

Reform Ideas No 5

Must do better: Spending on schools

Lauren Thorpe, Kimberley Trehwitt and James Zuccollo
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Executive summary

Spending on schools has almost doubled in the last decade in real terms:

- > Spending on primary and secondary education in the UK increased by 86 per cent in real terms between 2001-02 and 2011-12.
- > Per-pupil funding for primary and secondary schools in England increased by almost 90 per cent in real terms between 1999-00 and 2009-10.
- > On the most recent comparable data (2009), the UK spent more on primary and secondary schools as a percentage of GDP than 26 of the 32 OECD countries for which data was available, including France, Germany, Japan, Canada, the USA and Australia.

The ring-fence is not justified by better outcomes

The schools budget in England has been ring-fenced since 2010-11. Ministers' justification for higher school spending can only be that higher spending leads to better outcomes. *Reform* has therefore carried out an extensive comparison between funding and results:

- > *Reform's* research finds that there is no correlation at all between spending and outcomes. On a fair comparison, for both primary and secondary schools, some schools are spending more than twice as much as other schools to achieve the same outcomes in value-added measures in English and maths.
- > It finds that there is no link between higher per pupil spending and quality of teaching as measured by Ofsted. On average the same level of funding produces "Inadequate", "Satisfactory", "Good" and "Outstanding" teaching.
- > Recent research for the Department for Education found that there is a poor relationship between funding per pupil and outcomes at Key Stage 4.¹ *Reform's* study both confirms and extends this research to cover primary schools as well. The dataset used in *Reform's* study includes 16,727 primary schools and 2,653 secondary schools.

There is also little link between resources and results at the national level. As Andreas Schleicher, the OECD's Deputy Director for Education, and Special Advisor on Education Policy to the Secretary-General, wrote for *Reform* in 2012: "spending per student explains just around one fifth of the performance variation observed in PISA. In other words, two countries with similar spending can produce very different educational results."

¹ Deloitte (2012), *Quality counts: What can analysis of the National Pupil Database tell us about educational outcomes*.

Removing the ring-fence is consistent with good education

The ring-fence around the schools budget is damaging education:

- > It is preventing schools from thinking hard about how best to use their budgets. Research shows that headteachers should focus their resources on improving the quality of teachers rather than employing teaching assistants or keeping class sizes small (except for the youngest children).
- > It requires greater cuts in other public services that benefit schools. That includes spending by councils on early intervention into troubled families and school readiness.
- > Schools need to debate value for money urgently because per capita school funding will almost certainly have to fall in the next decade. The number of primary and secondary school pupils will rise from 7 million to 8 million between 2012 and 2020 (an increase of 13 per cent).

Government policy is contradictory and confused

In other areas of policy including policing, criminal justice, local government and defence, Ministers have rightly argued that financial pressure can go hand in hand with innovation and better results. In an interview with *The Times* on 24 April, the Chief Secretary to the Treasury rightly said: “This should be seen as an opportunity as well as a challenge you can use the process to drive some really good changes in the way the public sector works.”²

Recommendations

The Government should abolish the ring-fence around the schools budget in the forthcoming Spending Round, to be published on 26 June.

The necessary cuts in the schools budget will depend on HM Treasury decisions in other spending areas. That said, the Institute for Fiscal Studies has estimated that average departmental spending will fall by around 18 per cent between 2010-11 and 2017-18 in real terms. Given the extremely high increases in school spending in recent years, an 18 per cent reduction would be a reasonable ambition for school spending in the 2015 Parliament.

For comparison, services such as policing and justice have seen budgets fall by 25 per cent in real terms in the 2010 Parliament alone. They expect further cuts in the 2015 Parliament.

In addition, the Government should not introduce a ring-fence for the pupil premium. It is important to recognise that greater funding alone will not lead to an improvement in outcomes for pupils from disadvantaged backgrounds. It is how schools spend money that is crucial.

For headteachers, the overriding priority should be to invest in the quality of teaching. Ministers should support schools that reduce numbers of teaching assistants and allow class sizes to rise. Ministers should also make the case that having a high quality teacher is more important than smaller class size.

Why the budget needs reform

Historical growth in UK funding for education

Education is the third largest area of Government spending (after welfare and health). Education spending includes spending on primary, secondary, pre-primary and tertiary education (and covers departmental spending in addition to that of the Department for Education). In 2011-12, £93.1 billion was spent on education, which is around 13 per cent of government's total managed expenditure. This was almost double the amount in real terms since 1991. As a proportion of GDP, education spending increased from 5.1 per cent in 1991-92 to 6.1 per cent in 2011-12. In the 10 years from 2001-02, education spending increased by £28 billion in real terms, while in the previous 10 years spending increased by £16.6 billion in real terms. The bulk of the increase since 2001-02 took place in the five years to 2006-07 (with spending increasing by £16.8 billion in real terms over these five years).

Table 1: Education spending, 1991-92 to 2011-12

Source: HM Treasury (2013), *Public Expenditure Statistical Analyses, National Statistics Release February 2013*.

YEAR	Cash (£ billion)	Real terms (£ billion)	GDP (%)
1991-92	31.3	48.5	5.1
1996-97	37.8	52.2	4.7
2001-02	51.2	65.1	5.0
2006-07	73.0	81.9	5.4
2011-12	93.1	93.1	6.1
Increase over 20 years	197%	92%	20%

The most recent OECD figures on public spending on education (excluding tertiary education) illustrate that the UK system is relatively well funded.³ The UK spends more on primary, secondary and post-secondary non-tertiary education as a percentage of total GDP (at 4.5 per cent of GDP in 2009) than both the EU21 and OECD average (both at 3.8 per cent). The share of total public spending that goes on education (excluding tertiary education) in the UK (9 per cent in 2009) was also higher than the EU21 and OECD averages (7.6 per cent and 8.7 per cent, respectively).

Where education spending goes

Total education spending can be broken down into spending across different phases of education, including pre-primary, primary, secondary, tertiary and post-secondary and non-tertiary. 2012 Public Expenditure Statistical Analyses data on spending on education in 2011-12 showed that the breakdown was:⁴

- > Secondary spending, 46 per cent.
- > Primary spending, 27 per cent.
- > Tertiary spending, 12 per cent.
- > Pre-primary (under fives), 6 per cent.
- > Subsidiary services to education, 4 per cent.

³ OECD (2012), *Education at a glance*.

⁴ HM Treasury (2012), *Public Expenditure Statistical Analyses, Public Spending Statistics July 2012*.

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- > Education n.e.c., 3 per cent.⁵
- > Education non-definable by level, post-secondary non-tertiary education, and R&D education, 2 per cent.

Together, spending on primary and secondary education make up 73 per cent of total education spending. These two areas have seen the most significant growth over recent years. *Reform* estimates show that in 2011-12, spending in the UK on primary and secondary education was £68.0 billion, compared to £36.5 billion in real terms in 2001-02. This is an increase in real terms of 86 per cent over 10 years.

