Resource

National College
for Leadership of Schools
and Children's Services

Schools and academies

Efficiencies: helping schools balance the budget

Case studies and recommendations for school leaders

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Introduction

PricewaterhouseCoopers was commissioned by the National College in January 2010 to develop a set of case studies and a series of recommendations for school leaders on the potential implications of future budget cuts to school funding.

This report opens with key messages for leaders about the kinds of school that will be most vulnerable to changes in funding and what strategies and approaches can be taken to ensure that schools are able to manage those challenges. More depth is then provided about strategies for efficiency that schools can implement, grouped under the titles 'Leadership and vision', 'Capacity and ownership' and 'Tools and methods'. Following these sections are details of resources and toolkits that are already available for schools.

To give school leaders more specific advice, the main body of this report provides recommendations on budget management, staffing and curriculum planning, followed by illustrative hypothetical case studies to illustrate how different types of school might react to changes in funding. The case studies offer a means of understanding the effects of individual interventions and the drawbacks of relying on a narrow range of strategies to cope with financial challenge.

For school leaders to make effective funding changes, significant planning is needed as changes made to school budgets will usually not have an effect until the following year. Schools will also need to be wary of carrying uncommitted surpluses as these are likely to be clawed back. In each instance this report isolates single interventions to illustrate the impacts these have, but it is clear that school leaders should plan for and implement a range of activity to create efficiency within their budgets.

Recommendations for school leaders

Please note: This research was conducted up to March 2010. It is based on analysis of the previous government's commitments made in the pre-Budget report (PBR) 2009. Therefore it does not reflect the funding situation since the new coalition government took office on 11 May 2010. Nevertheless, much of the overall analysis and all the detailed case studies remain relevant.

Key messages

At present, the school system as a whole faces much smaller increases in funding than has been the case over the past 10 years. This means that some schools will see real-terms cuts in funding from 2011/12. Their money will not buy as much in 2011/12 as it did in 2010/11. As a consequence of the different funding approaches at a local authority level, no one can predict the implications for individual schools of the announcements in the pre-Budget report or elsewhere. What we can see, however, are the increasing pressure points across the system and in particular types of school or phases. As a result of the announcements in the PBR, schools most likely to receive a real-terms decrease in funding (or funding below the identified cost pressure level) are the following:

- Schools funded at the minimum funding guarantee (MFG). The MFG provides schools with stability of funding by guaranteeing all schools a minimum percentage increase in their funding per pupil from one year to the next in their school's delegated budget. In 2009/10 24.8 per cent of all schools received funding at the MFG rate.

- Schools that operate at a persistent deficit. During the last decade the proportions of schools with deficits has fallen but in 2008/09 three per cent of primary schools, eight per cent of secondary schools without sixth forms and nine per cent of secondary schools with sixth forms remained in deficit during the same period despite a period of significantly enhanced funding. Historically, primary schools have been more effective at managing their budgets to a small year-end deficit than secondary schools.

- Those schools most vulnerable to change. Based on historical funding patterns, schools with low levels of free school meal (FSM) eligibility and those in low-funded local authorities are the most vulnerable to tightening budgets. Compared with schools with high levels of deprivation, they spend smaller proportions of their income on teaching staff and therefore require long-term solutions to reduce costs. The secondary sector in general, and particularly small secondary schools, are also likely to be more at risk due to higher rates of deficits in these schools.

The funding available in 2011/12 means that many schools will need to change the way that they have been managing their resources or take a hit on their year-end balances. Initiating change now will ensure that schools are ready and can use this challenge as an opportunity to improve performance as well as streamlining working practices.

Ensuring that the school leadership team has the right skills to manage change and effectively deal with restricted budgets while protecting and improving outcomes for learners is essential. Leaders should be actively engaging in curriculum-based budgeting (which ensures a balance is achieved between provision of a broad and balanced curriculum and reasonable class sizes) in order to optimise services for pupils. The case studies at the end of this section draw strongly on the impact that curriculum-based planning and workforce analysis can have in addressing financial challenge. These strategies should be considered in conjunction with a number of other approaches.

Management of staff is a key part of creating an efficient school. Leaders need to understand how to manage underperformance and should seek high-quality human resources (HR) advice from their local authority or private companies if necessary to deal with issues that they feel uncertain about handling.

School leaders should look to work in co-operation with other local schools. Federations and collaborations save schools money by enabling:

- fixed costs to be shared across a wider range, eg administrative costs
- shared purchasing power and shared key resources, eg expert subject leaders
- shared opportunities for training and development
- shared strategic application for grants
- greater benefits to be gained from school business managers (SBMs) who provide an average net benefit of over £88,000 per year to school collaborations

Recommendations for school leaders

Making change in schools

All schools are able to improve their financial management and performance by critically examining their expenditure. Across all school phases, around 54 per cent of expenditure is on teaching staff and 26 per cent on other staff costs, leaving 19 per cent on non-employee related items. The largest non-employee related costs are premises and learning resources.

Schools seeking to improve efficiency while protecting and improving outcomes for pupils can select from a range of actions across their budget areas. We have separated the actions into categories to provide clear signposting for leaders:

- leadership and vision
- capacity and ownership
- tools and methods

Leadership and vision

Schools should seek to establish a joint vision between heads, SBMs and governors to establish the financial and moral imperative for responding to future financial pressures and priorities for moving forward. School leaders should be developing strategies to make sure that their leadership teams, governors, parents and pupils are actively engaged in the communal goal of finding efficiencies in the way that the school operates. They should lead change strategically and engage pupils, staff and parents by marketing successes (such as money saved on particular items such as energy use and how this can be put to better use elsewhere), and open up discussion about how to get involved.

Capacity and ownership

For school leaders to be successful at making the best and most sustainable use of resources, they will need to develop their professional skills. This is particularly important around curriculum-based budgeting and financial management. There is also a broader need to increase the capacity and capability within the system to achieve efficiencies, for example via the governing body, SBMs or school improvement partners (SIPs). In addition to improving skills, leaders need to start focusing on medium- to long-term strategies for efficiency and not just the short-term goals. Leaders should also be working with other schools to learn lessons, share best practice and increase the benefits of shared resources and procurement.

Tools and methods

There are some key tools and methods that schools will need to draw on to achieve good financial performance whilst maintaining positive outcomes for pupils. These include curriculum-based planning and budgeting and building budgets from zero. Such techniques will help schools to analyse their workforce and core activities and create a staffing structure around them to deliver the best outcomes for pupils and maximise the funding available. Schools can and should be optimising value for money through shared procurement routes and maximising income generation through effective use of facilities and the school's estate.

Current toolkits and resources are provided in more detail on the following page.

Recommendations for school leaders

Current toolkits and resources

A lot of work has gone into developing tools and resources to help schools assess, develop and transform their working practices, find efficiencies, optimise outputs and reduce their carbon footprints. These are listed below and the National College and the Training and Development Agency for Schools (TDA) are currently working to evaluate and assess these for the value they can provide to schools. If schools do not know of these resources already, we suggest they look through them to see how they can help to implement the changes we describe in the case studies below.

- Financial benchmarking tool:
  https://sfb.teachernet.gov.uk/login.aspx
- National College website – Using our resources well:
  www.nationalcollege.org.uk/index/leadershiplibrary/leadingschools/leading-an-effective-organisation/managing-schools/manage-resources.htm
- DfE online procurement for educational needs tool:
  www.dfe.gov.uk/open/
- TDA remodelling site
  www.tda.gov.uk/remodelling.aspx
- DfE financial management standard in schools (FMSiS) tool
  www.fmsis.info/
- Tribal Avail consultancy for schools:
  www.consultancyforschools.co.uk/
- Teachernet DfE landing page contains links to all the above:
  www.teachernet.gov.uk/management/schoolfunding/schoolfinance/letstalkresources/
- School Standards VfM site has tips for just about everything:
  www.standards.dfe.gov.uk/vfm/
- Carbon Trust energy efficiency:
  www.carbontrust.co.uk/cut-carbon-reduce-costs/products-services/sector-advice/Pages/schools-1.aspx
- Audit Commission self-evaluation tool for efficiency and economy:
  www.schoolresources.audit-commission.gov.uk/
- Teachernet Educational Procurement Centre (linked to DfE's OPEN) for better procurement from a free local procurement team:
  www.teachernet.gov.uk/management/epc/
- Audit Commission schools workforce tool for analysis of staffing by subject and area:
  www.schoolresources.audit-commission.gov.uk/Resources/Workforce%20Tool.xls
- Becta advice on effective use of resources and optimising organisational performance in relation to IT:
  http://schools.becta.org.uk/
  www.becta.org.uk/schools/procurement
  www.becta.org.uk/bestvalue.php
  www.becta.org.uk/schools/informationmanagement

Recommendations for school leaders

Savings in specific expenditure areas

Our analysis of expenditure for 2008/09 showed that across all schools, an average of 54 per cent of expenditure was spent on teachers, 26 per cent on other staff costs (including support teachers), with the remaining 19 per cent spent on non-employee related items. We also found that schools will make different choices on how they spend their funds depending on the level of their funding. For example, schools with higher per-pupil funding (local authorities with high deprivation and/or high historical funding levels) typically spend more on support staff and administration and other employee costs, with a reduced share of the budget going on teaching costs.

The case studies below show the types of opportunities for savings at budget level on which schools will need to make informed decisions.

Income generation

Income generation is not technically a method for finding efficiencies; however, in a climate of reduced budgets, increasing self-generated income can give a school the additional money it may need for support classes, staff or outreach that was previously to be found from traditional funding routes. Schools have facilities and buildings that can be used when pupils are not present, in the evenings, at weekends and during the holidays. The income generated from hiring out premises and facilities for courses and events can provide a significant source of income for schools. Finding schools that have successfully accessed this resource is a good way of getting it right.

Case studies

The following pages describe a range of case studies to illustrate how changes to funding are likely to affect schools in a range of circumstances and what strategies a school leader might draw on to improve the financial position of his/her school. They have been developed using the school expenditure model developed by the Association of School and College Leaders (ASCL). Some are created using anonymised data for real schools and others are hypothetical schools that have been created using consistent financial reporting (CFR) data.

Recommendations for school leaders

More detailed considerations in managing financial performance

A number of potential solutions for school leaders come out of the case studies. These are set out below and aim to provide leaders with a practical framework of areas that schools need to consider in dealing with financial constraints.

1. Schools need to ensure that they are working to the workload agreement and that teachers focus on teaching. This means that teachers should either be teaching, on preparation, planning and assessment (PPA) time or on management time.

- PPA time is 10 per cent of the timetabled teaching time not 10 per cent of the standard teaching week and must be rounded up to at least 30-minute sessions.
- Management time should be allocated on a needs rather than historical basis.
- The overall management time for a secondary school should be based on a norm of 10 per cent (although it is accepted that this will vary depending on the needs of the specific school).
- Several secondary schools are still carrying additional non-contact periods for staff and these should be removed whenever possible without compromising the ability to put a subject specialist in front of a class.
- Taking account of practicalities such as actual lesson length and the impact of part-time working, 10 per cent PPA time and an equivalent amount of management time, a contact ratio of 0.78 is a reasonable norm for a secondary school.

2. Class sizes will need to be optimised, while continuing to focus on improving standards. The section below sets out some examples of how this might be achieved.

- Mixed-age classes in smaller primary schools are common but they have been successfully used in secondary schools as well.
- Secondary schools have used separate one-year GCSE programmes in Years 10 and 11 to both maximise curriculum choice and give optimum class sizes.
- A few secondary schools have used 'stage not age' classes at Key Stage (KS) 3.
- An overall average class size of no lower than 20 in KS4 is a reasonable target unless the school is smaller than 750 on roll, which may mean it cannot offer a suitable curriculum at that level.
- Health and safety requirements effectively set a maximum class size of 20 for technology groups. Timetable structures should be checked to ensure that small groups are not created by the structure rather than educational requirements.

