



Department  
for Education

# **Formal school interventions in England: cost and effectiveness**

**February 2017**

## **An important note about this report and its limitations**

This analysis was carried out in response to a recommendation made by the Public Accounts Committee that the Department for Education should commission a full review into the relative cost-effectiveness of formal interventions in underperforming schools. The department accepted this recommendation in January 2015. We said we would carry out an evaluation where the available “data and techniques make it feasible to isolate their impact in a robust and reliable way”.

This report sets out the results of our research. It is the authors’ view that this analysis is the best that is possible given the design of the intervention system and the data that has been recorded. The report: a) advances what we know about what happens in schools that were subject to at least one of the formal interventions covered in this report; and b) improves our understanding of the average costs of these interventions over the period 2010 to 2015. Nevertheless, there remain some significant limitations to the analysis and in particular the extent of any conclusions that can be drawn. These limitations can be grouped into two areas:

### **1. Lack of a counter-factual against which to assess impact.**

- The lack of good comparison groups, and the potential influence of the “reversion to the mean” effect, mean that we cannot be sure that schools that were subject to an intervention would not have improved in the absence of that intervention .
- Due to limited information and data on the use of other informal strategies, we cannot be sure that the improvements are due to the formal interventions studied and not due to other policies and strategies we have not observed.

Taken together, these issues mean there is no counterfactual against which we can reliably draw conclusions about changes in a school’s performance.

### **2. Variable circumstances limit comparability**

- There is selection (by the design of local authorities and the department) into different intervention routes, depending on a school’s circumstances and the desired effects (e.g. sponsorship aims to achieve a long-term structural change in school performance). This usually means that schools in different intervention categories have, on average, different capacities to improve.

The analysis has not isolated the impact of each intervention, i.e. how much of an improvement can be attributed to each component of a school improvement strategy. This is because formal interventions are sometimes used in a sequential fashion.

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## Executive summary

1. In January 2015, the Public Accounts Committee (PAC) recommended that the Department for Education commission a full evaluation of the cost-effectiveness of all formal interventions in schools.

2. The data, operation and timing of interventions has meant there are limitations which constrain what we can say about the relative effectiveness of the formal interventions studied. However, this report does show that sponsored academies have (on average) seen greater increases in attainment than the average state-funded school. Unlike the improvements seen after some lower-cost interventions studied, the attainment increases seen in sponsored academies have persisted for a longer period. This needs to be weighed against the relatively higher cost of academy sponsorship (although these costs reflect that academies are a permanent, rather than a temporary, measure). On average, attainment in schools with interventions (for all three of the interventions looked at) tended to increase by more than the average state-funded school in the following year.

3. Similar to the original National Audit Office study, we have looked at the estimated costs and schools' subsequent academic attainment (not Ofsted judgements) for three types of formal intervention in maintained schools:

- Becoming a sponsored academy (by far the largest number of interventions looked at);
- Appointing Interim executive boards (IEBs) (mostly by LAs but a few by the Secretary of State); and
- Issuing local authority (LA) warning notices (WNs).

4. The attainment changes observed in schools with interventions were compared to those of a) the average state-funded school and b) as close as possible to a group of "similar" comparison schools to provide more context. Depending on the extent of existing documentation, costs were estimated to some extent on the basis of assumptions (e.g. time required to carry out processes related to an intervention). Box 1 sets out how this was done for each intervention.

### Sponsored Academies

5. During the 5 years 2010 to 2015, the cost of a sponsored academy is estimated to have been between £600,000 and £1.7 million, while for the period 2016 to 2021 we estimate them to be between £140,000 and £675,000. These costs reflect the fact that sponsored academies are a permanent rather than a one-time or temporary intervention. The improvements observed at sponsored academies are more persistent than those from other types of intervention. The report concludes that these academies have seen greater increases in attainment than the average state-funded

school. Sponsored academies' improvement was also larger than that seen in similar schools, although the size of the relative increase is smaller than when compared to the average state-funded school.

### **Interim Executive Boards (IEBs)**

6. The average costs of IEBs is difficult to establish due to the small number of IEBs involved and the lack of systematic documentation of associated costs and effort (in terms of time). There is also great variability in the challenge faced by schools and in stakeholders' cooperation in the process, both of which impact on the required resources. The cost of LA-appointed IEBs is estimated to be similar to that of Secretary of State-initiated ones. These challenges mean that the report estimates a wide range for the cost of an IEB: between c. £45,000 and £500,000 for the period of operation (between 6 months and 2 years). Primary schools tended to improve following IEBs, but secondary schools tended not to. Although sample sizes were small, and we must interpret the results very cautiously, when comparing primary schools' attainment changes to those of similar schools, schools with interventions achieved larger attainment increases than their comparison schools (although the difference is not statistically significant).

### **Warning notices (WNs)**

7. The cost of issuing WNs to LA maintained schools is estimated to be very low (between £150 and £370 over a few weeks). However, there are likely costs associated with implementing improvement plans which arose from the warning notices and which we were not able to record. Regarding outcomes, the report can conclude that schools that only received WNs did improve compared to the average school and to statistically similar schools, though the improvement was not as persistent as for other interventions.

#### **Box 1: Costs and cost-effectiveness**

I. Costs of warning notices and interim executive boards were estimated based on bottom-up assumptions for administrative costs and adding in other costs for which we have data. This was inherently difficult because of the independence of LAs and the need to avoid overly burdensome data collections (for the department and LAs). A top-down approach to try and attribute portions of the overall interventions budget to individual interventions would have required guesswork or the collection of additional data from LAs, which was deemed disproportionate effort.

II. For sponsored academies, a top-down approach was followed. Costs were identified relating to starting and running sponsored academies and divided by the number of sponsored academies.

III. A cost-effectiveness measure was not created because the interventions selected were not random; interventions were not interchangeable; schools' starting points were variable; good comparator schools were mostly not available; and the reversion to the mean effect (whereby schools with interventions will find it easier to improve than better performers).

## Definition and types of intervention

8. School intervention refers to action taken to deal with underperformance. Underperformance can be academic (where a school is not providing the expected quality of education, or pupils are not reaching expected standards), financial (where, for example, a school is running an unmanaged budget deficit) or related to governance, leadership, or the safety of pupils.

9. Academic underperformance in maintained schools (the subject of this analysis) is defined with reference to school performance (i.e. exam results) and Ofsted inspections. A school is underperforming if, for example, it is below the floor standards for attainment, and, where relevant, progress, or if the school is rated 'inadequate' by Ofsted.<sup>1</sup> Local authorities are responsible for intervening in the schools they maintain. The department intervenes in the worst cases and, now the Education and Adoption Act 2016 is in force, where the local authority has failed to act.

10. Interventions can be classified as either formal or informal. Informal interventions include the brokerage of additional external support, visits by Education Advisers, or extra reporting requirements. The main formal interventions are:

- Appointing a sponsor so that a LA-maintained school effectively closes and re-opens as a sponsored academy;
- Changing a school's governing body via the appointment of an interim executive board (IEB); and
- Warning notices (a formal letter from a local authority raising concerns about a school's performance and allowing for further formal interventions if necessary).

| Warning notice   | Changes to the governing body  | Appointing an academy sponsor   |
|--|--|---|
| Local authority intervention: <ul style="list-style-type: none"> <li>• Standards of performance are 'unacceptably low' and are likely to remain so</li> <li>• Serious breakdown in the way the school is managed</li> <li>• Safety of pupils or staff at the school is threatened</li> </ul> | Local authority or Department for Education intervention: <ul style="list-style-type: none"> <li>• School has failed to comply with a warning notice</li> <li>• Ofsted rating of 'inadequate'</li> </ul> | Department for Education intervention: <ul style="list-style-type: none"> <li>• School has failed to comply with a warning notice</li> <li>• Ofsted rating of 'inadequate'</li> </ul> |

11. Figure 1 summarises the interventions within scope of this assessment and the conditions under which a maintained school should expect to be subject to an intervention. This is based on the NAO's report.

<sup>1</sup> Information on the latest floor standards can be found here: [http://webarchive.nationalarchives.gov.uk/20160329141701/http://www.education.gov.uk/schools/performance/fs\\_15/index.html](http://webarchive.nationalarchives.gov.uk/20160329141701/http://www.education.gov.uk/schools/performance/fs_15/index.html). Different floor standards have been used at different points in time since 2010.

## Scope and limitation of our assessment

### What interventions have we looked at?

12. We have limited our assessment to interventions that deal with underperformance in academic terms. For warning notices issued to LA-maintained schools, the reason for intervention is recorded, so we can limit the analysis to cases of academic underperformance. For IEBs and the initial appointment of a sponsor the specific reasons for the intervention were not recorded but we can assume that academic underperformance will have played a role in prompting the intervention.

13. Our assessment did not consider how the costs and effectiveness of interventions vary by who intervenes, but on how they vary by intervention type. We are also not confident that the data we collect would allow us to judge effectiveness by who intervenes – the sample sizes are, in most cases, too small. Only in the case of sponsored academies do we have enough schools that some further segmentation would be feasible.

14. We do not have information on informal interventions, for example, occasional support from curriculum specialists or guidance from National Leaders of Education or Teaching Schools, so our assessment covered formal interventions only. The presence of informal interventions for which we cannot control is one of the reasons why any assessment would struggle to identify causal effects of individual formal interventions.

15. In cases where two or more formal interventions were employed in one school, our assessment was not able to separate out the impact of each intervention. For example, when a warning notice has been followed by appointment of an IEB, any resulting change in performance could reflect the cumulative impact of both those interventions (and possibly a range of other informal interventions and influences). Also, a less serious intervention, such as a warning notice, may owe some of its effectiveness to the potential for further action, for instance an academy order, when the actions resulting from the warning notice are deemed insufficient. With this in mind, we defined three different “treatment groups”<sup>2</sup> in our analysis:

- i) Schools that received only a warning notice, but no other intervention;
- ii) Schools at which an interim executive board was implemented, but that did not become an academy, irrespective of whether these schools had received a warning notice or not; and

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<sup>2</sup> We use this phrase in an analytical sense to indicate any school which has been subject to intervention



- iii) Schools that became sponsored academies, irrespective of any prior interventions.

16. This analysis looked only at mainstream schools and not special schools or pupil referral units. The excluded categories differ significantly from mainstream state-funded schools in many respects, and we would expect them to perform differently in the outcome measures we use to assess changes in performance (attainment). Our assessment also excluded independent schools, for which the department does not have a mandate to intervene in the same way (i.e. using the same interventions).

## Measuring the effectiveness of interventions

17. We chose not to assess changes in school quality with reference to Ofsted ratings, due to the length of time between Ofsted inspections and changes to the inspection regime in the middle of the period we are analysing. We assessed effectiveness predominantly in terms of headline attainment outcomes for key stages 2 and 4.<sup>3</sup> We have collected these figures for the period between academic years 2009/10 and 2014/15.

18. We used the percentage-point change in headline attainment figures one or more years after the implementation of the intervention to determine *improvement*. In order to arrive at *effectiveness*, we compared this attainment change to the change recorded by other schools, either the average of all state-funded schools or a group of comparable schools. For this reason, the latest interventions we studied occurred in the academic year 2013/14.

19. Figure 2 illustrates the principle of our methodology. In this example, the average attainment for the comparison group, all state-funded schools, increased by roughly 1.8 percentage points between 2012 and 2013 (panel a). A hypothetical school with an intervention saw an increase in its attainment in these years of 5 percentage points (panel b). So school 1's attainment increased by 3.2 percentage points more in the year after the intervention than the average state-funded school (panel c). We can then compile the difference-in-differences for all schools that received a given intervention and study their statistical characteristics (e.g. means, variance and extreme values). This will allow us to observe whether schools where an

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<sup>3</sup> In the school years 2009/10 and 2010/11 the key stage 2 headline measure was the percentage of pupils achieving level 4 or higher in English and mathematics. In the school years 2011/12 to 2014/15 the key stage 2 headline attainment metric was the percentage of pupils that achieved level 4 or higher in reading, writing and mathematics. For key stage 4 the headline attainment measure in all years was the percentage of pupils that achieved five or more A\*-C GCSEs including English and mathematics, although reforms in 2013/14 made subsequent numbers incomparable to the earlier part of the period.

intervention was implemented improved by more than their comparison group on average and whether this applied to all schools or just a portion.

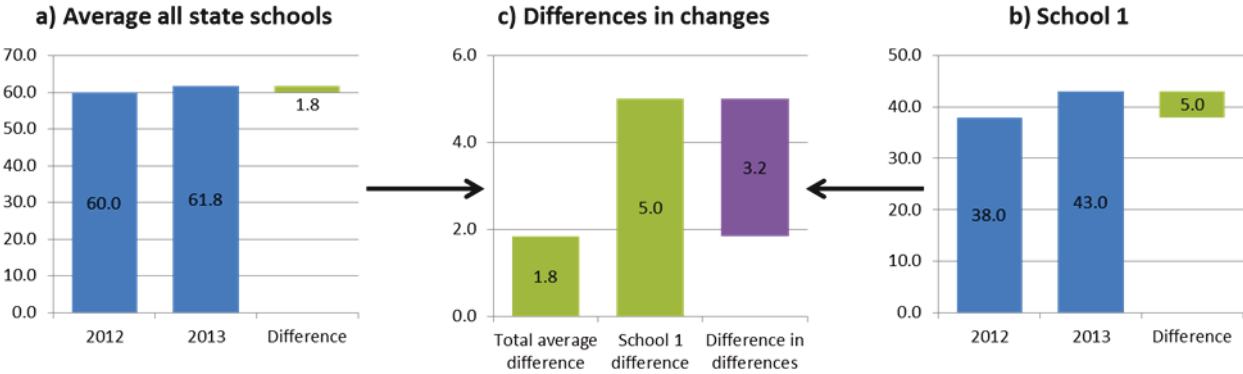


Figure 1: Methodology for intervention effectiveness

### Measuring the cost of interventions

20. The 2013 NAO report on effectiveness of interventions concluded that the department had an incomplete picture of how much it costs to intervene in underperforming schools. This conclusion was based mostly on the observation that the department could not perfectly attribute spending across the department, Education Funding Agency and LAs to oversight and intervention activities. It remains the department’s view that such a top-down approach is unlikely to yield an accurate picture of the costs of these activities.

21. We have not worked out the total costs of oversight and intervention for the system (and then apportioned these to each intervention). This would have involved a disproportionately burdensome process (both for LAs and the department) that would not have been likely to deliver accurate results due to the assumptions that would have been necessary.

22. The top-down approach is undesirable because of the layers of approximation and guesswork required. Instead, we have worked out an average cost for each intervention. For warning notices and interim executive boards this was based on bottom-up assumptions for administrative costs and adding in other costs for which we have data. For sponsored academies, we were able to follow the top-down approach, and identified all cost related to starting and running academies, e.g. start-up grants, funding protections or administrative costs. This total sum we then divided by the number of sponsored academies (1,404 as at academic year 2014/15).

