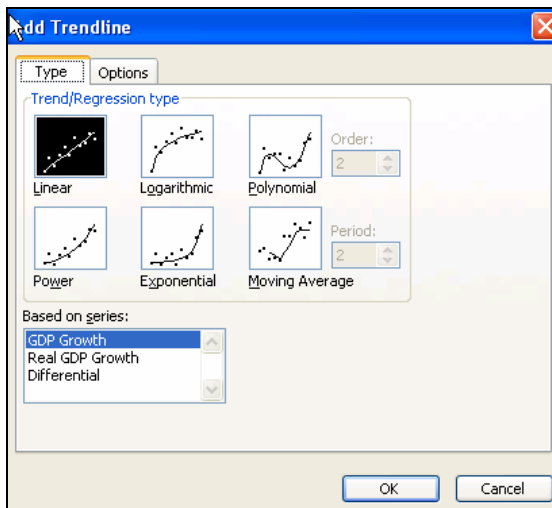
In an inflationary environment, the growth in real GDP is approximately equal to the nominal GDP growth rate less the inflation rate (although not exactly as the GDP deflator used to calculate real GDP includes government goods, export and investment goods rather than the consumer orientated basket of goods used to calculate inflation). This means that the differential tends to be high during periods of high inflation. From the graph you can see that high inflationary pressures in the early 1980's led to big price adjustments between nominal GDP and real GDP during those years.

There is more about deflating series with price indices generally in the **Making cross-national comparisons using macro data** unit.

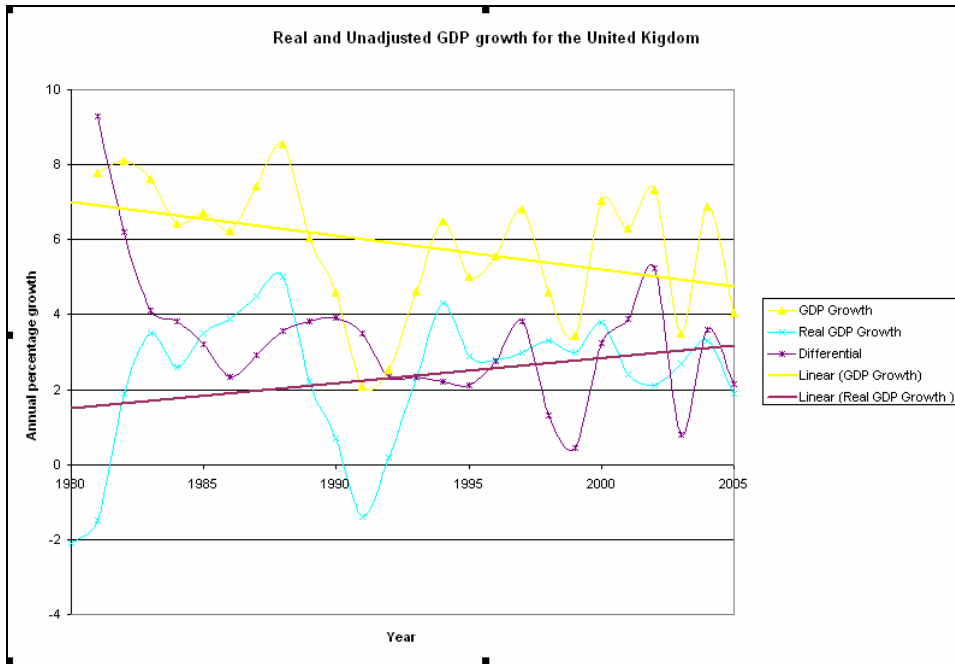
We are now going to add trend lines to the two GDP growth rates. First select the GDP growth data series by right clicking on the line in the graph. **Select Add Trendline** from the Format Data Series menu



The Add trend dialogue box now gives you several options to try. Select the **Linear** option and press **OK**.