3. Schools need to ensure that teaching staff are not taking on roles and tasks that could be done equally effectively by non-teaching staff.

- Are traditional pastoral roles being carried out by teaching staff? This can be very costly as the teacher has to be freed up from teaching to carry out the role, whereas a member of support staff can be fully dedicated to this role.
- Similarly the supervision of inclusion rooms and other direct student support roles can be carried out by educational support staff.
- Schools should avoid using teachers as behaviour managers.

4. Staffing structures and timetabling are key cost drivers and need to be managed proactively.

- The costs of inherited management structures and management time actually required need to be kept under review. Salary protection means that the full savings of a restructuring will not be seen for three years. A school with a falling roll needs to plan changes in its management structure well in advance.
- Average teacher cost is a critical factor for schools. This is not something that schools can easily control, given employment law, but it has a major impact on the number of staff a school can afford to employ.

Recommendations for school leaders

- In determining the number of teaching staff required, it is important to factor in both financial and curriculum perspectives so that the solution is affordable.
- The ideal timetable, with no surplus teaching time, is very difficult to achieve but schools can plan to get as close to the ideal of zero surplus as possible. A school can try to develop areas of the curriculum where significant numbers of staff are trained to deliver at an acceptable level (eg personal, health and social education (PHSE), ICT at KS3) to enable the timetabler to get an acceptable timetable out with minimum wastage.
- Employ cover supervisors and move to no cover for all staff unless you pull management time in the case of an emergency. Supply cover supervisors can be employed in the same way as supply teachers where a school can recruit a pool of available staff.
- Cost post-16 and diploma courses carefully to ensure they operate within the affordable cost envelope.

5. Non-staff costs and income need to be strategically reviewed to ensure value is maximised and costs are kept to a minimum.

- If you do not have access to SBM expertise, consider options for achieving this, either by employing an SBM within your school or entering into a shared arrangement with other schools.
- Look to find ways of improving procurement of services and educational resources. Use shared bulk purchasing and electronic procurement systems.
- Consider all the other strands of sharing resources (including staff) with other schools.
- Benchmark all the contracts that the school has for outsourced work (eg grounds maintenance) to see whether there are prospects of a cheaper contract for the same level of service.
- The CFR return for the school should be compared with that for similar schools to see where expenditure is varying from the norm. Local authority-wide CFR reviews and discussions with other school leaders and business managers can provide helpful insights as to how they have achieved more efficient expenditure patterns.
- Technology costs can be high and need to be proactively managed.
- Measuring energy use and introducing a policy on energy efficiency can help a school find efficiencies. It is an area that pupils and staff can be relatively easily engaged with and own.
- Look for income generation schemes. Is maximum use being made of the school site? A full assessment needs to be made of such opportunities as they may not always justify the level of effort required to generate the income.

Navigating the case studies

The format of the case studies is a narrative which describes the key characteristics of the school, its current financial position projected forward and a number of suggested strategies for improving its financial position. The narrative is supported by two charts. The upper chart illustrates the outcomes for a school before any strategic changes are made. The lower chart shows the impact of the changes made in the narrative.

In the lower chart, different interventions have been introduced to illustrate how multiple strategies can affect a school's financial performance. In practice, it is more likely that schools would use a wider range of different solutions in each case study, but we have restricted the number of solutions being used to demonstrate the effect isolated interventions will have, and highlight the risks associated with each.

Case studies

Case studies

We hope that school leaders will find elements from different case studies resonate with their particular situation and can find useful ideas to consider for their context. We emphasise that the case studies are for illustrative purposes only.

When reading these case studies, please be aware of the changing values on the vertical axes. Please see Annex A for more detail on how the models have been built.

Case studies

The table below gives an indication of the type of case-study schools used to help you identify the ones most relevant to your school situation.

	Secondary without sixth form	Secondary with sixth form	Primary	Urban	Rural	Large	Average	Small
Case study 1		✓		✓		✓		
Case study 2	✓			✓		✓		
Case study 3	✓			✓		✓		
Case study 4	✓			✓		✓		
Case study 5	✓			✓		✓		
Case study 6			✓		✓			✓
Case study 7	✓							✓
Case study 8			✓					✓
Case study 9	✓							✓
Case study 10			✓				✓	
Case study 11	✓			✓			✓	
Case study 12			✓	✓			✓	
Case study 13	✓			✓			✓	
Case study 14	✓							
Case study 15	✓						✓	
Case study 16	✓						✓	
Case study 17			✓				✓	

Case studies

Case study 1: Secondary school with income generation

This case study shows a school with a roll of just over 1,300 students, including over 200 in the sixth form. It is one of three secondary schools in a large town.

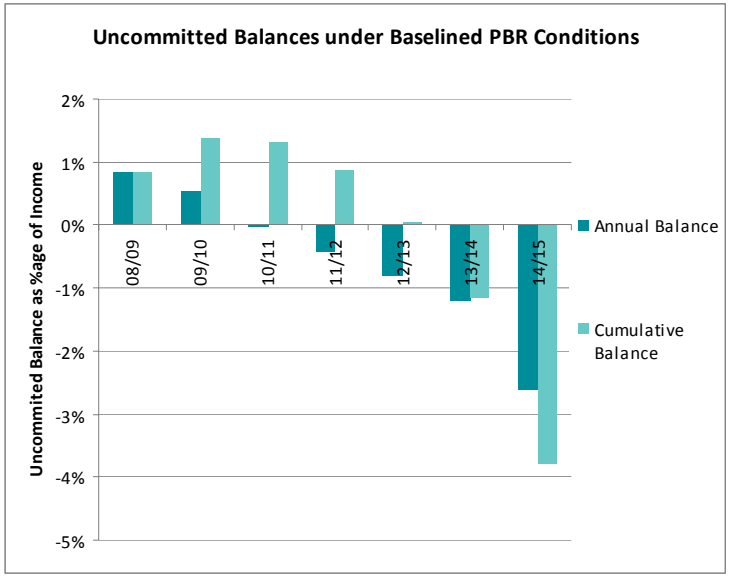
The school has a good income-generation programme with a sports centre on site and good use of the school facilities in the evening by the local community. Overall external income is £195,000 in the first year, although that income is not all profit. There will be the normal wear and tear on assets and facilities, and money needs to be put aside for this. There are also administrative, cleaning and caretaking costs.

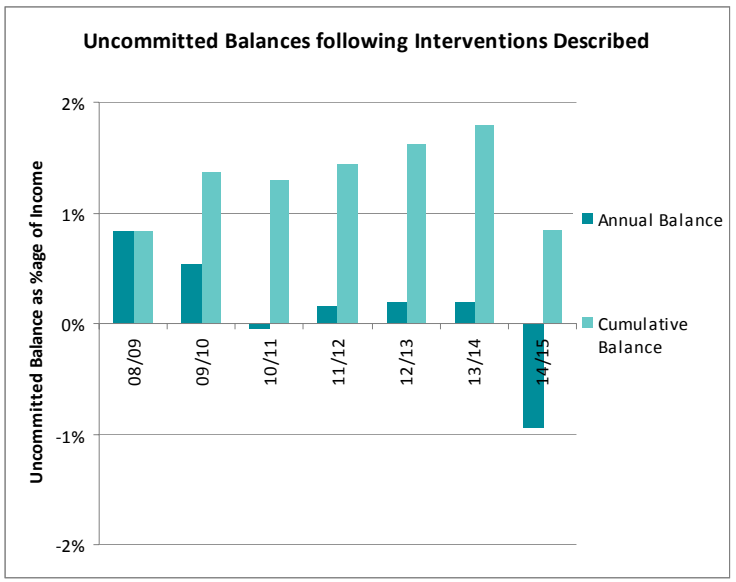
The upper graph shows that the financial outcome if the current level of provision is maintained is that the school gradually moves more deeply into deficit. The in-year deficits will gradually increase, as will the accumulated deficit. In 2011/12, the saving required is in the region of £27,000. Twice that level of saving is required in 2012/13 and a further three times that amount in 2013/14.

In this three-year period, a reduction equivalent to achieving the following actions will be required to keep this school within budget:

- obtaining a procurement saving of about 12 per cent on educational resources
- obtaining a procurement saving of around 3 per cent on the procurement of all other supplies and services
- a loss of 0.6 of a teacher with an appropriate loss of curriculum flexibility, ie increased class sizes or the removal of some option groups at KS4 (in essence this means the removal of about 12.5 hours of teaching time)
- a loss of 1.8 educational support staff, reducing the amount of about 45 hours in-class support or individual support provided by a teaching assistant
- a reduction of 1.5 administrative or clerical staff, removing approximately 55 hours of this type of support

In the lower graph, the figures show the financial impact of taking these actions which leads to generating an annual surplus, although projected figures indicate the need for further action to be taken to balance the budget in 2014/15.





Case studies

Case study 2: Secondary school without a sixth form in a low-funded local authority

This is an 11-16 city school of just over 1,100 pupils in a lower-funded local authority. Per-pupil funding is £4,447 compared with the similarly sized London school average cost per head of £5,706, a difference of £1,259 per student or just over £1.4 million for the school. The school has a surplus balance at the start of the period.

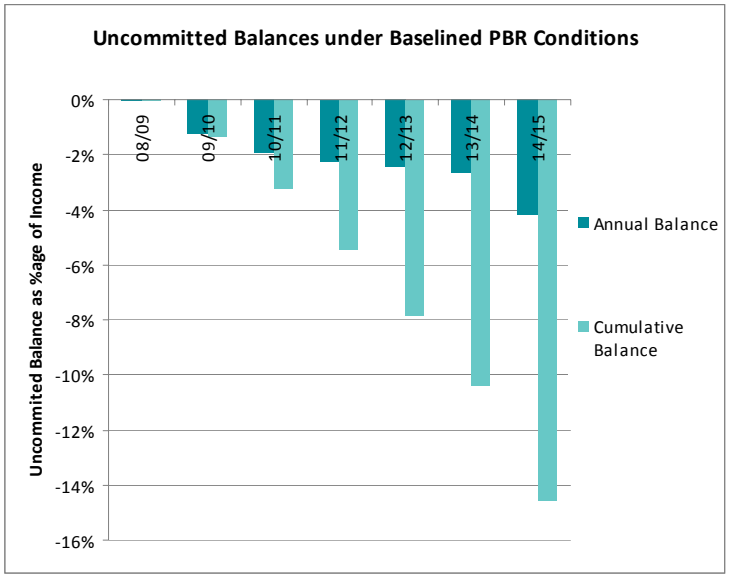
As a school in a low-funded local authority, this school is spending a significantly higher proportion of its budget on teaching staff (65 per cent, compared with many schools in the region of 56-60 per cent). The upper graph shows that the school is already looking at an in-year deficit in 2009/10. To get back to a balanced budget in 2010/11, savings in the order of £158,000 will need to be made.

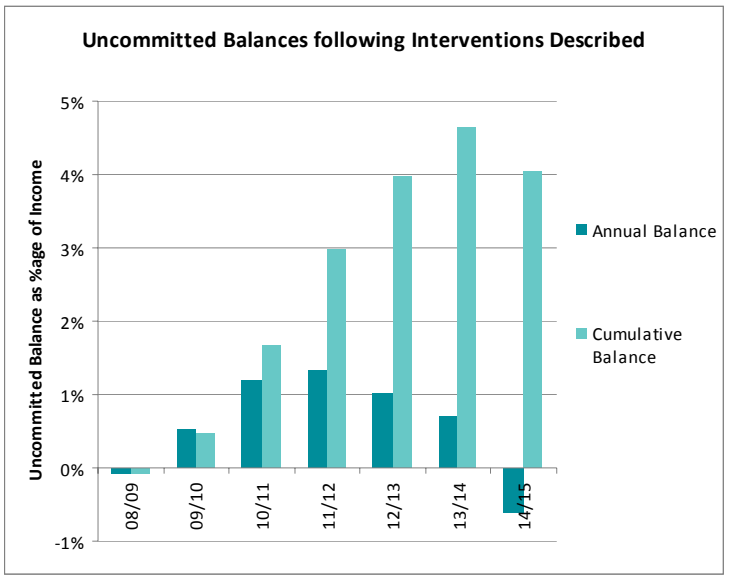
The current average class size in KS3 (except IT) is 27. Increasing this to 30 (provided that it can be achieved with the intake numbers) will have a significant impact on the budget, with a saving of nearly three members of staff. This will of course mean a reduction in the teaching staff either by natural movement or by redundancy.