## Cost-effectiveness of interventions

23. Cost-effectiveness analysis involves comparing the ratio of a defined outcome to its cost for two or more policy options. In education policy, the outcome is usually defined in terms of academic performance. For example, the outcome might be a pupil getting at least 5 A\*-C grades including English and Maths at GCSEs. The cost-effectiveness measure in this case would be the cost of each additional pupil reaching this threshold. In the last step we would then compare the cost for each policy option – in this case the different types of interventions – to achieve this attainment outcome.

24. Having explored the options, the department believes that it would not be possible to fairly compare the cost-effectiveness of different options. We outline the reasons below:

- 24.1. Selection problems: There is likely to be selection (at the design of local authorities and the department) into different intervention routes. Schools are not randomly assigned to each intervention. This means that schools assigned to different interventions are likely to have, on average, different capacities to improve.
- 24.2. Interventions are not interchangeable. Different interventions were employed in different schools, depending on some assessment of the requirement for improvement, for different reasons and to achieve different outcomes. This means that we cannot overcome the selection problems above.
- 24.3. Our data shows that the schools which are subject to intervention have different levels of underlying performance prior to the intervention (see the 'Background on interventions' section). There are likely to be many "omitted variables" – important factors that we cannot include in analysis, either because we have not observed them or because we have no data on them – that affect a school's performance following an intervention. These could range from the causes of underperformance and the expertise of the school's staff, to what informal support the school might receive before and after an intervention. All this may have an impact on the size of the effect we measure for each intervention.
- 24.4. The paucity of good comparator schools: one way to overcome selection issues is to use a quasi-experimental approach such as defining statistically similar schools which were not subject to an intervention, and then comparing performance in that group with the other group that did receive

an intervention.<sup>4</sup> We attempted this by using indicators for deprivation, special needs, prior attainment and past attainment. While the two groups of schools have very similar aggregate levels of these variables, on a school-by-school basis the intervention schools and their matched schools often have very different characteristics. This reflects that the model cannot predict very well which schools receive an intervention and which do not. We believe that this poor matching quality is due to a) omitted variables influencing the selection process and b) that potential comparison schools often also received some intervention, because of their low performance.

24.5. Reversion to the mean: under-performing schools which are subject to interventions will, on average, find it easier to improve than better performers. Schools subject to different interventions tended to have different starting points, and the extent of the change in attainment that could be ascribed to the reversion of the mean thus varies by intervention type.

25. All of these factors combined mean that the benefits we observe cannot and should not be compared. We have analysed the changes in attainment in schools that were subject to intervention, so that we can make statements such as “attainment in schools where interim executive boards were appointed improved from X before the intervention to Y after it.” However, we cannot make statements such as “schools where IEBs were appointed saw greater increases in attainment than schools that received warning notices, and therefore IEBs should also have been used in the latter.” In order to make such a statement, we require a solution to the problems outlined above, i.e. that the schools receiving both types of interventions were similar, and that they received similar support prior to, during or after the intervention.

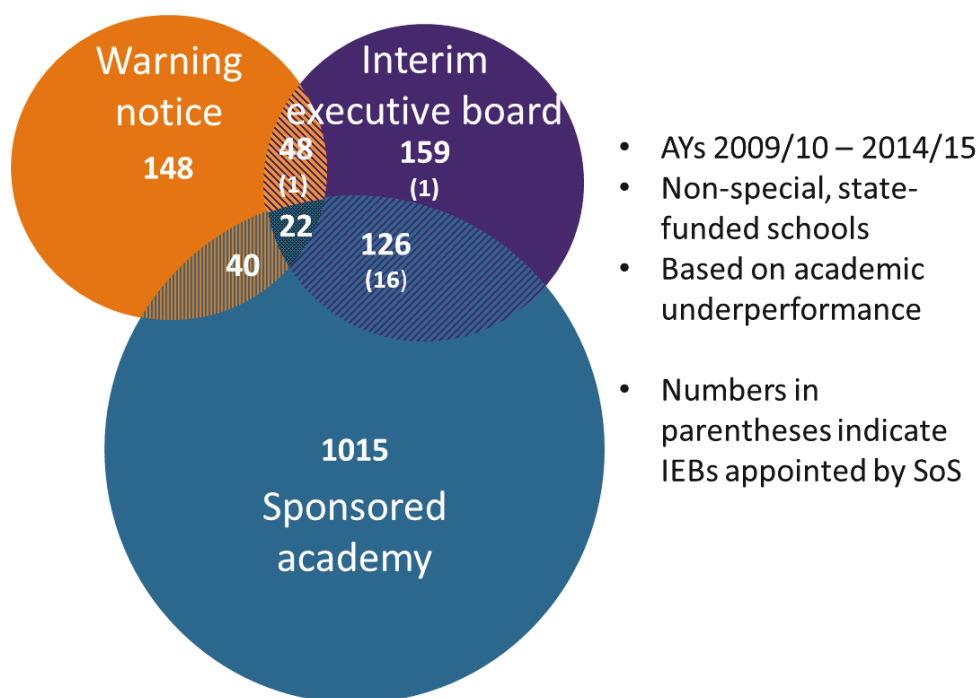
26. With a robust matching analysis, we could have been more confident that the average difference in attainment change between schools with an intervention and those without is related to the intervention. However, the quality of the matching we have been able to achieve suggests that we may not have been able to observe and consider all variables that determine the selection of schools for interventions and so the two groups (intervention schools and comparators) may still differ. We will present the findings from the matching analysis as an alternative view and the best we were able to do with the data at hand, but must stress the limitations mentioned above.

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<sup>4</sup> Annex 3 includes more details on the matching process. The methodology’s core idea is to rank schools according to the probability of receiving a given intervention. This probability is calculated based on each school’s characteristics. Schools that received an intervention are then matched with non-intervention schools that scored a similar probability.

## Number of interventions

27. Figure 3 shows the number of schools that received a given intervention between the academic years 2009/10 and 2014/15. The number of sponsored academies was taken from data made available to the public by the department.<sup>5</sup> The number of warning notices and interim executive boards has been collected by the department based on notifications from Ofsted. While this dataset is extensive and the best available, we cannot discard the possibility that some interventions were not reported to Ofsted, so the numbers for WNs and IEBs may be incomplete. The data shows that appointing a sponsor has been the most widely used intervention by a significant margin. There has not been a large overlap in the use of individual interventions, in particular between all three formal interventions.



**Figure 2: Number and type of interventions between 2009/10 and 2014/15.**

Source: 'Open academies and academy projects in development' file; Department for Education records

28. Table 1 and Table 2 break this information up into stages and years. They show that in some years, especially at secondary level, only a handful of schools received a given intervention. This means that averages and conclusions need to be approached with caution, as they may be influenced by special the circumstances of a particular year. In later analyses we have “pooled” interventions over the entire period, so that

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<sup>5</sup> Open academies and academy projects in development: <https://www.gov.uk/government/publications/open-academies-and-academy-projects-in-development>. We have used 1 September as a cut-off point for assignment into academic years.

the year in which the intervention took place becomes “year 0”. This increased our sample size for any given analysis, and thus the robustness of our conclusions.

|   | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2013/14 | 2014/15 | Total |
|---|---------|---------|---------|---------|---------|---------|-------|
| Total warning notices                   | 12      | 15      | 30      | 23      | 46      | 73      | 199   |
| <i>Of which: no other interventions</i> | 10      | 10      | 11      | 9       | 23      | 55      | 118   |
| Total IEBs                              | 17      | 20      | 51      | 62      | 72      | 44      | 266   |
| <i>Of which: did not become academy</i> | 17      | 16      | 28      | 19      | 39      | 39      | 158   |
| Total sponsored academies               | 7       | 1       | 33      | 284     | 289     | 188     | 802   |

**Table 1: Number of interventions in primary schools**

Source: ‘Open academies and academy projects in development’ file; Department for Education records

|   | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2013/14 | 2014/15 | Total |
|---|---------|---------|---------|---------|---------|---------|-------|
| Total warning notices                   | 5       | 7       | 9       | 9       | 10      | 17      | 57    |
| <i>Of which: no other interventions</i> | 5       | 2       | 3       | 4       | 4       | 12      | 30    |
| Total IEBs                              | 4       | 6       | 9       | 19      | 26      | 18      | 82    |
| <i>Of which: did not become academy</i> | 4       | 6       | 3       | 6       | 13      | 17      | 49    |
| Total sponsored academies               | 62      | 64      | 64      | 79      | 65      | 66      | 400   |

**Table 2: Number of interventions in secondary schools**

Source: ‘Open academies and academy projects in development’ file; Department for Education records

## The impact of interventions

29. Our assessment focused on changes in performance measures in schools that have been subject to intervention. Performance measures are “lagged” indicators. This means that school performance can start to change before these indicators will show a change in performance. Therefore, our assessment only looked at schools where intervention took place some time ago (the school year 2013/14 at the latest, so that we could effects may be visible in the 2014/15 data).

30. Table 3 shows the primary phase headline attainment for schools according to type of intervention and the quintiles of attainment of all state-funded schools.<sup>6</sup> The quintiles confirm a well-documented pattern of reversion to the mean: schools which achieved low results tend to improve by more than schools with better results. For example, the 20% of schools with the lowest attainment at key stage 2 *improved* on average by 10.4 percentage points in the year after 2011/12 and by 13.5 percentage points after 2012/13. In contrast, the 20% best performing schools saw an average *decrease* in attainment of 6.3 percentage points in the year after 2011/12 and of 5.1 percentage points after 2012/13.

Attainment<sup>1</sup> on Key Stage 2

|                   | AY 2009/10        |                     | AY 2010/11 |                     | AY 2011/12 |        | AY 2012/13 |        | AY 2013/14 |        | AY 2014/15 |        |
|-------------------|-------------------|---------------------|------------|---------------------|------------|--------|------------|--------|------------|--------|------------|--------|
|                   | Mean <sup>2</sup> | Change <sup>3</sup> | Mean       | Change <sup>4</sup> | Mean       | Change | Mean       | Change | Mean       | Change | Mean       | Change |
| Lowest 20%        | 55.7              | 11.2                | 53.7       |                     | 55.2       | 10.4   | 56.4       | 13.5   | 60.0       | 11.8   | 62.4       |        |
|                   | 69.4              | 4.1                 | 68.4       |                     | 69.4       | 3.7    | 70.5       | 6.1    | 73.7       | 3.9    | 75.9       |        |
|                   | 77.1              | 0.5                 | 76.5       |                     | 76.6       | 0.8    | 78.1       | 2.5    | 81.0       | 1.0    | 82.5       |        |
|                   | 83.9              | -1.8                | 84.5       |                     | 83.3       | -1.9   | 84.9       | -0.8   | 87.6       | -2.0   | 88.3       |        |
| Highest 20%       | 93.0              | -5.7                | 94.0       |                     | 93.0       | -6.3   | 93.8       | -5.1   | 95.2       | -5.7   | 95.8       |        |
| WNs only          | 65.3              | 7.6                 | 62.4       |                     | 61.7       | 14.4   | 69.3       | 7.0    | 65.0       | 5.0    | 71.5       |        |
| IEB or WN + IEB   | 61.6              | 3.8                 | 64.4       |                     | 66.3       | 8.5    | 67.4       | 3.7    | 65.7       | 6.3    | 68.9       |        |
| Sponsored Academy | 60.1              | 1.6                 | 50.0       |                     | 60.2       | 5.6    | 61.8       | 6.4    | 68.8       | 4.0    | 70.2       |        |

**Table 3: Headline attainment and subsequent changes in primary schools**

### Notes:

<sup>1</sup> 2010 - 2011: percent of pupils achieving level 4 or higher in English and Maths; 2012 - 2015: percentage of pupils achieving level 4 or higher in Reading, Writing and Maths

<sup>2</sup> Mean of the quintile

<sup>3</sup> Percentage point change in the following year i.e. in 2011/12 this designates the change from 2011/12 to 2012/13 results. [E.g. the bottom quintile improved on average from 55.2% to 65.6%. Some of these entered higher quintiles in 2012/13 and vice versa, changing the composition every year.]

<sup>4</sup> Because of changes to the tests between 2010/11 and 2011/12, no meaningful comparison can be drawn between these years.

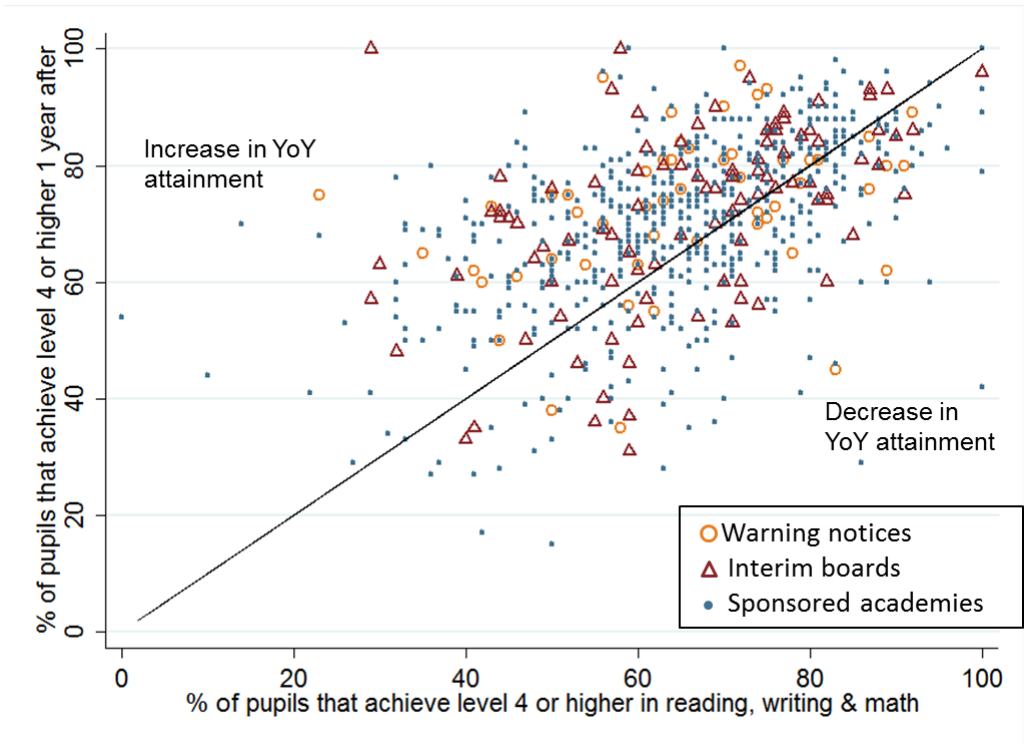
<sup>5</sup> By definition, each quintile has around 3,000 schools, except for 2009/10 where there it includes around 2400 (09/10 boycott)

Source: ‘Open academies and academy projects in development’ file; performance tables ; Department for Education records

<sup>6</sup> The division into primary and secondary phases is made according to whether a given school had results on key stage 2 or 4. Some schools such as all-through schools therefore appear in both stages.