The current budget in England: cash and real departmental settlement

Everything that the Government spends, Total Managed Expenditure (TME), can be separated into Departmental Expenditure Limits (DEL) and Annually Managed Expenditure (AME).⁶ Data on education spending show that in cash terms total education resource DEL will increase by 5.7 per cent between 2010-11 and 2014-15. In contrast, Capital DEL will fall by 46.5 per cent. Consequently total DEL will fall slightly (by 0.6 per cent). Between 2011-12 and 2014-15 (excluding 2010-11 as one-off accounting changes took place in this year), TME will rise by 2.6 per cent in cash terms.

Changes in spending in real terms show that total education resource DEL is expected to fall by 4.2 per cent between 2010-11 and 2014-15. Capital DEL is expected to fall by 51.5 per cent and total DEL by 10 per cent. Between 2011-12 and 2014-15 (excluding 2010-11 as one-off accounting changes took place in this year), TME is expected to fall by 4.8 per cent in real terms.

Table 2: Department for Education Settlement (£ billion, cash)
Source: HM Treasury (2012), *Public Expenditure Statistical Analyses 2012*.

	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Resource DEL (1)	44,903	46,834	49,582	51,401	51,336	52,612	53,247	54,346
Capital DEL	5,226	5,525	7,443	7,127	5,055	4,564	3,681	3,813
Total DEL	50,129	52,359	57,025	58,528	56,391	57,176	56,928	58,159
Departmental AME	10,709	10,651	10,429	-10,461	11,699	10,979	11,346	11,729
Total Managed Expenditure	60,838	63,010	67,454	48,067	68,090	68,155	68,274	69,888

Notes: (1) To be consistent with the presentation of data in the 2010 Spending Review DEL is shown excluding Depreciation.

The 2010 Spending Review set out that resource savings in the non-schools budget would reach 12 per cent over the period to 2014-15 and also set out how these savings would be achieved, including through a fall in the cost of administration and back office functions, a reduction in age 16-19 unit costs, replacement of the Education Maintenance Allowance with a more targeted measure and abolition of some Arm's Length Bodies. The Spending Review also set out plans to cut capital spending on schools by 60 per cent by 2014-15.⁷

⁵ Spending not elsewhere classified.

⁶ Departmental Expenditure Limits (DEL) refers to the budgets for Departments, Non Departmental Public Bodies and local authorities. Annually Managed Expenditure (AME) refers to spending that cannot be subject to "close control", such as social security and public sector pension spending, tax credits, council spending funded by council tax and other local sources and central government debt interest.

⁷ HM Treasury (2010), *Spending Review 2010*.

The schools budget

The 2010 Spending Review settlement set out an increase of 0.1 per cent in real terms for the age 5 to 16 schools budget in every year of the Spending Review 2010-11 to 2014-15. The Spending Review also set out to protect underlying per pupil funding (excluding capital) in cash terms.⁸ In addition, as part of the overall settlement for schools, a pupil premium was introduced. The schools budget will rise by £3.6 billion in cash terms by 2014-15, of which £2.5 billion will go to the pupil premium.⁹

Even after the ring-fence was announced, the decision to protect the schools budget was under some pressure as a result of higher than expected inflation.¹⁰ Many schools are already facing a squeeze on their finances. Some estimates are that only schools in receipt of the pupil premium will see real terms increases in per pupil funding.¹¹ As Michael Gove has said: “Although the overall schools budget will stay at the same level on a per pupil basis before the addition of the pupil premium, the actual level of each school’s individual budget will vary. It will depend on local decisions about how best to meet needs and priorities. This does mean that some schools will see budget reductions.”¹²

Continuing the ring-fence

Current government plans are based on a fiscal mandate to eliminate the structural deficit and put the UK Government’s debt onto a downward track. The 2010 Spending Review looked out to 2014-15 and protected (ring-fenced) a number of budgets in addition to schools, including the NHS, international development and pensioner benefits. In summer 2013 the Spending Round for 2015-16 will be announced.

The Coalition is currently committed to maintaining its policy of ring-fencing for 2015-16. The 2012 Autumn Statement noted: “departmental resource budgets will continue on the same trajectory as over the period of the Spending Review 2010. In line with the policy set at Spending Review 2010, spending on health, schools, and [overseas development assistance] will be protected from further reductions.”

Reform has argued that the Government should not ring-fence any areas from cuts in its fiscal consolidation plans as this requires cuts elsewhere to be deeper. Cuts should reflect those areas where the marginal value for money from spending is lowest and no area should be off limits. Ring-fencing leads to a pattern of fiscal consolidation that reflects political not economic priorities. The public service areas which have faced the toughest spending settlements this Parliament are those which have shown the greatest innovation and efficiency.

There has been speculation that the ring-fence on the schools budget could be removed in the Spending Round on 26 June. As reported in April: “DfE [Department for Education] officials have been told by the Treasury that they have to also work up a cut of 10 per cent to their whole budget, and that if needs be schools should not be protected.”¹³ On the *Andrew Marr Show* in May, Michael Gove said: “I’m fighting hard to ensure that the budget priorities that we have, particularly making sure that we can protect spending for schools and spending for the most disadvantaged children, is insulated from the necessary economies that we need to make.”¹⁴

8 HM Treasury (2010), *Spending Review 2010*.

9 *Ibid.*

10 Office for National Statistics (2012), *Public Service Productivity Estimates - Education, 2010*, 29 March 2012. <http://www.bbc.co.uk/news/education-11983026>. Last accessed 13 May 2013.

11 Institute for Fiscal Studies (2011), *Trends in education and schools spending*. Research showed that only secondary schools with 15 per cent or more of pupils eligible for Free School Meals would see funding increases higher than inflation.

