



Government Actuary's Department

Department for Education risk protection arrangement

Estimated provisions as at 31 March 2018

Summary of key results

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Contents

1	Executive summary	1
	Background	1
	Academic year 2014/15 results	3
	Academic year 2015/16 results	4
	Academic year 2016/17 results	5
	Academic year 2017/18 results	6
	Future academic year results	7
	Terms of reference	8
	Distribution and limitations	8
2	Analysis	9
	Overview	9
	Data	9
	Overview of projection methodology	9
	Projection of exposure	10
	Projection of claims	12
	Projection of claims for academic year 2014/15	15
	Projection of claims for academic year 2015/16	16
	Projection of claims for academic year 2016/17	17
	Projection of claims for academic year 2017/18	19
	Projection of claims for future academic years 2018/19 to 2024/25	21
	Projection of claims for financial years 2014-15 to 2024-25	24
3	Further considerations	26
	Appendix A: Data	27
	Appendix B: Glossary	30



1 Executive summary

- 1.1 This report has been prepared by the Government Actuary's Department ('GAD') at the request of the Department for Education ('DfE').
- 1.2 The purpose of this report is to provide DfE with a summary for publication of the key results of the work undertaken by GAD in order to estimate claim provisions for the risk protection arrangement ('RPA') as at 31 March 2018. This work was undertaken between April 2018 and June 2018. This report is based on data and the policy environment as at 31 March 2018 and makes no allowance for changes since this time. We draw your attention to the limitations and reliance restrictions described below in paragraphs 1.41 to 1.43.
- 1.3 The scope of this review includes the following estimates of provisions for:
- > The 2014/15, 2015/16, 2016/17 and 2017/18 academic years
 - > The 2014-15, 2015-16, 2016-17 and 2017-18 financial years
 - > Each future academic year from 2018/19 up to and including 2024/25
 - > Each future financial year from 2018-19 up to and including 2024-25
- 1.4 Where a future year or future period is referred to, this is used to mean a year or time period that has yet to start as at 31 March 2018.

Background

- 1.5 The RPA is an alternative to insurance where losses that arise are covered by UK government funds. DfE are running the arrangement, with some areas supported by external advisors.
- 1.6 The arrangement has been operational since 1 September 2014. For those that participated in the arrangement during the 2014/15 and 2015/16 academic years, £25 per pupil was deducted at source from the academy's general annual grant. For those that participate in the arrangement during the 2016/17, 2017/18 and 2018/19 academic years, £20 per pupil will be deducted.
- 1.7 The RPA covers property damage and business interruption ('PDBI'), public liability ('PL'), employers' liability ('EL') and UK travel ('Travel'). Limits for the RPA are the reinstatement value of the property, £10m per claim for business interruption, £2,000 per person for travel expenses and no limit is applicable for liability claims.
- 1.8 GAD's previous review of the RPA outstanding claims provisions was as at 31 August 2017. In this report we provide comparisons to the GAD provision estimates as at 31 August 2017, referring to these as the 'August 2017 review estimates'. Our estimates as at 31 March 2018 are referred to as the 'current estimates'.



