

# Introducing a Pupil Premium: IFS Researchers' Response to Government Consultation on School Funding Arrangements

IFS Briefing Note 111

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## 1. Introduction

Leading up to the 2010 general election, both the Conservatives and the Liberal Democrats campaigned on the idea of a disadvantaged pupil premium (hereafter, a pupil premium) in the school funding system in England. A commitment to introduce a pupil premium was then included in the coalition's programme for government.<sup>1</sup>

The main aim of the pupil premium is to narrow the achievement gap between children coming from rich and poor families. To achieve this, it would provide additional money to schools for each pupil from a disadvantaged background, however defined, with the intention of targeting resources more heavily towards schools with a high proportion of disadvantaged pupils, and reducing any disincentive that schools might have to recruit such pupils.

In a recent report, we examined the rationale for a pupil premium and assessed whether it is likely to achieve its aim of narrowing the achievement gap between rich and poor.<sup>2</sup> We concluded that current evidence suggests a pupil premium is only likely to have a modest impact on the achievement gap. We also discussed different options for the design of a pupil premium and empirically analysed how these would affect school finances.

In July 2010, the Department for Education launched a consultation on school funding arrangements in 2011–12, and their plans for a pupil premium from September 2011 onwards.<sup>3</sup> This briefing note contains the response of IFS researchers to this

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<sup>1</sup> <http://programmeforgovernment.hmg.gov.uk/schools/index.html>

<sup>2</sup> Chowdry, H, E. Greaves and L. Sibieta, (2010) *The Pupil Premium: assessing the options*, IFS Commentary 113, (<http://www.ifs.org.uk/publications/4776>).

<sup>3</sup> <http://www.education.gov.uk/consultations/index.cfm?action=consultationDetails&consultationId=1723&external=no&menu=1>

consultation. In particular, we focus on the following questions posed by the Government:

- “Do you agree it is right to give a higher pupil premium to areas that currently receive less per pupil funding?”
- “What is your preferred deprivation indicator for allocating the pupil premium?”

We do not focus on the other questions posed in the consultation, such as issues surrounding:

- Looked after children;
- Service children;
- Three-year-old participation;
- Pupil referral units (PRUs);
- Proposals for home-educated pupils;
- Proposed cash floor at LA level in 2011-12.

In what follows, we begin by outlining the structure of the pupil premium proposed in the consultation (Section 2). We then discuss the relative merits of different indicators of deprivation that could be used in a pupil premium (Section 3). In Section 4, we empirically assess the stated justification for the specific structure of the pupil premium proposed by the Government. In Section 5, we quantify its implications for patterns of school funding. Section 6 concludes.

## **2. The Government’s proposals for a pupil premium**

The idea of a pupil premium is to provide a fixed extra amount to state schools for each pupil from a disadvantaged background that they admit each year. The current system already weights funding towards deprived pupils to some extent, as we have previously demonstrated.<sup>4</sup> A pupil premium could: i) simplify this system, ii) weight funding even more towards disadvantaged pupils and iii) adjust school funding levels more quickly than the present system as the make-up of their student body changes.

Schools currently receive their funding through two main sources: local authorities’ ‘fair-funding’ formulae and specific grants from central government. Each local authority (LA) has its own ‘fair-funding’ formula and different local authorities chose to prioritise different factors. The most important aspect of these formulae is the

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<sup>4</sup> H. Chowdry, E. Greaves and L. Sibieta, (2010) *The Pupil Premium: assessing the options*, IFS Commentary 113, (<http://www.ifs.org.uk/publications/4776>), and H. Chowdry, A. Muriel and L. Sibieta (2008), *Level playing field? The implications of school funding*, CfBT Research Report, (<http://www.ifs.org.uk/publications/4252>).

number of pupils. All local authorities also allocate funding on the basis of some indicator(s) of deprivation; though they vary in their choice of indicator(s), and in terms of relative generosity.

Specific grants from central government are calculated using formulae determined by central government. Local authorities have very little say over how these grants are allocated. Instead, they must be passed on in full directly into schools' bank accounts. Examples of specific grants include the School Standards Grant, School Development Grant and other Standards Fund grants.

The consultation states that in the long run the government would like "to bring in a simpler and more transparent funding system... In particular, it is our intention to introduce a fairer, formulaic basis for distributing funding and to reduce differences in funding between similar schools in different areas." It also states that in the long run "the pupil premium will become the main mechanism for allocating deprivation funding to schools, as part of a new formula." In our recent report, we examined various options for such a single national funding formula. This analysis revealed the patterns of winners and losers from examples of such a reform, with the losses and gains concentrated in particular local authorities.

In the meantime, the consultation has proposed a pupil premium from September 2011 that would work as a specific grant on top of existing funding. It also makes proposals for how such a pupil premium would operate, and invites views on which measure of deprivation to use; the merits of different deprivation indicators are discussed in the next section.

The consultation further states that the pupil premium will vary across different LAs, with a higher pupil premium in less deprived areas. This feature is justified on the basis that deprivation funding is currently lower or, as the consultation claims, "spread more thinly", in less deprived areas. We return to this issue in Section 4, examining the precise mechanism by which the Government hopes to achieve this aim and whether deprivation funding is indeed "spread more thinly" in less deprived areas.

The consultation also states that the pupil premium will be staged in over time, and that the amount available will be determined following the forthcoming Spending Review. Since then the Deputy Prime Minister has announced that £2.5 billion will be available by the end of the current Parliament<sup>5</sup>. The consultation further states that funding will be found from "outside the schools budget," but it is not entirely clear exactly what this means in practice. We take it to mean that a pupil premium would be

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<sup>5</sup> <http://www.bbc.co.uk/news/uk-politics-11548062>

on top of all existing funding provided to schools (including money provided by local authorities and via specific grants). If the pupil premium were to be funded through the abolition of any specific grants, one would need to consider how progressively targeted such grants are at present, in order to determine whether a pupil premium would increase or decrease the level of funding targeted at deprivation. Furthermore, it is important to see the pupil premium in the wider context of the Spending Review, and its implications for the level of existing funding provided to schools. Although the precise settlement is unknown at the time of writing, it seems likely that funding provided to schools would be cut in real-terms given the overall scale of departmental cuts required.

The proposed pupil premium would only apply to disadvantaged pupils in the year groups between Reception and Year 11 (thereby excluding sixth form pupils). It would operate as a specific grant to schools, the allocation of which would be outside the control of LAs. Schools would be free to spend the additional money as they see appropriate, and target it on improvements for pupils deemed the most in need, even if this does not exactly match the definition of deprivation used to distribute the pupil premium.

### **3. Indicators of deprivation**

The consultation invites views on which indicator of deprivation should be used to distribute the pupil premium. In this section, we discuss the advantages and disadvantages of different potential indicators.

The primary aim of the pupil premium proposed by the Government is to narrow the achievement gap between advantaged and disadvantaged pupils; a pupil premium should thus be targeted towards groups experiencing 'educational disadvantage'. The most direct classification of disadvantage, therefore, would be any school where a large proportion of pupils fail to achieve good results. Unfortunately, this might create a perverse financial incentive for schools to perform badly, or might be perceived to penalise schools that achieve good results. Instead, one needs to use an indicator of deprivation that cannot be influenced inappropriately by the school and is a *proxy* for educational disadvantage. An ideal indicator of deprivation would have the following properties:<sup>6</sup>

- highly correlated with educational disadvantage;
- difficult to falsely manipulate by schools or pupils;

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<sup>6</sup> Akerlof, G. (1978), 'The economics of "tagging" as applied to the optimal income tax, welfare programs and manpower planning', *American Economic Review*, vol. 68, pp. 8–19.

- easily observable.

There are a number of potential indicators that could be used that satisfy these criteria to varying degrees; some capture the characteristics of individual pupils while others reflect characteristics of the areas in which they live. The consultation discusses many of these in detail.

