

# Additional Guidance

## Data projection under Approach 3

For each of the four data classes in turn:

- Let  $n_i$  represent the number of sales in year  $i$  (for  $i = 2007$  to  $2012$ ) as per the data provided.

Start from the first order % change ratios  $x_i$  (for  $i = 2008$  to  $2012$ ) used for Approaches 1 and 2. These should be calculated as  $x_i = n_i / n_{i-1} - 1$ .

- Calculate the second order % change ratios  $y_i$  (for relevant  $i$ ), where  $y_i = x_i / x_{i-1}$ .
- Calculate the constant  $Y$ , the arithmetic mean of these  $\{y_i\}$ .

There are two different approaches that can be taken for the next stages.

### EITHER

- The required % change ( $x_i$ ) in year  $i > 2012$  can be projected as:

$x_{2012}$  multiplied by  $Y^N$  where  $N = i - 2012$ .

- These  $x_i$  can then be applied to the numbers of sales to obtain the projected future sales as required, i.e. for  $i > 2012$ :

$$n_i = n_{i-1} \times [1 + x_i].$$

### OR

- The required number of sales  $n_i$  in year  $i$  (for  $i > 2012$ ) can be calculated as:

$$n_i = n_{i-1} \times [Y \times (n_{i-1} / n_{i-2} - 1) + 1].$$

For either approach, you may wish to check that the resultant figures meet the requirement of constant second order ratios.