12 Gove, M. (2011), Written Ministerial statement on education funding, 13 December.

13 Stratton, A. (2013), “Is Government planning to cut schools budget?”, *BBC News Online*, 23 April.

14 BBC News Online (2013), “Gove: ‘Pupil premium should be protected from cuts’”, 12 May.

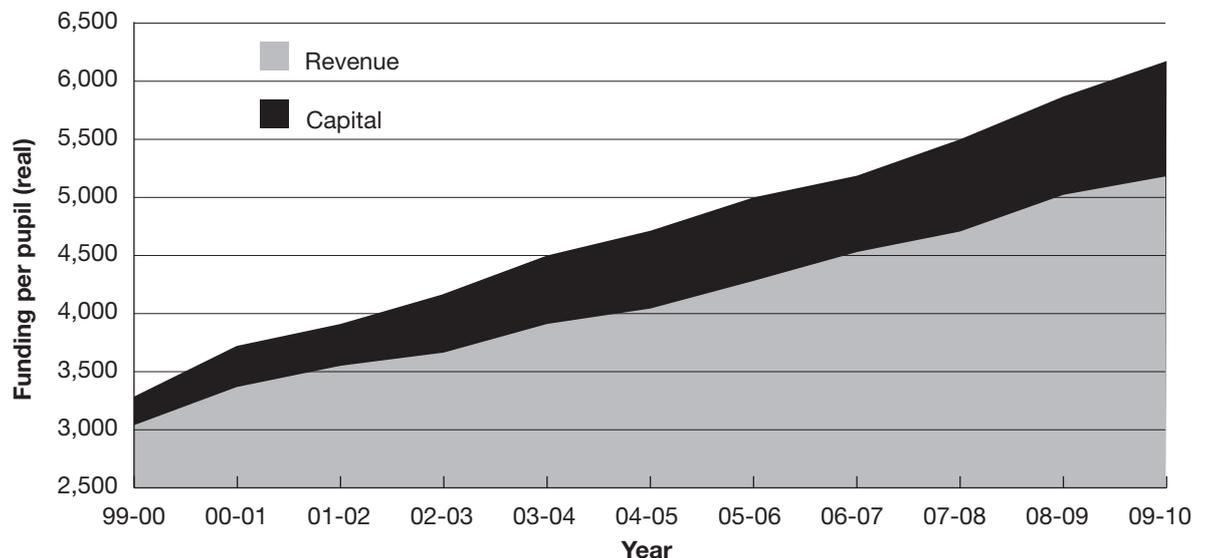
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Pupil numbers

The need to reform spending is even greater as a result of changing pupil numbers. Past increases in spending on schools took place when pupil numbers were falling.¹⁵ This combination of increasing funding and falling pupil numbers resulted in large increases in funding per pupil and a fall in productivity of spending.¹⁶ The most consistent data over time available show that total funding (revenue and capital funding) per pupil increased by almost 90 per cent in real terms between 1999-00 and 2009-10. A share of this rise was a result of increased capital spending as part of the Building Schools for the Future programme. Capital funding grew from 7 per cent of total per pupil funding in 1999-00 to 16 per cent in 2009-10. However, the majority of the growth was a result of increased revenue spending.

Chart 1: Per pupil funding 1997-98 to 2009-10 (real terms)

Source: Department for Children Schools and Families (2009), *Departmental Report 2009*.



Year	Revenue funding per pupil, £	Capital funding per pupil, £	Revenue and capital funding per pupil, £
1999-00	3,060	230	3,290
2000-01	3,380	350	3,730
2001-02	3,560	360	3,920
2002-03	3,670	510	4,180
2003-04	3,920	580	4,500
2004-05	4,050	670	4,720
2005-06	4,280	720	5,000
2006-07	4,530	660	5,190
2007-08	4,720	780	5,500
2008-09	5,010	860	5,870
2009-10	5,180	1,010	6,190

Note: Real terms, 1997-98 as base year. Figures for 2009-10 were estimated outturns at time of publication.

¹⁵ Department for Education (2012), School Census (actuals); Department for Education Pupil Projection Models.

¹⁶ Wild, R. et al. (2009), *Public service output, input and productivity: Education*, Office for National Statistics (Working Paper No. 09/212).

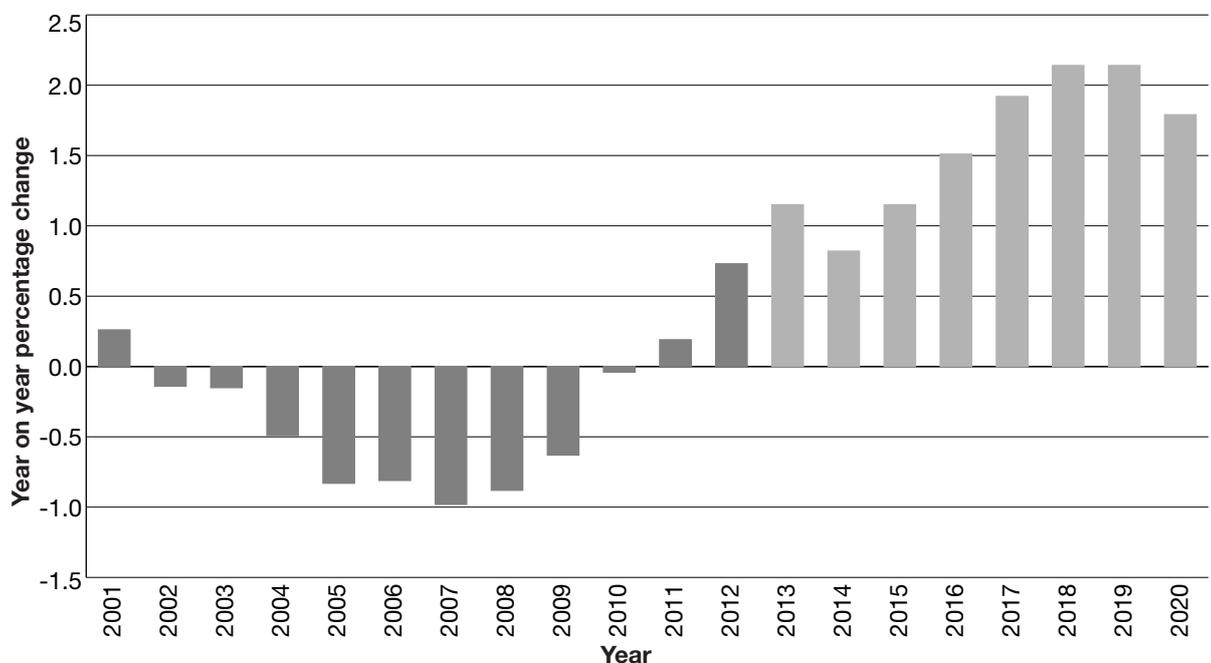
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As per pupil funding increased, primary and secondary pupil numbers fell by 3.7 per cent between 2000 and 2012. This was accompanied by a sharp increase in the size of the school workforce. Between 2000 and 2010 the number of full-time equivalent teachers increased by 10 per cent and the number of teaching assistants almost tripled.¹⁷ By the end of 2011, the school workforce was more than 50 per cent bigger than it was in 2000. Given that schools spend almost 80 per cent of their revenue on staff, much of the additional per pupil revenue spending went on workforce costs.

In 2010 the Coalition Government set average funding per pupil at £5,082 and has kept this level flat (not including the pupil premium). Yet total spending (in cash terms) has increased, largely as a result of rising pupil numbers (0.5 per cent average annual increase over 2011 and 2012). This is the start of a trend. Pupil numbers are projected to rise significantly between 2012 and 2020. Total pupil numbers are expected to grow by 13 per cent over the period, from 7.01 million to 7.95 million. This is an average annual growth rate of 1.6 per cent. These increases contrast significantly with the changes between 2000 and 2012, when there was an average annual fall in pupil numbers of 0.3 per cent. The Department for Education has factored in changes in pupil numbers over the current Spending Review period, but this could pose challenges for the next Spending Review period. Concerns have already been raised about primary school capacity and funding for extra primary school places.^{18,19}

Figure 1: Year on year change in state-funded pupils aged 5 – 15 (thousands), 2001 to 2020 (actuals to 2012)

Sources: Department for Education (2012), *National pupil projections: Future trends in pupil numbers*; Department for Education (2012), *Schools, pupils and their characteristics*.