The National Equality Panel (NEP) provides a comprehensive picture of how educational attainment varies with many of these characteristics.<sup>7</sup> It shows that one of the strongest predictors of educational attainment is household income, or socio-economic status more generally. Unfortunately, a finely grained indicator of socio-economic status for individual pupils is not currently available.

Instead, the most widely used indicator of material disadvantage for school children is eligibility for free school meals (FSM), which includes those who are eligible for them but do not take them up. This is certainly highly correlated with educational disadvantage, and – as indicated in the consultation document – is already available in public-level administrative data. In addition, schools should not, in principle, be able to declare pupils as eligible for FSM falsely, as eligibility is based on the receipt of certain means-tested benefits and tax credits.<sup>8</sup>

However, FSM eligibility is a rather blunt measure that cannot identify multiple degrees of deprivation. For instance, the means-tested benefits that determine eligibility go predominantly to workless families with children (e.g. Income Support, Job-Seekers Allowance and Child Tax Credit, but not Working Tax Credit). They may therefore miss children in working families with relatively low incomes. Furthermore, while the take-up of relevant benefits amongst families with children is relatively high,<sup>9</sup> there are a small number of disadvantaged children who may not be eligible for such benefits or do not take them up. It has also been found that schools do not always correctly identify all pupils eligible for FSM,<sup>10</sup> which may limit its effectiveness

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<sup>7</sup> National Equality Panel (2010), *An Anatomy of Economic Inequality in the UK: Report of the National Equality Panel*, CASE Report No. 60, London: Government Equalities Office and Centre for Analysis of Social Exclusion.

([http://www.equalities.gov.uk/national\\_equality\\_panel/publications.aspx](http://www.equalities.gov.uk/national_equality_panel/publications.aspx)).

<sup>8</sup> See [http://direct.gov.uk/en/Parents/Schoolslearninganddevelopment/SchoolLife/DG\\_4016089](http://direct.gov.uk/en/Parents/Schoolslearninganddevelopment/SchoolLife/DG_4016089).

<sup>9</sup> Department for Work and Pensions (2010), *Income Related Benefits Estimates of Take-Up in 2009–10*, London, ([http://statistics.dwp.gov.uk/asd/index.php?page=irb\\_2](http://statistics.dwp.gov.uk/asd/index.php?page=irb_2))

<sup>10</sup> Hobbs, G. and Vignoles, A. (2009), 'Is children's free school meal "eligibility" a good proxy for family income?', *British Educational Research Journal*, Vol. 36, No. 4, pp. 673–690.

(although the creation of a pupil premium targeted towards FSM may well induce schools to improve the recording of it).

Nevertheless, the FSM indicator is widely used, readily understood, relatively easy to observe and highly correlated with attainment. It should be noted, however, that the Government's proposed Universal Credit is likely to affect the eligibility criteria for FSM, and may also allow for a more finely grained indicator of socio-economic status in the long-run.

Another potential indicator is whether children have ever been eligible for FSM over a longer period of time, rather than being eligible just at a point in time. The consultation suggests indicators based on whether children have been eligible for FSM at any point over the past three or six years as potential alternatives to the contemporary FSM eligibility indicator. Clearly, those eligible for FSM in any given year will include some pupils who are long-term poor and some who are short-term poor. But a measure of whether pupils have been eligible at any point in the previous three or six years is even more likely to contain pupils who are only short-term poor than one based purely on contemporary eligibility. The consultation document presents analysis showing that average attainment at Key Stage 2 and GCSE generally falls as the number of years children have been eligible for FSM increases, suggesting that longer-term poverty is associated with even lower levels of attainment than contemporaneous poverty. Whether pupils have been eligible for FSM for a sustained period of time would be an indicator that would target more severe levels of deprivation.

Other potential individual-level indicators include having English as an additional language (EAL), belonging to a low-achieving ethnic minority group, and being identified as having special educational needs (SEN). All of these are associated with low levels of educational attainment. However, which ethnic groups have the lowest attainment varies across the different stages of schooling<sup>11</sup>, and using an indicator of membership of a low-achieving ethnic group on its own would clearly miss low-achieving pupils from other ethnic groups. Allocating funding on the basis of ethnicity could also prove controversial. Although there are centrally defined criteria, SEN (without a statement) and EAL are, in practice, open to some interpretation by schools; their use in a pupil premium could thus incentivise over-reporting of these characteristics in order to receive extra money.

One direct indicator of educational disadvantage is whether a child has low levels of *prior* attainment. For instance, secondary school pupils with low prior attainment

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<sup>11</sup> A. Briggs, S. Burgess and D. Wilson (forthcoming), 'The dynamics of school attainment of England's ethnic minorities', *Journal of Population Economics*.

could be defined as those who failed to achieve the expected level at Key Stage 2 (KS2), taken in the last year of primary school. Such a measure is easily observable, hard to manipulate (given that it is determined before secondary school) and clearly predictive of lower current attainment. In contrast to FSM eligibility, which focuses on material circumstances, this measure of disadvantage covers all children with low prior attainment, regardless of the reason for it, and is thus a wider measure of educational disadvantage. In primary schools, however, the only corresponding indicator of prior attainment would be based on teacher assessments at Key Stage 1 (KS1) or Foundation Stage Profiles. Unfortunately, KS1 teacher assessments are also undertaken in primary school and could therefore be susceptible to perverse incentives in order to increase funding. Foundation Stage Profiles, meanwhile, are still relatively new and their relationship with later achievement is poorly understood at present. Therefore, low prior attainment seems an ideal indicator for secondary schools, but a poor one for primary schools.

The consultation also proposed extending the pupil premium to Looked After Children. The government justifies extending the premium to Looked After Children on the basis of the very low average attainment of such pupils (and the fact that such pupils may not be eligible for FSM). It is clear that such an indicator is highly unlikely to be falsely manipulated. However, the consultation questions the accuracy and observability of such indicators in the administrative pupil census data. The indicator would clearly need to be improved if it is to be used in an extended pupil premium, including taking into account movements of Looked After Children across LAs.<sup>12</sup>

There is also a potential set of indicators of disadvantage based on the area in which children live, including the Index of Multiple Deprivation (IMD)<sup>13</sup> and an indicator based on tax credit receipt, developed by the then Department for Children, Schools and Families (DCSF). The most recently available IMD index (2007) measures deprivation across a variety of 'domains', such as employment, education, health and housing. The tax credit indicator is a weighted average of the proportion of families

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<sup>12</sup> The consultation also proposes an extended pupil premium for Service children. But this is not justified on the basis of low average attainment: such pupils do not, on average, have lower levels of attainment. Instead, the extension is justified on the basis of the additional strain on the family placed by frequent relocations and other aspects of Service life. The consultation concludes that Service children "need more support than the average child for their social and emotional development and to address their inevitable vulnerabilities".

<sup>13</sup> See

<http://www.communities.gov.uk/communities/neighbourhoodrenewal/deprivation/deprivation07/> for more information.

within a Lower Super Output Area – an area covering approximately 750 households, on average – receiving different levels or elements of tax credits (for example, children in out-of-work families receiving Child Tax Credit, or children in working families receiving Working Tax Credit and both elements of the Child Tax Credit). It was used by the then DCSF to allocate some elements of deprivation funding in the 2008–11 school funding settlement.

Both of these indicators are correlated with educational attainment,<sup>14</sup> easy to observe and difficult to falsify. However, area-based indicators are relatively broad: not every single child living in a deprived area will be disadvantaged, and not every single disadvantaged pupil will live in a deprived area. One particular advantage of the tax credit indicator is that it may be able to capture families not eligible for free school meals, but who nonetheless experience some level of material disadvantage. However, the tax credit indicator is currently only available for 2005; it would thus miss changes in deprivation since then and, if not updated, would miss them in the future as well. In order to use the tax credit indicator as part of a pupil premium, this indicator would need to be updated, and preferably updated regularly.