- 1.9 The provisional estimates were analysed split by:
- > Type of academy: Primary and Secondary & Other
 - > Main reserving class: PDBI, PL, EL and Travel
 - > Peril: For example the PDBI class includes the perils Fire, Flood and Theft
- 1.10 All estimates are on an undiscounted basis, which means that the amounts stated are the amounts expected to be paid out at the time they are due, without taking into account the time value of money.
- 1.11 The RPA had been operational for 43 months as at 31 March 2018. The number of academies within the RPA has been increasing since it first became operational, with 4,775 academies and 2.2 million pupils covered by the RPA as at 31 March 2018.
- 1.12 Due to the short period of time that the RPA has been in operation, the claims history by itself is not fully statistically credible to make assumptions about future claims experience. We have therefore supplemented the RPA data by using industry benchmarks provided by Willis Towers Watson ('WTW') and Gallagher Bassett in our estimate of claims provisions. WTW has previously provided consultancy advice to DfE regarding the RPA, and Gallagher Bassett are the claims administrators for the RPA.
- 1.13 As more academies join the RPA and the RPA becomes more established, the claims activity to date will be more statistically credible for estimating future claims experience. It will therefore be reasonable to take more account of actual experience and place less reliance on the WTW and Gallagher Bassett benchmarks. This transition, which has already commenced, will be a gradual process and will act to reduce the uncertainty of using industry benchmarks which may not reflect the particular claim characteristics of the RPA.
- 1.14 We believe it is reasonable to use external benchmarks where we have done so. Section 3 of this report describes several considerations relevant to the use of external benchmarks.
- 1.15 There are many uncertainties associated with the estimation of provisions such as those documented within this report. As a result, the claims experience may differ materially from the estimates made. Our report represents our view of the estimated ultimate claims and does not reduce the inherent uncertainty in the outcome of future events.



Academic year 2014/15 results

- 1.16 The chart below shows the expectation of ultimate claims for the 2014/15 academic year, as at 31 March 2018 and as at 31 August 2017 which was the date of our previous review. The 2014/15 academic year covers the 12 month period from 1 September 2014 to 31 August 2015.

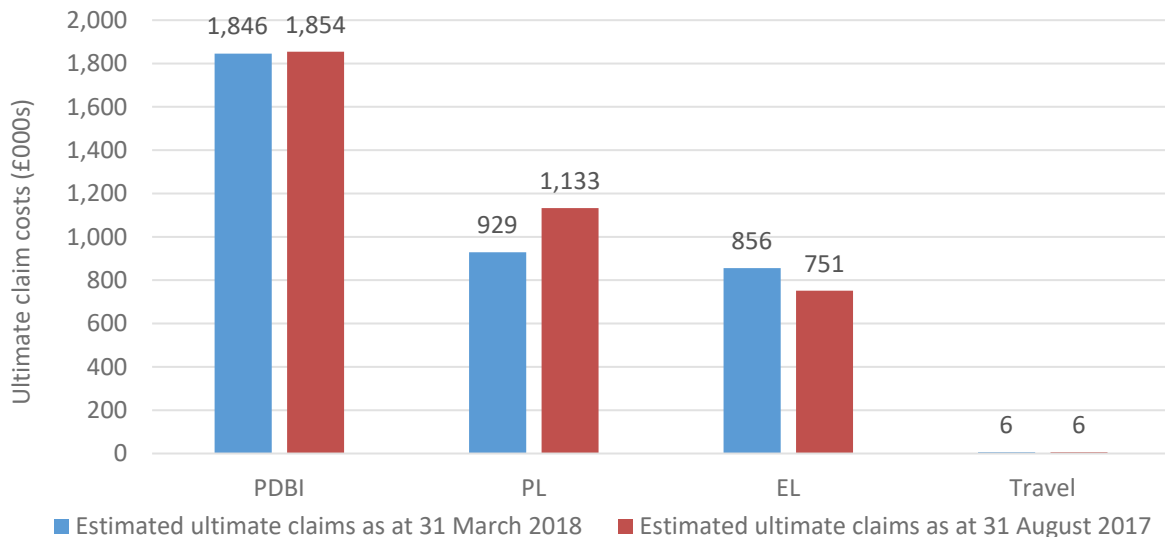


Figure 1: Summary of GAD academic year 2014/15 ultimate claims estimates by class (£000s)

- 1.17 Our current ultimate claims estimate for the 2014/15 academic year is £3.6m. This is a decrease of £0.1m compared to the August 2017 review estimate.
- 1.18 The decrease is due to the PL reserving group where a number of Injury claims have been reassessed and are now considered to be nil claims.
- 1.19 These estimates exclude all claim expenses. For the 2014/15 academic year we have maintained the methodology from our previous review which is to give more weight to the expense experience which has already emerged. To do this, we assumed that the expense ratio for reported claims will not be subject to any further changes, whilst the expense ratio for future claims will be 10%.
- 1.20 Further details on the academic year 2014/15 results can be found in paragraphs 2.32 to 2.36.



