Department<br>for Education

# Trends in school spending: 2002-03 to 2016-17 

Ad hoc statistics compiling a time series using academy and local authority schools' spending data

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## Summary

In this note we describe how we compiled a single time series of school spending data covering a period from 2002-03 to 2016-17. This involved calculating spending on a per pupil basis and, after 2011-12, combining the separate spending returns for LA maintained schools and academies which have some differences.

The resulting time series allows us to examine trends in total spending and individual spending categories, including:

- Total spending per pupil has increased in real terms by 42\% from 2002-03 to 2016-17. Spending per pupil was $£ 4,080$ in 2002 - 3 and $£ 5,790$ per pupil in 201617.
- Spending per pupil on teachers has risen by much less than total spending per pupil from 2002-3 to 2016-17, with spending on teachers rising by only $17 \%$ per pupil in real terms over the period, compared to the increase of $42 \%$ for total spending per pupil.
- Spending per pupil on education support staff has risen by a much greater percentage than total spending per pupil, with spending on education support staff rising by 138\% per pupil in real terms over the period, again compared to the $42 \%$ for total spending per pupil.
- Spending on Exam fees was 37\% higher in 2016-17 than 2002-03 (although it decreased substantially after 2010), compared to the $42 \%$ increase in total spending.
- Other spending lines that have seen significant real terms increases in spending per pupil are education consultancy and back office.


## Background

In this note we describe how we compiled a single time series of school spending data covering a period from 2002-03 to 2016-17. We did this by matching the separate spending datasets for academies and local authority maintained schools over time.

The department publishes data on schools' spending annually. Since 2010-11 spending data for maintained schools has been published through the Consistent Financial Reporting (CFR) publication. From 2011-12 to 2015-16 spending data for academies was published through the Academy Accounts Return (AAR) publication ${ }^{1}$. Schools spending data prior to 2010 has now been archived but can be found here and goes back to 2002-

[^0]03. We describe how we have transformed these different datasets to produce a 15 year trend in school spending.

## Methodology

## Matching academy spending data to maintained schools spending data

Both the AAR and the CFR break down school spending into just over 30 spending categories (see annex B). Some of these categories are easy to match between the datasets, for example both AAR and CFR have a spending category called "Teaching staff". Some categories are labelled differently but describe the same type of spending such as "Bought-in professional services - curriculum" in the CFR and "Educational Consultancy" in the AAR. In some cases, it is not possible to match spending categories between datasets, for example in the AAR there is an "Auditor costs" category. This category does not exist for maintained schools which are not required to audit because their spending is controlled by their local authority.

In annex B we set out how we have matched all the categories between the datasets. We have also created 12 spending groups which allow easier comparison between datasets. For example, the "premises" grouping contains all categories of spending related to premises. This group contains slightly different spending lines between the two data sets, but should cover a similar range of school expenses. Revenue funds put towards capital spending (known as "direct revenue financing") are excluded from the analysis.

## Pupil numbers

We are interested in spending per pupil (full-time equivalents) so for each year we need to identify the correct number of pupils that corresponds to the number of schools included in the financial datasets used. In any given year, some schools will be missing from the financial data because they became academies during the period covered. During the transition from the CFR to AAR some schools will have been missed from the AAR or schools will have submitted a part return - spending data covering just a portion of the year. In order to identify the right number of pupils, we match the pupil census data to the spending data. We then can identify which schools are missing and which schools submitted part returns and scale down our total pupil count accordingly.

For data prior to 2012-13 we use total maintained school pupil counts from the published tables and assume the data includes all schools. See annex A for the annual pupil number totals we used in this analysis.

## Accounting for inflation so we can observe real spending changes.

For this analysis we have combined academies and LA maintained school figures. To do this we have treated the spending data for academies as if it was reported on a financial year basis (although it is actually reported on an academic year basis). We have used

GDP deflators for the financial years to adjust spending figures into real terms. We have used the 2016-17 deflator as per annex A, which is produced by HM Treasury.

## Anomalies

The numbers of academies started to increase significantly around 2011-12. However, the data collected in that year on academy spending was not suitable for this analysis. This data collection was in its first year and had too many anomalies to present a valid picture of spending. We have therefore used data only for LA maintained school spending data for that year. Since the majority of early academy conversions were secondary schools, the 2011-12 figures here are disproportionally made up of maintained primary schools. This is evident from the peaks and dips in spending in 2011-12 which are caused by the missing academy data (and the missing data is predominantly for secondary schools where per pupil spending is higher for most categories of spend).

## Results

The main trends are presented in the graphs below (with the total spending line shown on all but the per pupil spend chart for comparative purposes). The data used in these graphs is presented in annex C .