31. As might be expected, on average, schools that had received an intervention are those with below-average attainment. In this report, we have assessed formal interventions based on attainment at key stage 2 and key stage 4 (as explained in paragraph 22). However, interventions are determined by Ofsted inspection judgements as well as performance in terms of headline attainment. There are also formal interventions for other reasons, including a breakdown of management or governance or where the safety of pupils or staff is threatened. This means that some interventions will be in schools that do not have the lowest attainment levels.

32. On average, schools that had received an intervention tended to achieve higher attainment in the following year and this holds true for all years and interventions. This is at least partly consistent with the finding that intervention schools start with below average levels of attainment and the reversion-to-the-mean effect. Those effects combined would suggest that schools that received an intervention improved, on average, by more than the average state-funded school. Later analysis will complement this first impression with a medium-term view and address, to some extent, the problem of small sample sizes shown in tables 3 and 4. This will show, for example, that the attainment changes experienced by academies (primary and secondary) tend to be more persistent than that of other interventions.



**Figure 3: Key stage 2 attainment in the year of and after an intervention was implemented.**

Source: ‘Open academies and academy projects in development’ file; performance tables ; DfE records

33. The figures shown in Table 3 are averages (measured by the mean), so they do not convey the full complexity of the picture. Figure 4 shows the headline attainment



for every primary school with an intervention in the year that the ‘highest level’ intervention was implemented and in the year after. Values above the line denote increases in performance, values below the line mean decreases. Our main observation is that overall, and within every intervention, there is considerable variance in starting levels of attainment and in subsequent changes. In total, roughly 2 out of every 3 primary schools with an intervention showed an increase in attainment in the following year with very little variation in this ratio between the different interventions.

34. Any conclusions in the following sections should therefore be interpreted carefully in that we are discussing average performance in relation to the comparison group so the conclusions will not apply to every individual school.

35. Table 4 shows the secondary phase headline attainment for schools according to type of intervention and the quintiles of attainment of all state-funded schools. By and large the same observations as for primary schools apply: there is a marked reversion to the mean pattern; intervention schools typically perform below average, but overall are not among the very lowest of the attainment distribution. With one exception, schools that had had an intervention achieved higher average attainment in the following year.<sup>7</sup>

Attainment<sup>1</sup> on Key Stage 4

|                   | AY 2009/10        |                     | AY 2010/11 |        | AY 2011/12 |        | AY 2012/13 |                     | AY 2013/14 |        | AY 2014/15 |        |
|-------------------|-------------------|---------------------|------------|--------|------------|--------|------------|---------------------|------------|--------|------------|--------|
|                   | Mean <sup>2</sup> | Change <sup>3</sup> | Mean       | Change | Mean       | Change | Mean       | Change <sup>4</sup> | Mean       | Change | Mean       | Change |
| Lowest 20%        | 36.8              | 6.6                 | 38.8       | 5.8    | 39.5       | 6.8    | 41.2       |                     | 34.8       | 4.5    | 34.4       |        |
|                   | 47.6              | 4.3                 | 49.6       | 1.9    | 50.6       | 3.1    | 52.6       |                     | 47.7       | 0.9    | 47.8       |        |
|                   | 56.0              | 2.5                 | 57.5       | 0.5    | 58.0       | 1.4    | 60.4       |                     | 56.0       | 0.4    | 55.8       |        |
|                   | 64.8              | 0.7                 | 65.9       | -2.2   | 65.7       | 0.2    | 68.5       |                     | 64.2       | -1.5   | 64.6       |        |
| Highest 20%       | 82.9              | -0.1                | 83.3       | -2.7   | 82.9       | -1.2   | 83.8       |                     | 82.2       | -1.8   | 81.3       |        |
| WNs only          | 49.4              | 3.4                 | 53.0       | 1.5    | 57.3       | 4.3    | 51.5       |                     | 53.0       | 3.8    | 45.7       |        |
| IEB or WN + IEB   | 42.8              | 4.8                 | 54.8       | -4.7   | 47.7       | 1.0    | 44.5       |                     | 46.8       | 2.5    | 41.4       |        |
| Sponsored Academy | 38.2              | 5.8                 | 41.8       | 4.1    | 47.6       | 2.5    | 45.9       |                     | 43.9       | 1.3    | 47.2       |        |

**Table 4: Headline attainment and subsequent changes in secondary schools**

**Notes:**

<sup>1</sup> Percent of pupils achieving 5 or more A\*-C GCSEs. 2014 and 2015 based on Wolf and other reform figures.

<sup>2</sup> Mean of the quintile

<sup>3</sup> Percentage point change in the following year i.e. in 2011/12 this designates the change from 2011/12 to 2012/13 results

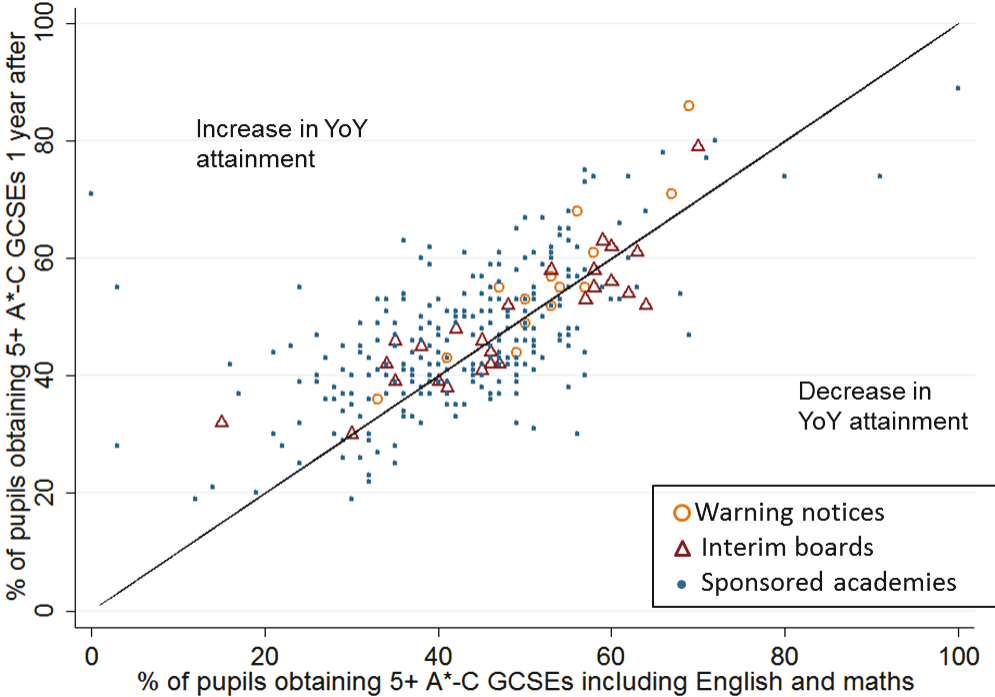
<sup>4</sup> Because of changes to the tests between 2012/13 and 2013/14, no meaningful comparison can be drawn between these years.

<sup>5</sup> By definition, each quintile has around 500-600 schools.

Source: ‘Open academies and academy projects in development’ file; performance tables ; DfE records

<sup>7</sup> The one exception is secondary schools that received interim executive boards (with or without warning notices) in 2010/11. Further analysis did not reveal anything unusual about these schools’ characteristics.

36. Figure 5 shows the attainment in the year of intervention and the year after for all secondary schools affected. Once again we note a large variance on the initial levels and subsequent changes in attainment. While the pre- and post-intervention changes are smaller in absolute terms than at primary school phase, there are still several cases of a change of more than 10 percentage points year on year. In total, in around 3 out of every 5 secondary schools with an intervention the attainment increased in the following year. This ratio is higher for warning notices and slightly lower for IEBs and sponsored academies.



**Figure 4: Key stage 4 attainment in the year of and after an intervention was implemented.**

Source: 'Open academies and academy projects in development' file; performance tables ; DfE records

37. Given the lower starting attainment of schools with interventions and the reversion to the mean effect, the fact that these schools' performance improved is not sufficient to determine whether the measures taken were *effective*. An intervention should only be regarded as truly *effective*, if the schools concerned improved by more after the intervention than they would have without action. As discussed in paragraphs 29 and 31, we attempted to address this issue by forming groups of statistically comparable schools. While caution is advised in interpreting the conclusions from the matching, we believe that they add a valuable alternative view and present them in the following sections along with the comparison to the state-funded average.

## Academy sponsorship

38. Academy sponsorship is the most widely used intervention for local authority-maintained schools. The support of an academy sponsor can help schools deal with the educational issues that they are faced with, and to take full advantage of the expanded freedoms available to a sponsored academy. The change to a sponsored academy is often accompanied by a change in leadership and governance. The rationale is that such structural changes are seen to have the capacity to lead to a more sustained improvement of a school's educational quality.

## Costs of academy sponsorship

39. We define the cost of a sponsored academy as the additional or marginal cost – compared to costs associated with a comparable local authority maintained school – since its conversion. In some cases, such as where portions of academies' funding have been protected, additional costs may still occur several years after the actual conversion. Additional costs come mainly in two forms: i) related to the level of funding allocated to academies and ii) administrative costs to the department in setting up academies and providing oversight and support. Schools with a more pronounced underperformance history generally received higher funding from some of these lines than schools where fewer measures were necessary to improve the quality of education. Therefore, we expect “converter” academies to have had substantially lower total average unit costs than the estimates presented below for sponsored academies. Table 5 gives the proportion of sponsored and converter academies of the whole programme over 5 financial years and shows that, except for the early years, the majority of academies have followed the converter route.

| Route        | FY 2009/10 & earlier | FY 2010/11 | FY 2011/12   | FY 2012/13   | FY 2013/14   | FY 2014/15   |
|--------------|----------------------|------------|--------------|--------------|--------------|--------------|
| Sponsored    | 100%                 | 58%        | 20%          | 23%          | 28%          | 30%          |
| Converter    | 0%                   | 42%        | 80%          | 77%          | 72%          | 70%          |
| <b>Total</b> | <b>199</b>           | <b>459</b> | <b>1,625</b> | <b>2,705</b> | <b>3,671</b> | <b>4,570</b> |

**Table 5: Share of sponsored and converter academies on total number of academies**

Source: 'Open academies and academy projects in development' file

40. For the funding of sponsored academies, we have been able to measure school-level grants, based on data collected within the department. The level of these grants has varied since 2010, when the academies programme began to expand under the coalition government. Since this expansion, the costs per academy have come down significantly, reflecting efficiencies implemented by the department and reductions in grants (see annex 1). This means that later cohorts of academies will

have had a systematically lower cost than the earlier sponsored academies. This may also be related to earlier sponsored academies having a different starting position and needing more support to improve. Consequently, it would be inappropriate to apply the estimates presented below – which refer to historic cost of sponsored academies – to potential future programme costs, e.g. the cost of turning the next 1,000 schools into academies.

41. We also consider the administration costs to the department and the Education Funding Agency (EFA) of setting up the academy arrangements and providing oversight. The former involves finding a suitable sponsor for an academy, leading negotiations, drawing up a funding agreement and organising any of the funding streams related to an initial academy opening. We had to make an assumption about what proportion of the administrative costs of organising and monitoring sponsorship are attributable to sponsored academies rather than converter academies or free schools. There is also uncertainty about what part of such cost, if any, is in fact additional. In part the department, the EFA and the Trust itself may now perform tasks formerly undertaken by local authorities. To this extent, the administrative costs that we could record may partly be a shift in expenses from local authorities to the department and EFA rather than a net increase.

42. While the department closely monitors the level of spending for the academies programme and against which programme lines these costs are recorded, the systems were not designed to provide all of the disaggregation needed for this report. For some cost lines, information has not been collected at school level, and in other cases, such as central administration, cost only occurs at the central level. We also needed to make assumptions on how to isolate the marginal cost of sponsored academies as opposed to converter academies and free schools. These limitations meant that we could not construct cohort-level estimates - that is, the unit cost for all schools that became sponsored academies in a given academic year. Even if additional resources were committed to this, any estimates would not necessarily be more accurate, because they would be heavily based on assumptions.

43. However, we have managed to collect all marginal costs from financial years 2010-11 to 2014-15 that can be attributed to sponsored academies only. We then divided this total cost by the number of open sponsored academies at April 2015. In several cases, we were able to obtain more detailed data that has allowed us to analyse how costs vary between academies and over years. With that we applied the following assumptions to arrive at low, medium and high cost estimates:

- i) Deficit funding: for the low cost estimates we considered that only few academies historically needed any funding of deficits and so set a cost of zero; the medium

estimate is the total cost of deficit funding spread over all academies; the high estimate gives the average of those cases where deficit funding occurred.<sup>8</sup>

- ii) Rebrokerage (change of sponsor): in the low cost estimate we considered that most academies did not require rebrokerage and so assume zero cost; the medium cost estimate spreads the total re-brokerage cost over all academies; in the high cost estimate we consider an average value of cases where a change in the school's sponsor was necessary; this is included in the line "other grants".<sup>9</sup>
- iii) Post-opening costs: We analysed the level of grants allocated to individual academies over a subsample of the data. We then used the relative difference from the average to the lowest and highest quintile of grant levels for the low and high cost estimates respectively.
- iv) For the low cost estimates, we assumed that the only marginal administrative cost was the one-time effort to broker a sponsor and departmental activities to set up the academy. For the medium and high cost estimates we added 50% and 100% respectively of Department for Education and EFA staff cost for oversight and intervention. The values are based on bottom up unit cost calculations compiled for the 2015-2020 spending review. They may therefore understate the historic cost, because processes were yet not as efficient in the earlier periods of the programme.

44. Table 6 shows the results of our calculations for the three levels of cost estimates. We first note that the historic cost per sponsored academy varied between c. £600,000 and £1.7 million – higher than for either warning notices, interim executive boards or the comparable cost of c. £100,000 – £700,000 for a sponsored academy opening in 2016/17 (see annex 1 for details on how the department has brought down costs via efficiencies and reductions in grants). We also observe how four lines have made up the majority of expenses in all cost estimate levels:

- Pre-opening costs: these represent grants paid to the school to help it implement educational improvement measures and to cover the administrative and legal expenses of establishing an academy.
- Post-opening costs: these grants support schools which need to build up their pupil numbers and are experiencing diseconomies of scale during that period.
- Funding protections: the department decided to limit reductions in academies' funding arising from changes in local authorities' budgeting assumptions.

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<sup>8</sup> Some local authority maintained schools had deficits when they became sponsored academies and these deficits stayed with the local authority after conversion. In rare instances, also open sponsored academies accumulated a deficit. In these cases, the EFA typically provided the schools concerned with advances in funding which would be recovered over time. EFA support could also include non-recoverable payments, which was what this report considered as additional cost to the academies programme.