The lower graph shows the school having just gained access to an SBM with significant experience of achieving savings on non-staff costs both through more effective procurement of educational resources for lower value goods, and through collaborative procurement deals with local schools for high-value goods and services. Potential savings are not currently included in the lower graph but achievement of a five per cent saving in non-staff costs would provide additional flexibility for the delivery of the curriculum.

Other options were considered but did not result in the level of efficiency required, for example reducing the number of subject options in KS4 to achieve an average class size of 20 instead of 18. This however would only have half the effect in the first year as it would not be possible to adjust the size of the group moving into Year 11.

These combined actions will move the school into the lower graph, which shows a reasonably healthy in-year balance.





Case studies

Case study 3: Secondary school without a sixth form in a high-funded local authority

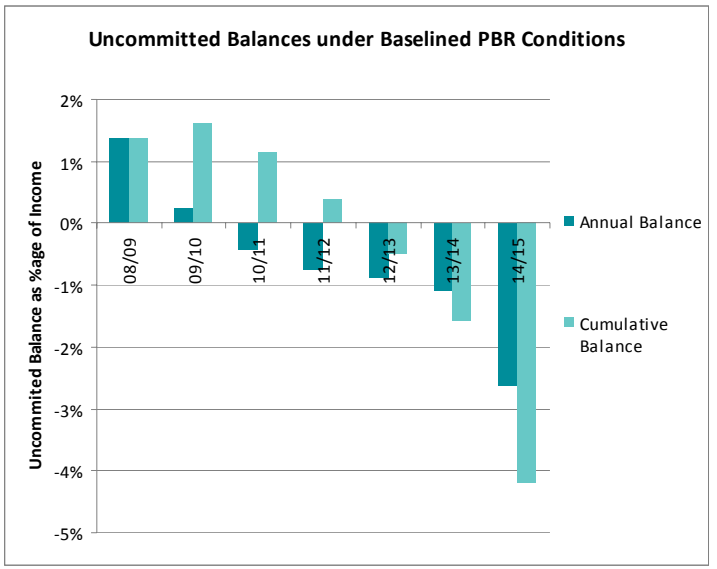
This is an 11-16 city school of just over 1,100 pupils in a high-funded authority. Per-pupil funding is £5,706 compared with the similarly sized low-funded authority average cost per head of £4,447, a difference of £1,259 per student or just over £1.4 million for the school. The school has no surplus balance at the start of the period.

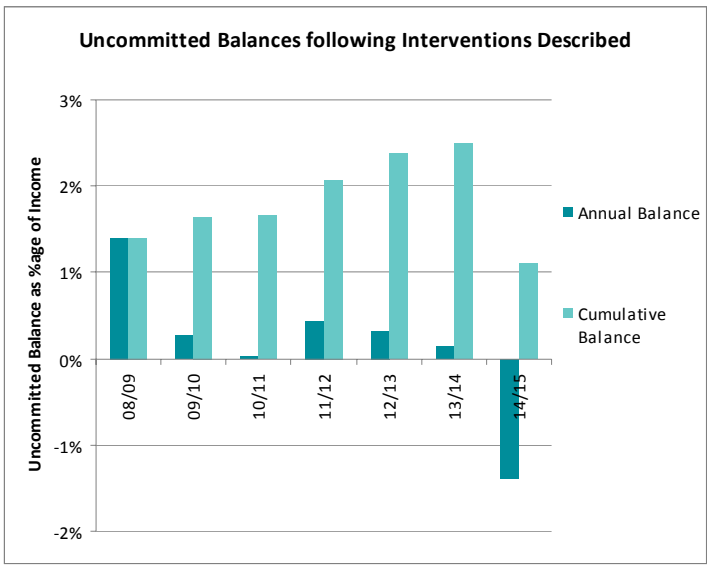
The average teacher cost is £54,821, a high rate in comparison with other schools. This indicates either that more teachers are higher up the pay scales (this is relatively unlikely for London) or a more expensive management and leadership structure is in place.

The school spends 58 per cent of its income on teaching staff and there is a proportionally high number of educational support staff. If the school continues to operate with this cost base, it will move slowly but steadily into a deficit situation as can be seen in the upper graph.

The lower graph shows the effect of reducing the educational support staff by 2 (from 38 to 36) in 2010/11 and retaining that level, together with 5 per cent savings on procurement on all supplies and services and educational materials in 2011/12. The result shows that it will remain in a positive in-year budget situation until 2014/15, when a further evaluation of the situation could be made, as illustrated in the lower graph.

If a more expensive leadership and management structure is in place, efficiencies might be found there, for example either by reducing the size of the leadership and management team or by bringing pay levels more in line with the average.





Case studies

Case study 4: Secondary school without a sixth form in a high-funded local authority with good pupil numbers

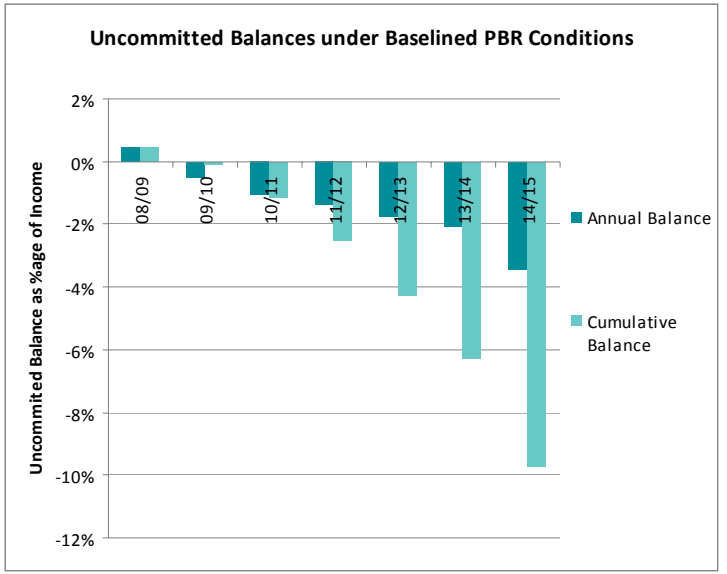
This is an 11-16 city school of just over 1,100 pupils in a high-funded authority. The roll numbers are even at 215 per year group. This fits very neatly with the curriculum plan. At KS3 the school can run with 8 classes of 26 or 27, and 12 technology groups of 17 or 18. In KS4 this will provide for 12 groups of 17 or 18 across the year group. All of these numbers are for average group size.

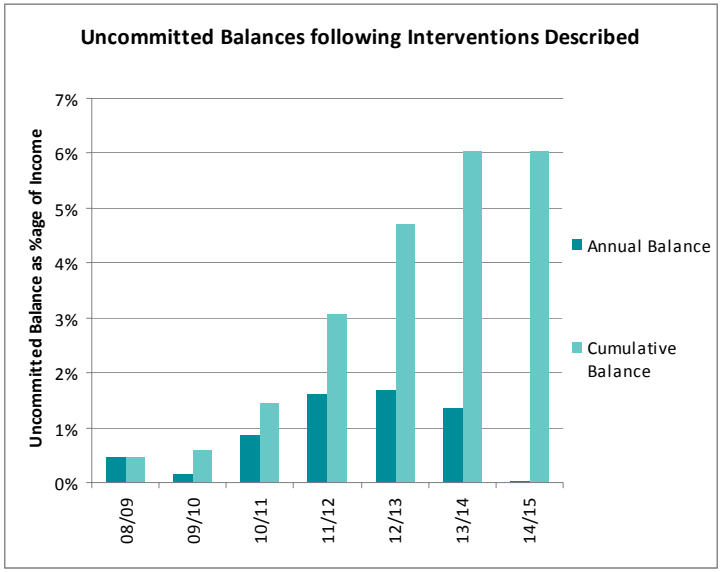
Running against this curriculum model, the school will have a small but increasing in-year deficit.

Trying to increase the average class size at KS3 to 30 will have no effect in terms of saving money as 8 classes are still required. To reduce to 7 classes, the class size would have to move to 31. This would save 3.6 teachers over the key stage, a net saving of £203,756 at base year figures.

This would require a substantial change for the school to manage if it were applied to existing classes as they move into Years 8 and 9. One option would be to phase it in over three years with the incoming Year 7 set at the higher class size. This saves 1.2 teachers per year. This will put the school into surplus as indicated in the lower graph, but would mean reducing the teaching staff by 1.2 a year over the three-year period.

This scenario should be compared with Case study 5, where the school numbers are not good for the curriculum model to start with.





Case studies

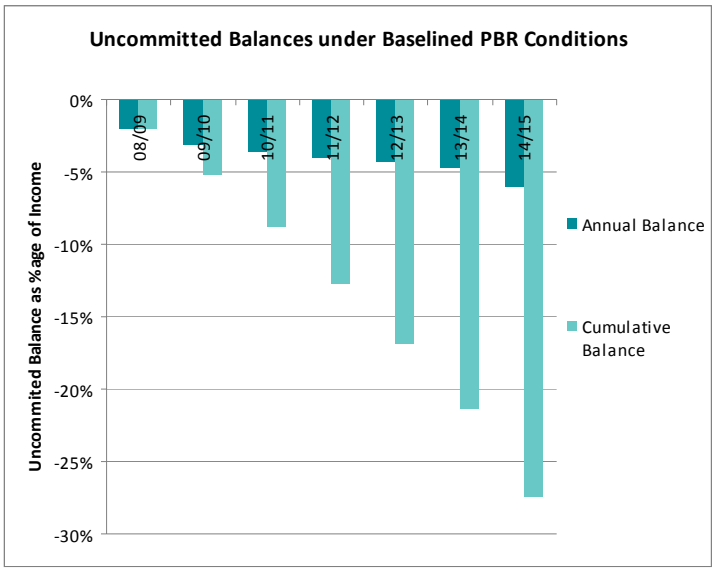
Case study 5: Secondary school without a sixth form in a high-funded local authority with poor pupil numbers

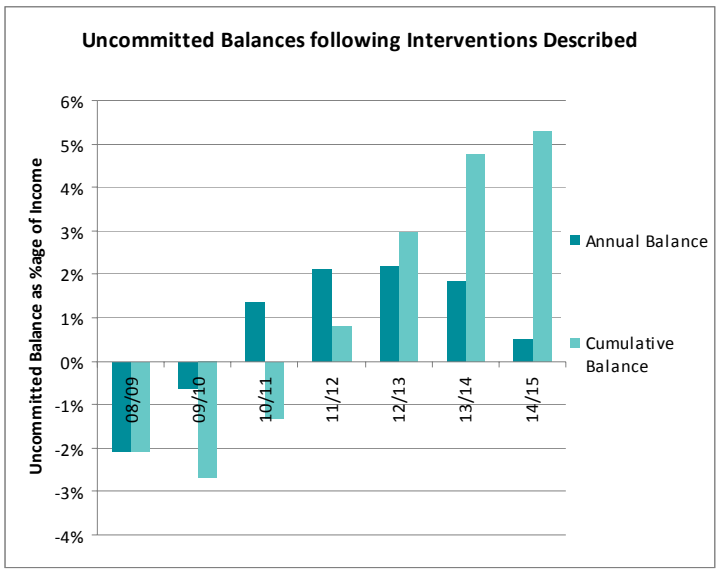
This is an 11-16 city school of just under 1,100 pupils in a high-funded authority. The roll numbers are even at 218 per year group. This does not fit with the curriculum plan. At KS3, this means that 9 groups are required to stay with a maximum class size of 27, which leads to an average class size of 24.2. Similarly in KS3 technology and in KS4, to keep to the average class size of 18 ,13 groups will be needed rather than 12, giving an average class size in these areas of 16.7.