## Annex A: Pupil counts and deflators used

GDP deflators used can be found here.
Pupil numbers are derived from the pupil census data, annual summaries of which are published here. In order to identify the right number of pupils we match the pupil census data to the spending data. We then can identify which schools are missing and which schools submitted part returns and scale down our total pupil count accordingly.

| Year | Number of pupils in schools <br> included in spending data | GDP deflator (for <br> 2016-17) |
| :--- | ---: | ---: | ---: |
| $2002-03$ | $7,597,310$ | 75.337 |
| $2003-04$ | $7,559,910$ | 76.986 |
| $2004-05$ | $7,507,030$ | 79.129 |
| $2005-06$ | $7,447,330$ | 81.194 |
| $2006-07$ | $7,368,680$ | 83.737 |
| $2007-08$ | $7,288,720$ | 85.816 |
| $2008-09$ | $7,213,500$ | 88.048 |
| $2009-10$ | $7,137,450$ | 89.327 |
| $2010-11$ | $7,007,935$ | 90.960 |
| $2011-12$ | $6,079,845$ | 92.270 |
| $2012-13$ | $7,317,565$ | 94.186 |
| $2013-14$ | $7,421,499$ | 95.795 |
| $2014-15$ | $7,575,716$ | 97.184 |
| $2015-16$ | $7,691,922$ | 97.839 |
| $2016-17$ | $7,640,436$ | 100.000 |

## Annex B: List of Spending categories and groupings

Definitions of the spending categories can be found here.

| LA maintained data(CFR) | Academies data (AAR) | Grouping | Staff/Non-staff |
| :--- | :--- | :--- | :--- |
| E01 (Teaching staff) | Teaching staff | Teaching staff | Staff |
| E02 (Supply staff) | Supply teaching staff |  |  |
| E10 (Supply teacher insurance) | Supply teacher <br> insurance | Supply staff | Staff |
| E26 (Agency supply staff) | Agency supply teaching <br> staff | (minus) Supply |  |
| I10 ((minus) Receipts from supply <br> insurance claims) | (msurance claims <br> insurn |  |  |
| E04 (Premises staff) | Premises staff |  |  |
| E12 (Building maintenance and <br> improvement) | Building and Grounds <br> maintenance and <br> improvement | Premises |  |
| (including staff |  |  |  |
| costs) |  |  |  | Non-staff | E13 (Grounds maintenance and <br> improvement) | Cleaning and caretaking |
| :--- | :--- |


| E18 (Other occupation costs) | Other occupation costs |  |  |
| :---: | :---: | :---: | :---: |
| E07 (Cost of other staff) | Other staff | Other staff related costs | Staff |
| E08 (Indirect employee expenses) | Indirect employee expenses |  |  |
| E09 (Staff development \& training) | Staff development and training |  |  |
| E11 (Staff related insurance) | Staff-related insurance |  |  |
| E05 (Administrative \& clerical staff) | Administrative and clerical staff | Back office (including staff costs) | Non-staff |
| E22 (Admin supplies) | Administrative supplies - non educational |  |  |
| E28 (Bought in professional services - other) | Legal \& Professional |  |  |
| E06 (Catering staff) | Catering staff | Catering | Non-staff |
| E25 (Catering supplies) | Catering supplies |  |  |
| 109 ((minus) Income from catering) | (minus) Income from catering |  |  |
| E19 (Learning resources) | Learning resources (not ICT equipment) | Learning <br> resources (not <br> ICT <br> equipment) | Non-staff |
| E20 (ICT learning resources) | ICT learning resources | ICT learning resources | Non-staff |
| E16 (Energy) | Energy | Energy | Non-staff |
| E27 (Bought in professional services - curriculum) | Educational Consultancy | Educational consultancy | Non-staff |
| E03 (Education support staff) | Education support staff | Education support staff | Staff |
| E17 (Rates) | Rent and Rates | Other expenditure | Non-staff |
| E21 (Exam fees) | Examination fees |  |  |
| E23 (Other insurance premiums) | Other insurance premiums |  |  |
| E24 (Special facilities) | Special facilities |  |  |
| E29 (Loan interest) | Interest charges for Loan and Bank |  |  |
|  | Auditor costs |  |  |
|  | Other supplies and services |  |  |
|  | PFI Charges |  |  |

