# Lesson 5-25: Add a trend line

It is impossible to demonstrate empirically that a cause produces an effect. Just because the sun has risen every day since the beginning of the Earth does not mean that it will rise again tomorrow. However; it is impossible to go about one's life without assuming such connections, and the best that we can do is to maintain an open mind and never presume that we know any laws of causality for certain.

*David Hume (1711-1776),*
*Scottish philosopher, economist, and historian.*
*From "An Enquiry Concerning Human Understanding".*

Trend analysis applies the science of mathematics to the art of fortune telling.

If a value has been increasing for a long time, trend analysis would suggest that it will go on increasing. Some would say that the reverse is true, but Excel remains healthily optimistic that we can predict the future from the past!

Excel provides several different types of trend analysis. We're going to use a linear trend line and a two-period moving average to decide whether it was a good idea to buy a house in 2008.

1   Open *UK House Prices-1* from your sample files folder (if it isn't already open).

2   Remove the *Min Base Rate* data series from the chart.

> This was covered in: *Lesson 5-14: Change source data using the Select Data Source dialog tools.*

3   Add a linear trend line element to forecast where property prices will be in the year 2014.

1.   Activate the chart by clicking just inside the chart's border.

2.   Click the *Chart Elements* icon ⊞ outside the top right of the chart.

3.   Click: Trendline→More Options…

> The *Format Trendline* task pane appears.

4.   Click the *Trendline Options* icon. 📊

5.   Make sure that the *Linear Trendline* type is selected (this is the default).

6.   As 2014 is 6 periods after 2008, enter 4 in the *Forecast Forward* text box and then press the **<Enter>** key.

| Forecast | | |
|---|---|---|
| Forward | 4 | periods |
| Backward | 0.0 | periods |

Notice the trend line shown on the chart.

**UK House Prices-1**

Excel confidently predicts that that a house purchased for 187K in 2008 will be worth over a quarter of a million by 2014 (though David Hume would have advised you not to bet on it).
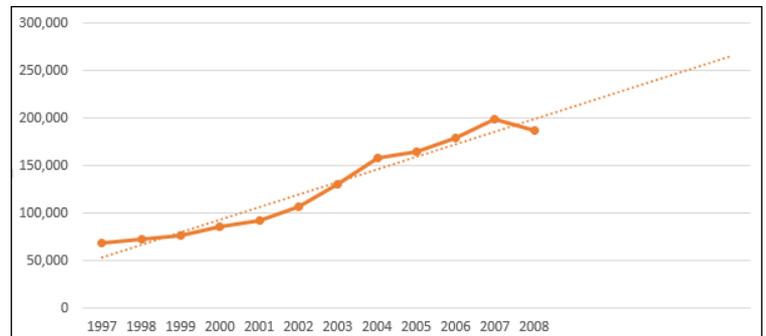


4    Remove the trend line.

1.    Click on the trendline to select it.

2.    Press the **<Delete>** key on the keyboard.

5    Add a two period moving average.

Moving averages are one of the most loved instruments of speculators who predict the future values of shares, currencies and commodities based entirely upon charts. The theory is that when the price crosses beneath the moving average it is time to sell.

1.    Activate the chart.

2.    Click the *Chart Elements* icon ⊞ outside the top right of the chart.

3.    Click: Trendline→Two Period Moving Average.

This time the analysis shows that, for the first time in ten years, 2008 was the year to sell up because the price has moved below the moving average.



6    Save your work as *UK House Prices-2.*