There is also a set of geo-demographic indicators such as MOSAIC (developed by Experian) and ACORN (developed by CACI). These indicators classify all postcodes into a number of types which share certain characteristics and behaviours based on the Census and other data. MOSAIC and ACORN data are often used by commercial firms for market research and a number of LAs have begun using them in their fair-funding formulae. However, in order to use such indicators for a pupil premium, one needs to rank MOSAIC groups by some measure of educational disadvantage. As part of the design of its proposed pupil premium, Policy Exchange suggested allocating a pupil premium to MOSAIC types with the lowest average GCSE scores.<sup>15</sup> A pupil premium with such a measure of disadvantage would be similar to the low prior attainment premium considered above. It would focus on all MOSAIC types with low average attainment, ignoring the source of such disadvantage, be it material or cultural factors. However, as examples of area-based indicators, such measures can be relatively broad: not every single child living in disadvantaged postcodes will be disadvantaged, and not every single disadvantaged pupil will live in a disadvantaged postcode.

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<sup>14</sup> National Equality Panel (2010), *An Anatomy of Economic Inequality in the UK: Report of the National Equality Panel*, CASE Report No. 60, London: Government Equalities Office and Centre for Analysis of Social Exclusion, ([http://www.equalities.gov.uk/national\\_equality\\_panel/publications.aspx](http://www.equalities.gov.uk/national_equality_panel/publications.aspx)).

<sup>15</sup> Freedman, S. and Horner, S. (2008), *School Funding and Social Justice*, London: Policy Exchange.

Therefore, given the relative advantages offered by contemporary eligibility for free school meals, this is the government's preferred measure for distributing the pupil premium. In the rest of this briefing note, we assume that this is the primary measure for allocating the pupil premium.

#### **4. Empirical analysis of existing patterns of deprivation funding**

The consultation proposes that the pupil premium would vary across LAs. In particular, a headline, nationwide target value for funding per disadvantaged pupil would be established (following the Spending Review on October 20<sup>th</sup>). The pupil premium would then equal the difference between this target value and overall LA funding per pupil (thus it would be constant within LAs). It is important to note here that this does not necessarily mean that the pupil premium would be higher in areas with lower deprivation funding per pupil. It instead means the pupil premium would be higher in areas where total funding per pupil is lower. For instance, if the headline, nationwide target value were set at £7,000, then the pupil premium within a local authority with total funding per pupil of £4,500 would be £2,500 per disadvantaged pupil. This is clearly a relatively complicated structure, and as such may make the pupil premium less transparent than it would be if the pupil premium was simply the same amount of money for each disadvantaged pupil regardless of LA.

The main determinants of differences in total funding per pupil between different LAs are differences in average deprivation levels and differences in local cost pressures (e.g. London Weighting for teachers' salaries). The Government has proposed that an area cost adjustment (ACA) will be applied to this LA-specific pupil premium, though the actual adjustment used may differ from the ACA currently used across LAs. According to this methodology, if an LA's total funding per pupil is greater than the assumed target value, then the pupil premium will be set to zero for that LA. To prevent this situation arising, the consultation also asks whether there should be a minimum pupil premium. It is our view that it would be far more sensible to apply an ACA to the target level of funding per disadvantaged pupil *before* calculating the pupil premium. The proposed methodology would compare a value subject to an ACA (total LA funding per pupil) with a value not subject to such an adjustment (the nationwide target value of funding per disadvantaged pupil). In the scenario where funding per pupil is above the target level due to high local costs, our proposed adjustment would allow that to be reflected in the target funding level as well; adding this margin would then reduce the number of LAs receiving a pupil premium of zero. Our proposal would only affect the pupil premium in the small number of areas that would otherwise get a zero pupil premium (e.g. deprived local authorities within high-cost areas such as

Hackney and Tower Hamlets). In our analysis in Section 5, we assume this slight change in methodology is applied.

Therefore, given that the pupil premium will be subject to an ACA (though not necessarily the current version), the main determinant of an LA's pupil premium is likely to be the average deprivation level in that LA. Disadvantaged areas already tend to receive higher funding (even taking account of the ACA), so the pupil premium would be relatively *smaller* for a deprived LA and relatively *larger* for a more affluent LA. The consultation document justifies this relatively counter-intuitive design by claiming that funding for deprived pupils is "spread more thinly in less deprived authorities, so that schools in those authorities currently receive less funding for their deprived pupils."

However, in previous research, we have found precisely the opposite relationship between the distribution of deprivation funding and area-level deprivation.<sup>16</sup> In fact, deprivation funding is spread more thinly in *more deprived* areas and is actually higher in *less deprived* areas. So a deprived child in an affluent LA tends to attract greater funding than an equivalently deprived child in a less affluent LA. Given that area-level deprivation is a major determinant of total funding (before the ACA has been applied), it thus seems highly likely the proposed pupil premium would *widen* differences in funding for deprived pupils across different areas rather than close them.

This section therefore describes in more detail the relationship between funding per pupil and deprivation separately for LAs with high and low levels of funding, in order to ascertain whether the provision of funds for deprivation is indeed less generous for local authorities that are less deprived. We quantify the implications of the proposed pupil premium for school finances in Section 5.

To conduct this analysis we link two school-level data sources on school finances and pupil numbers;<sup>17</sup> the latest available one relates to financial year 2009–10. We are then able to construct measures of all funding per pupil at the school level (including both LA formula funding and specific grants) and the proportion of pupils eligible for FSM (our indicator of deprivation at the school level). Our analysis only examines primary and secondary state schools, ignoring special schools and maintained

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<sup>16</sup> H. Chowdry, A. Muriel and L. Sibieta (2008), *Level playing field? The implications of school funding*, CfBT Research Report, (<http://www.ifs.org.uk/publications/4252>).

<sup>17</sup> The Local Education Authority School Information Service (LEASIS) provides data on pupil numbers and school type; and, Section 251 Budget Table 2 for detailed information on school funding.

nurseries (who have different funding arrangements).<sup>18</sup> We rank LAs' total funding per pupil,<sup>19</sup> and split them up into five equally-sized quintiles with approximately 30 LAs per quintile. The bottom quintile contains those with the lowest levels of total funding per pupil (e.g. Cheshire East and Suffolk) and the top quintile those with the highest levels of funding per pupil (e.g. Hackney and Liverpool).

We use two methods to analyse the relationship between deprivation and funding per pupil across LAs: the first is graphical, examining the pattern of average funding per pupil by school-level measures of deprivation; the second uses regression analysis to calculate how much extra funding schools appear to receive, on average, for an additional pupil eligible for FSM, while controlling for other factors. We refer to this notional quantity as the 'implicit FSM premium'.

### ***What is the relationship between average funding per pupil and school-level deprivation across local authorities?***

Figures 1(a) and 1(b) attempt to answer this question graphically, by tracing out the relationship between school-level funding and school-level deprivation for a given level of LA funding (both before and after the Area Cost Adjustment has been applied<sup>20</sup>). Figure 1(a) does this for primary schools while Figure 1(b) does the same for secondary schools. In each figure the vertical axis measures funding per pupil (2010 prices) and the horizontal axis measures the proportion of pupils eligible for FSM (both at the school level). There are five separate curves, each one corresponding to a different quintile of LA funding per pupil (as described above). The blue curve, for example, refers to schools in the lowest-funded 20% of LAs (the least deprived or lowest cost areas), while the black line refers to schools in the highest-funded 20% of LAs. Each curve is a line of best fit that describes how, on average, schools' level of funding per pupil varies with the proportion of pupils eligible for FSM at that school. All the lines slope upward (except over extreme ranges of low FSM eligibility),

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<sup>18</sup> We also drop schools with zero pupils, schools that have recently opened or closed and schools with very low or very high levels of funding per pupil (less than £2,000 per pupil and greater than £12,000 per pupil, respectively).