The largest growth in numbers will be in maintained nursery and state-funded primary schools, with pupils in this age group expected to increase by 18 per cent between 2012 and 2020 (from 4.11 million to 4.85 million). This is an average annual increase of 2.1 per cent. The number of pupils at state funded secondary schools is expected to grow from 2.80 million to 2.98 million, an increase of 7 per cent over this period. This is an average annual growth rate of 0.8 per cent.

¹⁷ Department for Education (2011), *School workforce in England: November 2011*.

¹⁸ HM Treasury (2010), *Spending Review 2010*.

¹⁹ National Audit Office (2013), *Capital funding for new school places*.

As pupil numbers increase, money will have to be spent more effectively because there will be pressure on levels of per pupil funding. Factors which need to be taken into account when considering efficiency include workforce and class sizes.²⁰ The expected growth in pupil numbers has led to arguments for a need for increased capital spending in order to fund additional pupil places. This highlights that as much value as possible must be sought from spending.

The growing demographic challenge and continuing pressures on government spending mean it is important to consider the effectiveness of current spending. The rest of this paper assesses the variability in school funding and considers whether or not there is an opportunity to reduce existing spending as part of the wider school funding reforms.

Variations in school funding

This section considers how much funding schools receive, whether this funding is allocated effectively to schools and whether some schools appear to do more with less.

The school funding architecture

For state maintained schools, the Department for Education allocates a Guaranteed Unit of Funding per pupil from central government to local authorities. Schools in different circumstances receive different levels of funding. At a national level the Department for Education's funding formula accounts for the type of school, region, deprivation level, retention rate, and programme cost. The Dedicated Schools Grant is the mechanism through which this funding goes from central government to schools, via local authorities, and at the local authority level the spending is restricted for this purpose. The Dedicated Schools Grant was introduced in 2006-07 and was based on what local authorities planned to spend on schools in the previous year. This approach became known as "spend plus" and, as the Department for Education has said, "current levels of school funding are, in fact, based largely on those in 2005-06."²¹

At a local level, authorities can distribute funding by taking into account a number of considerations. Two levers restrict changes in budgets for local authorities and individual schools: the Cash Floor and the Minimum Funding Guarantee. The Cash Floor guarantees that no local authority receives a cut of more than 2 per cent of its budget in cash terms (to protect those with falling pupil numbers). The Minimum Funding Guarantee ensures that no school sees more than 1.5 per cent per pupil reduction in budgets compared to the previous year and before the pupil premium is taken into account.²² This means that funding is not always allocated in the most efficient way.

A reasonable and fair funding formula should produce variation in the distribution of funding according to need, yet there is widespread concern that the current system does not do this effectively. Department for Education research has shown that differences in funding between similar secondary schools can be up to £1,800 per pupil, which across schools of 1,000 pupils can mean differences in revenue of up to £1.8 million.²³ The Department has recognised that this is a result of inequalities in the funding system. As set out in its consultation on funding reform: "The money the Government gives to local authorities to fund schools relates not to the needs of pupils but to historical decisions about spending made by previous governments and local authorities.... It does not respond well to changing characteristics of pupils It is almost impossible to explain why a particular school receives the budget that it does."²⁴

²⁰ Bassett, D. et al (2010), *Every teacher matters, Reform*.

²¹ Department for Education (2011), *A consultation on school funding reform: Rationale and principles*, April 2011.

²² The Minimum Funding Guarantee does not include sixth form funding (5 to 16 only).

²³ Department for Education (2011), *A consultation on school funding reform: Rationale and principles*, April 2011.

²⁴ Department for Education, *Consultation on school funding reform: Proposals for a fairer system*.

The Government has committed to introducing a national funding formula in the next Spending Review period to “build a fairer, simpler and more consistent funding system in which schools will have confidence.”²⁵ As part of steps towards this, for 2013-14 the Dedicated Schools Grant has been split into three blocks – the Schools Block, the Early Years Block and the High Needs Block. As much as possible of the Schools Block will be delegated to schools.²⁶ This will reduce the number of criteria local authorities can use in their formulae for funding allocation to schools to 10 from almost 40.²⁷ In addition, all maintained schools, academies and free schools will be funded on the same basis so that equivalence of funding is transparent across the system.²⁸

Measured variations in school funding

As outlined above, there are many reasons for variation in school funding. For example, a school with more pupils from deprived backgrounds will receive more funding. Therefore it is important to investigate whether these factors which impact on funding levels explain the current variation in funding. *Reform* carried out an analysis on the funding levels of state-maintained schools in England.²⁹ The data used in this analysis was drawn from the Department for Education dataset, *Income and expenditure in schools in England: Local Authority maintained schools, 2010-11*.³⁰ In 2011, there were 24,507 schools in England, of which 16,884 were state-funded primary schools and 3,310 were state-funded secondary schools. The dataset contains information on 20,602 schools, including 16,727 primary schools (99 per cent of all primary schools) and 2,653 secondary schools (80 per cent of all secondary schools).³¹ *Reform* considered all schools for which the data needed in the analysis was available. The analysis does not include academies, which in 2011 accounted for 408 schools. Having examined the funding formula and wider literature on this issue, the analysis took into account the most important factors for which data is available.³² The variables *Reform* considered were:

- > **Phase:** Primary schools receive less funding than secondary schools. Special schools have significantly wider variance in funding per pupil than primary or secondary schools and so were removed from the sample.
- > **Region:** The Department for Education distinguishes nine regions. This is important to consider as some regions incur higher staff costs for example.
- > **Deprivation:** Additional funding is given to schools with higher levels of deprivation. *Reform* therefore took into account the percentage of pupils eligible for free school meals.
- > **Type:** There are four main types of state-maintained schools: foundation schools, community schools, voluntary controlled and voluntary aided schools. The sample does not include academies and free schools because of the differences in the Department for Education datasets available.
- > **Fixed costs:** Schools with smaller rolls tend to have a higher level of funding per pupil because their fixed costs are distributed across fewer students.
- > **English language skills:** Additional funding is given to schools with a higher proportion of students who speak English as a second language.

25 Department for Education (2012), *School funding reform: Next steps towards a fairer system*.

26 Department for Education (2012), *School funding reform: Arrangements for 2013-14*.

27 Department for Education (2012), *School funding reform: Next steps towards a fairer system*.

28 Ibid.

29 Special schools were excluded from the sample as well as schools for which data was unavailable.

30 Department for Education (2012), *Income and expenditure in Local Authority maintained schools 2010-11*.

31 Department for Education (2011), *Schools, pupils and their characteristics*, January 2011.

32 See for example Department for Education (2011), *Consultation on school funding reform*; Chowdry, H. et al (2011), *School funding reform: an empirical analysis of options for a national funding formula*, Institute for Fiscal Studies.