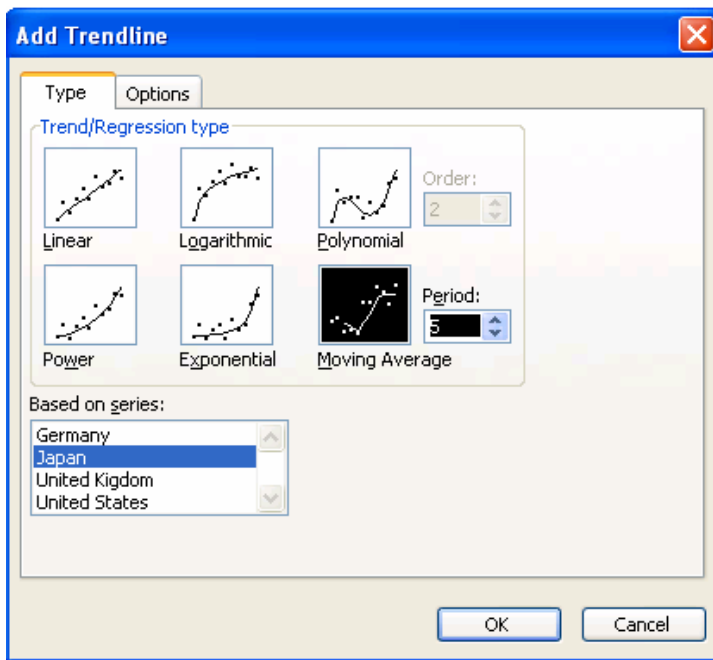
Repeat the process for the Real GDP growth rates.



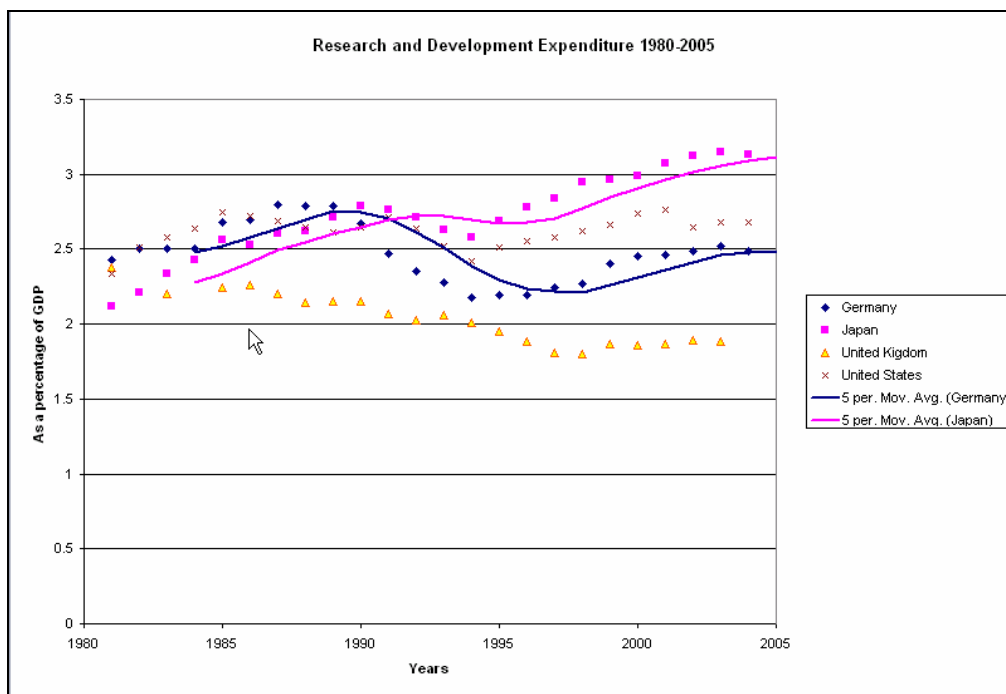
Notice Excel adds the trend line to the legend for you. The trend lines show that while nominal GDP has tended to fall over the last 25 years, once adjusted for prices, the real GDP growth rate has tended to rise.

Finally, we will add a moving average trend line to the **R&D expenditure data**. A simple moving average is the **mean** of a set number of previous data points. In this case we are going to add a 5 year moving average, which for each year will be the average value of the previous 5 years. Moving averages are used to smooth out short-term fluctuations to show longer-term trends or cycles more clearly.

Go to the **Derived and chart data** sheet. Select the **R&D expenditure data** chart you produced in Activity 2. Right click on the Japan series and select **Add Trendline** from the menu. In the **Add Trendline** dialogue box, select **Moving Average** and set the **Period** to 5 and click **OK**. This will give us an average based on the last 5 data points, i.e. the last 5 years.



Notice the first data point on the moving average is 1985, as the average is calculated on the previous five years.



