



This activity uses UK house prices to introduce moving averages and weighted moving averages.

Suitability and Time

Level 3 (Advanced); 4 hours (approximate) depending on how work is shared and use of computers

Resources and equipment

Student information sheet, worksheet, calculators

Optional: slideshow, spreadsheet, computers with Excel

Key mathematical language

Quarter (of the year), moving average, weighted moving average.

Notes on the activity

This activity introduces the use of moving averages and weighted moving averages to smooth out seasonal fluctuations in UK house prices.

The arithmetic required to complete the tables is very time-consuming – if possible share the work between learners or let them use a spreadsheet.

There is a student spreadsheet with the raw data. The completed tables and graphs are also provided in a separate spreadsheet for class discussion.

During the activity

It is recommended that some calculations of each type are done by hand to familiarise students with the method. Using a spreadsheet makes the process far less time-consuming and tedious.

Points for discussion

Why is the denominator of the simple moving average calculation 4, and that of the weighted moving average 10?

When calculating weighted moving averages, why are average prices multiplied by different numbers – in this case 4, 3, 2 and 1?

Extensions

The final worksheet in the spreadsheet of data for students gives quarterly house price data and indices for each country and region of the UK from 2000 to 2011.

Students can use this to extend the work on moving averages by comparing what has happened locally to what has happened in the UK as a whole, or comparing different countries and/or regions.

Notes on the data

The data are adapted from The Halifax House Price Index spreadsheet at

http://www.lloydsbankinggroup.com/media1/research/halifax_hpi.asp

This website gives data for years before 2000 which could be used for finding moving averages over longer periods.

Please note that any use of the data for an individual's own or third party commercial purposes is done entirely at the risk of the person or persons making such reliance.