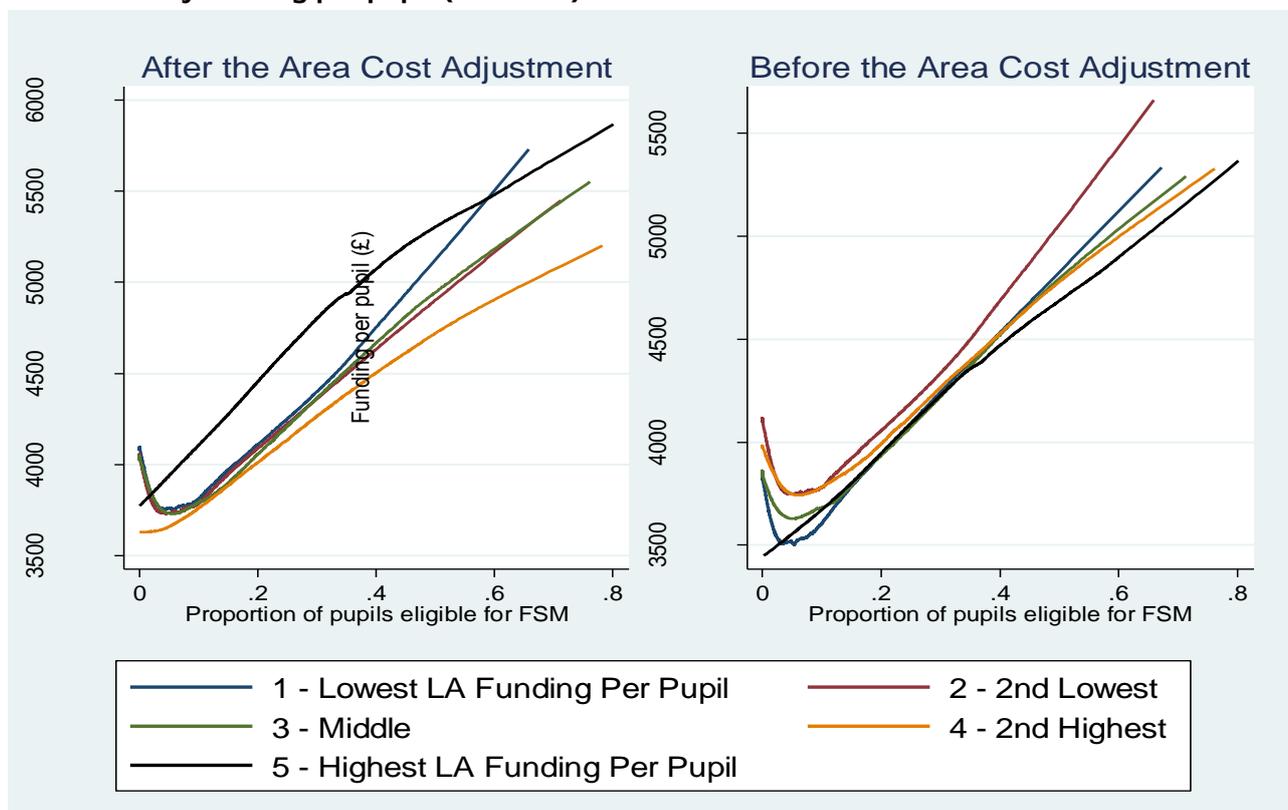
<sup>19</sup> The measure of total funding per pupil across LAs is Guaranteed Units of Funding (GUF) per pupil (i.e. the level of funding per pupil provided to LAs from central government via the Dedicated Schools Grant in 2009–10) plus specific grants per pupil within each LA. The school funding consultation indicates an intention to mainstream as many specific grants as possible into the Dedicated Schools Grant. We therefore add specific grants to 2009–10 GUF levels in order to ensure our analysis is consistent as possible with this intended policy shift.

<sup>20</sup> Note that the application of the ACA also affects the distribution of LAs across quintiles.

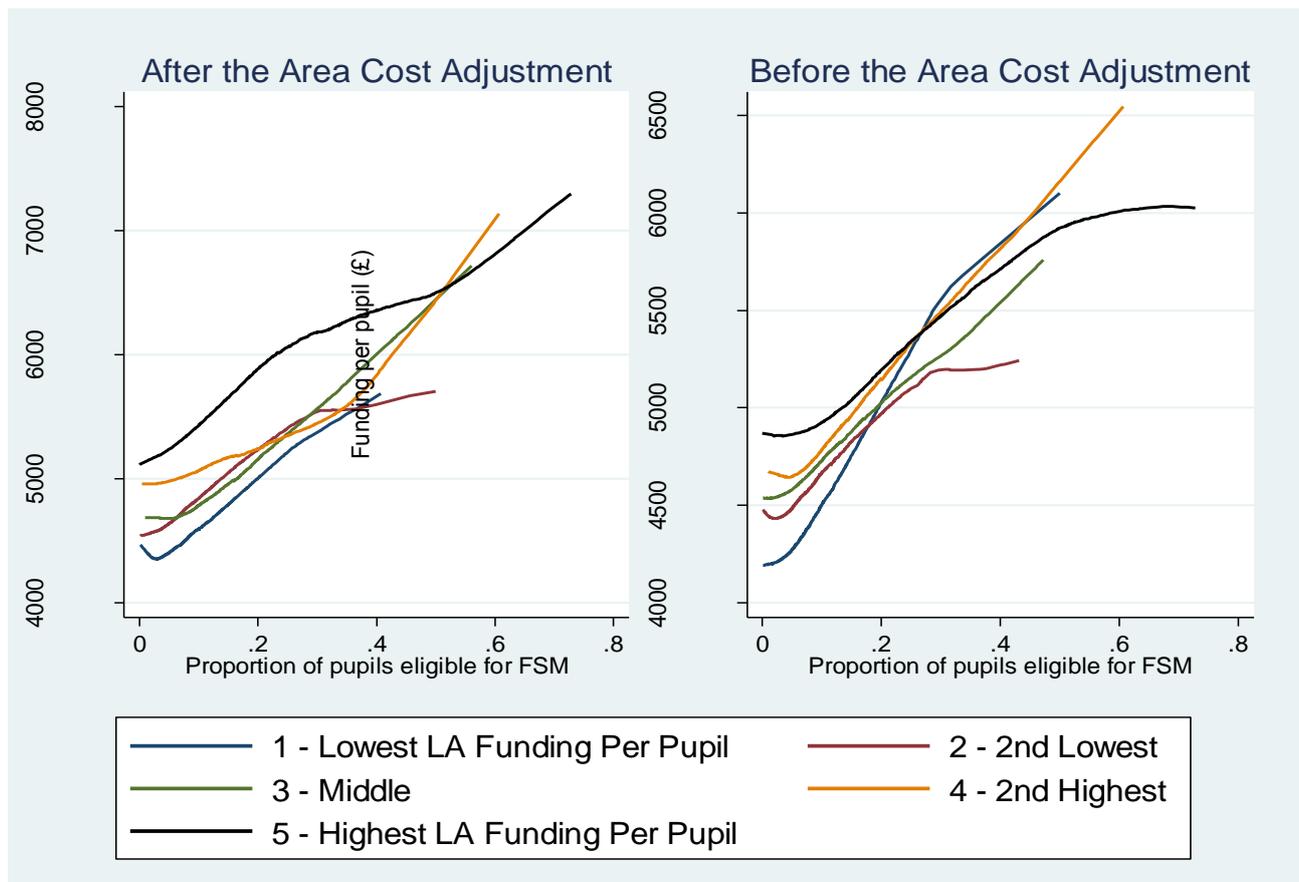
indicating that – regardless how well-funded the LA is – schools that are more deprived tend to have more funding per pupil.