<sup>9</sup> This average value in the cost of changing a sponsor was calculated from a Freedom of Information request response (2014/0076330), released by the department in January 2016. This response included 23 cases between 1 September 2013 and 1 October 2014 with a total cost of c. £3 million.

- Differences arising from the funds allocated to academies (on an academic year basis) and those recouped from local authorities (on a financial year basis).<sup>10</sup>

| <b>Cost type</b>  | <b>Low estimate</b> | <b>Medium estimate</b> | <b>High estimate</b> |
|---|---------------------|------------------------|----------------------|
| Cost of programme admin                                   | £10,000             | £25,000                | £40,000              |
| Funding of deficits                                       | -                   | £15,000                | £260,000             |
| Refund for insurance cost                                 | £60,000             | £60,000                | £60,000              |
| Other grants  | £20,000             | £25,000                | £155,000             |
| Pre-opening cost  | £40,000             | £165,000               | £305,000             |
| Post-opening cost   | £45,000             | £265,000               | £445,000             |
| TUPE (Transfer of undertakings, protection of employment) | £5,000              | £5,000                 | £5,000               |
| VAT funding   | £30,000             | £30,000                | £30,000              |
| Differences arising from the funding system               | £205,000            | £205,000               | £205,000             |
| ESG protections   | £200,000            | £200,000               | £200,000             |
| <b>Total cost per sponsored academy</b>                   | <b>£615,000</b>     | <b>£995,000</b>        | <b>£1,705,000</b>    |

**Table 6: Cost estimates for setting up and running sponsored academies**

**Notes:**

1 All costs are valued in financial year 2015/16 terms.

2 All estimates apply to academies opened between financial years 2010/11 and 2014/15.

Source: National Audit Office, 2012, Managing the expansion of the Academies Programme; records from the Department for Education and Education Funding Agency

45. Pre-opening, TUPE and part of the admin cost (brokerage) incurred up to and around the conversion, whereas post-opening grants were typically paid for up to 3 years thereafter. VAT and insurance cost refunding and ESG protections are temporary additional cost which either have already ceased or will cease during this parliament. The other lines are operational and system costs which are expected to persist in the long term. More details on what these cost lines are and what is included

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<sup>10</sup> Over the course of a financial year there are some differences between the funds allocated to academies and the funds recouped from local authorities for this. This difference is mainly due to the pupil numbers used for each of the calculations, but for some of the older academies there are also differences in historic funding levels. We have classified this as an additional cost to the programme. As this cost is spread across different types of academy, we needed to make assumptions on which proportion to assign to sponsored academies.

can be found on the department's webpage for academies funding and in the NAO's report on the management of the academy programme's expansion.<sup>11 12</sup>

## Impact of sponsored academies

### Comparison to state-funded average

46. Figure 6 shows the change in headline attainment for academies relative to that of the average state-funded school one or more years after becoming a sponsored academy. All bars and associated figures are the averages of the attainment changes that academies experienced, less the average attainment change experienced by all state-funded schools (see Figure 2). We show this for schools (where we have comparable attainment data) one year, two years and three years after the school had become a sponsored academy. In the case of two and three years, we show the change in each year, not the cumulative impact. For example, those 311 primary sponsored academies for which we have usable attainment data two years after the conversion saw an increase of attainment (beyond the state average) of 3.4 percentage points in the first year and of an additional increase of 1.7 percentage points in the second year. Two years after having become academies, these schools thus have improved by 5.1 (3.4 plus 1.7) percentage points more than the state-funded average. The 3.4 percentage point relative increase in this group's first year is different from the 3.0 percentage point relative increase observed for the 609 sponsored academies in the leftmost bar in panel (a). The reason for this difference is that the leftmost bar's sample also includes 298 schools for which we had only one-year of comparable post-academisation attainment data, so the difference in means reflects the different composition of the two groups.<sup>13</sup>

47. These figures are *relative* changes (the difference to the changes recorded in all state-funded schools), rather than *absolute* changes, and are pooled over several years. Therefore, they cannot be compared to earlier publications from the department on academies' performance, which mostly used absolute changes for a given stock of academies. Annex 2 gives an example of how the secondary sponsored academies were pooled and what schools comprised the sample of one-year changes.

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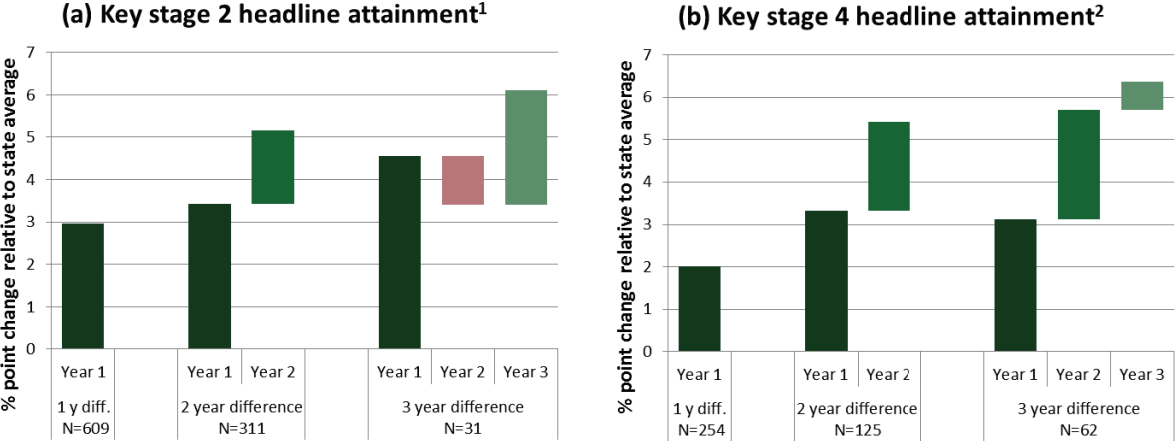
<sup>11</sup> Academies funding: A to Z of terms. <https://www.gov.uk/guidance/academies-funding-a-to-z-of-terms>

<sup>12</sup> National Audit Office. 2012. Managing the expansion of the Academies Programme. <https://www.nao.org.uk/report/managing-the-expansion-of-the-academies-programme/>.

<sup>13</sup> See Annex 2 for details on the group's compositions. The 298 primary sponsored academies refer to 7 primary academies opened in 2010/11 and 287 sponsored academies opened in 2013/14 for which no valid two-year comparison is possible as well as 1 sponsored academy from 2011/12 and three from 2012/13 with missing data.

48. As seen in panel (a), the mean headline attainment increased by significantly more in primary sponsored academies than it did in the average state-funded primary school in the first and second year as an academy. After three years the relative total difference for that smaller subsample of 31 schools (c. 6 percentage points) is still statistically significant, but the differences in the second and third year are not.

**Mean post-intervention attainment change of schools that became sponsored academies relative to the average state-funded school.**



Notes:  
 Bars designate individual years, i.e. where 3 years of post intervention KS4 data is available, there was an average percentage point increase of c. 3.1 in the first year, of 2.6 in the second year and of 0.7 in the third year after the intervention.  
<sup>1</sup> Percentage of pupils achieving level 4 or higher in English and maths (2010 + 2011) in reading, writing and maths (2012-15).  
<sup>2</sup> Percentage of pupils achieving 5 or more A\*-C GCSEs including English and maths.

**Figure 5: Relative attainment changes sponsored academies**

Source: 'Open academies and academy projects in development' file; school performance tables

49. On average, headline attainment for secondary sponsored academies increased by significantly more than the state-funded average in the first two years after a sponsor was first appointed (see figure 6, panel (b)). There is also a mean relative increase in year three compared to the state average, but its size and variance do not permit us to regard that as a general pattern. After three years, the total relative difference for secondary sponsored academies has reached a statistically significant 6.4 percentage points.

50. At both primary and secondary phase, schools that became academies in the following year experienced attainment increases that were higher than those of the average state-funded school. For primary schools the average of these relative pre-academy increases was slightly smaller, for secondary schools it was slightly larger than the relative changes the schools then had in their first year as academies. Such pre-academy improvements could have several reasons such as: preparations for becoming a sponsored academy; informal work with sponsors before the formal conversion; earlier interventions (where relevant) and existing improvement measures;



or they could reflect that schools with lower levels of attainment tend to improve by more than the average.

## Comparison to matched schools

51. In order for any matching process to produce meaningful results, we would need one or more variables on which sponsored academies are similar to each other and similar to some non-intervention schools (the comparison group), but different from most non-intervention schools. Unfortunately, on the variables available to us, sponsored academies show a wide range of values, although – as we will see – their characteristics tend to differ from those of non-intervention schools. Annex 3 describes the matching methodology in more detail and shows that the quality of the matches demands caution in interpreting the results.

| Primary schools   | Sponsored academies | Statistically Similar schools | Difference treated - control | State-funded average |
|---|---------------------|-------------------------------|------------------------------|----------------------|
| <b>1 year post-intervention KS2 attainment change<sup>1</sup></b>   | <b>5.2</b>          | <b>4.5</b>                    | <b>0.7</b>                   | <b>2.1</b>           |
| % of pupils on Free School Meals in year of intervention            | 29.9                | 29.3                          | 0.6                          | 16.7                 |
| % of pupils with SEN statement in year of intervention              | 1.8                 | 1.6                           | 0.1                          | 1.5                  |
| KS1 average point score of intervention year's cohort               | 14.0                | 14.0                          | 0.1                          | 15.3                 |
| Average KS2 attainment in the year before intervention <sup>1</sup> | 60.7                | 61.5                          | -0.7                         | 76.4                 |

| Secondary schools   | Sponsored academies | Statistically Similar schools | Difference treated - control | State-funded average |
|---|---------------------|-------------------------------|------------------------------|----------------------|
| <b>1 year post-intervention KS4 attainment change<sup>2</sup></b>   | <b>3.7</b>          | <b>2.5</b>                    | <b>1.2</b>                   | <b>1.4</b>           |
| % of pupils on Free School Meals in year of intervention            | 25.0                | 25.2                          | -0.1                         | 15.4                 |
| % of pupils with SEN statement in year of intervention              | 2.2                 | 2.2                           | 0.0                          | 2.0                  |
| KS2 average point score of intervention year's cohort               | 26.3                | 26.3                          | -0.1                         | 27.6                 |
| Average KS4 attainment in the year before intervention <sup>2</sup> | 39.1                | 39.6                          | -0.5                         | 58.3                 |

**Table 7: Average attainment change and school characteristics for sponsored academies and their comparison schools.**

**Notes:**

1 Percent of pupils achieving level 4 or higher in English and Maths (2010-2011) / Reading, Writing and Maths (2012-2015)

2 Percent of pupils achieving 5 or more A\*-C GCSEs. 2014 and 2015 based on Wolf and other reform figures.

3 State-average was weighted by number of sponsored academies in each year. This is why these averages differ between interventions.

4 The difference to state-average (not shown here) implied by these figures differs slightly from figure 5 because of the smaller sample in the PSM analysis (we did not have the necessary characteristic variables for some of the schools).

Source: 'Open academies and academy projects in development' file; school performance tables; January school census 'Schools, pupils and their characteristics'

52. Table 7 shows the average one-year attainment change after intervention and the matching variables for sponsored academies, the comparison schools and the average state-funded school. We first note that the average state-funded school had lower levels of deprivation and special needs, and higher levels of prior attainment and previous year attainment compared to the average sponsored academy. We also see how the matching greatly reduced these differences and that the comparison schools are, on average, similar to the sponsored academies (on the modelled characteristics).

53. Figure 7 is identical to figure 6 in structure, but shows the average attainment change of sponsored academies relative to the average change of the statistical comparison schools, rather than to that of the state-average. For secondary sponsored academies we note that the pattern is similar to figure 6 – a positive effect throughout and each year sees an additional relative increase – but the numbers are smaller. This is not surprising, because reversion to the mean suggests that some of the differences observed in figure 6 may be independent of academy status. We also generally observe increases for primary academies, but, again, these changes are smaller than those observed in the comparison to the state-funded average from figure 6. Based on statistical tests we cannot confidently say that either primary or secondary academies generally see an increase in attainment in the following year greater than that of our group of similar schools. However, we observe a statistically larger increase in attainment in primary sponsored academies 2 years and in secondary sponsored academies 3 years after the intervention. The one-year attainment differences are similar to earlier findings by the department from using statistically similar schools as a comparison group, although that study's sample and methodology was different.<sup>14</sup>

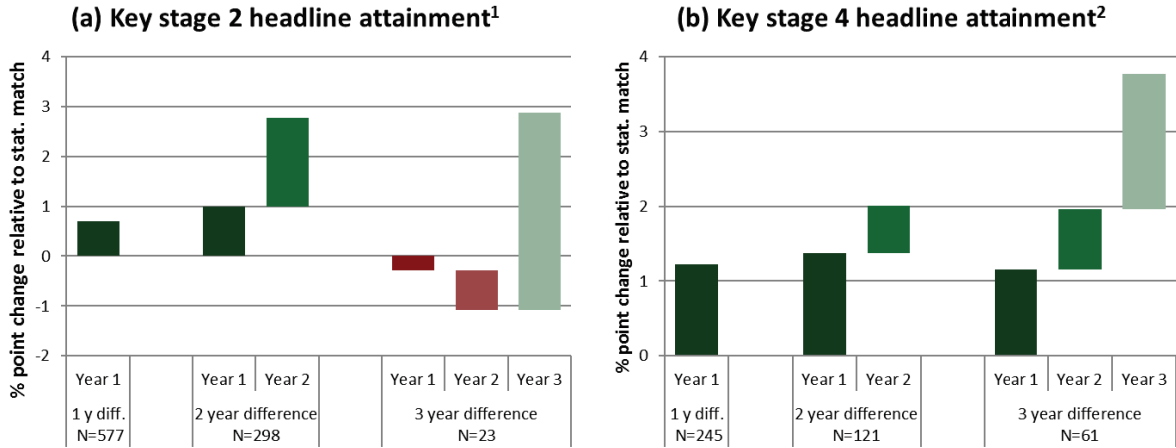
54. We also note that the estimates presented in figures 6 and 7 and table 7 apply only to this cohort of sponsored academies. Given the variation among schools seen in figures 4 and 5, another group of schools with different initial needs or funding levels

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<sup>14</sup> Department for Education. June 2013. Attainment by pupils in academies 2012. Supplementary analysis to the Academies Annual Report 2011/12: <https://www.gov.uk/government/publications/academies-annual-report-academic-year-2011-to-2012>.

is likely to experience different relative attainment outcomes after becoming sponsored academies.

**Mean post-intervention attainment change of schools that became sponsored academies relative to the comparison school.**



Notes:  
 Bars designate individual years, i.e. where 3 years of post intervention KS4 data is available, there was an average percentage point increase of c. 1.2 in the first year, of 0.8 in the second year and of 1.8 in the third year after the intervention.  
<sup>1</sup> Percentage of pupils achieving level 4 or higher in English and maths (2010 + 2011) in reading, writing and maths (2012-15).  
<sup>2</sup> Percentage of pupils achieving 5 or more A\*-C GCSEs including English and maths.