The school already has an in-year deficit that is increasing at about double the rate of the similarly funded school with good pupil numbers (see Case study 4).

Reducing to 8 groups in KS3 (average class size 27.25) would have an impact but would not move the school into a positive in-year situation. To do this, the KS3 classes would have to be taught in groups of 31 or 32, ie to have 7 teaching groups across the year group. As in Case study 4, this could be achieved over a three-year period by reducing the number of teaching groups for each intake Year 7 over three years. This moves the school into the positive funding position shown in the lower graph.

Based on these class sizes, this school has a bigger surplus than the school in Case study 4 where the school had better pupil numbers. This is because it benefits from income for 15 additional pupils but is able to run the same number of teaching groups, although the teaching group sizes are slightly larger. This school cannot afford to keep to its curriculum model because the number of students constantly takes it over its model class size. As the budget situation tightens, this school has to reduce by two teaching groups per KS3 year group, whereas the school in Case study 4 will have to reduce by one. You can see from the base year that the school could not afford to run on its original curriculum model and would have had to move to eight groups instead of nine, even without any additional pressure on the budget. The revised analysis for this is shown in the lower graph. To reach this position, the school will need to lose seven teaching staff over the three-year period.





Case studies

Case study 6: Small primary school with a falling roll

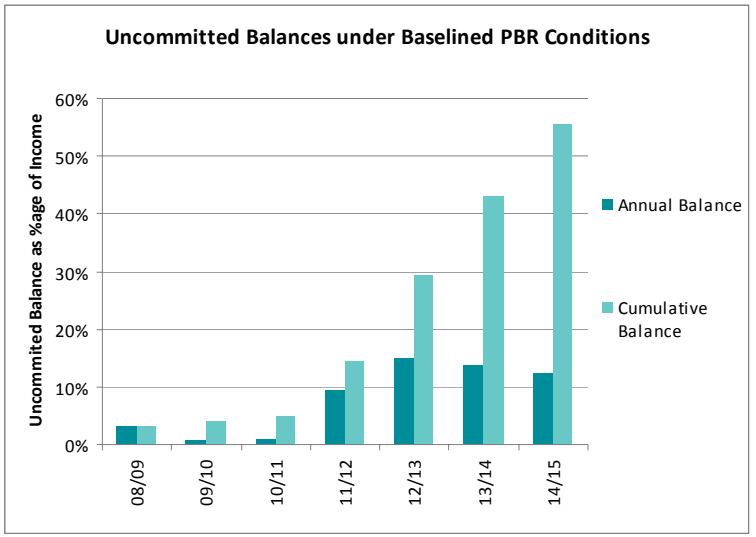
This is a very small school in a rural location with fewer than 10 pupils in any year group. To date it has achieved a balanced budget by combined year teaching classes. One member of staff represents over 25 per cent of the teaching resource and therefore staff numbers have a significant impact on the budget. It spends slightly more of its budget on teaching costs and goods and services than other small primary schools.

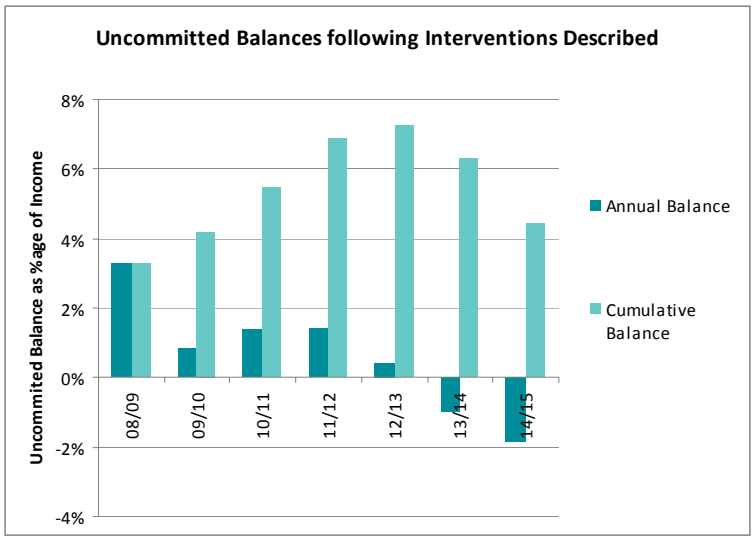
The roll numbers are falling slightly year on year (by around two per cent), leading to a drop in income. By 2010/11, the school is only just balancing its budget and as two of its part-time teachers are coming up to retirement, the school's leadership team takes the decision to reduce teaching staff from 3.4 full-time equivalents (FTEs) to 2.5 FTEs. This creates a significant increase in the uncommitted balance at the year end, but has an immediate impact on the quality of the experience for pupils.

The second graph shows the consequence of the school maintaining its teaching strength at 3.4 FTEs. This creates an in-year deficit balance from 2013/14, which is compensated for in the short- to medium term by the accumulated carry forward, but is not sustainable.

The school needs to take further action by 2014/15. An option is to explore whether some of its 3.4 FTEs teacher complement could be replaced with teaching assistants (it currently spends a smaller proportion on support staff than other small primaries). It could also review opportunities to reduce costs in its key contracts. Capacity and experience available within the school to do this is limited, so the school may wish to explore sharing an SBM resource with other local schools.

Note: This case study has been created by taking the average figures of the smallest 20 per cent of primary schools (by pupil numbers) from the national datasets (CFR and ASC) to provide a general picture of a small primary school.





Case studies

Case study 7: Small secondary school with a falling roll

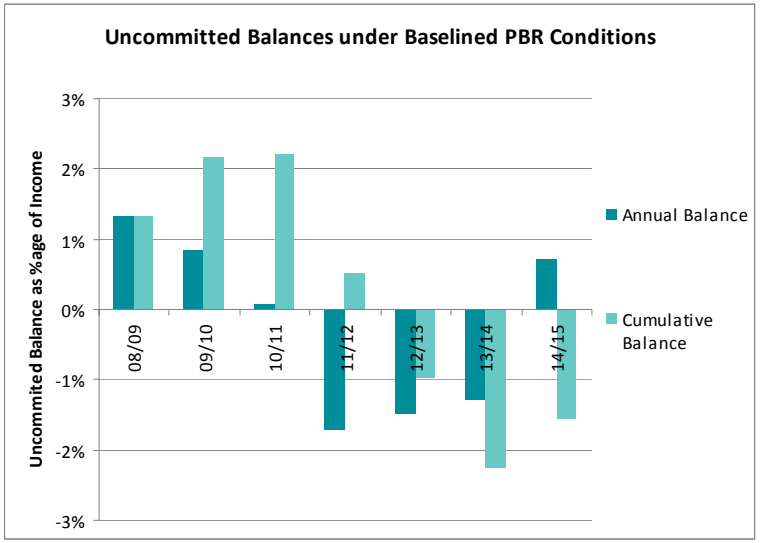
This small secondary school has a falling roll of around three per cent a year during the period. Pupil numbers fall from 361 to 291 during that time. It receives an average level of funding and has no difficulty recruiting staff as it is located in an attractive area with good local facilities.

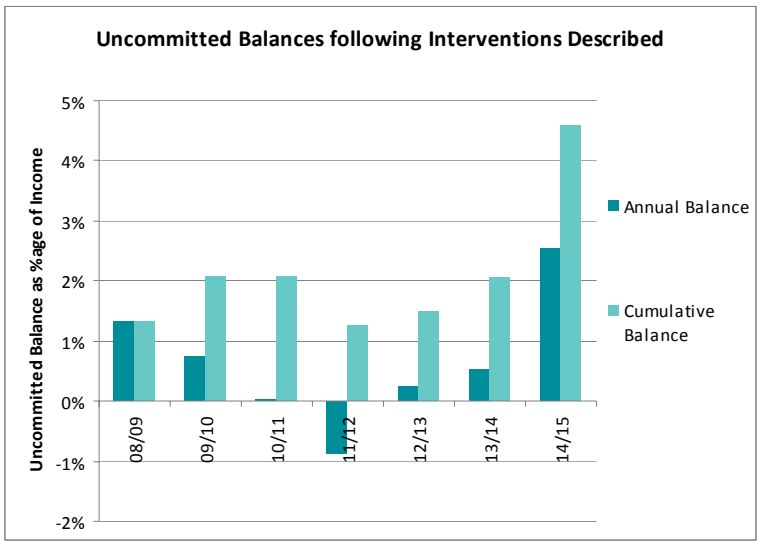
During this period, the school takes action to manage the budget and reduces teaching costs by 17.6 per cent. However, even with this action, the upper graph shows a steep decline in the year-end balance. This is because of the combined effect of loss of per-pupil income and the need to provide an extra teaching group for a dwindling number of pupils. In 2014/15, a positive balance is achieved because the roll has fallen to a level for Year 7 where the school can reduce the number of teaching groups. This scenario maintains the curriculum flexibility.

A balanced budget can be achieved by reducing support staff in line with teaching staff over the period. The lower graph shows a reduction in classroom support staff of 16 per cent in 2011/12. This same peak can be seen in 2014/15 as the number of groups for Year 7 can be reduced.

Because it has very small year-group sizes, this school find it difficult to supply an adequate KS4 curriculum and to cover sufficient subject specialism with this staff base. This model shows the impact of reducing staff numbers on the budget and in reality schools will need to make multiple changes to improve financial performance. Blending a reduction in staff numbers to reflect a falling roll with other efficiencies, such as reduced procurement costs, will deliver a more sustainable change. The school does not currently have an SBM but is negotiating with two local schools to establish a shared SBM resource.

Note: This case study is based on the average figures of the smallest 20 per cent (by pupil numbers) of secondary schools without sixth forms from the national datasets (CFR and ASC).





Case studies

Case study 8: Small primary school with a rising roll

This primary school has a rising pupil roll, with pupil numbers increasing from 55 to 63 over the period, an increase of around 2 per cent a year. The school is able to accommodate its rising roll within existing class sizes and is able to benefit from the additional income.

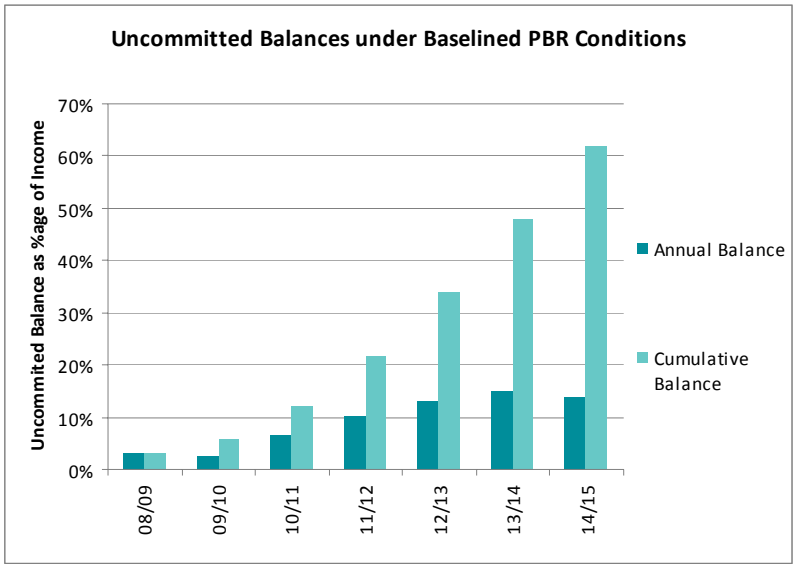
The upper graph shows that current staffing levels and curriculum flexibility are maintained and that this leads to an increasing year-end surplus. There is potential for the school to use the additional income generated by its rising rolls to improve the quality of learning provided to its pupils.