For a given level of school deprivation (i.e. a given point along the horizontal axis), the vertical distance between each line indicates how the generosity of funding varies according to how well funded the LA is. Looking at the left panels of Figures 1(a) and 1(b), it does seem that, over most ranges of FSM eligibility, schools in the highest-funded (most deprived or highest cost) LAs have greater levels of funding per pupil than those with lower level of total funding per pupil – and, by extension, greater levels of deprivation funding per pupil given that these schools are similarly deprived. These differences amount to nearly £1,000 per pupil when compared against similarly deprived schools in the lowest-funded areas. Meanwhile, secondary schools in the lowest-funded areas seem to have the lowest funding per pupil for a given level of school deprivation. However, for primary schools the blue line (representing the most affluent or lowest-cost LAs) is the second highest on the graph: primary schools in these areas actually have relatively high levels of funding per pupil, if not quite as high as the level in the most deprived or highest cost areas. Furthermore, the orange line indicates that schools in the fourth quintile of LA funding seem to have the lowest levels of per-pupil funding. An initial examination of the graphs therefore provides mixed evidence on the likely validity of the consultation’s hypothesis.

**Figure 1(a) – Funding per pupil and FSM eligibility among primary schools, by quintile of total local authority funding per pupil (2009–10)**



**Figure 1(b) – Funding per pupil and FSM eligibility among secondary schools, by quintile of total local authority funding per pupil (2009–10)**



Notes: Figures are presented in 2010 prices.

Sources: Authors' calculations using 2009–10 Section 251 Budget Table 2 and LEASIS data.

However, the funding levels presented in the left panels of Figures 1(a) and 1(b) are the amounts *after* Area Cost Adjustment (ACA) factors have been applied. Since ACA factors adjust for differences in local staffing costs, the observed differences in funding between different areas could actually just reflect differences in costs (given by a higher ACA factor) rather than differences in the actual resources or educational inputs that schools can provide to their pupils. The ACA should therefore be removed in order to provide a measure of the actual resources available per pupil. This is even more so given that many deprived areas (especially those in inner cities) are likely to have a high ACA uplift – the ACA factor for Tower Hamlets, for example, is 28% higher than it is in Suffolk. As a result, areas with high funding might simply be areas with high costs of providing education, rather than areas where schools enjoy more generous provision of resources.<sup>21</sup> The Government has stated that it may choose to

<sup>21</sup> It is for this same reason that we believe that ACA factors should be applied to the target level of funding for each local authority, in order to reflect differences in costs and enable schools in higher-cost areas to provide the same desired resources and inputs as schools in lower-cost areas.

apply a different version of the ACA to the pupil premium, but has made no specific proposals. We therefore examine funding per pupil before the current ACA has been applied.

To reflect this, the right panels of Figures 1(a) and 1(b) repeat the analysis but use a measure of funding that does not have the current ACA applied. It is now clear among primary schools that those with lower levels of total LA funding per pupil (less deprived) actually have more resources per pupil (for a given level of school deprivation), and that those with higher levels of total LA funding per pupil (most deprived) actually have relatively low levels of resources per pupil.

Among secondary schools, it is still true that, given the level of school deprivation, schools in areas with higher total funding per pupil (more deprived LAs) have less resources per pupil than schools in areas with lower total funding per pupil, but the vertical distance is now much smaller – roughly £100 per pupil, which is much smaller than the proposed differences in the pupil premium between these areas. Also, for some ranges of the data (where FSM eligibility is greater than about 30%), secondary schools in areas with the highest total funding per pupil (most deprived) have less resources per pupil than similar schools in areas with slightly lower levels of total funding per pupil (less deprived).

After taking into account differences in local staffing costs, this analysis does not seem to provide support for the assertion made in the consultation. For a given level of school deprivation, it appears that primary schools in deprived areas actually have fewer resources per pupil, while secondary schools in deprived areas have levels of resources per pupil that are either slightly greater than, or very similar to, the levels in other areas.

### ***Implicit FSM premiums across local authorities***

There are two main limits to the analysis just described. First, schools in high-funded areas may differ from schools in low-funded areas in many ways; the analysis took only one of these factors (an estimate of local costs) into account. There are other differences between schools in different areas – even if they have similar levels of FSM eligibility – which may have implications for the amount of funding received. The proportion of children with EAL, who may also attract additional funding, is one such example. For instance, in secondary schools with above-average levels of FSM eligibility (14.5% in 2009) and in the highest funded quintile, there were about 40% of children with EAL. This compares with 8% of children in secondary schools with above-average levels of FSM eligibility and in the lowest funded quintile. If these and

other factors are not taken into account then misleading inferences can be made about the relative generosity of resources for deprived pupils between different LAs.

Second, the figures above measure total funding per pupil on the vertical axis, when the actual quantity of interest is funding per *deprived* pupil. Clearly, this quantity cannot be measured directly without knowing each LA's fair-funding formula and the formulae for allocating specific grants. However, it can be measured indirectly by focussing on the 'implicit FSM premium': a statistical estimate of the increase in funding per pupil that schools experience, on average, for each additional FSM-eligible pupil (on top of the amount that would be received for a non-FSM-eligible pupil), while holding fixed other school characteristics. If we add this to the estimate of what schools receive for a pupil not eligible for FSM, this gives us the total amount schools receive for a deprived pupil.

To measure the implicit FSM premium while taking into account multiple school factors simultaneously, we use regression techniques similar to those employed in previous research.<sup>22</sup> In particular, we run statistical models of the total funding received by schools from all income sources, and quantify the relationship between that and a range of school characteristics (including the number of pupils and the number of FSM-eligible pupils). This analysis is performed separately for primary and secondary schools, and separately for each quintile of funding per pupil at the LA level – the same groups used above.

The results of this analysis are summarised in Table 1 below (the full results, including standard errors, can be found in Appendix A). Each row represents a different quintile of LA funding per pupil, with the last row representing the results for all primary and all secondary schools. The numbers in the first column represent our estimate of the basic per-pupil amount, that is, the basic amount that each school receives, on average, for an additional pupil. The second column contains the estimated implicit FSM premium: the additional funding, on top of the basic per-pupil amount, which schools on average receive for each additional pupil who is eligible for FSM. For example, primary schools in the lowest-funded LAs receive, on average, £2,350 per pupil, but they receive an extra £2,140 for pupils eligible for FSM (a total value of £4,490 per FSM pupil). Secondary schools in the highest-funded LAs receive £4,060 per pupil, with an additional £1,860 per FSM-eligible pupil (a total value of £5,920 per FSM pupil).

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<sup>22</sup> H. Chowdry, A. Muriel and L. Sibieta (2008), *Level playing field? The implications of school funding*, CfBT Research Report, (<http://www.ifs.org.uk/publications/4252>).

**Table 1 – Total school funding allocations by quintile of total local authority funding per pupil, 2009–10 (2010 prices, rounded to the nearest £10)**

	<b>Basic per-pupil amount (£)</b>	<b>Implicit FSM premium (£)</b>
<b>Primary schools</b>		
Lowest total LA funding per pupil	2,350***	2,140**
Second-lowest total LA funding per pupil	2,510***	2,160***
Middle total LA funding per pupil	2,440***	2,050***
Second-highest total LA funding per pupil	2,570***	2,100***
Highest total LA funding per pupil	2,550***	1,620***
<b>All local authorities</b>	<b>2,460***</b>	<b>1,980***</b>
<b>Secondary schools</b>		
Lowest total LA funding per pupil	3,190***	3,450***
Second-lowest total LA funding per pupil	3,750***	1,070
Middle total LA funding per pupil	3,610***	2,190***
Second-highest total LA funding per pupil	3,950***	2,110***
Highest total LA funding per pupil	4,060***	1,860***
<b>All local authorities</b>	<b>3,940***</b>	<b>2,040***</b>

Notes: \* significant at 10% level; \*\* significant at 5% level; \*\*\* significant at 1% level. Amounts are shown in 2010 prices. Figures have been deflated using the Area Cost Adjustment factor to reflect the fact that some local authorities (e.g. those within London) receive a higher level of funding to cover higher input costs. These regressions also included controls for other school characteristics, see Appendix A for more details.

Sources: Authors' calculations using 2009–10 Section 251 Budget Table 2 and LEASIS data.