## Annex C: Data used in graphs

Real terms per pupil spending

|  | $\begin{aligned} & \hline 2002- \\ & 03 \end{aligned}$ | $\begin{aligned} & \hline 2003- \\ & 04 \end{aligned}$ | $\begin{aligned} & \hline 2004- \\ & 05 \end{aligned}$ | $\begin{aligned} & \hline 2005- \\ & 06 \end{aligned}$ | $\begin{aligned} & \text { 2006- } \\ & 07 \end{aligned}$ | $\begin{aligned} & 2007- \\ & 08 \end{aligned}$ | $\begin{aligned} & \text { 2008- } \\ & 09 \end{aligned}$ | $\begin{aligned} & 2009- \\ & 10 \end{aligned}$ | $\begin{aligned} & \hline 2010- \\ & 11 \end{aligned}$ | $\begin{aligned} & \text { 2011- } \\ & 12 \end{aligned}$ | $\begin{aligned} & \text { 2012- } \\ & 13 \end{aligned}$ | $\begin{aligned} & 2013- \\ & 14 \end{aligned}$ | $\begin{aligned} & \hline 2014- \\ & 15 \end{aligned}$ | $\begin{aligned} & 2015- \\ & 16 \end{aligned}$ | $\begin{aligned} & \hline 2016- \\ & 17 \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Total spending per pupil | $\begin{aligned} & £ \\ & 4,081 \end{aligned}$ | $\begin{aligned} & £ \\ & 4,392 \end{aligned}$ | $\begin{aligned} & £ \\ & 4,580 \end{aligned}$ | $\begin{aligned} & \mathrm{£} \\ & 4,831 \end{aligned}$ | $\begin{aligned} & £ \\ & 4,973 \end{aligned}$ | $\begin{aligned} & £ \\ & 5,184 \end{aligned}$ | $\begin{aligned} & £ \\ & 5,342 \end{aligned}$ | $\begin{aligned} & £ \\ & 5,438 \end{aligned}$ | $\begin{aligned} & £ \\ & 5,500 \end{aligned}$ | $\begin{aligned} & £ \\ & 5,643 \end{aligned}$ | $\begin{aligned} & £ \\ & 5,575 \end{aligned}$ | $\begin{aligned} & £ \\ & 5,726 \end{aligned}$ | $\begin{aligned} & £ \\ & 5,797 \end{aligned}$ | $\begin{aligned} & £ \\ & 5,836 \end{aligned}$ | $\begin{aligned} & £ \\ & 5,789 \end{aligned}$ |
| Edu support staff | $\begin{aligned} & \hline £ \\ & 376 \end{aligned}$ | $\begin{gathered} \hline £ \\ 434 \end{gathered}$ | $\begin{gathered} \hline £ \\ 491 \end{gathered}$ | $\begin{array}{\|c\|} \hline £ \\ 558 \end{array}$ | $\begin{aligned} & \hline £ \\ & 618 \end{aligned}$ | $\begin{aligned} & \hline £ \\ & 679 \end{aligned}$ | $\begin{gathered} \hline £ \\ 731 \end{gathered}$ | $\begin{gathered} \hline £ \\ 774 \end{gathered}$ | $\begin{gathered} \hline £ \\ 793 \end{gathered}$ | $\begin{aligned} & \hline £ \\ & 847 \end{aligned}$ | $\begin{gathered} \hline £ \\ 802 \end{gathered}$ | $\begin{gathered} \hline £ \\ 854 \end{gathered}$ | $\begin{aligned} & \hline £ \\ & 872 \end{aligned}$ | $\begin{array}{\|l\|} \hline £ \\ 891 \end{array}$ | $\begin{gathered} \hline £ \\ 894 \end{gathered}$ |
| Non staff | $\begin{aligned} & £ \\ & 7,957 \\ & \mathrm{~m} \end{aligned}$ | $\begin{aligned} & £ \\ & 8,225 \\ & \mathrm{~m} \end{aligned}$ | $\begin{array}{\|l\|} \hline £ \\ 8,792 \\ \mathrm{~m} \\ \hline \end{array}$ | $\begin{array}{\|l\|} \hline £ \\ 9,467 \\ \mathrm{~m} \end{array}$ | $\begin{aligned} & £ \\ & 9,913 \\ & \mathrm{~m} \end{aligned}$ | $\begin{aligned} & £ \\ & 10,510 \\ & \mathrm{~m} \end{aligned}$ | $\begin{aligned} & £ \\ & 11,008 \\ & \mathrm{~m} \end{aligned}$ | $\begin{aligned} & \mathrm{£} \\ & 11,132 \\ & \mathrm{~m} \end{aligned}$ | $\begin{aligned} & £ \\ & 11,313 \\ & \mathrm{~m} \end{aligned}$ | $\begin{aligned} & £ \\ & 11,917 \\ & \mathrm{~m} \end{aligned}$ | $\begin{aligned} & £ \\ & 12,679 \\ & \mathrm{~m} \end{aligned}$ | $\begin{aligned} & \hline £ \\ & 13,351 \\ & \mathrm{~m} \end{aligned}$ |  |  | $\begin{aligned} & \mathrm{£} \\ & 13,879 \\ & \mathrm{~m} \end{aligned}$ |