**Figure 6: Attainment changes sponsored academies relative to comparison group**

Source: ‘Open academies and academy projects in development’ file; school performance tables; January school census ‘Schools, pupils and their characteristics’

55. As an illustration of the potential value for money, one primary school with a cohort of 100 pupils that improved the attainment of that (and only that) cohort by 1 percentage point could be expected to increase lifetime productivity by £1.3 million (the equivalent for secondary schools is £0.6 million).<sup>15</sup> While we still cannot attribute the whole of the effect seen in table 7 and figure 7 to sponsored academy status, these numbers suggest that if only part of the attainment change were a causal effect, the aggregate gross benefit would be sizeable.<sup>16</sup>

56. The exact cost to the department of a school becoming an academy for any single school depended on the school’s specific circumstances and needs. While

<sup>15</sup> The department has standard economic models that can translate a given change in attainment into a total societal benefit per pupil. This benefit is based on estimates of the impact of education on individuals’ lifetime economic output, after having taken account of other factors, such as age, experience, gender or industry.

<sup>16</sup> This is a gross benefit and no statement on sponsored academies’ value for money. Producing such an assessment would require linking pupil level estimates to enrolment numbers and extensive assumptions on how benefits and cost develop over the longer term, how long the appropriate analytical horizon should be, how well sponsored academies’ attainment changes translate into labour market outcomes for the cohorts concerned, and extensive sensitivity analysis.

becoming an academy is the most expensive of the interventions analysed in this report, these costs also reflect the fact that academies are a structural change, as opposed to a one-off or temporary intervention. The rationale is that the benefits reaped from academies tended to be more persistent than those from other types of interventions.

57. Sponsored academies have, on average, seen greater increases in attainment than the average state-funded school and the available attainment data suggests that these improvements are persistent in the medium term. Sponsored academies' attainment also tends to increase by more than that of similar schools, but this relative increase is smaller (than the one to the state average) and the difference is not statistically significant until the second and third year. This could be an indication that part of the improvement seen was due to reversion-to-the-mean. It is also possible that schools that became academies had more challenges and less capacity to make fast progress compared to schools that received other types of interventions.

58. Comparing sponsored academies on cost-effectiveness measures would be misleading as it would not factor in the different starting points and that other interventions might not have produced the same positive outcomes given these schools' situations. Academies are also intended to have wider spillover benefits that will help to raise standards in other local schools. By working together in multi-academy trusts, schools can gain the efficiencies of collaborating by sharing resources, training and expertise. This includes deploying staff across trusts and developing stronger leadership structures, which will have benefits for their trust and beyond for the wider system.

59. Without the prospect of becoming an academy, warning notices and IEBs might have had a smaller impact on the efforts by the school leadership to drive the improvement. There may also be positive impacts from pupil behaviour, greater parental choice of schools, increased freedoms or pressure on surrounding schools to perform well. However, measuring these effects does not form part of this report.

## Interim executive boards

60. An IEB is a governing body appointed for a temporary period with the specific task of ensuring school improvement. It is used when a school is eligible for intervention, i.e. it has failed to comply with a warning notice, or has been given an inadequate judgement by Ofsted. Local authorities need the consent of the Secretary of State for Education (SoS) to appoint an IEB.<sup>17</sup>

61. An IEB takes overall responsibilities and duties from the governing body and as such has control over:

- Finance
- Curriculum
- Staffing
- Pay
- Performance management of the head teacher
- The appointment of heads and deputies

62. Appointing an interim board involves consultation with the school's existing governing board, religious bodies (in faith schools) as well as notifications to these stakeholders when IEB members are appointed. An IEB should be composed of at least two, preferably more, members and include individuals with skills in finance or education improvement.

63. In the past, where a school was found by Ofsted to be inadequate, the department actively encouraged academy status with a strong sponsor as a way to bring about rapid improvement<sup>18</sup>. In these cases, we would expect the IEB to undertake its duties with a view to achieving this outcome. An IEB may also recommend school closure to the LA or Secretary of State, but cannot take that decision by itself.

## Cost of interim executive boards

64. Nearly all the interim executive boards in our sample were appointed by local authorities. Because IEBs have not in the past been used very often by the Secretary of State, we have only limited systematic knowledge about LA processes or costs of this measure and it would have been burdensome and inappropriate for the department to oversee and collect data about how they do it. We did, however, identify

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<sup>17</sup> Department for Education (2016): Schools causing concern. Guidance for local authorities and RSCs. [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/510080/schools-causing-concern-guidance.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/510080/schools-causing-concern-guidance.pdf)

<sup>18</sup> The Education & Adoption Act 2016 now means that the Secretary of State has a duty to make an academy order for all schools found to be inadequate by Ofsted.

department officials with direct experience of the processes and resources involved. While a more comprehensive survey of local authorities would have given more robust findings, we felt this would be a disproportionate approach given the other options available and the possibility of not collecting useable numbers. The numbers cited below are thus informed estimates based on assumptions.

65. According to the respondents, the effort involved in establishing and running an IEB can vary considerably, depending on the problems that the particular school faces and the level of stakeholder engagement. The cost of an IEB can be expressed in financial terms, e.g. the salary of Department for Education or LA staff dedicated to intervention work, or in economic cost. Economic (or opportunity) cost is the value of the next most valuable alternative use for a resource. Economic cost is a more complete measure for comparing options. According to the respondents and departmental guidelines, neither governors nor interim governors are usually paid. We therefore regard their efforts as an economic cost, because even if no financial cost accrues to the state, these professionals could have used their time to increase working hours or for other charitable activities.

66. The respondents also stressed the high calibre of interim governors, usually professionals from senior or middle management in the private sector or working in education. We therefore use a cost rate for interim governors commensurate with this level of experience. We factor in that not all of the interim board's effort is additional, because even a regular governing board incurs some economic cost. We calculate these costs using the standard cost rates and an estimate of required governor effort based on a survey from the National Governors' Association.<sup>19</sup>

67. Finally, we combined the respondents' comments with advice from published guidelines and limited qualitative research to make assumptions on how long interim executive boards usually stay in place, how many members they have and how intensively the interim governors participate. We regard these as a reflection of how the effort needed varies according to the nature of a school's problems. The full range of assumptions is in table 8.

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<sup>19</sup> Research Matters: The 2015 NGA/TES survey of governors and trustees.  
<http://www.nga.org.uk/Guidance/Research/NGA-TES-survey-2015.aspx>

68.

| Item                        | Unit        | Low estimate | Medium estimate | High estimate |
|-----------------------------|-------------|--------------|-----------------|---------------|
| Number of interim governors | Hours       | 3            | 5               | 9             |
| Duration of IEB             | Months      | 5            | 18              | 24            |
| Frequency of meetings       | # per month | 1.1          | 1               | 1.25          |
| Duration of meetings        | Hours       | 2.5          | 2.5             | 2.5           |

**Table 8: Assumptions on IEB characteristics**

Source: Interviews with staff at the Department for Education; qualitative research

69. Table 9 shows the tasks and associated efforts identified by the department’s respondents in running an IEB, while table 10 shows the best estimate for the total cost of an IEB of c. £180,000 (as well as the likely range of costs). This range is mainly influenced by the assumptions from table 8. In line with this, the majority of the cost is the economic cost of interim governors’ time. This is chiefly driven by the ongoing tasks and responsibilities of the interim board for which respondents indicated between one and three days per week per person. From a direct financial cost perspective, the largest elements were the involvement of department or LA staff in recruiting suitable interim governors and regular correspondence, once the interim board has been appointed.

| Step   | Affected stakeholder     | Cost type | Low estimate | Medium estimate | High estimate |
|--|--------------------------|-----------|--------------|-----------------|---------------|
| Consultation with existing governors, diocese, LA, etc.      | DfE/ LA                  | Financial | 38           | 38              | 52            |
| Consultation with existing governors, diocese, LA, etc.      | Other                    | Economic  | 15           | 15              | 15            |
| Identification and recruitment of IEB members                | DfE/ LA                  | Financial | 45           | 135             | 300           |
| Identification and recruitment of IEB members                | Potential IEB members    | Economic  | 36           | 108             | 240           |
| Formal appointment of IEB                                    | DfE/ LA                  | Financial | 11           | 13              | 17            |
| Formal appointment of IEB                                    | Other                    | Economic  | 8            | 8               | 8             |
| Preparation and attendance of briefing for interim governors | DfE/ LA                  | Financial | 37           | 58              | 79            |
| Preparation and attendance of briefing for interim governors | IEB members              | Economic  | 12           | 20              | 36            |
| 1st day introduction meeting at school                       | DfE/ LA                  | Financial | 6            | 8               | 8             |
| 1st day introduction meeting at school                       | IEB members              | Economic  | 18           | 35              | 68            |
| 1st day introduction meeting at school                       | School staff and leaders | Financial | 28           | 28              | 28            |
| School oversight and improvement                             | IEB members              | Economic  | 468          | 2,105           | 4,056         |
| Of which: IEB meetings                                       | DfE/ LA                  | Financial | 14           | 45              | 75            |
| Of which: IEB meetings                                       | IEB members              | Economic  | 41           | 225             | 675           |
| Of which: regular DfE/ LA – IEB contact                      | DfE/ LA                  | Financial | 100          | 100             | 100           |
| Of which: regular DfE/ LA – IEB contact                      | IEB chair                | Economic  | 100          | 100             | 100           |
| Freed up time – prior governing board                        | Prior governors          | Economic  | -540         | -2,808          | -4,320        |

**Table 9: Steps and effort for setting up and running an interim executive board**

Source: Interviews with staff at the Department for Education; qualitative research

70. The financial costs of establishing and running an IEB are thus moderate. However, if we consider the full economic cost to society, IEBs are a relatively resource-intensive intervention. For an alternative perspective, we asked three LAs



about the costs of IEBs, as part of a separate research project being carried out by the department. There, two local authorities indicated that the total cost of an IEB was £0 (but there could still be an economic cost) while one estimated costs of £40,000.

| Step                     | Affected stakeholder | Unit     | Low estimate  | Medium estimate | High estimate  |
|--------------------------|----------------------|----------|---------------|-----------------|----------------|
| DFE/LA                   | Financial            | hours    | 250           | 395             | 630            |
| IEB members              | Economic             | hours    | 534           | 2,268           | 4,399          |
| School staff and leaders | Financial            | hours    | 28            | 28              | 28             |
| Other stakeholders       | Economic             | hours    | 23            | 23              | 23             |
| Prior governors          | Economic             | Hours    | -540          | -2,808          | -4,320         |
| DFE/LA                   | Financial            | £        | 8,000         | 12,500          | 20,000         |
| IEB members              | Economic             | £        | 48,500        | 255,000         | 589,500        |
| School staff and leaders | Financial            | £        | 850           | 850             | 850            |
| Other stakeholders       | Economic             | £        | 400           | 400             | 400            |
| Prior governors          | Economic             | £        | -14,000       | -73,000         | -112,000       |
| <b>Total</b>             |                      | <b>£</b> | <b>43,750</b> | <b>195,750</b>  | <b>498,750</b> |

**Table 10: Total estimated effort and cost of an IEB**

Source: Interviews with staff at the Department for Education; qualitative research

## Impact of interim executive boards

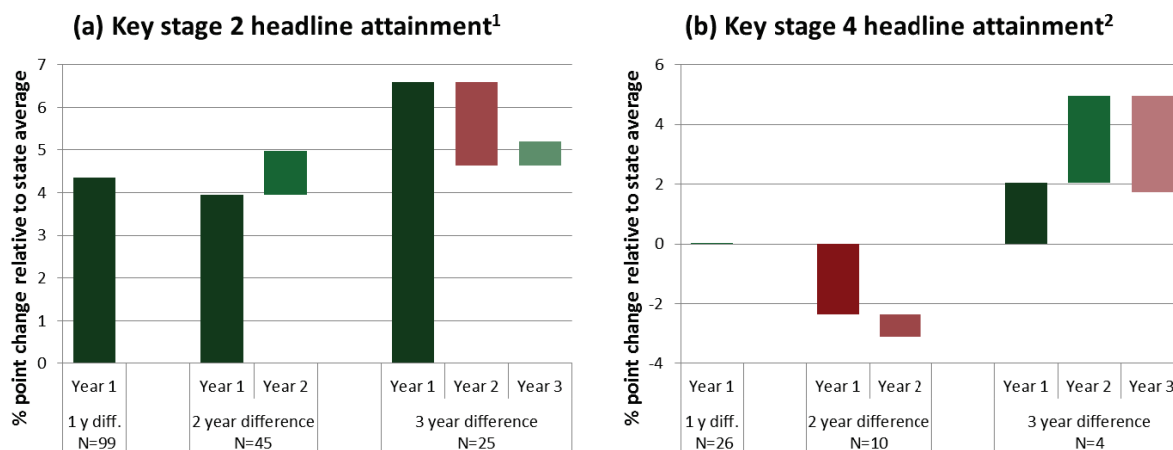
### Comparison to state-funded average

71. Figure 8 shows the change in headline attainment of schools at which an interim executive board had been appointed relative to the average state-funded school's change. The bars show the average change experienced by an IEB school on top of the change by the average state-funded school for the stated period after the appointment. Because these bars represent averages and because there is considerable variation within intervention groups (see figure 4 and figure 5), the bars can vary depending on which specific schools they are based on, especially if these samples are small. This is exemplified in panel (b) of figure 8, which shows that the relative average change in attainment after the appointment of an IEB at secondary schools is positive in one subsample (4 schools), negative in another (10 schools) and zero in the largest possible sample (26 schools).

72. Panel (a) shows a strong and statistically significant relative attainment improvement in the first year for primary schools. The conclusions for the second and third years are less clear, as the direction of the effect varies by the subsample (i.e. between schools open for two years and schools open for three). However, the data

does suggest that after two and three years primary schools with an IEB have seen larger than average increases in the key stage 2 headline measure.

### Mean post-intervention attainment change of schools with an Interim Executive Board relative to the average state-funded school.



Notes:

Bars designate individual years, i.e. where 2 years of post intervention KS4 data is available, there was an average percentage point decrease of c. 2.4 in the first year and of 0.8 in the second year after the intervention.

<sup>1</sup> Percentage of pupils achieving level 4 or higher in English and maths (2010 + 2011) in reading, writing and maths (2012-15).

<sup>2</sup> Percentage of pupils achieving 5 or more A\*-C GCSEs including English and maths.

**Figure 7: Relative attainment changes interim executive boards**

Source: Department for Education records; school performance tables

73. As seen in panel (b) of Figure 8, the conclusions about attainment changes in secondary schools after the appointment of IEBs vary strongly due to small number of schools involved. There is no discernible difference in one-year post-intervention changes between the average of the full sample and the average of all state-funded schools. Also, none of the attainment changes for the two-year or three-year analysis were statistically different from the average state-funded schools' experience.