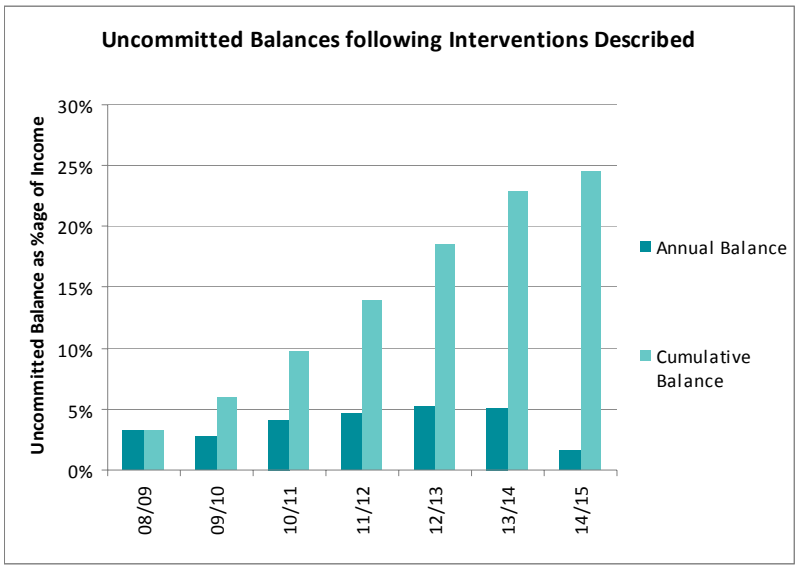
It decides to increase the teaching numbers to keep pace with the rising roll. The lower graph shows the effect of this and the projection shows an increase of one teacher over the period of the model. The year-end surplus is reduced and only rises above five per cent in 2012/13.

The lower graph also shows that with the increase in roll, the school now also has room in its budget to invest in improving other aspects of its provision, such as its IT facilities.

Of course, managing a large surplus is a less challenging issue than managing a large deficit, but schools in this situation need to ensure that they make decisions that maximise the benefits of the funding for their pupils.

Note: This case study is based on the average figures of the smallest 20 per cent of primary schools (by pupil numbers) from the national datasets (CFR and ASC).





Case studies

Case study 9: Small secondary school with a rising roll

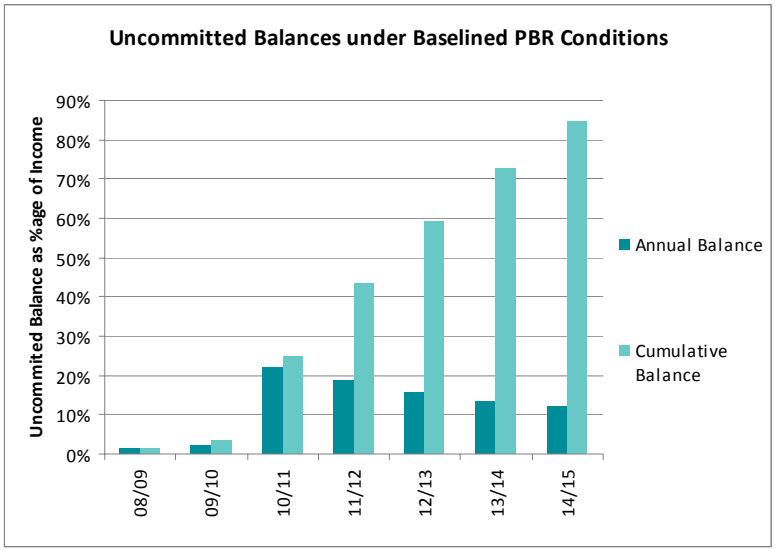
This small secondary school has a gradually increasing roll which grows from 361 to 443 over the 7-year period.

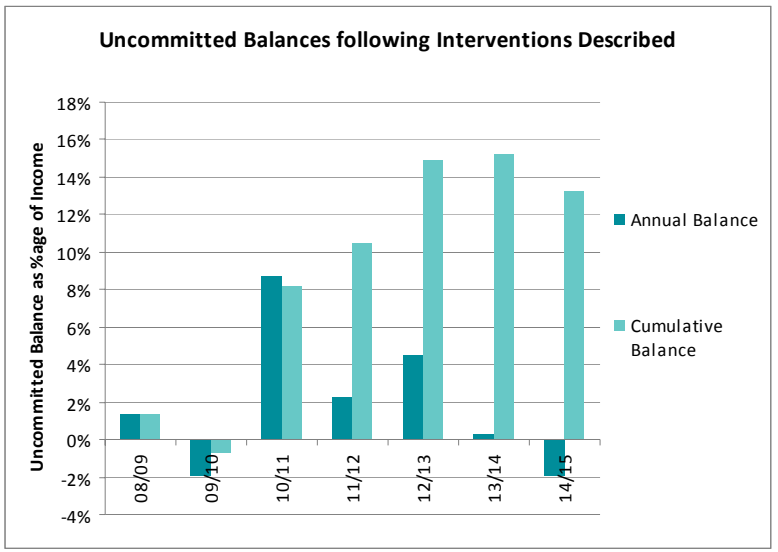
By maintaining its present limited curriculum flexibility, the school would generate a significant surplus at the end of the year from 2010/11 onwards. However, the school leadership team knows that it needs to invest the increase in funding in enhancing its KS4 provision.

In the lower graph, the school has spent most if not all of the surplus balance on providing an adequate curriculum to manage the roll at KS4. The significant balance in 2010/11 is due to the year-group sizes being at the most economic point. As this surplus is not sustained in future years, the school is able to use the balance in one-off expenditure (eg on learning resources) to enhance the curriculum provision.

This illustrates that taking a single action would not solve the issues in this type of school. In reality, because of the very small year-group sizes, the school would need significant financial support above that used in the model to supply an adequate KS4 curriculum and to cover sufficient subject specialism.

Note : This case study is based on the average figures of the smallest 20 per cent (by pupil numbers) of secondary schools without sixth forms from the national datasets (CFR and ASC).





Case studies

Case study 10: Average primary school with a falling roll

This primary school has 231 pupils at the start of the period , with pupil numbers falling gradually to 200 (a cumulative total school roll reduction of 2 per cent a year) over the 7-year period. At the start of the period, the roll numbers in all year groups are just over 30. The school has managed its financial position by using mixed-age teaching groups.

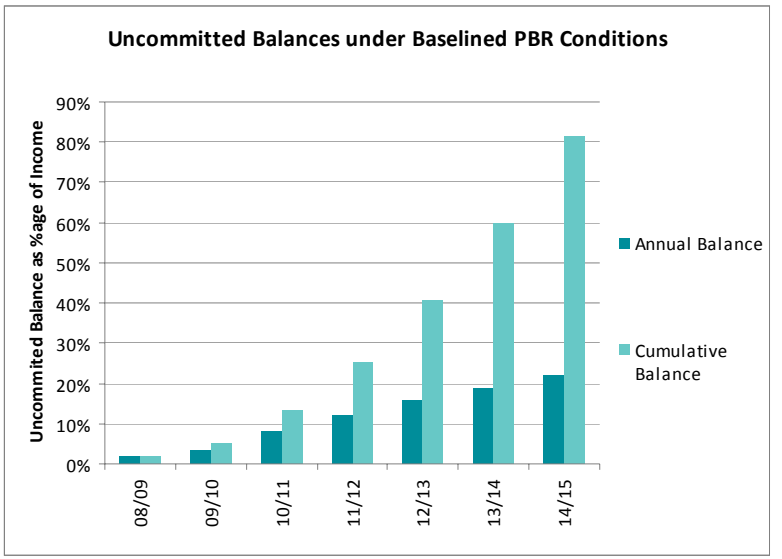
The upper graph shows how the school's surplus would continue to increase if it maintained this model of teaching large, mixed-age classes in KS1 and large classes in KS2 and reduces its staff in line with pupil numbers. If the school continues to do this, it is questionable whether pupil learning can be effectively sustained. Beyond 2010/11, the surplus reaches levels that may put it at risk of being clawed back by the local authority. Curriculum flexibility has been maintained in this graph but the pupil-teacher ratio has increased from 21.4 to 35.2 over the period.

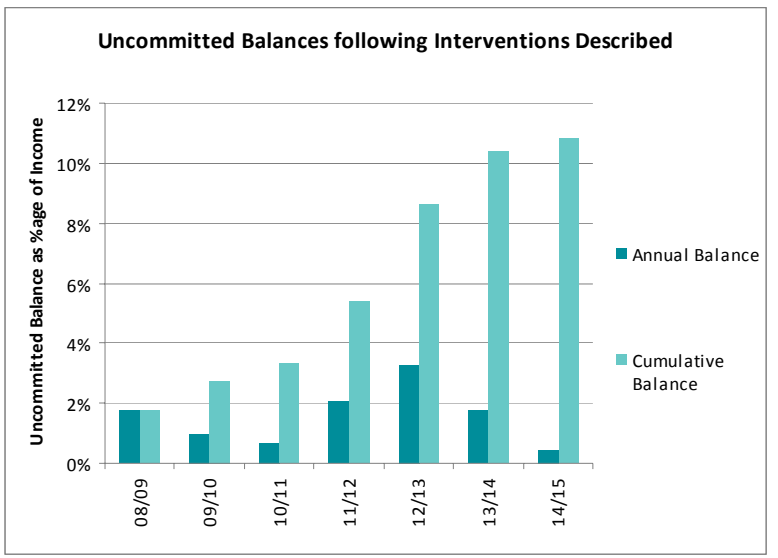
The lower graph shows the impact of a modest increase in the teaching establishment to move to teach non-mixed-age classes. This becomes easier to manage in the last years of the model as the roll falls to below 30 in each year group, but the scale of the surplus at the end of each year is within acceptable limits for the duration of the model.

Observations in relation to this case study are that a primary school will have difficulties if:

- its average staff costs (particularly teachers) are relatively high
- its pupil roll numbers do not allow economic combinations such as multiples of 30 or 15. Multiples of 15 can support split-age classes and there is considerable experience of managing this in the sector. Mixed-age classes for Years 1 and 2, Years 3 and 4 or Years 5 and 6 are quite common. It is less common for them for cross a key stage, for example Y2 and Y3 groups

Note: This case study is based on the average figures of all primary schools in the national datasets (CFR and ASC).





Case studies

Case study 11: Average secondary school with a falling roll

This school is of average size, is located in an industrial area which is starting to see the effects of recession on its local economy and some families are moving out of the area. The school roll falls by about three per cent a year over the period.

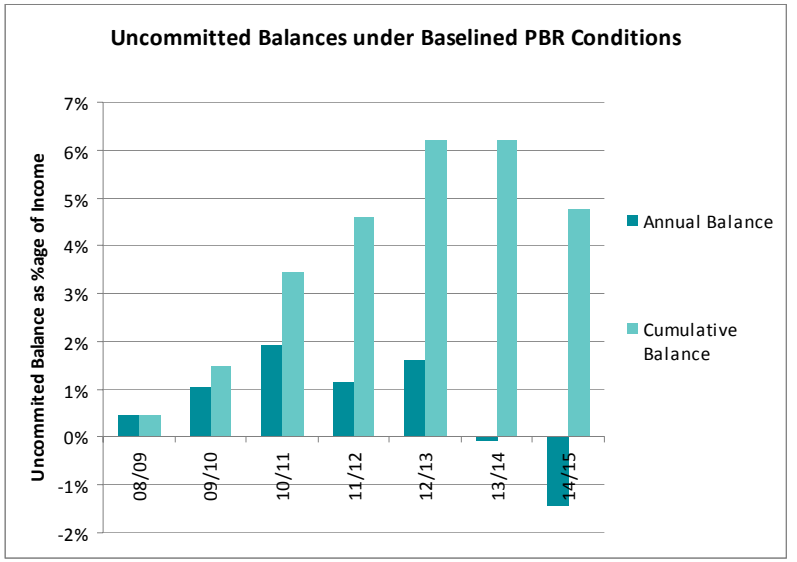
In the upper graph, the school is shown operating with the same level of curriculum flexibility as it had in 2008/09. This has been achieved by a reduction of 10.3 per cent teaching staff costs over the six-year period to match the falling rolls. The school budget changes from a well-managed surplus to deficit in 2013/14. This is due to the fall in roll and the high cost of some year groups due to pupil numbers being over the threshold required for an additional teaching group. The costs will stay relatively constant despite lower pupil-based income.