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- > **Special needs:** Additional funding is given to schools with students who have special needs.
- > **Sixth form:** A separate funding stream operates at sixth form level.

Further details of the analysis can be found in Annex B. *Reform's* analysis shows that when these variables are taken into account, more than two thirds of the variation in school funding levels can be explained, 70 per cent at primary level and 77 per cent at secondary level. Some of the remainder will be due to factors *Reform* could not measure, such as retention, the cost of vocational programmes and the quality of school buildings. Yet much of the remainder will also be due to inflexibility in current funding mechanisms.

Reform constructed a measure which allows like for like comparisons among state-maintained primary and secondary schools across the factors listed above. This compensated funding per pupil data is estimated using a raw per pupil funding measure, calculated as total funding received by a school divided by the number of pupils on the roll, and then taking into account the above factors. This effectively removes the funding variation we would expect to see because of the circumstances listed above, such as a school having a greater proportion of pupils who speak English as a second language or a greater number of pupils from disadvantaged backgrounds.

Table three shows the frequency of schools across ranges of funding per pupil for both the raw funding per pupil data and the compensated funding per pupil data. The raw funding data shows huge variation in the sample, from £2,000 to more than £8,000 per pupil. The compensated figure, controlling for the above factors, shows that very few schools receive extraordinarily higher funding than average. The majority of schools in the sample (12,440) cluster in the range of funding per pupil of £2,000 to £3,999.

Table 3: Variation in school budgets

Source: *Reform* calculations based on Department for Education school data.

Funding per pupil	Number of schools (raw funding)	Number of schools (<i>Reform</i> compensated measure)
<£2,000	0	360
£2,000- £2,499	1	2,349
£2,500 – £2,999	112	6,783
£3,000 - £3,499	2,566	2,719
£3,500 - £3,999	3,634	589
£4,000 - £4,499	3,039	186
£4,500 - £4,999	2,531	64
£5,000 - £5,499	1,601	37
£5,500 - £5,999	953	19
£6,000 - £6,499	491	11
£6,500 - £6,999	292	3
£7,000 - £7,499	181	2
£7,500 - £7,999	99	1
>£8,000	185	4

Note: Special schools have been removed from the sample

As table three shows, the raw funding per pupil measure shows vast variation in funding between schools, as would be expected. Once the compensated per pupil funding measure is

constructed, far fewer schools stand out as outliers. Only 21 schools in the sample are shown to have funding above £6,000 per pupil on the compensated measure, and this may be a result of factors *Reform* was not able to measure. Significant variation in funding remains, particularly in those schools with compensated funding per pupil figures of less than £6,000. This suggests it could be possible to reduce funding for some schools. A concern raised in relation to this may however be that this would compromise outcomes. The section below therefore investigates the relationship between funding and outcomes.

The relationship between inputs and outcomes

To evaluate whether any reduction in funding could lead to a worsening of outcomes, *Reform* examined the relationship between the compensated funding measure and outcomes. For outcomes, *Reform* considered some key measures used widely when assessing pupil outcomes: value-added scores in English and maths at Key Stage 2 and Key Stage 4, as well as considering the quality of teaching.

Funding and value-added measures in English and maths

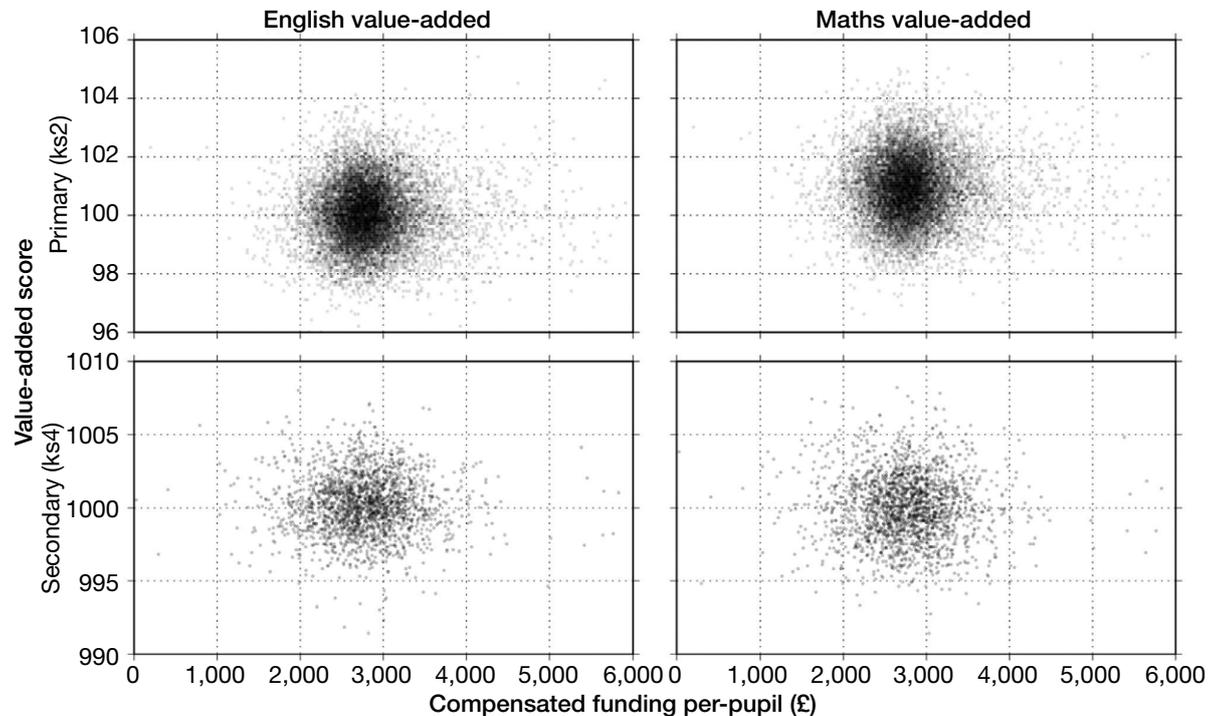
Figure two considers the relationship between the compensated funding per pupil and each school's value-added measures for English and mathematics. Value-added measures consider the progress pupils make over a period of time. A school's value-added score demonstrates where schools are making more or less progress than the average. A higher value-added score means pupils are making more progress than the average. The sample has been split between primary and secondary schools since they are calculated slightly differently.³³ *Reform* used these value-added measures because they are the measures that stakeholders are encouraged to use when benchmarking schools.

The analysis shows no clear relationship between the compensated per-pupil funding level and value-added scores. In figure two, each dot represents a school achieving that value-added score at the associated level of compensated per-pupil funding. The shape of the distribution on the charts show that there is no correlation between funding level and value-added score for both English and maths across primary and secondary schools.

³³ At primary level, the scores are based around an average measure of 100 and at secondary level the scores are based around an average measure of 1,000.