74. Further analysis showed that both primary and secondary schools experienced an average increase in attainment relative to the state-funded average in the year leading up to the implementation of an IEB. On average, this relative increase was of comparable size to the subsequent post-IEB relative change for primary schools. Our sample's nine secondary schools with IEBs experienced an average relative attainment increase in the year leading up to the appointment of the interim board. In the year after the IEB was appointed, attainment decreased relative to the state-funded average, but by less than the preceding increase. It may be that these pre-IEB attainment increases have been the result of previous efforts to improve, of earlier warning notices (where applicable) or partly a reversion-to-the-mean effect.

## Comparison to matched schools

75. For a good matching process, we would need to find some characteristics along which most schools with an interim executive board were similar to each other and to some non-intervention schools, but different to most non-intervention schools. However, on the generally used variables such as deprivation, special needs or prior attainment, IEB schools tended to have quite different values from each other. Their values were also, on average, systematically different to those of non-intervention schools (in the expected direction).<sup>20</sup> While this implies an imperfect comparison group, it may still be a useful addition to comparison with the state-funded average, which is why we present this alternative view. Our dataset allowed us to match 79 primary and 26 secondary schools where an interim executive board had been appointed to 237 primary and 156 secondary schools where no intervention occurred in the observation period.

76. Table 11 contains the matching results. It shows that the groups of schools where an IEB started had, on aggregate, pupils with characteristics similar to those of the comparison groups, but different to the average state-funded school. The attainment of primary schools where an IEB had been appointed increased on average by 6.6 percentage points in the year after establishment, as opposed to 3.2 percentage points for the comparison schools in the same respective year. Secondary schools with an IEB experienced an increase of attainment of 1.0 percentage point one year after the appointment, while the group of comparison schools increased by 1.7 percentage points. These differences are statistically significant for primary schools, but not for secondary schools.

| Primary schools   | Interim exec. board schools | Statistically Similar schools | Difference treated - control | State-funded average |
|---|-----------------------------|-------------------------------|------------------------------|----------------------|
| <b>1 year post-intervention KS2 attainment change<sup>1</sup></b>   | <b>6.6</b>                  | <b>3.2</b>                    | <b>3.4</b>                   | <b>1.6</b>           |
| % of pupils on Free School Meals in year of intervention            | 22.8                        | 23.0                          | -0.2                         | 16.6                 |
| % of pupils with SEN statement in year of intervention              | 1.7                         | 2.2                           | -0.5                         | 1.5                  |
| KS1 average point score of intervention year's cohort               | 14.7                        | 14.8                          | 0.0                          | 12.6                 |
| Average KS2 attainment in the year before intervention <sup>1</sup> | 61.4                        | 61.5                          | -0.1                         | 63.2                 |

<sup>20</sup> Annex 3 gives a more detailed description of the matching methodology and the quality of its output.

| Secondary schools   | Interim exec. board schools | Statistically Similar schools | Difference treated - control | State-funded average |
|---|-----------------------------|-------------------------------|------------------------------|----------------------|
| <b>1 year post-intervention KS4 attainment change<sup>2</sup></b>   | <b>1.0</b>                  | <b>1.7</b>                    | <b>-0.7</b>                  | <b>1.0</b>           |
| % of pupils on Free School Meals in year of intervention            | 20.4                        | 20.0                          | 0.4                          | 15.5                 |
| % of pupils with SEN statement in year of intervention              | 1.9                         | 1.8                           | 0.1                          | 2.0                  |
| KS2 average point score of intervention year's cohort               | 26.8                        | 26.8                          | -0.1                         | 27.7                 |
| Average KS4 attainment in the year before intervention <sup>2</sup> | 46.8                        | 47.0                          | -0.2                         | 59.4                 |

**Table 11: Average attainment change and school characteristics for schools at which an IEB was appointed and their comparison schools.**

**Notes:**

1 Percent of pupils achieving level 4 or higher in English and Maths (2010-2011) / Reading, Writing and Maths (2012-2015)

2 Percent of pupils achieving 5 or more A\*-C GCSEs. 2014 and 2015 based on Wolf and other reform figures.

3 State-average was weighted by number of sponsored academies in each year. This is why these averages differ between interventions.

4 The difference to state-average (not shown here) implied by these figures differs slightly from figure 5 because of the smaller sample in the PSM analysis (we did not have the necessary characteristic variables for some of the schools).

Source: Department for Education records; school performance tables; January school census 'Schools, pupils and their characteristics'

77. The estimated costs of interim executive boards are likely to range from c. £40,000 to c. £470,000, depending on the school's circumstances. The cost is generally much higher than those of warning notices, but below that of becoming a sponsored academy. As with warning notices, counting all of the attainment changes as being attributable to IEBs would likely overestimate the benefits due to reasons such as selection bias and regression to the mean. Interim executive boards may also draw some of their effectiveness from the possibility of further intervention, i.e. by becoming an academy. To the extent that the schools' staff and leadership wish to avoid such an outcome, they may exert greater efforts to demonstrate improvement that would otherwise be the case.

78. There is evidence that primary schools where an IEB was appointed improved following the intervention. There was no such improvement in secondary schools, though it should be noted that the sample sizes we are analysing are so small that we must conclude that we do not know if there is a true impact. When comparing the attainment changes to those of similar schools, primary schools still achieve larger (albeit not statistically significant) attainment increases than their comparison schools.

## Warning notices

79. Warning notices are chosen when the local authority believes that informal measures have not led to a sufficient improvement or are not expected to deliver that improvement. There is no template for warning notices, although comparison between a few samples shows some standardised elements and a comparable structure. They are typically 2-3 pages long and outline the specific areas in which the school has been underperforming. Warning notices further set out what the school needs to achieve and by what deadline such measures need to have been implemented.

80. The letters warn that if the school does not comply and improve as desired, the school will become 'eligible for intervention' and face, for example, the appointment of an interim executive board. Warning notices do not typically state that becoming a sponsored academy is a possible consequence of a failure to comply with the conditions because that would not be an intervention open to a local authority. In light of ministerial statements and the academies programme's pace of expansion, head teachers and governors may nevertheless have considered academisation by the department a possibility in case of insufficient improvement. If school leaders wished to avoid becoming a sponsored academy, the warning notice might have been added motivation to achieve improvements.

## Cost of warning notices

81. The costs of sending warning notices are very low. We have calculated the average cost of sending a warning notice using a "bottom up" approach, similar to our approach for IEBs. These costs are not based on actual recorded data, but are a rough estimate of the costs to the department of issuing a warning notice. To produce more robust estimates based on local authority costs, we would have needed to interview staff at different local education authorities. By doing this we could have established which steps are involved in their warning notices processes, who is involved and how much time is required. As with IEBs, we deemed such an approach not to be proportionate and thus chose to consult internal departmental staff instead. Consequently, the process described below refers to a warning notice issued by the department to an academy rather than to a LA maintained school. While the steps for an academy WN are not identical to those that local authorities take, based on the content and length of both types of warning notices, we can assume that the overall effort will generally be similar. For our purposes we adopted a narrow definition of what counts as intervention work and excluded the following activities from the warning notice process:

- i) the decision-making process on whether to issue a warning notice; this would be identical for all interventions and so is not relevant when comparing the cost of different interventions

- ii) the effort by the school leadership on creating an action plan and drafting a reply; this forms part of a school leadership’s regular responsibilities
- iii) any follow up by the department beyond the initial review of the action plan; we regard this as part of general school oversight work.
- iv) Implementation of any improvement measures by the school or other organisations. We do not hold the necessary data and would have had to interview several schools and their LAs to understand what happens after a warning notice and what effort is involved. This feature distinguishes warning notices from the other interventions studied in this report which include, to an extent, the cost of activities to improve attainment.

82. We have used a wide range of potential values to account for uncertainty and potential measurement error. Table 12 summarises our estimates and shows that in all scenarios the costs remain very low. The conversion of hours into cost is done with a standard cost rate used within the department that reflects salary and non-salary costs and a mix of staff grades involved in the process.

| Action   | Low estimate | Medium estimate | High estimate |
|--|--------------|-----------------|---------------|
| 1. Collect evidence and establish grounds for intervention                 | 0.25 h       | 0.5 h           | 0.75 h        |
| 2. Find the correct clause in the academy’s articles or funding agreement. | 0.5 h        | 1 h             | 2 h           |
| 3. Draft warning notice  | 0.75 h       | 1 h             | 1.5 h         |
| 4. Clearance by line manager   | 0.33 h       | 0.5 h           | 0.75 h        |
| 5. Legal Advisors Office sign off  | 0.33 h       | 0.5 h           | 0.75 h        |
| 6. Regional School Commissioner sign off                                   | 0.33 h       | 0.5 h           | 0.75 h        |
| 7. Send letter, record data in DfE’s knowledge management system           | 0.75 h       | 1 h             | 2 h           |
| 8. Analyse school’s response   | 1 h          | 1.5 h           | 2 h           |
| 9. Publish WN on gov.uk and call school regarding publication              | 0.33 h       | 0.5 h           | 1h            |
| <b>Total time required</b>   | <b>4.6 h</b> | <b>7 h</b>      | <b>11.5 h</b> |
| <b>Total estimated cost of issuing a warning notice</b>                    | <b>£150</b>  | <b>£220</b>     | <b>£370</b>   |

**Table 12: Estimates for the cost of issuing a warning notice**

Source: Department for Education records

## Impact of warning notices

### Comparison to state-funded average

83. Figure 9 displays how schools that received a warning notice performed relative to the average state-funded school one and more years after. Each bar shows the average difference between the attainment change of schools with a warning notice and the attainment change by the average state-funded school.<sup>21</sup> For example, year one of the three-year difference in panel (a) corresponds to the change between 2012 and 2013. The 10 schools that received warning notices in 2012 saw an average increase of attainment from 2012 to 2013 of 11.9 percentage points. During the same period the average state-funded school improved by 1.1 percentage points. The dark green bar in figure 9, panel (a), is the difference of 10.8 percentage points between the two figures.<sup>22</sup>

84. At primary level, which is shown in panel (a), warning notices are generally associated with a large improvement in attainment in the first year and a large decrease in the second year. Accordingly, statistical tests do not find a significant difference between the average changes of primary schools with warning notices and the average state-funded primary after 2 or 3 years.

85. Secondary schools with a warning notice have experienced a moderately higher average attainment change relative to the state average in the first year as seen in Figure 9, panel (b). This relative increase is larger in the second year and is followed by a relative decrease in year 3 where we have a long enough time series. The small sample size does not permit great confidence in these results, so we cannot be certain how large or persistent warning notice attainment effects are for secondary schools.

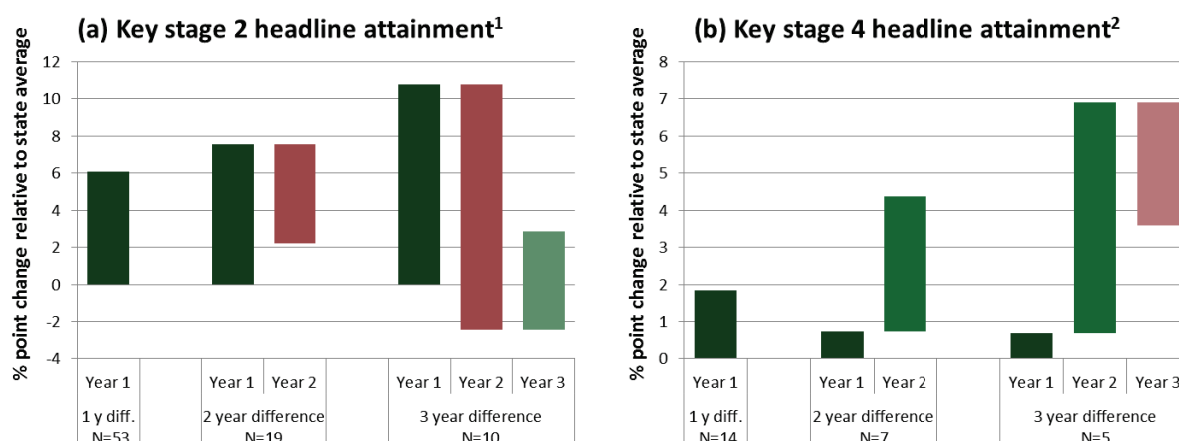
86. Further analysis revealed that both primary and secondary schools had experienced average increases in attainment relative to the state average in the academic year leading up to the warning notice. For primary schools this relative increase was on average of comparable magnitude to the one experienced in the year following the warning notice. In the five secondary schools with the necessary data, the average relative increase in attainment in the year before a warning notice was issued was about twice as large as the increase in the year after. This development could have been another example of reversion-to-the-mean, though the threat of an intervention may have been a factor as well.

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<sup>21</sup> See paragraph 24 and Figure 2 for more detail on how exactly this difference-in-differences was calculated.

<sup>22</sup> The groups with one-year and two-year differences are an amalgamation of different starting points, so it is not possible to make as straightforward comments on them.

## Mean post-intervention attainment change of schools with warning notices relative to the average state-funded school.



Notes:

Bars designate individual years, i.e. where 2 years of post intervention KS2 data is available, there was an average percentage point increase of c. 7.5 in the first year and a 5.3 percentage point decrease in the second year after the intervention.

<sup>1</sup> Percentage of pupils achieving level 4 or higher in English and maths (2010 + 2011) in reading, writing and maths (2012-15).

<sup>2</sup> Percentage of pupils achieving 5 or more A\*-C GCSEs including English and maths.

**Figure 8: Relative attainment changes warning notices**

Source: Department for Education records; school performance tables

## Comparison to matched schools

87. As before, for a good matching process we would need variables along which schools with warning notices are similar to each other, but different to non-intervention schools. The most frequently used variables in this context – measures for deprivation, special needs and prior attainment – show that schools with warning notices tend to differ from schools that did not receive any intervention. However, also within the group of schools with warning notices there is considerable variation in the values of these variables. This is made more difficult by the fact that a smaller number of schools received warning notices, making it even more difficult to identify something distinct about these schools. The comparison groups are helpful – and more accurate a comparison than the state average – but still imperfect. We would caution against regarding it as a robust counter-factual.<sup>23</sup> With our available data we were able to match 42 primary and 14 secondary schools that received warning notices to 124 and 210 statistically similar schools.