Comparing these values permits a more rigorous test of the assumption underlying the proposed pupil premium than was possible in the graphs presented above as we control for other school-level characteristics. Table 1 shows that in lower funded areas (less deprived), schools actually receive *more* deprivation funding than those in the higher-funded areas, not less: the implicit FSM premium is £2,140 for primary schools in the lowest-funded LAs but is only £1,620 for similar primary schools in the highest-funded LAs. Meanwhile, for secondary schools in the lowest-funded LAs, the implicit FSM premium is almost twice as large as it is for similar secondary schools in the highest-funded LAs (though it should be noted that the implicit FSM premium is lowest for the 2<sup>nd</sup> quintile). Schools in higher-funded (more deprived) LAs do appear to receive higher basic per-pupil amounts, which may reflect an incentive to spread deprivation around more thinly when average levels of deprivation are higher. However, these differences are generally smaller than those in the implicit FSM premiums. Therefore, the total amount for each deprived pupil is certainly not lower for less deprived pupils; if anything, it is higher.

Overall, the evidence presented in Table 1 (and in the figures above) does not support the assertion made in the consultation document. It is not the case that in areas with

lower funding, funding for deprived pupils is lower. A careful examination of the data provides no convincing evidence for the assertion made in the consultation that deprivation “spread more thinly in less deprived areas.” As such, the proposed design of the pupil premium would either create differences in funding for deprived pupils where none presently exist, or it would exacerbate the differences that do exist. It would not redress any perceived imbalance in deprivation funding across LAs.

Given the findings of this analysis, the structure of the proposed pupil premium could only be justified if schools in affluent areas need more resources to admit a disadvantaged child than otherwise similar schools in deprived areas, and that they need even more additional resources than they currently receive. This idea could be plausible when comparing an affluent school to a deprived school – the latter may have structures and resources already in place to accommodate disadvantaged children – but it is not clear why the same argument should hold when considering two equally deprived schools in different LAs.

## **5. Implications of proposed pupil premium**

We now move on to discuss the implications of the proposed pupil premium structure. On October 15, the Deputy Prime Minister Nick Clegg announced that £7 billion would be made available for a ‘fairness premium’ over the period covered by the Spending Review, including both extra funding for the early years, the pupil premium and help for poorer students going into Higher Education.<sup>23</sup> News reports further suggested that funding for a pupil premium will be £2.5 billion by the end of the current Parliament.<sup>24</sup>

We therefore model a pupil premium of the same cost based on the structure proposed in the consultation and the latest available data. We focus on the implications of this proposed pupil premium for school funding levels across state schools in England. We assume that funding for this pupil premium comes from outside existing funding already provided to schools directly, and that there are no other changes to school funding levels. The latter assumption is not realistic given changes to school funding in 2010–11 and the likely tightness of the forthcoming Spending Review, but does allow us to focus on the impact of the pupil premium in isolation. Although this means we cannot precisely measure the impact of the proposed pupil premium, we are able to answer the following key questions:

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<sup>23</sup> <http://www.bbc.co.uk/news/uk-politics-11548062>

<sup>24</sup> <http://www.guardian.co.uk/politics/2010/oct/15/nick-clegg-lib-dems-pupil-premium>

- Do schools with more pupils from a deprived background gain more from such a reform?
- How does the relationship vary with total funding per pupil in the local authority?

We make the further following assumptions in order to calculate LA-specific pupil premiums:

- The measure of deprivation used to allocate the pupil premium is eligibility for FSM (the consultation indicates that this is Government’s current preferred indicator);<sup>25</sup>
- We assume that this is phased in over a number of years, but only focus on the total impact after the phase-in period has been completed;
- We use the current ACA factors to adjust the pupil premium for area cost pressures. This is also applied to the target values before we calculate the pupil premium.<sup>26</sup>

A total cost of £2.5 billion allows us to set a headline target value of £7,150 (in today’s prices) for funding per deprived pupil in the final year of the Spending Review period. Table 2 then shows the average pupil premium by quintile of total LA funding per pupil under this reform.

**Table 2 – Average pupil premium under modelled policy reform, by quintile of total LA funding per pupil**

	Average pupil premium under Example 1	
	£ (2010 prices)	Relative to average for all LAs
Lowest total LA funding per pupil	2,903	1.20
Second-lowest total LA funding per pupil	2,590	1.07
Middle total LA funding per pupil	2,413	1.00
Second-highest total LA funding per pupil	2,193	0.91
Highest total LA funding per pupil	1,918	0.80
<b>All local authorities</b>	<b>2,410</b>	<b>1.00</b>

Note: Figures are presented in 2010 prices.

Sources: Authors’ calculations using 2009–10 Section 251 Budget Table 2 and LEASIS data.

By construction, the pupil premium is higher in LAs with lower levels of total LA funding per pupil. The average value of the pupil premium in the lowest funded LAs (least deprived) is 20% higher than the average value for all LAs; the average value of

<sup>25</sup> We also assume this only applies to pupils from Reception through to Year 11. However, the data in LEASIS do not detail the proportions eligible for FSM at different ages. We therefore conduct an adjustment for primary and secondary schools based on the national differences between those eligible for FSM across all age groups and those eligible between Reception and Year 11.

<sup>26</sup> This differs slightly from the proposed methodology in the consultation, but, as argued in section 4, it is more consistent than the proposed methodology. It also ensures that the pupil premium is positive in areas which would otherwise receive no pupil premium purely because of higher cost pressures.

the pupil premium amongst the highest funded quintile (most deprived) is 20% below it. At the extremes, the pupil premium in the LA with the lowest total funding per pupil (Wokingham) is about two-and-a-half times greater than the value of the pupil premium in the LA with the highest level of funding per pupil (Tower Hamlets).

We can then use these values to calculate the extra funding each school would receive as a result of this example pupil premium. Figure 2 illustrates how the average percentage increase in a school's funding per pupil varies according to the proportion of pupils eligible for FSM. This is shown in Figure 2(a), both for primary schools (left-hand graph) and secondary schools (right-hand graph). As can be seen, the percentage increase in funding clearly increases as the proportion eligible for FSM increases.