Academic year 2015/16 results

1.21 The chart below shows the expectation of ultimate claims for the 2015/16 academic year, as at 31 March 2018 and as at 31 August 2017. The 2015/16 academic year covers the 12 month period from 1 September 2015 to 31 August 2016.

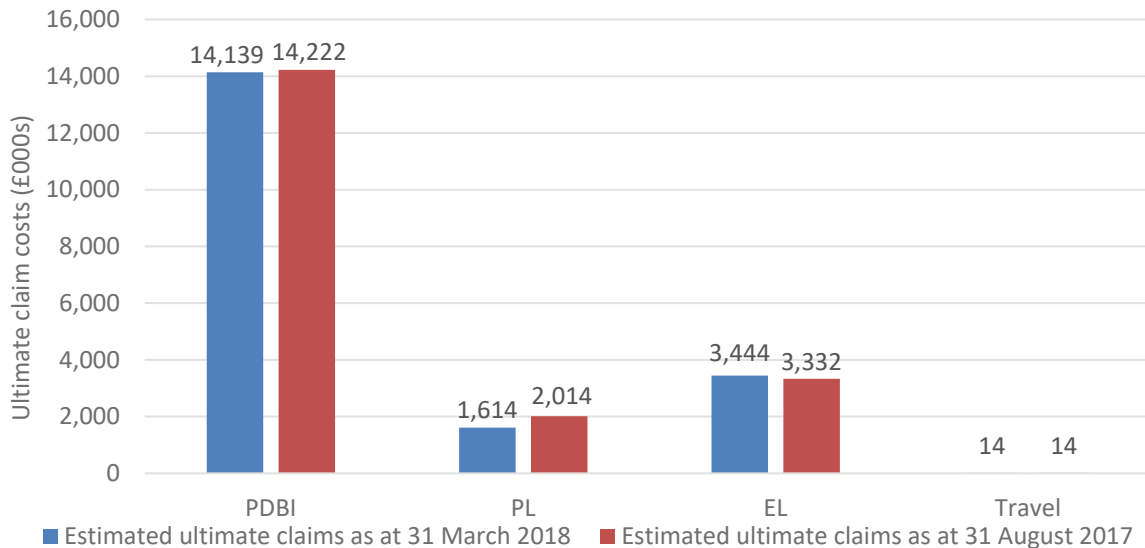


Figure 2: Summary of GAD academic year 2015/16 ultimate claims estimates by class (£000s)

- 1.22 Our current ultimate claims estimate for the 2015/16 academic year is £19.2m. This is £0.4m lower than the August 2017 review estimate.
- 1.23 This is driven by the PL reserving group where a number of known Injury claims have had their case reserves reduced since the last review.
- 1.24 These estimates exclude claim expenses related to individual claims. For the 2015/16 academic year we have maintained the methodology from our previous review which is to give more weight to the expense experience which has already emerged. To do this, we assumed that the expense ratio for reported claims will not be subject to any further changes, whilst the expense ratio for future claims will be 10%.
- 1.25 Further details on the academic year 2015/16 results can be found in paragraphs 2.37 to 2.42.



Academic year 2016/17 results

1.26 The chart below shows the expectation of ultimate claims for the 2016/17 academic year, as at 31 March 2018 and as at 31 August 2017. The 2016/17 academic year covers the 12 month period from 1 September 2016 to 31 August 2017.