Figure 2: Correlation between funding and English and maths value-added at Key Stage 2 and Key Stage 4

Source: Reform calculations.



In conclusion, there is a weak relationship between funding and pupils' performance across value-added scores in English and maths. Some schools achieve better outcomes on lower funding and some schools in receipt of higher funding do not necessarily have better outcomes. That is, the higher funding is not driven by something that causes pupils to perform better across value-added scores in English and maths. If funding was reduced, value-added scores in English and maths need not necessarily be affected. Nevertheless, it would be important for spending to be cut in the right way. High performing schools with lower budgets can provide good examples of how this can be done without adversely affecting outcomes.

Funding and quality of teaching

Value-added scores are just one measure of attainment that can be taken into account when considering pupil outcomes. Another key factor to consider is the quality of teaching. A substantial body of research into educational progress suggests that teacher quality is the most significant influence on educational outcomes.³⁴

Quality of teaching is a hard variable to measure, yet Ofsted use a ranking system to assess the quality of teaching in a school. This is the best measure currently available across all schools. The rankings are: Outstanding; Good; Satisfactory (Requires Improvement under the new framework); and Inadequate. Ofsted has described the variability of teaching within schools and between schools as a “persistent issue”.³⁵ 2 per cent of all education providers (431 schools) in England are considered to be inadequate in terms of the quality of teaching. A further 27 per cent (5,818 schools) are considered to be only satisfactory (requires improvement).

Table 4: Percentage of all providers with quality of teaching rated as Outstanding, Good, Satisfactory and Inadequate (August, 2012)

Source: <http://dataview.ofsted.gov.uk>. Last accessed 13 May 2013.

	Outstanding	Good	Satisfactory	Inadequate
All (21,548 providers)	16	55	27	2
LA maintained	10	42	43	5
Academy sponsor led	15	55	28	2
Academy converter	29	58	13	0

Reform analysis shows that the relationship between per-pupil funding and the quality of teaching is weak. Figure three shows the distribution of compensated funding per pupil at each Ofsted-graded level of teacher quality.³⁶ The dashed vertical lines show the median level of funding.

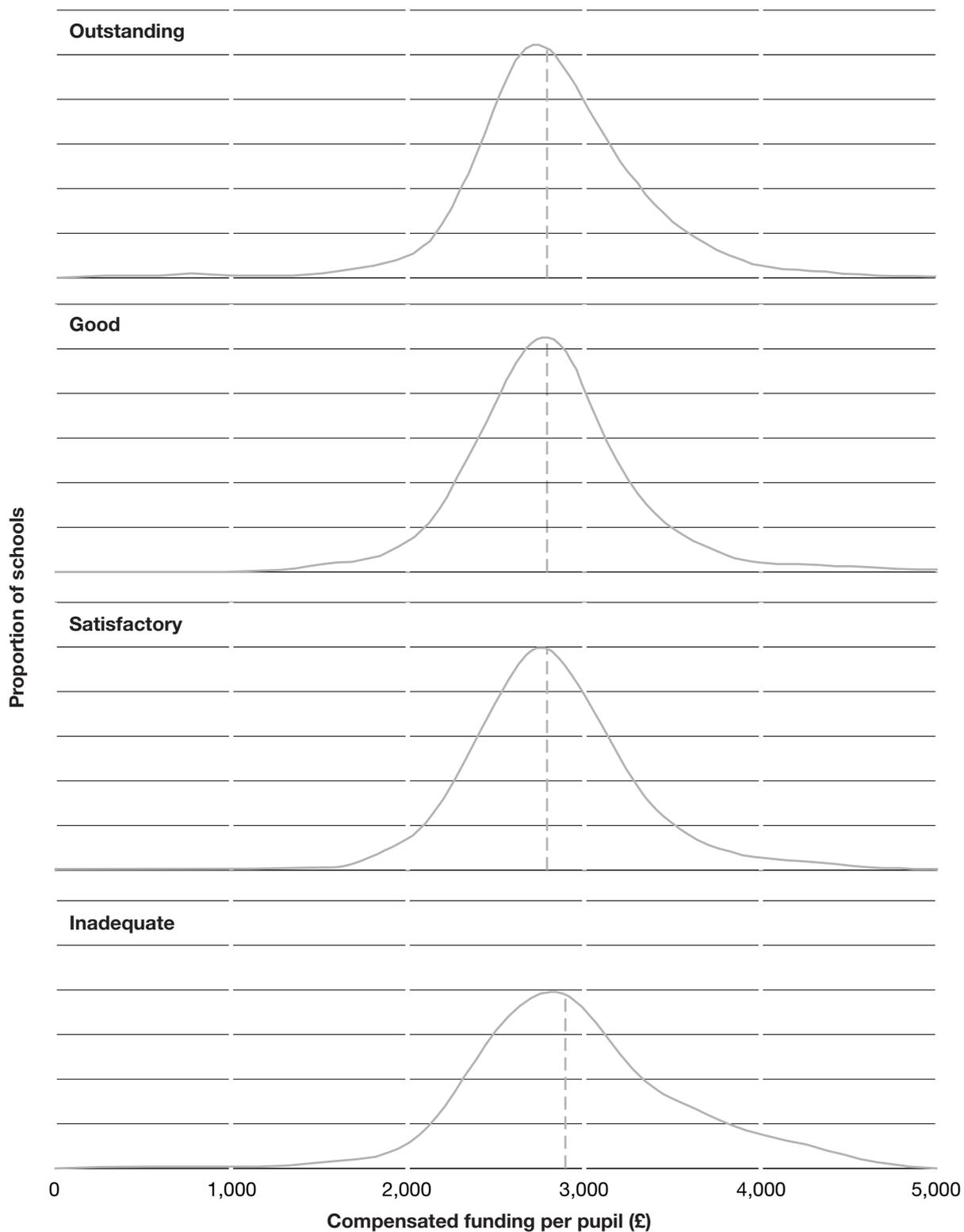
³⁴ See for example: Hanushek, E. et al. (2005), *The Market for Teacher Quality*, National Bureau of Economic Research; Burgess, S. et al. (2009), *Do teachers matter? Measuring the variation in teacher effectiveness in England*, Centre for Market and Public Organisation, University of Bristol; McKinsey & Company (2007), *How the world's best-performing school systems come out on top*.

³⁵ Ofsted (2011), *Annual Report of Her Majesty's Chief Inspector of Education, Children's Services and Skills, 2010-11*.

³⁶ Distributions are derived with a kernel density estimator.

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Figure 3: Distribution of funding across Ofsted measure of teacher quality
Source: *Reform* calculations.



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As figure three shows, at higher levels of per pupil funding, there are more schools with poorer quality teaching, particularly where quality of teaching is rated as inadequate. Yet this relationship could be due to insufficient controls for deprivation in the compensated funding measure. Overall, the similarity of the distributions and the median points show that there is no real relationship between per pupil funding and quality of teaching. Schools with the highest teaching quality do not earn it through higher levels of funding.