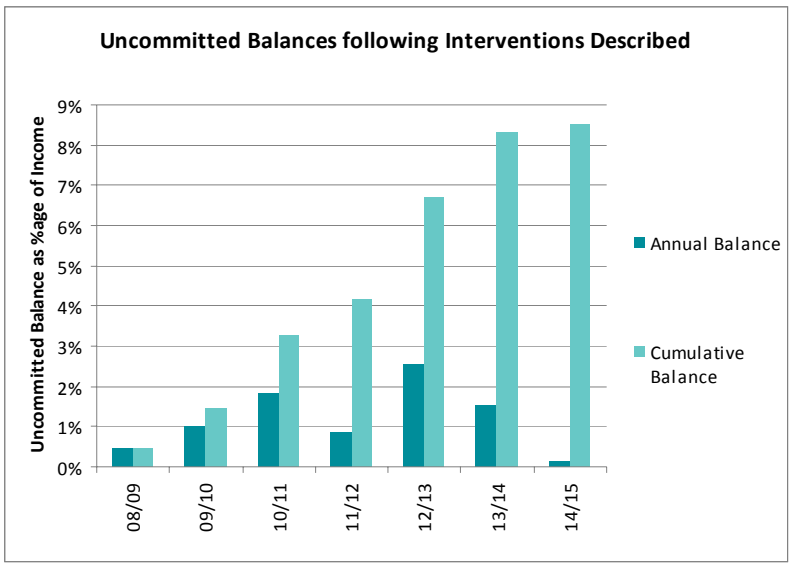
To balance the budget over the period, the costs of classroom support and other staff have been reduced by 10.8 per cent, and the financial impact of this is illustrated in the lower graph.

In reality the school may not be able to reduce the teaching establishment by the degree indicated due to the need to meet subject specialisms. In that case, economies may be needed elsewhere, for example if the school can reduce its average teacher cost by restructuring its management then this will have an impact on the balance once the pay protection ends.

A further strategy is to replace staff leaving at the top of the pay scale with staff at the lower end of the pay scale, although clearly the impact of this will be mitigated over time as staff progress and move up the scale.

Note: This case study is based on the average figures of all secondary schools without sixth forms from the national datasets (CFR and ASC).





Case studies

Case study 12: Average primary school with a rising roll

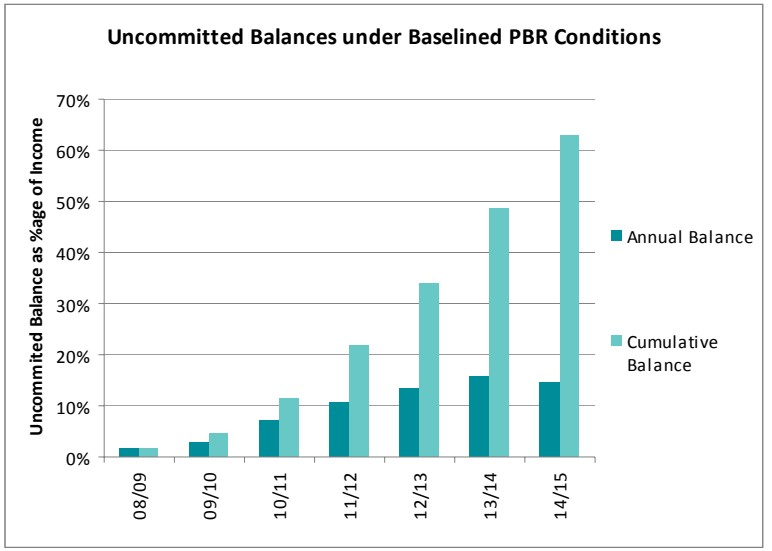
This primary school is of average size and is based in an urban environment with an average level of deprivation. Its local authority has done its best to pass on funding at levels recommended in the national funding level and consequently the school receives an average level of funding compared with other primary schools of its size. There has been substantial new housing built near the school recently and the school roll increases at approximately 2 per cent a year during the period, taking it from 231 to 256 pupils between 2008/09 and 2014/15.

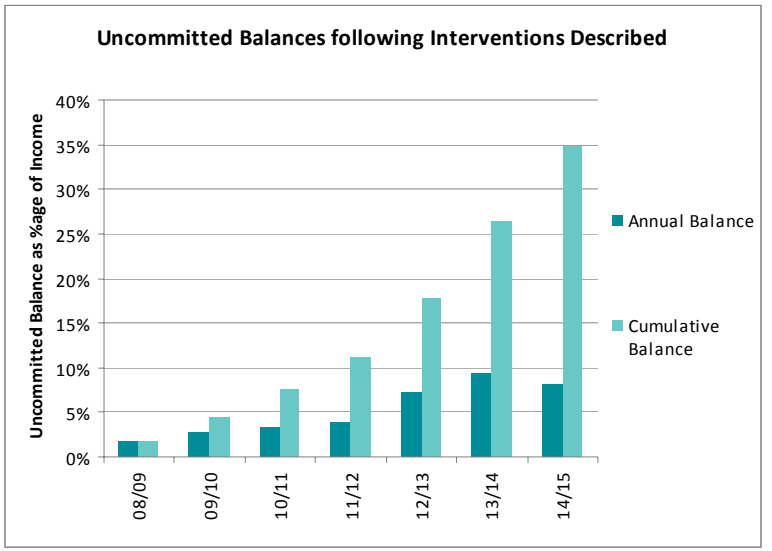
The school has previously had difficulty managing within its budget and to deal with this has large classes (over 30 pupils in KS2 and mixed-year classes in KS1). The upper graph shows that this curriculum model and the increasing pupil rolls will result in the generation of large year-end surpluses from 2011/12. The level of surplus projected indicates the potential for the school to reconsider its staffing model.

The lower graph shows the impact of trying to move to classes with a maximum size of 30 in the whole school, with one support assistant for each class and sufficient classroom support time to cover teacher PPA time. The resulting additional spend reduces the year-end surplus to acceptable levels and should improve outcomes for pupils.

This graph shows the budget impact of one more teacher and one more support assistant from 2010/11. In this school, the average teacher cost is over £47,000, but the budget flexibility of the school to appoint more than one teacher and one support assistant depends on its ability to reduce this overall average cost.

Note: This case study is based on the average figures of all primary schools (by pupil numbers) from the national datasets (CFR and ASC).





Case studies

Case study 13: Average secondary school without a sixth form and with a rising roll

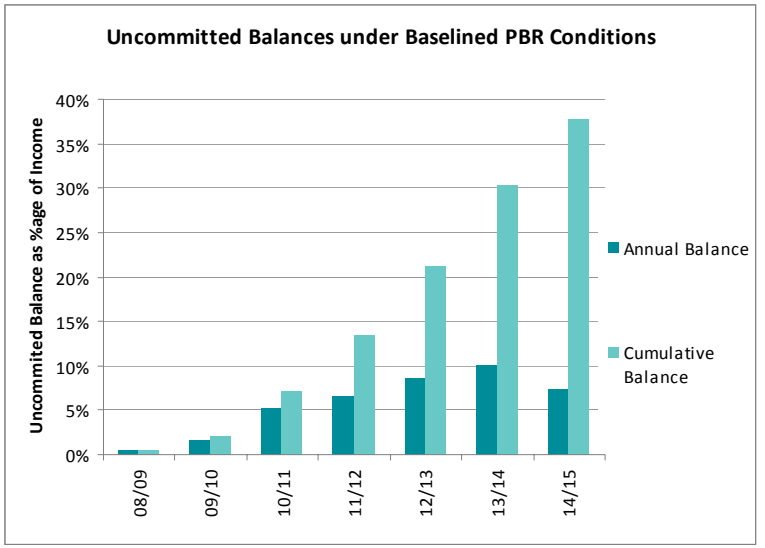
This 11-16 secondary school is based on the edge of a large conurbation with two other secondary schools nearby. Since it appointed a new head two years ago, its attainment levels have improved significantly and it is beginning to attract a higher number of applications, particularly for its intake year. This has resulted in a cumulative increase in total school roll from 767 to 943 during the period (an average increase of 3 per cent a year).

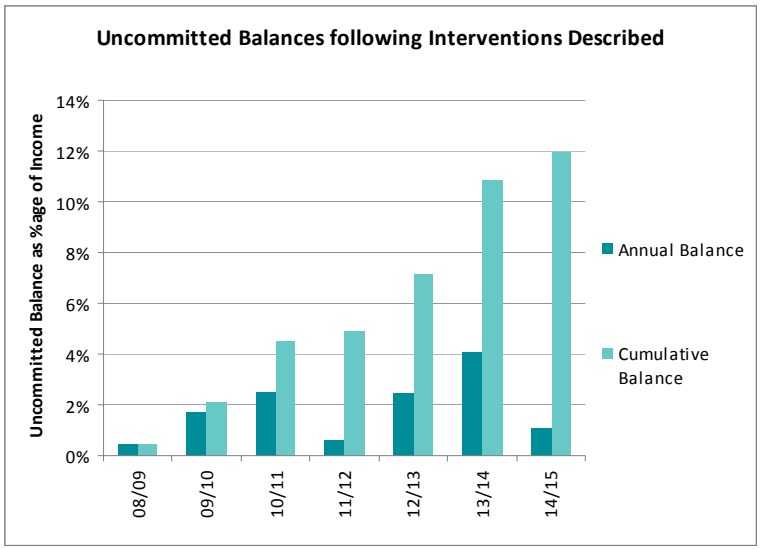
In the upper graph, the school shows a significant balance by maintaining its small level of curriculum flexibility. It is able to increase teaching staff in line with roll numbers, and FTE teaching staff numbers have gone up from 47.5 to 57.1. The roll increases have been accommodated without the need for an additional teaching group and the rise in roll is therefore projected to generate a year-on-year surplus.

The new head decides to use the additional resources to increase support staff and recruit a school business manager to support the school in delivering workforce reform and to generate efficiencies from more effective procurement. The costs of making these appointments is shown in the lower graph.

If the increase in pupil numbers tipped the balance to the point that KS3 required an additional group for only a small increase in pupil numbers, then it is unlikely that the school could afford the increase in support staffing. The budget position would be dramatically affected by the stepped increase in cost. The head is conscious that this is becoming likely and has charged the new SBM with exploring collaborative procurement initiatives with local schools for key goods and services, including energy, technology and grounds maintenance. Benchmarking data is showing that the school is in the top quartile of spend for these areas, suggesting that it should be possible to make significant year-on-year savings in these areas.

Note: This case study is based on the average figures of all secondary schools without sixth forms from the national datasets (CFR and ASC).