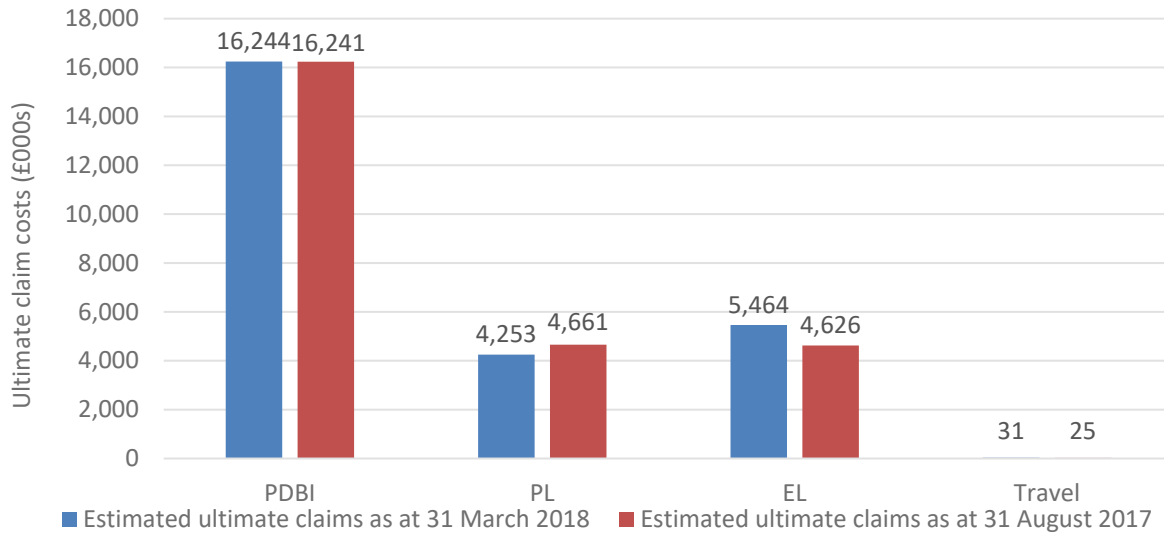


Figure 3: Summary of GAD academic year 2016/17 ultimate claims estimates by class (£000s)

- 1.27 Our current ultimate claims estimate for the 2016/17 academic year is £26.0m. This is £0.4m higher than the August 2017 review estimate.
- 1.28 This increase is a result of the EL reserving group where there has been a deterioration on a known Injury claim, and a higher than expected number of Dispute & Other claims being recorded.
- 1.29 These estimates exclude claim expenses related to individual claims. For the 2016/17 academic year we have assumed ultimate claim expenses will be 10% of ultimate claims. This differs from the approach taken for 2014/15 and 2015/16 due to the relative immaturity of this year.
- 1.30 Further details on the academic year 2016/17 results can be found in paragraphs 2.43 to 2.47.



Academic year 2017/18 results

1.31 The chart below shows the expectation of ultimate claims for the 2017/18 academic year, as at 31 March 2018 and as at 31 August 2017. The 2017/18 academic year covers the 12 month period from 1 September 2017 to 31 August 2018.