Real terms per pupil percentage change in spend from 2002-03

|  | $\begin{aligned} & 2002- \\ & 03 \end{aligned}$ | $\begin{aligned} & 2003- \\ & 04 \end{aligned}$ | $\begin{aligned} & \text { 2004- } \\ & 05 \end{aligned}$ | $\begin{aligned} & 2005- \\ & 06 \end{aligned}$ | $\begin{aligned} & \hline 2006- \\ & 07 \end{aligned}$ | $\begin{aligned} & 2007- \\ & 08 \end{aligned}$ | $\begin{aligned} & \text { 2008- } \\ & 09 \end{aligned}$ | $\begin{aligned} & \text { 2009- } \\ & 10 \end{aligned}$ | $\begin{aligned} & \text { 2010- } \\ & 11 \end{aligned}$ | $\begin{aligned} & 2011- \\ & 12 \end{aligned}$ | $\begin{aligned} & 2012- \\ & 13 \end{aligned}$ | $\begin{aligned} & \text { 2013- } \\ & 14 \end{aligned}$ | $\begin{aligned} & \hline 2014 \\ & 15 \\ & \hline \end{aligned}$ | $\begin{aligned} & \text { 2015- } \\ & 16 \end{aligned}$ | $\begin{aligned} & \hline 2016- \\ & 17 \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Staff | 0\% | 9\% | 12\% | 17\% | 20\% | 24\% | 27\% | 29\% | 31\% | 33\% | 28\% | 31\% | 31\% | 33\% | 33\% |
| Non staff | 0\% | 4\% | 12\% | 21\% | 28\% | 36\% | 43\% | 45\% | 47\% | 54\% | 62\% | 69\% | 74\% | 71\% | 68\% |
| Total spending per pupil | 0\% | 8\% | 12\% | 18\% | 22\% | 27\% | 31\% | 33\% | 35\% | 38\% | 37\% | 40\% | 42\% | 43\% | 42\% |

Real terms per pupil percentage change in spending categories from 2002-03

|  | $\begin{aligned} & 2002- \\ & 03 \end{aligned}$ | $\begin{aligned} & 2003- \\ & 04 \end{aligned}$ | $\begin{aligned} & \text { 2004- } \\ & 05 \end{aligned}$ | $\begin{aligned} & \text { 2005- } \\ & 06 \end{aligned}$ | $\begin{aligned} & \text { 2006- } \\ & 07 \end{aligned}$ | $\begin{aligned} & 2007- \\ & 08 \end{aligned}$ | $\begin{aligned} & \text { 2008- } \\ & 09 \end{aligned}$ | $\begin{aligned} & 2009- \\ & 10 \end{aligned}$ | $\begin{aligned} & \text { 2010- } \\ & 11 \end{aligned}$ | $\begin{aligned} & 2011- \\ & 12 \end{aligned}$ | $\begin{aligned} & 2012- \\ & 13 \end{aligned}$ | $\begin{aligned} & 2013- \\ & 14 \end{aligned}$ | $\begin{aligned} & 2014- \\ & 15 \end{aligned}$ | $\begin{aligned} & 2015- \\ & 16 \end{aligned}$ | $\begin{aligned} & \text { 2016- } \\ & 17 \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Teaching Staff | 0\% | 9\% | 11\% | 14\% | 15\% | 16\% | 18\% | 19\% | 20\% | 21\% | 17\% | 16\% | 15\% | 17\% | 17\% |
| Edu support staff | 0\% | 16\% | 31\% | 49\% | 64\% | 81\% | 95\% | 106\% | 111\% | 126\% | 114\% | 127\% | 132\% | 137\% | 138\% |


| Edu' consultancy | 0\% | 12\% | 24\% | 48\% | 67\% | 88\% | 113\% | 126\% | 139\% | 161\% | 122\% | 169\% | 182\% | 204\% | 196\% |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Back office | 0\% | 4\% | 13\% | 23\% | 32\% | 43\% | 53\% | 59\% | 60\% | 68\% | 87\% | 98\% | 104\% | 97\% | 105\% |
| Exam fees | 0\% | 10\% | 23\% | 34\% | 44\% | 56\% | 64\% | 76\% | 91\% | 64\% | 74\% | 50\% | 50\% | 49\% | 37\% |
| Energy | 0\% | -2\% | 11\% | 40\% | 62\% | 73\% | 106\% | 101\% | 88\% | 86\% | 106\% | 104\% | 93\% | 85\% | 75\% |
| Supply Staff | 0\% | -3\% | -7\% | -1\% | -4\% | -1\% | -1\% | -4\% | -4\% | -5\% | -8\% | 5\% | 12\% | 3\% | -3\% |
| Agency supply | 0\% | 2\% | 3\% | 14\% | 14\% | 22\% | 26\% | 21\% | 21\% | 23\% | 35\% | 61\% | 82\% | 74\% | 64\% |

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[^0]:    ${ }^{1}$ From 2016-17 academy spending data is published on the financial benchmarking website