88. Table 13 shows the matching results. At this aggregate level both groups have similar levels of deprivation, special needs, prior attainment of pupil intake and attainment in the year before the intervention. On average, primary schools with a warning notice experienced an increase in attainment of 7.6 percentage points in the

<sup>23</sup> Annex 3 goes into more detail on the matching methodology and the quality of its output.



year after the notice, compared to an increase of 1.6 percentage points for the comparison schools. Where secondary schools received a warning notice, the attainment increased by an average of 3.4 percentage points in the following year. In the same period secondary comparison schools' attainment increased by 3.2 percentage points. This difference-in-differences is statistically positive for primary schools, but not for secondary schools.

| <b>Primary schools</b>  | <b>Warning notice schools</b> | <b>Statistically Similar schools</b> | <b>Difference treated - control</b> | <b>State-funded average</b> |
|---|-------------------------------|--------------------------------------|-------------------------------------|-----------------------------|
| <b>1 year post-intervention KS2 attainment change<sup>1</sup></b>   | <b>7.6</b>                    | <b>1.6</b>                           | <b>6.0</b>                          | <b>1.6</b>                  |
| % of pupils on Free School Meals in year of intervention            | 27.8                          | 30.0                                 | -2.2                                | 16.5                        |
| % of pupils with SEN statement in year of intervention              | 1.7                           | 1.6                                  | 0.1                                 | 1.5                         |
| KS1 average point score of intervention year's cohort               | 14.4                          | 14.4                                 | 0.0                                 | 12.4                        |
| Average KS2 attainment in the year before intervention <sup>1</sup> | 58.3                          | 59.7                                 | -1.4                                | 62.0                        |

| <b>Secondary schools</b>  | <b>Warning notice schools</b> | <b>Statistically Similar schools</b> | <b>Difference treated - control</b> | <b>State-funded average</b> |
|---|-------------------------------|--------------------------------------|-------------------------------------|-----------------------------|
| <b>1 year post-intervention KS4 attainment change<sup>2</sup></b>   | <b>3.4</b>                    | <b>3.2</b>                           | <b>0.3</b>                          | <b>1.6</b>                  |
| % of pupils on Free School Meals in year of intervention            | 25.8                          | 26.8                                 | -1.1                                | 15.3                        |
| % of pupils with SEN statement in year of intervention              | 2.7                           | 2.4                                  | 0.2                                 | 2.0                         |
| KS2 average point score of intervention year's cohort               | 26.8                          | 26.9                                 | -0.1                                | 27.5                        |
| Average KS4 attainment in the year before intervention <sup>2</sup> | 48.0                          | 49.2                                 | -1.2                                | 57.9                        |

**Table 13: Average attainment change and school characteristics for schools that received a warning notice and their comparison schools.**

**Notes:**

1 Percent of pupils achieving level 4 or higher in English and Maths (2010-2011) / Reading, Writing and Maths (2012-2015)

2 Percent of pupils achieving 5 or more A\*-C GCSEs. 2014 and 2015 based on Wolf and other reform figures.

3 State-average was weighted by number of sponsored academies in each year. This is why these averages differ between interventions.

4 The difference to state-average (not shown here) implied by these figures differs slightly from figure 5 because of the smaller sample in the PSM analysis (we did not have the necessary characteristic variables for some of the schools).

Source: Department for Education records; school performance tables; January school census 'Schools, pupils and their characteristics'

89. Warning notices are the lowest-cost intervention studied in this report and would likely have scored highly in a cost-effectiveness measure: the schools which received warning notices tended to improve temporarily, and the costs of issuing warning notices are very low. There are several reasons why such an interpretation would be misleading and why we have not provided a cost-effectiveness measure:

89.1. Selection into interventions and underlying capacities to improve may have had an impact on the change in performance. In this case, this could mean an overestimate of improvement. We have looked at schools which received only warning notices, i.e. where a warning notice was initially deemed appropriate and was sufficient in the sense that no further interventions were required. This could indicate that the schools which received warning notices only are likely to have had a greater capacity to improve without intervention than schools that were subject to other interventions.

89.2. The possibility of further intervention may have an impact on the effectiveness of warning notices. In order to be effective, warning notices must actually warn of some further action. Therefore, the costs of this intervention may be an underestimate, as warning notices "borrow" some of their effect from the presence of other interventions.

90. It is unlikely that warning notices by themselves had a noticeable positive effect on educational outcomes. Subsequent improvement in the schools concerned were more likely to be the result of specific actions taken to address their problems. Our analysis was not able to record the effort or cost of these activities. There was an improvement in schools that received warning notices only, compared to the average of all state-funded mainstream schools and compared to the more statistically comparable schools we identified. We would not claim, however, that all of this improvement is due to the warning notice: some of the improvement may have been caused by unobserved factors.

## Conclusions

91. Overall, our assessment is that it is not possible to isolate the individual impacts of different interventions and make a precise judgement on relative cost-effectiveness. Our results cannot be used to compare interventions and determine the “best” measure for a given situation because of selection bias, the inability to measure all important factors and regression to the mean. These issues make constructing a reliable counterfactual impossible.

92. Our report presented our best evidence on costs per intervention, based on bottom-up assumptions for warning notices and interim executive boards and the top-down division of funding and administrative costs between sponsored academies. As a basis for comparing the relative costs these estimates are fit for purpose.

93. Our report looked at the benefits of the interventions by comparing the change in attainment prior to and after the intervention in schools which were subject to intervention against the state-school average. Overall, schools that received interventions improved, with the exception of secondary schools where interim executive boards were appointed. Statistically, secondary sponsored academies and primary schools with any type of formal intervention improved, on average, by more than the state-funded average in the short run. In the medium run, primary and secondary sponsored academies and primary schools where an interim board was appointed showed statistically significant attainment increases beyond the average state school’s change. These schools’ improvements thus tended to be more persistent than that of schools which received warning notices only.

94. We also attempted a statistical matching exercise in order to try to compare performance to more similar schools. These methods did not deliver very reliable statistical matches (in predicting interventions). Primary schools that received either a warning notice or an IEB improved, on average, by more than the comparator schools in the following year and these differences were statistically significant. Primary and secondary sponsored academies tended to also improve by more than the comparison schools, but statistically these differences were only significant in the second and third year after the intervention. The differences between secondary schools that received warning notices or IEBs were small and not statistically significant. Overall, it has thus not been possible to measure the true size of the causal effect of interventions, or to compare the causal impact of each intervention.

95. This report represents a robust and proportionate approach, given the design of the oversight and intervention system and the aims of the report. Constructing robust, comparable cost-effectiveness metrics is not possible at this moment. If it were, it is not certain that the best system could be achieved by using the most cost-effective intervention. Different interventions suit different schools in different circumstances, e.g. an IEB may not be a suitable as an intervention for a school with great difficulties.

## Annex 1: Historic and current cost estimates for sponsored academies

96. As mentioned in paragraph 45 the cost estimate for sponsored academies presented in this report is based on historic funding rates and organisational structures. Since the expansion of the academies programme in 2010 the department has achieved several efficiency improvements and decreased the programme's relative cost markedly. To model the impact of these changes we have estimated the average cost between financial years 2016/17 and 2020/21 for a group of c. 300 academies opening in financial year 2016/17.<sup>24</sup> These estimates have been generated by applying the current, published sponsored academy funding rates and policies to that group of academies. For the lines that could not be modelled in this way, such as administration, deficit funding or re-brokerage, we have made assumptions based on historic costs.

97. We note that although these numbers are a better indicator for the future cost of creating sponsored academies, they are based on a specific mix of school sizes, phases, and the expected level of support required. If the profile of schools that will open during 2016/17 to 2020/21 differs from that mix, the average cost for sponsored academies will likely differ from our estimates as well. In addition, funding policies in the future may not be at the same level as we have assumed for our modelling, leading to further differences. Lastly, we stress that also these estimates apply to sponsored academies only, and not to converter academies or free schools, whose average cost is likely to be considerably lower.

98. Columns 1-3 in table 14 present the low, medium and high estimates of the 2016/17 sponsored academies' future costs, while column 4 gives the medium historic estimate from table 6 for comparison purposes. Table 14 shows a central estimate of c. £190,000 and an estimated range of costs between £140,000 and £675,000, all of which are substantially lower than corresponding historic costs of between 2010 and 2015. Compared to the historic medium estimate, most cost lines in the future medium estimate either fall substantially or have been phased out. In particular, there will be large decreases for the historic central estimate's largest lines – pre- and post-opening grants, funding protections, and funding system differences. Paragraph 103 will explain what the department has done to achieve these reductions.

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<sup>24</sup> We chose the five-year horizon from FY 2016/17 until 2020/21 so that the estimates are as comparable as possible to the historic ones. Stating the figures for FY 2016/17 only would mean that cost lines such as funding protections or administration would not be as fully represented as in the historic estimates.

| <b>Cost type</b>  | <b>Low estimate<br/>2016-2021</b> | <b>Medium estimate<br/>2016-2021</b> | <b>High estimate<br/>2016-2021</b> | <b>Medium estimate<br/>2010-2015</b> |
|---|-----------------------------------|--------------------------------------|------------------------------------|--------------------------------------|
| Cost of programme admin                                   | £10,000                           | £25,000                              | £40,000                            | £25,000                              |
| Funding of deficits                                       | £0                                | £10,000                              | £245,000                           | £15,000                              |
| Refund for insurance cost                                 | £0                                | £0                                   | £0                                 | £60,000                              |
| Other grants  | £10,000                           | £20,000                              | £135,000                           | £25,000                              |
| Pre-opening cost  | £70,000                           | £75,000                              | £110,000                           | £165,000                             |
| Post-opening cost   | £0                                | £0                                   | £50,000                            | £265,000                             |
| TUPE (Transfer of undertakings, protection of employment) | £5,000                            | £5,000                               | £5,000                             | £5,000                               |
| VAT funding   | £0                                | £0                                   | £0                                 | £30,000                              |
| Differences arising from the funding system               | £30,000                           | £30,000                              | £30,000                            | £205,000                             |
| ESG protections   | £15,000                           | £20,000                              | £60,000                            | £200,000                             |
| <b>Total cost per sponsored academy</b>                   | <b>£140,000</b>                   | <b>£190,000</b>                      | <b>£675,000</b>                    | <b>£995,000</b>                      |

**Table 14: Estimates for future unit cost of creating a sponsored academy**

**Notes:**

1 All costs are valued in financial year 2015/16 terms.

2 We expect the low and medium cost estimates above to cover more than 95% of cases in our group of schools.

99. Our last observation in table 14 is that pre-opening grants will generally be the largest cost position, except in the 1-2% of cases in which, based on experience, we expect a sponsored academy to require a deficit to be cleared or a change of sponsor (re-brokerage). Deficit funding and re-brokerage are also, along with the levels of pre- and post-opening grants, the main sources of variation between the low, medium, and high estimates for the future cost of sponsored academies. For the group of schools which we projected costs for, fewer than 5% are expected to fall under the high cost estimate. The assumptions made for these different estimates mirror those made for the historic estimates (where possible) and are outlined in more detail in table 15.

| Cost line                                  | Low estimate  | High estimate  |
|--|---|--|
| Administration                             | All central administrative cost replaces previous LA administrative cost; only brokerage cost considered marginal | All of the central administrative cost is marginal; brokerage cost as in other estimates |
| Funding of deficits                        | School is not in deficit at point of conversion   | Average cost for a school that needed to have deficit cleared                            |
| Other grants                               | School will not require re-brokerage  | Average cost for a change in sponsor (see footnote 12)                                   |
| Pre-opening grants                         | Lower end of pre-opening grant distribution   | Higher end of pre-opening grant distribution   |
| Post-opening grants                        | Lower end of post-opening grant distribution  | Higher end of post-opening grant distribution  |
| Education Services Grant (ESG) protections | No explicit assumptions; result of a model  | No explicit assumptions; result of a model   |

**Table 15: Assumptions for low and high future cost estimates of sponsored academies**

100. The following paragraphs provide more details on the various cost lines and will outline what the department has done since 2010 to decrease the cost of turning a maintained school into a sponsored academy:

100.1. In this report, insurance cost refers to the cost to the department of refunding individual academies for the excess cost of their insurance policies.<sup>25</sup> In September 2014 the department introduced a Risk Protection Arrangement (RPA) for academies, which academies can participate in in return for a deduction of £25 per pupil from their General Annual Grant (GAG) (£20 per pupil from September 2016). While joining the RPA is not mandatory, from September 2014 on no excess cost of new insurance arrangements has been refunded – e.g. for newly opening academies – and existing arrangements will not be funded after August 2017.

100.2. Table 16 gives an overview of the historic and current ranges for pre-opening grants paid to sponsored academies. It shows that over time the grants levels have decreased on average and the ranges have become narrower. These ranges refer to school level pre-opening grants only. The historic cost estimate included grants paid on a MAT level, such as the Sponsor Capacity Grant (SCG), and the

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<sup>25</sup> Academies are responsible for their own insurance (covered by LAs for maintained schools). All academies are currently deemed to receive £25 per pupil as part of the GAG to pay for insurance. Most of the arrangements made by academies cost more than £25 pp and the department used to cover this excess cost.

Environmental Improvement Grant (EIG).<sup>26</sup> At the time of this report, the funding details for these grants were still being finalised for 2016/17 and beyond. We decided not to include any assumptions for these in our estimates, but acknowledge that the cost estimates will be understated in this regard. In 2012/13, 2013/14 and 2014/15 the share of SCG and EIG in the total pre-opening grant value varied between one third and one half.

|             |                               | Before Mar<br>2012 | Before Sep<br>2013 | Current<br>rate |
|-------------|-------------------------------|--------------------|--------------------|-----------------|
| Lower bound | Primary sponsored academies   | £50,000            | £65,000            | £70,000         |
| Upper bound | Primary sponsored academies   | £214,000           | £120,000           | £110,000        |
| Lower bound | Secondary sponsored academies | £32,000            | £90,000            | £80,000         |
| Upper bound | Secondary sponsored academies | £395,000           | £200,000           | £150,000        |

**Table 16: Pre-opening funding rates for sponsored academies**

100.3. Until April 2011 academies could not recover their VAT from HMRC (LA maintained schools can), so the department compensated them for this cost. There have been no further VAT-related costs since April 2011.

100.4. One part of the differences between funding allocated to sponsored academies and funding recouped from local authorities for these schools is related to earlier academies having received higher funding than comparable LA-maintained schools. Because this funding falls under the Minimum Funding Guarantee (MFG), these funding levels can only be reduced gradually. Another part of the differences resulted from the funding allocation and the recoupment calculations having had to use different data sources. The department has brought funding levels for newly opening academies closer to that of comparable LA-maintained schools, and introduced a tool to align data sources for allocation and recoupment calculations. These initiatives have resulted in a newer academy entailing, on average, a relatively smaller difference in funding than an older one (c. £6k per year on average for our sample). Some differences will remain as long as two funding systems are operated in parallel, such as allocations being based on academic years and recoupments on financial years.