The finding that there is little relationship between funding and quality is reinforced by previous work. The recent Deloitte study for the Department for Education stated: “There is no guarantee that providing more resources to schools will improve performance.”³⁷ As set out in another research paper for the Department for Education: “The relationship between money and school quality has been shown to be weak, both in the general case where schools are given more money to spend as they choose and in specific cases where governments dictate how the money should be spent.”³⁸

Reducing spending and maintaining outcomes

Some of the variation in school funding could be removed without impacting negatively on outcomes. The Government has also argued for more for less across most other areas of spending. Continuing to ring-fence the schools budget is unjustifiable. This has significant implications for the upcoming Spending Review. The Government should use this opportunity to lift the ring-fence on the schools budget. No area of the Department for Education budget should be protected. Refocusing spending on better value for money is key as historically this has not been done. How schools spend money is crucial. As the recent Deloitte study reported: “How schools spend money is likely to be much more important than how much they get. Measures to improve school quality... are in our view more likely to have a significant impact on improving school performance than raising the per pupil funding level alone.”³⁹ Schools must therefore focus on resources which will deliver the highest quality education.

Table 5: Impact of different resources on educational outcomes

	Correlation with educational outcomes	Evidence
Class size (pupil: teacher ratio)	Little/no impact except for youngest children	<p>OECD country comparison data shows no correlation between class size and performance.⁴⁰</p> <p>Studies by Ofsted, Institute of Education and others.⁴¹</p> <p>The Education Endowment Foundation summary of research⁴² concludes “low impact for very high cost, based on moderate evidence.”</p>

³⁷ Deloitte (2012), *Quality counts: What can analysis of the National Pupil Database tell us about educational outcomes*.

³⁸ Allen, R. et al. (2012), *Understanding school financial decisions*, Department for Education.

³⁹ Deloitte (2012), *Quality counts: What can analysis of the National Pupil Database tell us about educational outcomes*.

⁴⁰ OECD (2009), *Education at a Glance 2009*.

⁴¹ Bradshaw, J. et al. (2007), *Achievement of 15-year-olds in England: PISA 2006 National Report*, National Foundation for Educational Research; Passmore, B. (1995), “Small is best, but not for everyone”, *Times Educational Supplement*, 17 November; Blatchford, P. et al. (2003), “Are Class Size Differences Related to Pupils’ Educational Progress and Classroom Processes? Findings from the Institute of Education Class Size Study of Children Aged 5-7 Years”, *British Educational Research Journal*, Vol. 29 No. 5; Hanushek, E. (1998), *The Evidence on Class Size*, W. Allen Wallis Institute of Political Economy, University of Rochester; Blatchford, P. et al. (2004), *The effects of class size on attainment and classroom processes in English primary schools (Years 4 to 6), 2000-2003*, Department for Education and Skills; Bradshaw, J. et al. (2007), *Achievement of 15-year-olds in England: PISA 2006 National Report*, National Foundation for Educational Research.

⁴² Education Endowment Foundation Toolkit (2013), <http://educationendowmentfoundation.org.uk/toolkit/approaches/reducing-class-size>. Last accessed 25 April 2013.

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Number of teaching assistants	Negligible impact on pupil progress though some impact on teacher productivity	Studies by Ofsted ⁴³ and Institute of Education. ⁴⁴ The Education Endowment Foundation summary of research concludes “Very low or no impact for high cost, based on limited evidence”. ⁴⁵
Teacher quality	Substantial - a teacher whose quality is two standard deviations above the average will double a pupil’s speed of learning	Studies by US National Bureau of Economic Research ⁴⁶ and University of Bristol. ⁴⁷ Good performance management ⁴⁸ and strong professional development ⁴⁹ are identified as significant in improving teacher quality.
Teacher pay	Mixed impact based on limited evidence	The Education Endowment Foundation summary of research ⁵⁰ concludes “low or no impact for moderate cost, based on very limited evidence” based on numerous international and UK studies. ⁵¹ One UK study suggests performance related pay delivers a benefit of almost half a GCSE grade. ⁵²

In light of this evidence, there are clear opportunities to reduce spending on schools. The increase in funding for schools over the past 15 years has been biased towards a focus on spending more on inputs, such as workforce, rather than the resulting outcomes.⁵³ The total number of teaching assistants employed in schools across England rose from 79,000 in 2000, to 147,200 in 2005, to 232,200 in 2012.⁵⁴ This has been associated with a fall in the productivity of school spending (as outputs over the same period did not rise at the same rate as funding).⁵⁵

Spending pressure is consistent with good management and innovation

Government policy is contradictory and confused. In other areas of policy including policing, criminal justice, local government and defence, Ministers have rightly argued that financial pressure can drive innovation and better results.

- > “This should be seen as an opportunity as well as a challenge. Of course these are really difficult decisions. You’ve got to remember that every pound that you are talking about is potentially somebody’s job or a service that someone relies on. But you can use the process to drive some really good changes in the way the public sector works.”

Danny Alexander, The Times, 24 April 2013

⁴³ Ofsted (2006), *Inclusion: does it matter where pupils are taught?*.

⁴⁴ Blatchford, P. et al. (2003), “Are Class Size Differences Related to Pupils’ Educational Progress and Classroom Processes? Findings from the Institute of Education Class Size Study of Children Aged 5-7 Years”, *British Educational Research Journal*, Vol. 29 No. 5; Ofsted (2006), *Inclusion: does it matter where pupils are taught?*; Blatchford, P., Bassett, P., Brown, P., Martin, C., Russell, A. and Webster, R. (2009) *The Deployment and Impact of Support Staff project: Research brief (DCSF-RB148)*. London: Department for Children, Schools and Families.

⁴⁵ Education Endowment Foundation Toolkit (2013), <http://educationendowmentfoundation.org.uk/toolkit/approaches/teaching-assistants/>. Last accessed 25 April 2013.

⁴⁶ Hanushek, E. et al. (2005), *The Market for Teacher Quality*, National Bureau of Economic Research.

⁴⁷ Burgess, S. et al. (2009), *Do teachers matter? Measuring the variation in teacher effectiveness in England*, Centre for Market and Public Organisation, University of Bristol.

⁴⁸ House of Commons (2010), *Training of Teachers, Children, Schools and Families Committee*. This has been highlighted in Storey, A. et al. (2008), *Schools and continuing professional development (CPD) in England – State of the nation research project*, Cambridge University/ Open University and Bassett, D. et al (2010), *Every teacher matters, Reform*.

⁴⁹ Ofsted (2009), Ofsted annual report 2008/9. “A common quality of the most effective settings, schools and colleges is their attention to developing staff and refreshing their knowledge, skills and understanding.”; Bassett, D. et al (2010), *Every teacher matters, Reform*.

⁵⁰ Education Endowment Foundation Toolkit (2013), <http://educationendowmentfoundation.org.uk/toolkit/approaches/performance-pay/>. Last accessed 25 April 2013.