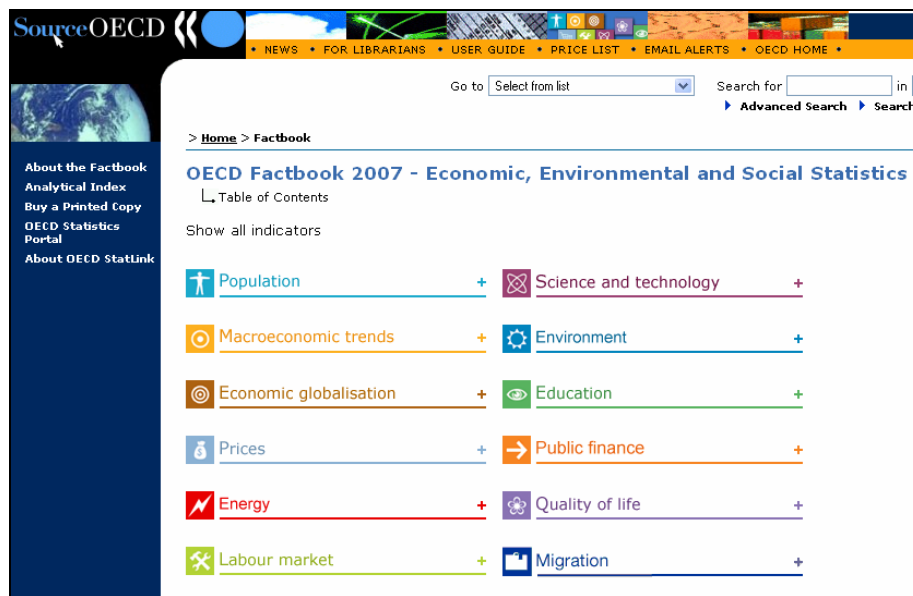
Adding the moving averages show that for all four countries, R&D expenditure fell as a % of GDP in the early 1990's. Expenditure in Japan, Germany and the US has since recovered, although the UK's R&D intensity has continued to decline. The slopes of

the moving average lines also tell us at what rate changes are occurring. For instance, the chart above illustrates the relative rates at which changes in spending occur. Japan's overall investment in R&D is both larger (in spending as a percentage of GDP terms) and growing at a faster rate (the slope of the average). Such basic information can highlight areas for further analysis.

Activity 4: Accessing and downloading OECD Factbook data

In this final activity we will see how to access and download free data from the OECD Factbook – Economic, Environmental and Social Statistics' and view associated documentation. The OECD Factbook contains 100 indicators providing an overview of economic, social and environmental trends for all OECD countries.

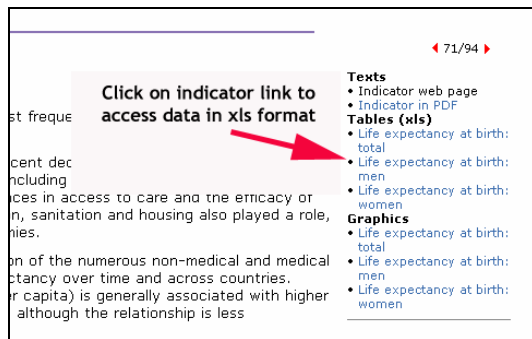
Firstly, go to <http://www.sourceoecd.org/factbook> where you will see the following screen listing all 12 of the topic headings, Population, Macroeconomic trends, Economic Globalisation, Prices, Energy, Labour Market, Science and Technology, Environment, Education, Public Finance, Quality of Life and Migration.



Click on one of the headings to view the indicators contained. For example, if we click on **Quality of Life**, we will see sub-headings on Health, Leisure, Society and Transport. Under Health, choose **Life Expectancy**.

You will then be provided with comprehensive details about the indicator including a definition of the data, information on its comparability, long term trends, sources and links to further information.

On the right hand side of the screen, you will see a link to the same document in pdf format under the Texts heading, links to the available indicators in Excel format under the Tables heading and links to graphical representations of the indicators under the Graphics heading. Under each table and graph, a 'StatLink' enables any reader to immediately download the original data in Excel format.



Click on **Life Expectancy at Birth, total** to open this indicator in Excel. You should see an excel spreadsheet populated with life expectancy data for OECD countries from 1960 onwards.

	A	B	C	D	E
1	OECD Factbook 2007: Economic, Environmental and Social Statistics - ISBN 92-64-02946-X - © OECD 2007				
2	Quality of life - Health - Life expectancy				
3	Life expectancy at birth: total				
4	<i>Number of years</i>				
5		1960	1961	1962	1963
6	Australia / Australie	70.9	71.2	71	71.1
7	Austria	68.7	69.7	69.4	69.6
8	Belgium ¹	70.6	70.6	70.6	71.2
9	Canada ²	..	71.3	..	..
10	Czech Republic	70.7	70.6	69.9	70.5
11	Denmark	72.4	..	..	..
12	Finland	69	..	..	69
13	France	70.3	71	70.5	70.5
14	Germany	69.6	69.6	69.6	69.8
15	Greece	69.9	..	..	..
16	Hungary	68	68.9	67.8	68.9

This spreadsheet can then be saved to your PC for future use.