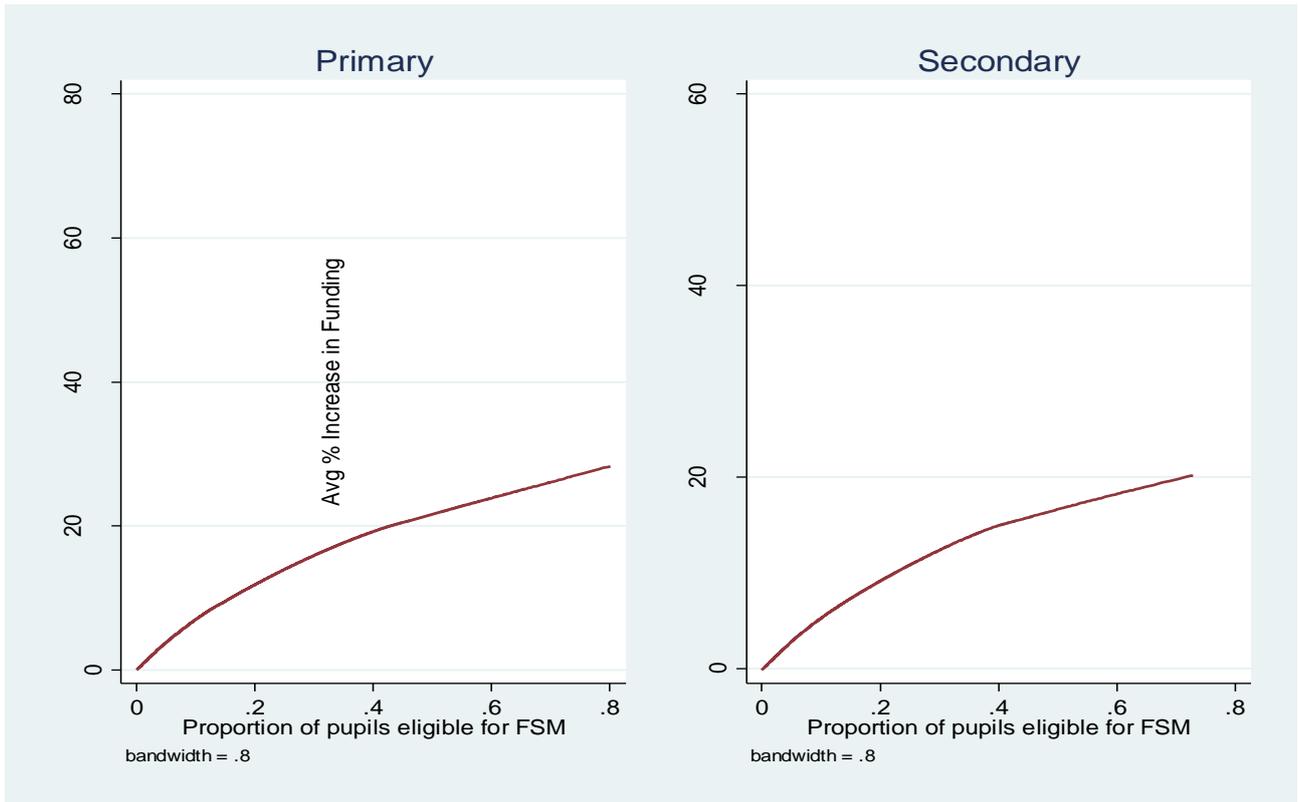
While the pupil premium is higher in less deprived local authorities, the fact that schools receive the premium for every pupil eligible for FSM outweighs this effect; overall, schools with a greater number of such pupils see a greater benefit, even if the benefit per pupil is smaller. The percentage gains would be larger in primary schools (noting the difference in scale on the vertical axis): the pupil premium is the same for primary and secondary schools, but the current primary school funding per pupil is lower in absolute terms, on average, than it is in secondary schools.

Figure 2(b) shows for primary schools (left-hand graph) and for secondary schools (right-hand graph) how this relationship differs between LAs with different levels of total funding per pupil, using the quintiles of total funding per LA described earlier. Again, the percentage increase in funding clearly increases as the proportion eligible for FSM increases.

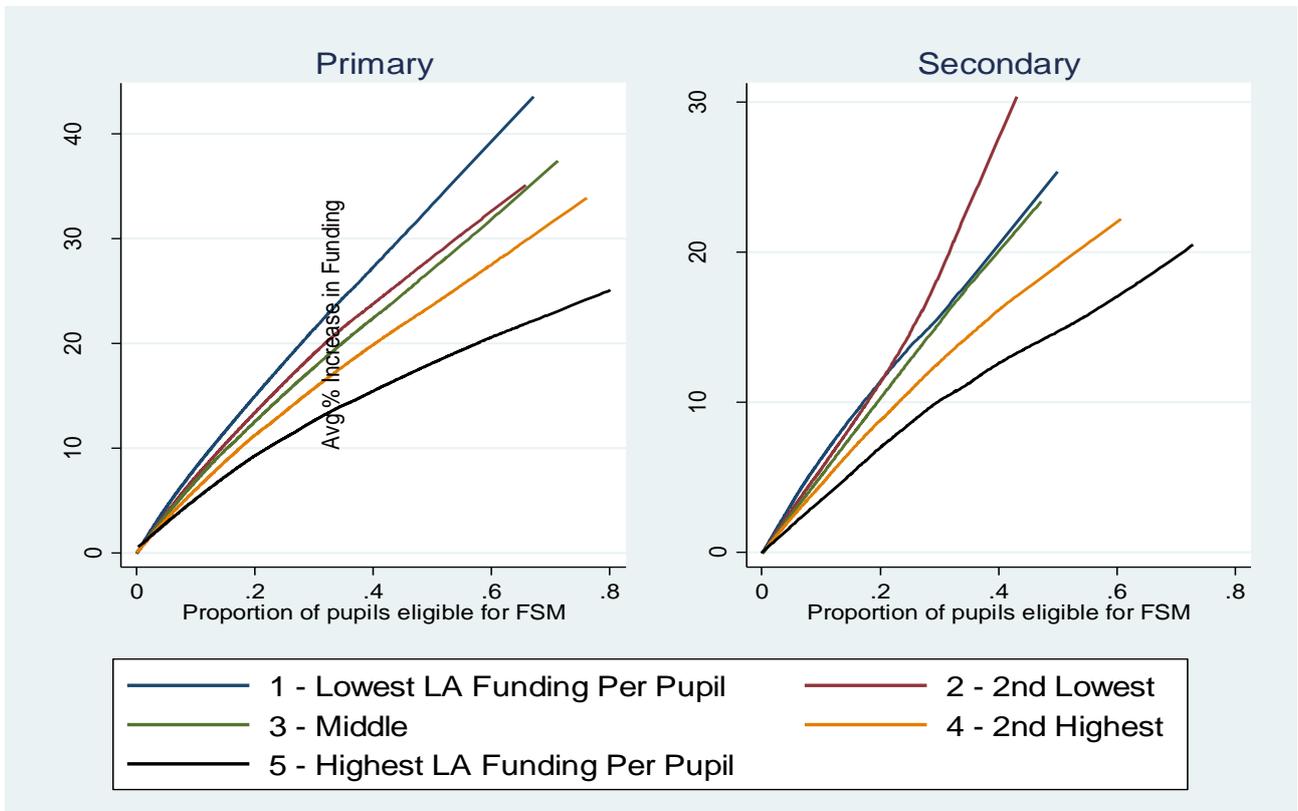
However, one can now see quite clearly one of the main implications of the proposed structure of the pupil premium. Amongst schools experiencing similar levels of deprivation, those in LAs with lower levels of funding per pupil (less deprived LAs) would receive much higher percentage increases in funding per pupil than those in areas with higher levels of total funding per pupil (more deprived). For instance, amongst secondary schools where about a quarter of pupils are eligible for FSM, schools in the bottom quintile (least deprived LAs) would receive a percentage increase of about 13.5%, whilst similarly deprived schools in the top quintile (most deprived LAs) would receive an increase of about 8.5%. Equally, secondary schools in the least deprived LAs with the national average level of FSM (14.5% in 2009) would see the same proportionate increase in funding (about 8.5%) as schools in the most deprived LAs, whose prevalence of FSM eligibility stands at 25%, on average.

**Figure 2 – Increases in funding per pupil under modelled policy reform**

**(a) Overall changes**



**(b) By Quintile of Total LA Funding per Pupil**



Note: Figures are presented in 2010 prices.

Sources: Authors' calculations using 2009–10 Section 251 Budget Table 2 and LEASIS data.

Overall, the modelled policy reform would be ‘progressive,’ in the sense that the average percentage increase in funding is greater for schools that are more deprived. However, there would be substantial differences in such increases across areas with different levels of total funding per pupil: schools in currently higher funded areas (more deprived) would receive noticeably less in percentage terms than similarly deprived schools in lower funded areas (less deprived). Furthermore, it is important to note that if the total funding available for the pupil premium were to be lower than the stated £2.5 billion, the relative differences between the pupil premiums across areas would be much larger (since their values would all be reduced by the same amount).

## **6. Conclusion**

Both the Conservative Party and the Liberal Democrats included proposals for a pupil premium in their general election manifestos, and it was included in the government’s coalition agreement. The school funding consultation launched in July 2010 makes specific proposals for how the pupil premium should be structured, and invites views on these proposals.

There are good reasons for the Government’s preferred measure for distributing the pupil premium being eligibility for free school meals. It is highly correlated with low educational attainment, easily observable and difficult to falsify. It is true that such a measure misses some children from relatively poor families with incomes just above the qualifying threshold. However, schools will be free to target any additional resources from the pupil premium on the pupils they deem to be most in need, even if this does not perfectly correspond with the measure of deprivation used to allocate the pupil premium.