Case studies

Case study 14: High deprivation secondary school without a sixth form

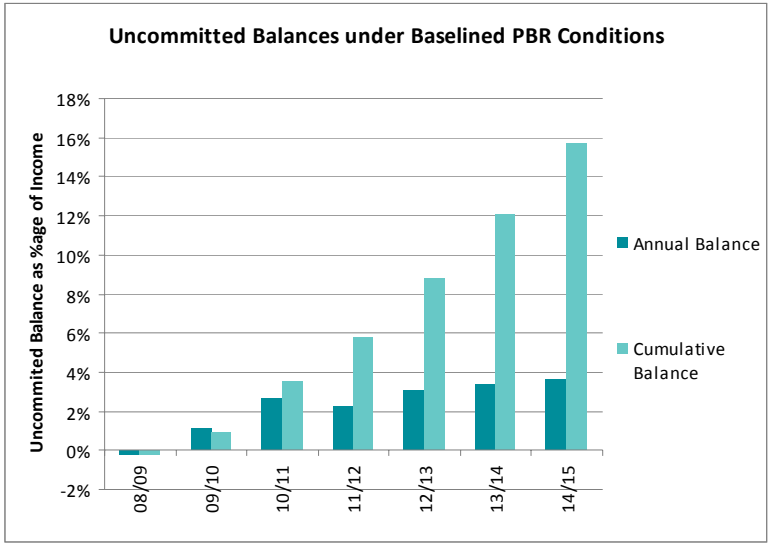
This school experiences a cumulative total school roll reduction in line with the Department for Education (DfE) population forecast: 8 per cent in the period 2009/10 to 2014/15.

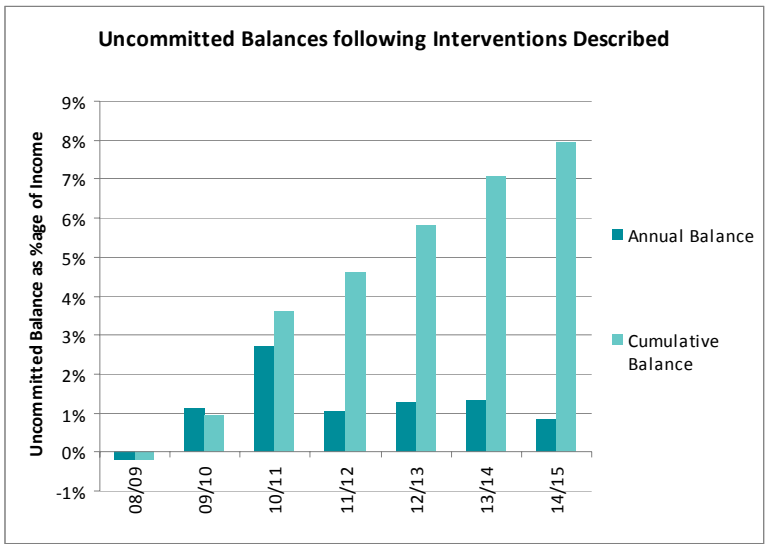
The upper graph shows curriculum flexibility being retained at its current level. As the roll of the school falls, however, there will in all probability be a need to increase curriculum flexibility to ensure retention of subject-specialist teachers for all groups. In the case of this average school, the group sizes clearly do not exceed a point at which a new group needs to be established. The slight annual fluctuations are probably caused by the different sized year groups working through and into KS4.

To achieve its modest year-end surplus, the school has reduced teaching staff in line with pupil numbers by 8 per cent in the period from 2009/10 to 2014/15. This would keep the school operating at the same level of curriculum flexibility.

In the lower graph, the reduction in staffing level has not kept up with the falling pupil numbers (3.7 per cent instead of 8 per cent), giving more curriculum flexibility. This will allow some protection of subject specialists. As the school is in a deprived area, to help support the students two additional classroom assistants have been added from 2011/12. The projected outcome indicates that this additional classroom support could be afforded from 2010/11. The small but positive projected balance will enable the school to fund a number of additional small projects such as literacy development or additional revision sessions.

Note: This case study is based on the average figures of the most deprived 20 per cent (by FSM eligibility) of secondary schools without sixth forms from the national datasets (CFR and ASC).





Case studies

Case study 15: Average secondary school without a sixth form in the context of a PBR of less than 0.3 per cent

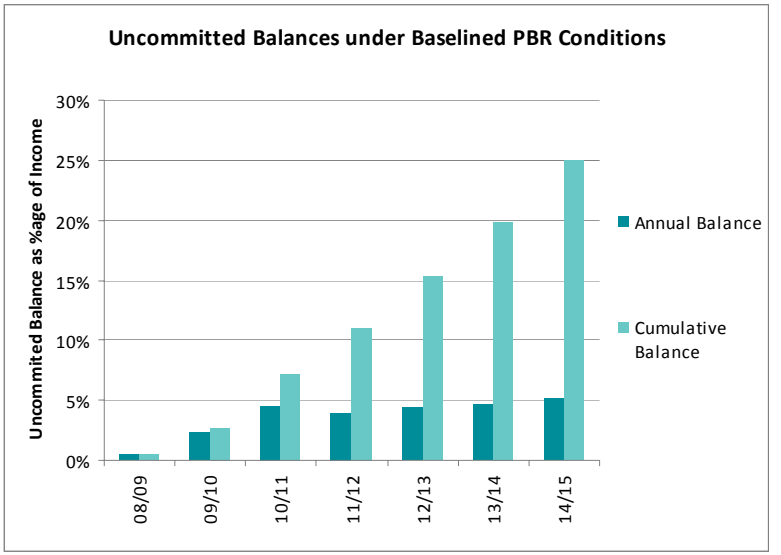
This case study shows the effect of funding decreasing beyond PBR levels by a real rate of 0.3 per cent a year. Roll changes have been applied, resulting in a cumulative total school roll reduction in line with the DfE population forecast: 8 per cent in the period 2009/10 to 2014/15.

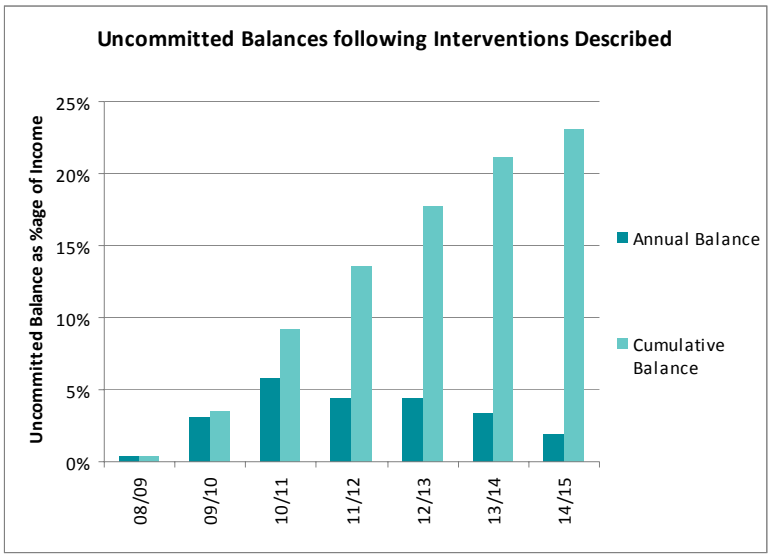
We know that if secondary schools without sixth forms do not change the way that they manage their budgets, a 0.3 per cent decrease in their funding will increase the number of these schools in significant deficit from around 8 per cent to 37 per cent. The upper graph shows a balanced projection because teaching staff have been reduced in line with pupil numbers. In this case the teaching staff level reduces by 3.9 FTE (8 per cent) over five years.

If the FTE teaching staff are maintained at the 2009/10 level to allow for a better curriculum delivery and effective coverage of specialisms, then a negative trend appears in the in-year balance. In the short-to medium term, this could be offset by the cumulative balance the school has, but the school will need to address the issue of the negative trend, particularly if uncommitted balances are clawed back by the local authority.

Schools will always need to seek a balance and blend of actions to address the difficulty of reduced funding.

Note: This case study is based on the average figures of all secondary schools without sixth forms from the national datasets (CFR and ASC).





Case studies

Case study 16: Average secondary school without a sixth form in the context of a PBR of less than 0.3 per cent

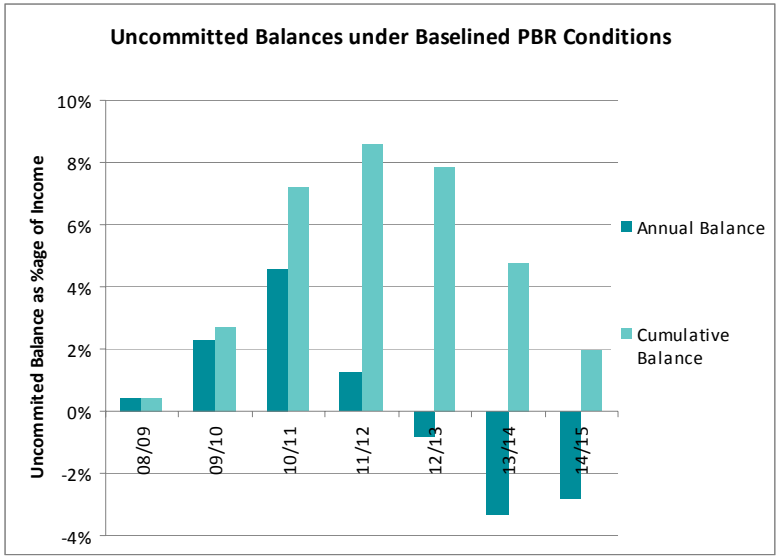
This scenario shows the effect of funding decreasing beyond PBR levels by a real rate of three per cent a year. The school experiences roll changes resulting in a cumulative total school roll reduction in line with the DfE population forecast: 8 per cent in the period 2009/10 to 2014/15.

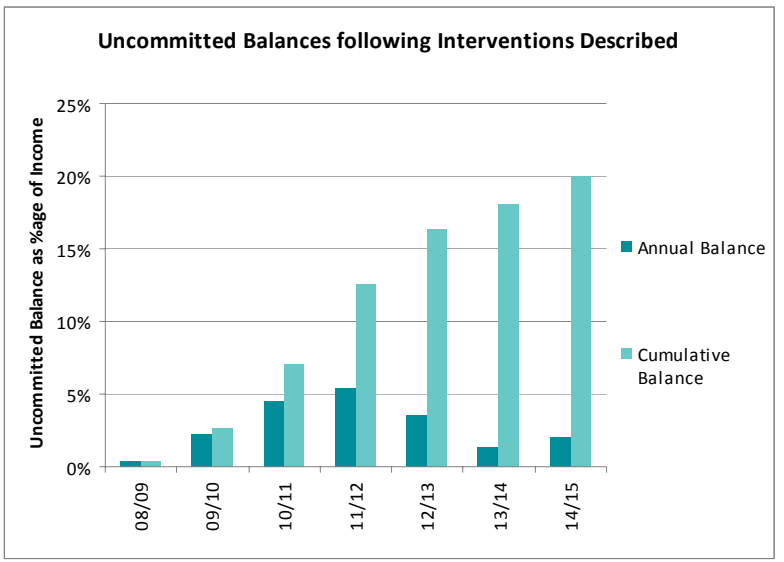
In the upper graph it is clear that from 2010/11, maintaining the curriculum flexibility under restricted funding results in a significant negative trend in the substantive budget. The driver is the high average teacher cost in this school (£49,538 in 2008/09).

In the lower graph, a solution to the difficulty has been found by seeking efficiencies beyond staff costs. Here the year-end balance reflects the impact of reducing premises costs by 10 per cent, supplies and services by 10 per cent and reducing learning resources including ICT by 50 per cent from 2011/12. There is no judgement made as to the impact of these changes on learning although the financial impact can be seen from the graphs.

The roll numbers in the school are such that as the roll falls as a result of population projections, the school is unable to reduce the number of teaching groups in KS3 until the Year 7 numbers in 2014/15 fall below the threshold for an additional class. The impact of this uneconomic class size can be as much as £60,000 for every year group where it occurs.

Note: This case study is based on the average figures of all secondary schools without sixth forms from the national datasets (CFR and ASC).