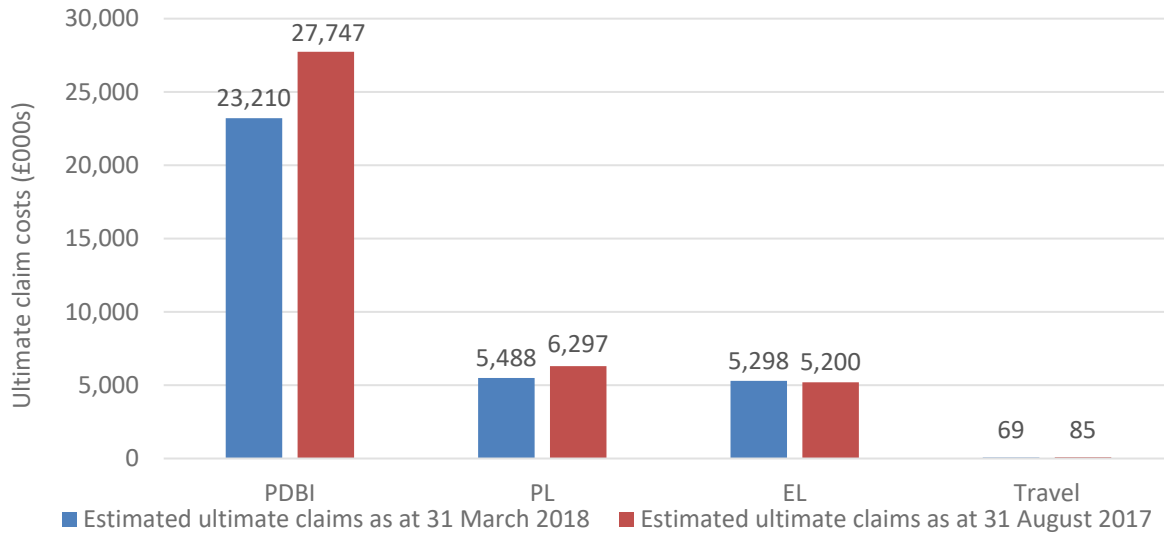


Figure 4: Summary of GAD academic year 2017/18 ultimate claims estimates by class (£000s)

- 1.32 Our current ultimate claims estimate for the 2017/18 academic year is £34.1m. This is £5.3m lower than the August 2017 review estimate.
- 1.33 This decrease is due to an absence of any new large Storm losses and only a single large Flood loss, which is below our expectations. There was one particularly large Fire loss but an absence of any other losses meant that this reserving class had performed largely in line with expectations.
- 1.34 These estimates exclude claim expenses related to individual claims. For the 2017/18 academic year we have assumed ultimate claim expenses will be 10% of ultimate claims. This differs from the approach taken for 2014/15 and 2015/16 due to the relative immaturity of this year.
- 1.35 Further details on the academic year 2017/18 results can be found in paragraphs 2.48 to 2.52.



Future academic year results

1.36 The following chart shows our current estimate of ultimate claims for the 2018/19 to 2024/25¹ academic years alongside the corresponding estimates from our August 2017 review.

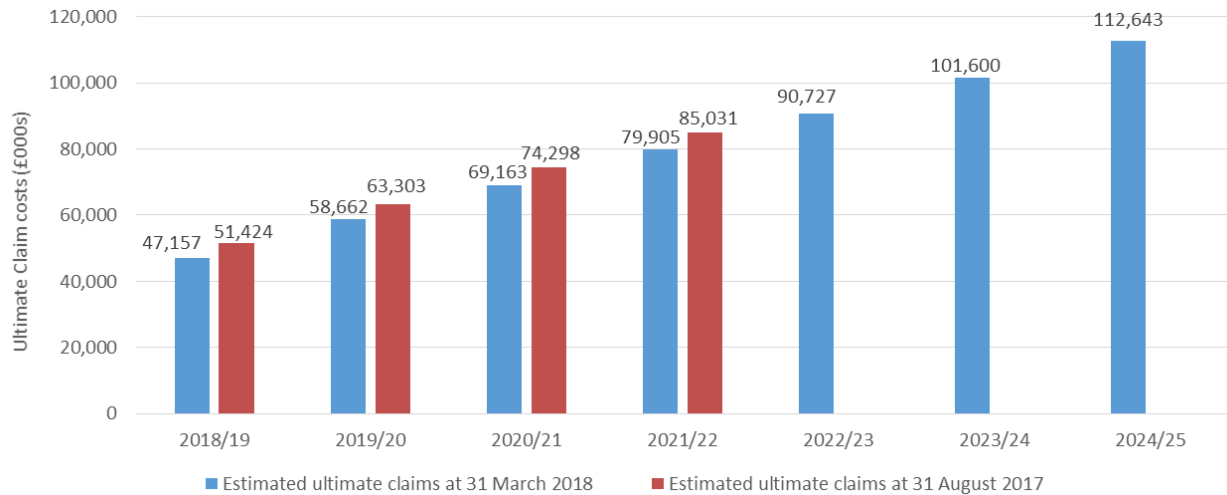


Figure 5: Summary of GAD future academic year ultimate claims estimates (£000s)

