

Forecasting Model

In order for Members to understand the standardised forecasting model, used across local authorities for forecasting Reception demand for future years, the following summary has been prepared.

The tables below show the birth data received from the ONS¹ for previous years and compares this to the number of pupils that start in Reception in a Slough school 5 years later. The comparison of the 'number that start in Reception' (column 4) to the 'number of births' 5 year's earlier (column 2) is called the 'retention ratio'. How this is calculated is shown below in Step 1. Step 2 then shows how to apply the average retention ratio for the last 3 years to forecast future demand.

Table 1: Lower Retention Rate Period – 2000-2006

1	2	3	4	5	
Year	Number of Births	5 years after birth data	Number that start in Reception	Retention ratio	
1996	1869	2000-1	1482	79.3%	(see Step 1)
1997	1826	2001-2	1496	81.9%	
1998	1786	2002-3	1409	78.9%	
1999	1799	2003-4	1388	77.2%	
2000	1825	2004-5	1464	80.2%	
2001	1864	2005-6	1488	79.8%	

Table 2: Higher Retention Rate Period – 2006-2010

1	2	3	4	5
Year	Number of Births	5 years after birth data	Number that start in Reception	Retention ratio
2001-2	1865	2006-7	1545	82.8%
2002-3	1946	2007-8	1621	84.2%
2003-4	1984	2008-9	1665	83.9%
2004-5	2051	2009-10	1831	89.3%
2005-6	2234	Sep-10	Forecast shown below	
2006-7	2457	Sep-11	Forecast shown below	
2007-8	2561	Sep-12	Forecast shown below	
2008-9	2738 ²	Sep-13	Forecast shown below	

Table 1 above shows that demand (column 4) was falling over the period to 2003-4, reducing to a low of 1388. However, since the opening up of the European Union this has reversed the trend and since 2004-5 demand has risen and this trend is still continuing.

Note also that in 2006-7 there was a change in trend in retention ratios (column 5), this has been highlighted by separating the tables above into 'higher' and 'lower' periods.

Table 2 shows that retention ratios have risen significantly compared to the period 2000-1 to 2005-6 and in 2009-10 the figure rose to its highest level of 89.3%. As members can see, based on experience over the long term, it was not possible to predict the large rise in the retention ratio (seen in Slough and in many other authorities) experienced in 2009-10.

ⁱ Slough receives live birth data from the Office of National Statistics (ONS) on an annual basis. The availability of this data at postcode level in recent years is a big improvement over previous years however there is still a significant lag before data is made available, for instance 2008-9 data will not be available until September 2010.

ⁱⁱ Provisional data provided by the PCT and adjusted to reflect past experience. Final data will be provided by ONS late 2010.

Step 1 - Calculate the retention ratio for each year using the formula below:

$$\frac{\text{No. of children that start in Reception (column 4)}}{\text{No. of births (column 2)}} = \frac{1482}{1869} = 79.3\% \text{ retention ratio (column 5)}$$

Step 2 - Average the retention ratios for the previous 3 years and use this average to predict the demand for future years.

The average of the last 3 year retention ratios (2007-8 to 2009-10) is 85.8%.

Applying the 3 year average retention ratio directly to the birth data for 2005-6 to 2008-9 gives the following forecasts:

Future Year	Forecast using 3 year average retention ratio
2010-11	1917
2011-12	2108
2012-13	2198
2013-14	2349

Volatility

Members will appreciate that there is a degree of volatility in predicting demand for school places. Therefore it is prudent to look at a range of forecasts rather than an exact number. This gives a greater degree of accuracy with forecasts including for a degree of +/- variation.

Year	Forecasts		Shortfall compared to current number of Reception places: 1887
	Low range projection	High range projection	
September 2010	1917*	1947*	30→60 1 to 2 classes
September 2011	2064	2126	177→239 6-8 classes
September 2012	2152	2216	265→329 9 to 11 classes
September 2013	2300	2369	413→482 14 to 16 classes

* These figures are based on actual admissions figures rather than forecast data