Case studies

Case study 17: Average primary school in the context of a PBR of less than three per cent

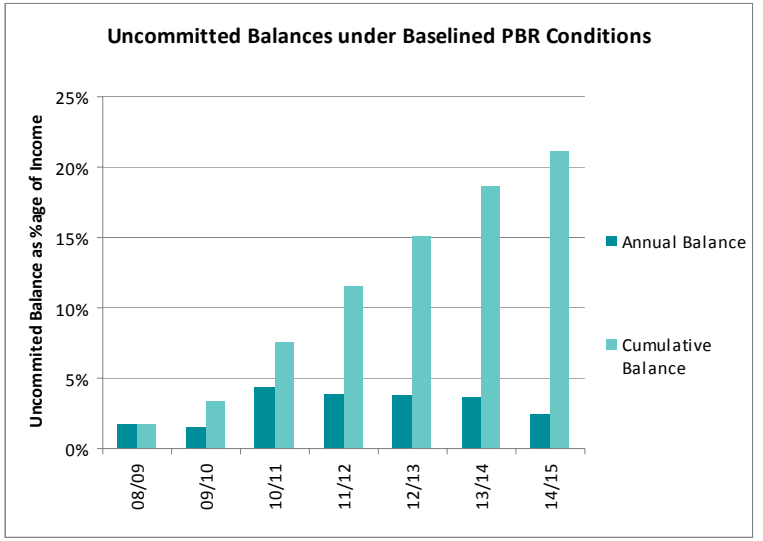
This case study shows the effect of funding decreasing beyond PBR levels by a real rate of 3 per cent. The school experiences rising roll numbers resulting in a cumulative total school roll growth in line with the DfE population forecast (March 2010) starting at 231 pupils and rising to 255 in the period.

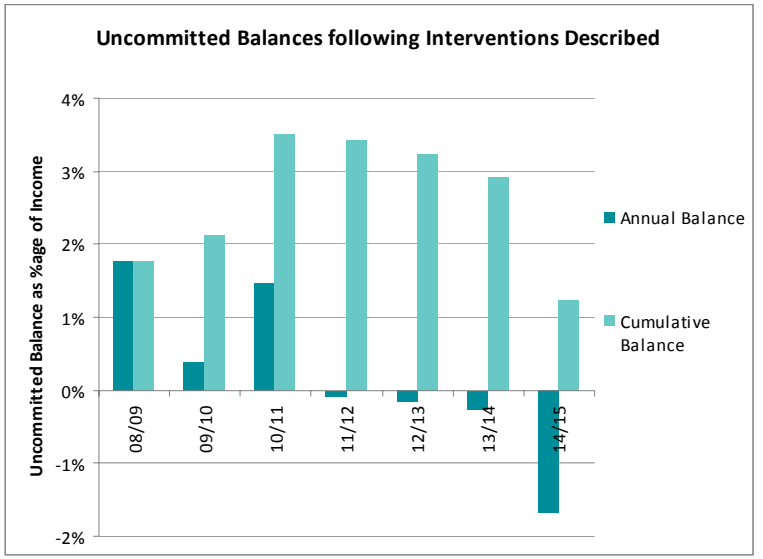
The upper graph shows the situation if the school maintains its current mode of operation. The school has economic class sizes, meaning that the reduction in funding is not evident in the year-end balance yet. The slight decline is due to increasing pupil numbers at a lower rate, but not enough additional pupils to require a new class. Once that threshold is crossed, a significant additional cost will be introduced and the school will find itself in very significant deficit.

The lower graph shows the impact of a small increase in teacher FTE (around 0.5 FTE) to accommodate the rising roll and an additional classroom support assistant from 2010/11. This produces a negative gradient in the substantive budget which can be met in the short term by the use of the cumulative balance but in the long term is not sustainable without effective change being introduced either through addressing the high average teacher cost, which has a large effect when there is a small change of staffing, or by introducing other efficiencies.

As a primary, it is unlikely that this school has had access to an SBM, so it should address that in order to meet the challenge of restricted funding, which will become acutely apparent when the class size threshold is crossed. There are costs associated with the recruitment of an SBM, although the long-term efficiencies that result make this short-term investment worthwhile for schools.

Note: This case study is based on the average figures of all primary schools from the national datasets (CFR and ASC).





Annex

Annex A

The ASCL model

How the case studies work

Curriculum flexibility

The curriculum model calculates the required teaching establishment of a school in full-time equivalent (FTE) staff on the basis of a set of parameters. These have been fixed at a set of values to give a reference point. It should be noted that the use of these figures does not represent a recommendation or value judgement that schools could or should run to these parameters.

The following pages provide a detailed overview of what sits behind the models.

The secondary curriculum model

Parameter	Value used	Comment reference
Maximum teaching group size in KS3 for all subjects except technology	27	1
Maximum teaching group size in KS3 for technology	18	2
Proportion of the teaching week spent on technology in KS3	8%	3
Average class size in KS4	18	4
Minimum number of post-16 subject choices per option block	3	5
Number of post-16 option blocks	5	5
Proportion of the week per option block	20%	5
Increase in student roll required for one more additional subject per option block	25	5
Teacher contact ratio	0.78	6

1. Maximum teaching group size in KS3 for all subjects except technology
   In many secondary schools class sizes will be higher than 27. Where circumstances are challenging or even simply as a function of the size of the intake, they could be much lower. They may also be lower where a school has sufficient resources to teach students in smaller groups. All secondary schools will have an upper limit to teaching group size on the basis of room size, notwithstanding any other factor. The number 27 has been chosen as a typical value that most schools would currently view as sensible. Most would view a class of 30 to 32 as the upper limit in terms of quality of provision and using 27 allows for some degree of setting and flexibility across a year group with smaller lower sets. In subjects such as PE it also gives some scope for group-size adjustments on the basis of gender distribution.

Annex A

The ASCL model

2. Maximum teaching group size in KS3 for technology
   This value is two lower than that indicated by British Code of Practice BS4163 2007 to allow for pupil movement between groups and for the slight change in pupil population that any school experiences during the course of a year.

3. Proportion of the teaching week spent on technology in KS3
   Two periods out of 25 is probably a minimum. Some schools will have up to twice this amount.

4. Average class size in KS4
   An overall class size of 18 in KS4 will allow a school with a roll of over 650 to offer a range of options and some access to diploma courses provided the core curriculum is delivered in class sizes corresponding to that in KS3. As this number increases, the range of the curriculum offer falls. It is not possible to fully include the impact of diploma courses where students travel to other institutions. Although the average class-size parameter will allow for the teacher time deployed or saved in the home institution, the costs of course provision and transport are not included. In many schools these are significant and far outweigh the income per student.

5. Post-16
   This is modelled on a traditional five-block choice curriculum with a minimum provision of 15 subject groups at 20 per cent of the teaching week each. Assuming that a post-16 student brings between £4,000 and £5,000 in funding and that 55 per cent of that is deployed on the curriculum, and also assuming average teacher cost as circa £43,000 and the average teacher teaching about 0.78 of the week, then every group of 25 students provides approximately sufficient funding to employ the equivalent of a teacher for 25 periods, ie adds one more subject per option block.

6. Contact ratio
   Teachers have PPA time at a minimum of 10 per cent of teaching time in units of no fewer than 30 minutes. In effect this means that organisationally most schools will give 3 hours out of 25 for PPA (12 per cent). Staff who have significant management responsibilities are entitled to management time and the head is entitled to dedicated headship time in addition to PPA time. Overall we have taken as a reference point 10 per cent PPA plus 10 per cent management (including dedicated headship time) and a 2 per cent margin of error to give an overall teaching contact of 78 per cent. This is usually expressed as a decimal fraction and called the contact ratio, ie 0.78 as above. It should be noted that the distribution of management time will not be even across all managers.

No school will operate exactly as described by these parameters although many schools will be near to one or more of them.

The parameters define the teaching establishment in full-time equivalent (FTE) teaching staff on the basis of a given set of roll numbers.

The school will have an actual teaching establishment. The curriculum flexibility is a statistic invented for this report although it has strong parallels with the established concept of curriculum bonus as defined by T I Davis (1969) in *School Organisation* (published by Pergamon Press).

The curriculum flexibility is defined as the percentage of staffing that the school has available to operate in a manner different from that defined by the parameters. A positive value indicates that the school can improve provision eg by offering more choices in KS4, more time for technology, more staff preparation time etc. Similarly, a negative value indicates that the school has to move some or all parameters in the other direction, eg higher class sizes etc. If a school has zero curriculum flexibility, it may still not be operating at any of the given parameters although when all are taken together the result comes to the same thing as if it were.

Annex A

The ASCL model

The primary curriculum model

Parameter	Value used	Comment reference
Maximum teaching group size in KS1 and KS2	30	1
PPA time for teachers	10%	2
Dedicated headship time and management time	See comment	3

1. Maximum teaching group size
   This group size is also used in small schools where classes can be combined to make mixed-year-group classes. It is assumed that this does not happen across the KS1 and KS2 divide. Many primary schools will have larger class sizes than this in KS2 even though 30 would probably be the desired upper limit

2. PPA time for teachers
   The PPA comments follow on from those above. It is assumed that there is always a teacher in front of a class. In some primary schools this will not be the case and the PPA time will be provided by using a higher-level teaching assistant (HLTA) or similar to cover the class.

3. Dedicated headship time or management time
   The management time for the whole school is calculated on the basis of a basic allocation of dedicated headship time and an increasing level of additional time depending upon the size of the school. There is no assumption that all of this time is allocated to any particular individual.

The concept of using this arbitrary model as a baseline for curriculum flexibility is then done as described above.

Other key factors

Pupil-teacher ratio

The pupil-teacher ratio (PTR) is the ratio of pupils to teachers in the school. This is not a continuous variable. For example, in a school with three year groups, where a school has an upper limit in Years 7, 8 and 9 of 30 per class, then a change in roll of 3 students as shown in the table below has a dramatic impact upon the PTR. There is an assumption in the table that the teacher contact ratio is 0.8 and that there is only class teaching. Although this is an oversimplification the principle applies to a real school.

	Baseline	Change
Year 7 pupils	120	121
Year 8 pupils	120	121
Year 9 pupils	120	121
Total roll	360	363
Staff required	15	18.75
PTR	24	19.36

This non-linear relationship exists between the number of students in a year group and the number of teaching staff required to keep class sizes as set in the curriculum model as can be seen above. This is what we term a stepped cost. A school can move from a position of relative stability into one of considerable financial difficulty quickly if the numbers of students do not neatly fit into the curriculum model. An increase in numbers can be just as difficult to deal with as a decrease in numbers in terms of organising the curriculum, although without the pressure of redundancies. The admissions process and parental choice do not always help in these circumstances. For example, on our model with KS3 class sizes of 27, if there are 351 Year 6 students to transfer to secondary school in a town with two secondary schools, it is better for one to have 162 (6 x 27) and the other 189 (7 x2 7) than for the schools to end up with 175 and 176 respectively.

Annex A

The ASCL model

Average teacher cost

If you divide the average teacher cost by the PTR, you get the expenditure per pupil. Clearly the higher the average teacher cost, the higher the PTR value has to be for any given value of expenditure per pupil. There will be an upper limit to the PTR depending upon the physical size of the classrooms, the contact ratio of the staff and the need to offer a curriculum that meets the expectations of all stakeholders and external agencies. If the average staff cost is too high in the context of falling levels of available expenditure per pupil, then restructuring may be an option but that will have a lead-in time of up to three years due to pay protection. Other factors will contribute to this, such as long-term illness, staff age profile, the need to use supply agencies due to recruitment difficulties and the need to pay more to recruit staff in difficult areas.

The principle of average staff cost divided by pupil to staff ratio applies equally but less critically to all other staffing lines.

It is clear from the modelling we have done that the average teacher cost is a highly critical factor. It is possible to have two schools identically funded with the same number and distribution of students in completely different financial situations caused simply by different average teacher costs. This average teacher cost can in some cases be high because of expensive management or leadership team costs as well as having a large number of teachers high up on the pay scales.

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