100.5. Since the introduction of the Education Services Grant (ESG) in 2013-14 (previously the Local Authority Central Spend Equivalent Grant, or LACSEG), we have provided protections for academies to limit the reduction to their funding as a result of changes to ESG. This is because the funding rates for these grants have

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<sup>26</sup> Department for Education. 2016. Sponsored academies funding. Advice for sponsors: <https://www.gov.uk/government/publications/sponsored-academies-funding-guidance-for-sponsors>.

been lowered over time and moving immediately to the new rates would have represented large year on year reductions for some academies. In recent years, the protection has been set in tapered bands. Academies that received lower ESG allocations in the previous year will see a smaller reduction in funding as a result of ESG changes than academies that received higher allocations in previous years, allowing reductions of up to 3% of the total funding. As set out in the first National Funding Formula consultation, we are removing the ESG general funding rate from 2017-18. This means that ESG protections will not be applicable to academies opening from 1 September 2017 on. Academies opening until 31 August 2017 will continue to receive a protection for the remainder of the spending review period to prevent unmanageable reductions to their budgets, however we expect the vast majority of academies to be off the protection by 2019-20. During the AYS 2013-14 and 2014-15 academies also received a “top-up” in their ESG funding, which we included in this cost line as well and which has since been discontinued.<sup>27</sup>

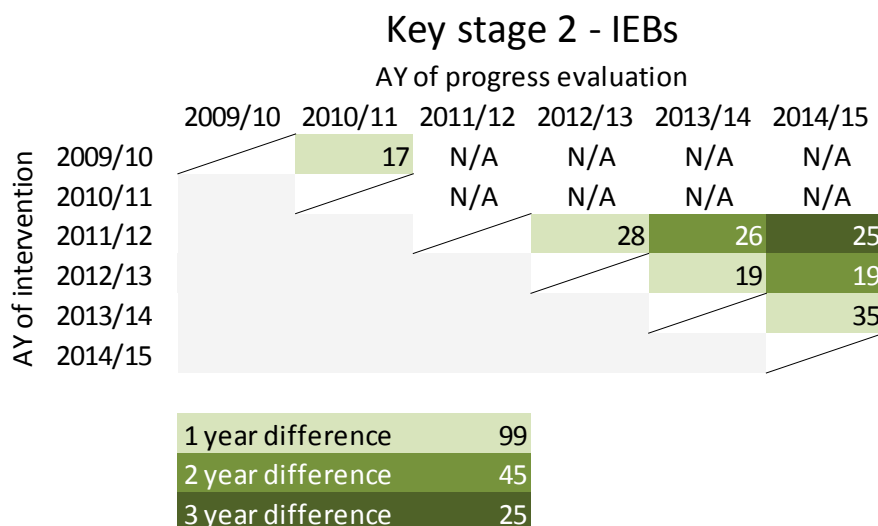
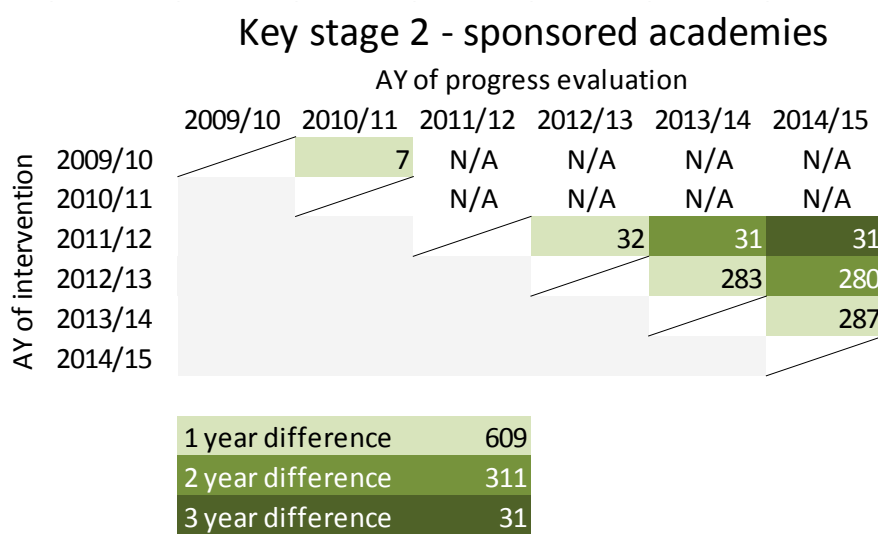
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<sup>27</sup> The following document goes into more detail about composition of ESG in 2013-16, motivations for protections and how they work in practice: The Education Services Grant. Statement of final arrangements for 2015 to 2016, Department for Education. <https://www.gov.uk/government/publications/education-services-grant-2015-to-2016>.



## Annex 2: Composition of analysis groups from figures 6, 8, and 9

101. The following figures show how the analytical groups from figures 6, 8, and 9 are composed, and are intended to improve understanding of the analysis. For example, in figure 6, panel b, we saw that around 254 secondary sponsored academies improved their attainment one year after conversion by 2 percentage points more than the state average. This figure of 254 sponsored academies is composed of 62 academies that opened in AY 2009/10 and whose performance was checked in AY 2010/11, 63 opened in 2010/11, 64 opened in 2011/12 and 65 opened in 2013/14. From this is also apparent that we could not compare pre-2013/14 results with later outcomes, because of the changes to tests.



## Key stage 2 - warning notices

AY of progress evaluation

|         | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2013/14 | 2014/15 |
|---------|---------|---------|---------|---------|---------|---------|
| 2009/10 |         | 10      | N/A     | N/A     | N/A     | N/A     |
| 2010/11 |         |         | N/A     | N/A     | N/A     | N/A     |
| 2011/12 |         |         |         | 11      | 10      | 10      |
| 2012/13 |         |         |         |         | 9       | 9       |
| 2013/14 |         |         |         |         |         | 23      |
| 2014/15 |         |         |         |         |         |         |

|                   |    |
|-------------------|----|
| 1 year difference | 53 |
| 2 year difference | 19 |
| 3 year difference | 10 |

## Key stage 4 - sponsored academies

AY of progress evaluation

|         | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2013/14 | 2014/15 |
|---------|---------|---------|---------|---------|---------|---------|
| 2009/10 |         | 62      | 62      | 62      | N/A     | N/A     |
| 2010/11 |         |         | 63      | 63      | N/A     | N/A     |
| 2011/12 |         |         |         | 64      | N/A     | N/A     |
| 2012/13 |         |         |         |         | N/A     | N/A     |
| 2013/14 |         |         |         |         |         | 65      |
| 2014/15 |         |         |         |         |         |         |

|                   |     |
|-------------------|-----|
| 1 year difference | 254 |
| 2 year difference | 125 |
| 3 year difference | 62  |

## Key stage 4 - IEBs

AY of progress evaluation

|         | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2013/14 | 2014/15 |
|---------|---------|---------|---------|---------|---------|---------|
| 2009/10 |         | 4       | 4       | 4       | N/A     | N/A     |
| 2010/11 |         |         | 6       | 6       | N/A     | N/A     |
| 2011/12 |         |         |         | 3       | N/A     | N/A     |
| 2012/13 |         |         |         |         | N/A     | N/A     |
| 2013/14 |         |         |         |         |         | 13      |
| 2014/15 |         |         |         |         |         |         |

|                   |    |
|-------------------|----|
| 1 year difference | 26 |
| 2 year difference | 10 |
| 3 year difference | 4  |

## Key stage 4 - warning notices

|                    |         | AY of progress evaluation |         |         |         |         |         |
|--------------------|---------|---------------------------|---------|---------|---------|---------|---------|
|                    |         | 2009/10                   | 2010/11 | 2011/12 | 2012/13 | 2013/14 | 2014/15 |
| AY of intervention | 2009/10 |                           | 5       | 5       | 5       | N/A     | N/A     |
|                    | 2010/11 |                           |         | 2       | 2       | N/A     | N/A     |
|                    | 2011/12 |                           |         |         | 3       | N/A     | N/A     |
|                    | 2012/13 |                           |         |         |         | N/A     | N/A     |
|                    | 2013/14 |                           |         |         |         |         | 4       |
|                    | 2014/15 |                           |         |         |         |         |         |
| 1 year difference  |         |                           |         |         |         |         | 14      |
| 2 year difference  |         |                           |         |         |         |         | 7       |
| 3 year difference  |         |                           |         |         |         |         | 5       |

## Annex 3: The matching methodology for intervention schools

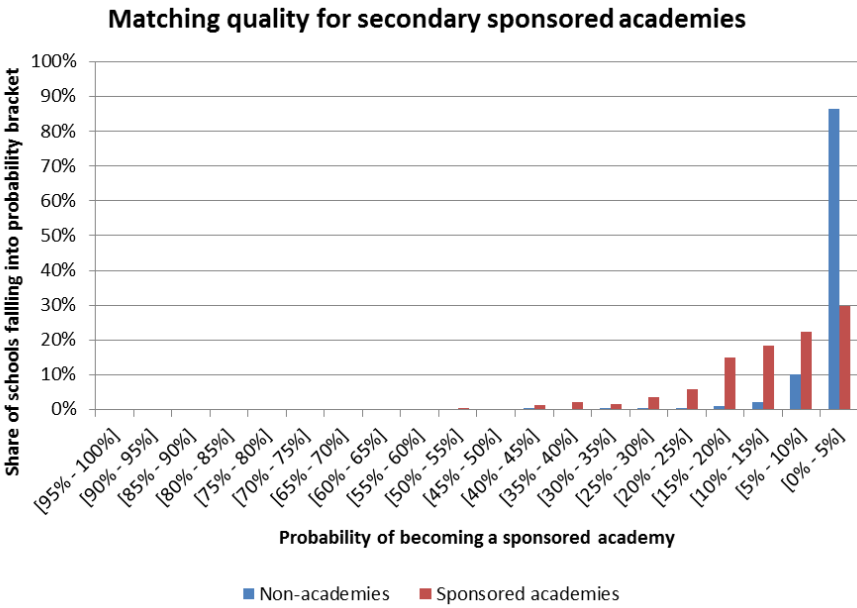
102. In order to find schools that are similar to a given intervention school we employed a statistical technique called Propensity Score Matching. This technique estimates the probability of receiving a given intervention for all schools based on a set of pre-defined characteristics. It runs a probit regression of the dependent variable (intervened in: Yes/No) on the explanatory variables (school characteristics). Each intervention school is then automatically matched with the school(s) with the most similar probability of being intervened in.

103. In line with prior publications from the department and academic research, our independent variables were: i) percentage of pupils known to be eligible for free school meals; ii) percentage of children with Special Education Needs (SEN) statements; iii) prior attainment as measured by key stage 1 and key stage 2 average point scores; and iv) attainment in the year prior to the intervention. Except for iv), all parameters apply to the year of conversion. The variables have been taken from the January version of the school census, the performance tables and statistical first released for SEN provision.

104. In each regression the school that received an intervention in a given year could only be matched to a school that never received that or a higher intervention, so as to minimise any intervention effect in the counterfactual. That means that a school that received a warning notice in AY 2011/12 could not be matched with a school that had an IEB or became a sponsored academy, no matter when these took place. Each intervention school was matched in the academic year that its intervention occurred, and only with a school whose characteristics were similar in that year. We did not allow a school that, for example, was given a warning notice in 2012/13 to be matched with a school data point from 2014/15, even if the two propensity scores might be very similar. For sponsored academies, our sample was large enough that we needed to use only one matched school per academy. For warning notices and IEBs we chose multiple matches per intervention school to reduce the risk that the results could be distorted by any specific, small comparison group generated.

105. Figure 10 gives an example of the accuracy of our matching methodology. It shows that around 30% of secondary sponsored academies were assigned a probability between 0% and 5% of becoming a sponsored academy, as opposed to c. 85% of LA maintained secondary schools. 15% of sponsored academies were assigned a probability of 20% or higher of becoming a sponsored academy and no school had a probability greater than 55%. In the interest of brevity, we will not go into much detail on comparable graphs for every combination of intervention type and school phase. We merely note that the matching quality for secondary sponsored academies is the highest of all combinations and that, due to the small sample sizes

involved, the matching for secondary school warning notices and IEBs cannot be regarded as very robust.

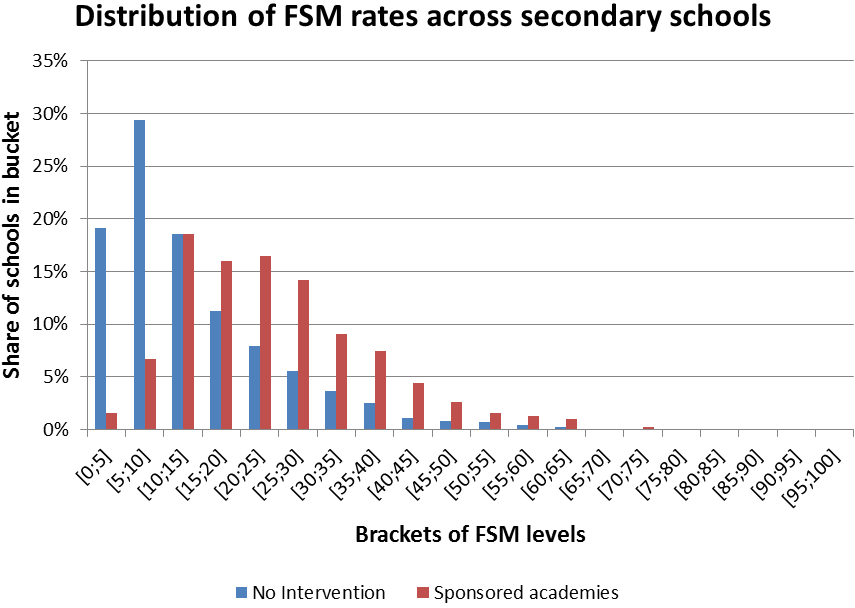


**Figure 9: Quality of propensity score matching for secondary sponsored academies**

106. We attempted to address this via alternative model specifications, for example including a (second) lag of the explanatory variables or extending the model by factors such as class size, gender ratio or ethnicity variables. While these partly achieved modest improvements, none of the extended models tested increased the probabilities of being matched sufficiently for us to discard the simpler model.

107. Further analysis revealed that the low match rates are less a problem with the methodology chosen, but of the wide variation of school characteristics within intervention groups. Figure 11 gives an illustrative example of this variation for our deprivation indicator, Free School Meal (FSM) rates. It shows that just over half of secondary sponsored academies had FSM rates lower than 15% or higher than 30%, but also that sponsored academies have, on average, higher FSM rates than LA maintained schools. Studying comparable figures for the other matching variables, phases and intervention types likewise shows that, while intervention schools’ values tend to be different from those of non-intervention schools, there is high variation within each group, i.e. there is no “typical” intervention school. These observations indicate that, despite being helpful to generate a better comparison group, these characteristics were not enough to robustly predict which schools received an intervention. Hence we must conclude that there have been other factors, such as local assessments, that drove the decision on whether or not a school received a given intervention. The department does not systematically collect data that could address this problem and we estimate that a dedicated, comprehensive data collection

exercise would be very costly and, due to the historic nature of the data, may not be possible at all.



**Figure 10: Variation of FSM rates among secondary sponsored academies**



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