⁵¹ Dolton, P. and O. Marcenaro-Gutierrez (2011), “If You Pay Peanuts, Do You Get Monkeys? A Cross-country Analysis of Teacher Pay and Pupil Performance”, *Economic Policy* 26(65); Glazerman, S. and A. Seifullah (2010), *An Evaluation of the Teacher Advancement Program (TAP) in Chicago: Year Two Impact Report*.

⁵² Atkinson, A. et al. (2009), “Evaluating the impact of performance-related pay for teachers in England”, *Labour Economics*, 16 (3), pp. 251-261.

⁵³ See for example Brown, G. (2006), Budget speech, March 2006. Department for Education (2013), *Statistical First Release, School workforce in England: November 2012*.

⁵⁴ Department for Education (2013), *School workforce in England: November 2012*.

⁵⁵ Wild, R. et al (2009), *Public service output, input and productivity: Education*, Office for National Statistics Working Paper no. 09/212.

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- > “Chris Grayling, the Justice Secretary, described the plan as a ‘classic case of more for less’ during the current austere climate. ‘My ambition is we need a system that is more efficient and less bureaucratic . . . Private sector management skills . . . are very helpful in trying to create a leaner, meaner service,’ Mr Grayling said in an interview.”
Financial Times, 9 May 2013
- > “What matters is not the total number of officers employed, but the total number of officers deployed, and how effectively they are deployed.”
Theresa May, speech for Reform, 16 August 2011
- > “‘But how can we be the party of law and order when we’re cutting police spending?’ some people ask. And it’s true, government spending on the police is going down by 20 per cent over four years. But we’re reforming the police – difficult reform like changes to pay and conditions – and crime is down by 10 per cent since the election. We’re proving that you don’t have to be the party of big spending to be the party of law and order.”
Theresa May, speech at “Victory 2015” conference, 9 March 2013
- > “In other words, the challenge is now to improve the productivity of every part of the Defence organisation. Rejecting the notion that a given percentage cut in the Defence budget must inevitably mean a similar percentage cut in our military capability.”
Philip Hammond, speech at Reform conference, 21 November 2012
- > “Councils’ revenue spending will still be over £53 billion this year. It’s not how much you spend, it’s how you spend it. The best public bodies don’t assume they have to do things the way they always have. Deliver the same old services. With councils getting this political and economic autonomy they can ask big questions about how services are run. And if they offer the best possible value to the taxpayer. And instead of salami slicing services and cutting the frontline, there’s a chance to deliver transformational change.”
Eric Pickles, speech at Reform conference, 15 June 2011

Recommendations

The Government should abolish the ring-fence around the schools budget in the forthcoming Spending Round, to be published on 26 June.

The necessary cuts in the schools budget will depend on HM Treasury decisions in other spending areas. That said, the Institute for Fiscal Studies has estimated that average departmental spending will fall by around 18 per cent between 2010-11 and 2017-18 in real terms. Given the extremely high increases in school spending in recent years, an 18 per cent reduction would be a reasonable ambition for school spending in the 2015 Parliament.

For comparison, services such as policing and justice have seen budgets fall by 25 per cent in real terms in the 2010 Parliament alone. They expect further cuts in the 2015 Parliament.

In addition, the Government should not introduce a ring-fence for the pupil premium. It is important to recognise that greater funding alone will not lead to an improvement in outcomes for pupils from disadvantaged backgrounds. It is how schools spend money that is crucial.

For headteachers, the overriding priority should be to invest in the quality of teaching. Ministers should support schools that reduce numbers of teaching assistants and allow class sizes to rise. Ministers should make the case that having a high quality teacher is more important than smaller class size.

Appendix A: Current funding architecture

The current funding system for state-maintained schools has a complicated architecture. Funding is largely made via the Dedicated Schools Grant and the Pupil Premium. Key features are:

- > **The Dedicated Schools Grant:** Most of the Government's current spending on schools is through the Dedicated Schools Grant. This is distributed from central government to schools via local authorities. The total sum of a local authority's Dedicated Schools Grant must be allocated to its schools budget and distributed as such. However, a local authority may retain necessary expenditure for other key educational functions, including certain types of school support services. There are restrictions on the type of expenditure for which a local authority can retain money from its schools budget, and how much that can be retained.⁵⁶
- > **The Cash Floor:** This guarantees that no local authority receives a cut of more than 2 per cent of its budget in cash terms (to protect those with falling pupil numbers).
- > **The Minimum Funding Guarantee:** This ensures that no school sees more than 1.5 per cent per pupil reduction in 2012-13 budgets compared to 2011-12 (before the pupil premium is taken into account).
- > **The Pupil Premium:** The pupil premium is allocated separately from the Dedicated Schools Grant and will cost £1.875 billion in 2013-14.⁵⁷ The pupil premium is given directly to schools and pupil premium receipts are considered discretionary spending, so that "schools will have freedom to employ the strategies that they know will support their pupils to increase their attainment." Schools must report annually on how they have spent their pupil premium funding and these details must be published online.
- > **Additional grants:** Additional grants over the period 2008-11 included the School Standards Grant and the School Development Grant. In 2011 most additional grants were streamlined into the Dedicated Schools Grant.

⁵⁶ Jarrett, T. et al. (2012), *School Funding, including the Pupil Premium*, House of Commons Library SN/SP/4581.

⁵⁷ <http://www.education.gov.uk/schools/pupilsupport/premium>. Last accessed 30 April 2013.

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Appendix B: Controlling for differences in schools' environments

This appendix sets out the regression analysis *Reform* undertook that sought to control for the funding schools receive for key demographic data and other features.

Table 5: Compensating regression results
Dependent variable: School funding per pupil (£)

	Primary schools		Secondary schools	
	Coefficient	Standard error	Coefficient	Standard error
Intercept	£2,839***	£16	£2,774***	£63
East Midlands	-£181***	£20	-£38	£71
West Midlands	-£108***	£19	-£347***	£65
South West	-£281***	£18	-£226***	£66
North East	-£99***	£24	-£131	£83
Outer London	£346***	£23	£316***	£74
Inner London	£963***	£26	£759***	£99
North West	-£114***	£17	-£213***	£62
Yorkshire and the Humber	-£64***	£20	£85	£69
Foundation School	-£51*	£31	£40	£39
Voluntary Controlled/Voluntary Aided	-£106***	£10	-£174***	£44
East of England	-£73***	£19	-£5	£68
Sixth Form			£499***	£36
Free school meals	£29***	£0	£48***	£2
Fixed costs	£130,300***	£1,309	£1,439,000***	£22,400
English as an additional language	£440***	£26	£235**	£115
Special educational needs	£983***	£57	£361	£268
<i>n</i>	10,990		2,137	
<i>R</i> ²	0.70		0.77	

The reference case for type and phase is a community school in the South East.

Asterisks denote the statistical significance of the coefficient: */**/** asterisks indicate significance at the 1/5/10 per cent level respectively.