

## Simple Interest

If you put money into a bank account, the bank will normally pay interest on the money in your account. If the interest is simple interest, then the yearly amount of interest will be calculated on the original deposit. This is unlike compound interest, for which the amount of interest is calculated on the balance at the time interest is calculated, meaning that you get 'interest on your interest'. The balance of an account attracting simple interest increases at a constant rate of pounds per year.

Example: If you deposit £500 into an account paying 10% simple interest then the balance increases at a constant rate of

$$\frac{10}{100} = \text{£ } 50 \text{ per year.}$$

Initially there is £500 in the account.

After 1 year there is  $\text{£ } 500 + \text{£ } 50 = \text{£ } 550$  in the account.

After 2 years there is  $\text{£ } 550 + \text{£ } 50 = \text{£ } 600$  in the account.

After 3 years there is  $\text{£ } 600 + \text{£ } 50 = \text{£ } 650$  in the account.

After 4 years there is  $\text{£ } 650 + \text{£ } 50 = \text{£ } 700$  in the account.

After  $n$  years there will be  $\text{£ } 500 + n \times \text{£ } 50 = \text{£ } (500 + 50n)$  in the account.

Simple interest means that eventually the amount in the account will start falling in real terms. For the example given above, if the rate of inflation is 5%, after 11 years there will be £1050 in the account. Interest at 5% would be needed to maintain the value of the money in real terms, so at the end of the next year there would be

$$\text{£ } 1050 + \frac{5}{100} \times 1050 = \text{£ } 1102.50$$

In fact there will only be  $\text{£ } 1050 + \text{£ } 50 = \text{£ } 1100$ .