A key feature of the proposal is that LAs with higher overall funding per pupil would receive a smaller pupil premium. Given that disadvantaged areas tend to receive higher funding, this means that the pupil premium would be relatively smaller for a deprived LA and relatively larger for a more affluent LA. The consultation document justifies this proposed structure by claiming that deprivation funding is “spread more thinly in less deprived authorities, so that schools in those authorities currently receive less funding for their deprived pupils.” They further claim that the proposed structure attempts to harmonise funding for deprived pupils by reducing “differences in funding between similar schools in different areas.”

However, our analysis suggests the consultation’s justifying assumption does not hold. If anything, funding for deprived pupils is already higher in less deprived areas than in more deprived areas. The proposed structure of the pupil premium would thus widen differences in funding for deprived pupils, rather than close them. The proposed

structure would not achieve the Government's objective, as set out in the consultation, to reduce differences in funding between similarly deprived schools in different areas.

Looking at the overall effects of the proposed structure, the policy would be broadly 'progressive' in the sense that the average percentage increase in funding is greater for schools that are more deprived. However, there are differences across areas with different levels of total funding per pupil: schools in currently higher funded areas (more deprived) would receive noticeably less in percentage terms than similarly deprived schools in lower funded areas (less deprived). Schools experiencing the largest increases in funding under such a policy would be deprived schools within the least deprived or lowest cost areas.

The effects of the pupil premium should also be seen within the wider context of the Spending Review. Given the scale of departmental spending cuts required, it seems likely that overall funds provided to schools will be cut in real-terms. If such cuts are shared equally across schools, then the proposed structure of the pupil premium could (depending on final value of the pupil premium and the change in overall funding) lead to a net result where schools in less deprived areas receive increases in funding, on average, and schools in more deprived areas see cuts in funding, on average.

Given the findings of this analysis, the structure of the proposed pupil premium could only be justified on the assertion that schools in affluent areas need more resources to teach a disadvantaged child than otherwise similar schools in deprived areas. This idea could be plausible when comparing an affluent school to a deprived school – the latter may have structures and resources already in place to accommodate disadvantaged children – but it is not clear why the same argument should hold when considering two equally deprived schools in different LAs. Moreover, given that the consultation states that the Government would like to equalise the levels of funding for deprived pupils across LAs, this assertion does not seem to be the view of the Government either. Providing the same per-pupil amount in all LAs would be more in keeping with the Department's stated objective. It would also be much simpler and more transparent.

Lastly, the Government also states a long-run objective to "to bring in a simpler and more transparent funding system... In particular, it is our intention to introduce a fairer, formulaic basis for distributing funding and to reduce differences in funding between similar schools in different areas." Unfortunately, if the pupil premium proposed in the recent consultation is implemented, they are likely to move further away from this long-term goal, rather than closer.

## Appendix A

**Table A.1. Total funding for primary schools, 2009–10 (2010 prices)**

	All local authorities	By Quintile of Total LA Funding				
		Lowest	2 <sup>nd</sup> Lowest	Middle	2 <sup>nd</sup> Highest	Highest
Base per-pupil amount	2,459.744*** [20.659]	2,349.693*** [39.515]	2,505.833*** [32.224]	2,437.896*** [39.653]	2,572.292*** [37.246]	2,545.016*** [61.772]
Extra amount per FSM pupil	1,983.472*** [56.917]	2,143.195*** [203.596]	2,159.005*** [120.398]	2,054.595*** [117.430]	2,101.097*** [88.808]	1,622.618*** [97.424]
Extra amount per EAL pupil	448.428*** [40.870]	389.533*** [80.986]	190.505 [119.195]	408.340*** [124.298]	453.850*** [55.889]	480.603*** [64.735]
Extra amount per SEN pupil with statement	10,617.815*** [405.464]	9,792.790*** [579.413]	9,111.003*** [1,110.020]	10,911.023*** [874.746]	10,623.756*** [826.263]	13,027.412*** [1,120.540]
Extra amount per SEN pupil without statement	412.039*** [68.006]	510.143*** [140.174]	546.649*** [110.834]	355.228*** [137.842]	232.137** [101.980]	300.495*** [97.107]
Extra amount per nursery pupil	1,782.778*** [124.715]	1,802.216*** [298.069]	1,982.790*** [241.756]	1,815.795*** [308.582]	1,556.506*** [232.383]	1,463.187*** [219.184]
Extra amount for being a Voluntary Aided or Voluntary Controlled school	-10,657.794*** [1,460.343]	-7,197.323*** [1,799.033]	-3,618.421* [2,002.992]	-9,611.631*** [3,389.673]	-13,996.509*** [2,836.911]	-35,175.267*** [4,035.771]
Constant	143,649.923***	130,964.086***	112,488.118***	148,725.766***	148,402.834***	183,709.223***
Number of observations	16,898	4,421	4,970	2,646	2,835	2,026
Number of local authorities	148	30	30	30	30	28

EAL – English as an additional language; FSM – free school meals; SEN – special educational needs.

\* - significant at 10% level; \*\* – significant at 5% level; \*\*\* – significant at 1% level. Standard errors in brackets are clustered at the local authority level. Figures have been deflated using the Area Cost Adjustment

**Table A.2. Total funding for secondary schools, 2009–10 (2010 prices)**

	All local authorities	By Quintile of Total LA Funding				
		Lowest	2 <sup>nd</sup> Lowest	Middle	2 <sup>nd</sup> Highest	Highest
Base per-pupil amount	3,938.916*** [50.885]	3,192.536*** [104.786]	3,750.454*** [87.723]	3,614.633*** [157.636]	3,952.281*** [117.127]	4,059.561*** [157.808]
Extra amount per FSM pupil	2,039.828*** [255.349]	3,446.486*** [433.745]	1,069.88 [928.479]	2,193.780*** [492.646]	2,110.837*** [479.689]	1,860.117*** [348.211]
Extra amount per EAL pupil	524.929*** [116.499]	-119.484 [269.833]	339.341 [364.471]	244.734 [244.393]	348.216** [171.397]	373.004 [227.807]
Extra amount per SEN pupil with statement	10,138.748*** [1,034.890]	10,850.142*** [1,841.933]	9,901.924*** [2,566.517]	9,685.275*** [2,526.886]	9,953.968*** [2,629.237]	10,141.505*** [2,501.866]
Extra amount per SEN pupil without statement	155.025 [140.874]	448.867** [203.712]	825.362** [414.979]	718.976* [393.701]	175.424 [189.987]	269.02 [309.241]
Extra amount per boarding pupil	985.421*** [139.760]	632.358** [274.239]	545.957 [347.512]	-152.435 [323.070]	682.961* [395.713]	0 [0.000]
Extra amount for being a Voluntary Aided or Voluntary Controlled school	-27,217.13 [23,564.128]	-35,876.437* [20,911.349]	-79,452.426*** [22,827.651]	15,127.95 [30,852.174]	-72,888.45 [63,876.253]	-99,717.03 [111,599.245]
Extra amount for having a sixth form	0.330*** [0.011]	2,776.823*** [402.352]	1,706.191*** [332.811]	1,990.793*** [705.205]	0.327*** [0.026]	924.939* [513.292]
Extra amount per sixth-form pupil	239,233.747*** [34,567.439]	-68,784.64 [104,605.600]	-32,227.85 [81,293.071]	-57,556.43 [143,883.568]	238,004.417*** [85,480.644]	-51,597.53 [118,941.108]
Constant	143,478.891***	340,491.162***	240,358.791**	324,805.579**	285,777.463**	339,989.036*
Number of observations	3,112	850	869	503	521	369
Number of local authorities	146	30	29	30	30	27

EAL – English as an additional language; FSM – free school meals; SEN – special educational needs.

\* - significant at 10% level; \*\* – significant at 5% level; \*\*\* – significant at 1% level. Standard errors in brackets are clustered at the local authority level. Figures have been deflated using the Area Cost Adjustment