- 1.37 Our current ultimate claims estimates for the first few future academic years (2018/19 to 2021/22) are approximately 6% to 8% lower than the August 2017 review estimates. This decrease is driven by both a decrease in expected exposure and improvements in PDBI Flood claims (where our estimate of both claim frequency and the average claim severity have improved), PDBI Theft claims (where our estimate of claim frequency continues to reduce) and PL Injury (also due to an improvement in claim frequency). There is, however, a notable offsetting deterioration from PDBI Fire where average severity is now thought to be higher.
- 1.38 These estimates exclude claim expenses related to individual claims. For the future academic years we have maintained the methodology from our previous review which is to assume ultimate claim expenses will be 10% of ultimate claims.
- 1.39 Further details on the academic years 2018/19 to 2024/25 results can be found in paragraphs 2.53 to 2.60.

¹ In the previous review we only considered 2018/19 through to 2021/22. This means that we are not able to make a comparison for the extended time horizon of 2022/23 through to 2024/25.



Terms of reference

- 1.40 The actuarial services provided to DfE by GAD in respect of the RPA are covered by the 'Letter of Engagement between Department for Education and the Government Actuary's Department', dated 13 June 2014. This report is a summary of the estimates of claim provisions as at 31 March 2018 from advice provided to DfE by GAD between April 2018 and June 2018.

Distribution and limitations

- 1.41 Other than DfE, no person or third party is entitled to place any reliance on the contents of this report, except to any extent explicitly stated herein, and GAD has no liability to any person or third party for any act or omission taken, either in whole or part, on the basis of this report.
- 1.42 The data provided by DfE was used as it was received. GAD has not independently verified the data and we have relied on the general completeness and accuracy of the information supplied. Where possible, we have performed consistency and reasonableness checks using data from our previous review as at August 2017.
- 1.43 This report must be considered in its entirety, as individual sections, if considered in isolation, may be misleading, and conclusions reached by review of some sections on their own may be incorrect.



2 Analysis

Overview

- 2.1 This section describes the methodology and assumptions which we have used to perform our independent analysis of the RPA's outstanding claims provisions as at 31 March 2018. It covers academic years 2014/15, 2015/16, 2016/17 and 2017/18, financial years 2014-15, 2015-16, 2016-17 and 2017-18, future academic years 2018/19 to 2024/25, and future financial years 2018-19 to 2024-25.
- 2.2 There is inherent uncertainty in an analysis of this type and we highlight the key uncertainties throughout this report. Our analysis does not remove this uncertainty but will provide DfE with more insight into the assumptions used and judgements made.

Data

- 2.3 Our analysis is supported by the following information and data:
- > Claims data tables as at month ends from 30 September 2014 to 31 March 2018.
 - > Additional claims data table as at 31 May 2018. This was required to assess any material movements in individual claims.
 - > Average pupil numbers taken from a DfE study on schools, pupils and their characteristics dated January 2017.
 - > Indicative estimates of future academy numbers.
 - > RPA membership data.
 - > The WTW report 'Self-insurance for Academies' dated May 2014 and the raw data underlying this.
- 2.4 We have not verified the accuracy of the data independently. We have compared the academy projections and RPA membership data to that previously received for consistency and reasonableness.
- 2.5 Please see Appendix A for more detail on the data provided.

Overview of projection methodology

- 2.6 To project the expected losses, we first estimated the exposure, by estimating how many pupils will be covered by the RPA at each financial and academic year within the scope of our review. We then used this exposure estimate to inform our claims estimates, using various methods as detailed below, and selected a method or an average of methods for each class.



Projection of exposure

Overview

- 2.7 To estimate the number of pupils within the RPA for future risk periods we first estimate the number of academies within the RPA and then make further assumptions about the average number of pupils within each academy. This method is unchanged since our previous review at August 2017, however the assumptions have been updated to take into account the most recent experience.

Projection of academies within the RPA

- 2.8 Using indicative estimates provided to us of future academy numbers for the purpose of this provisioning exercise, we derived assumptions of the number of new and existing academies joining the RPA per month. These assumptions, which are listed below, are based on the RPA's actual experience:

- > 60% of new academies join the RPA each month;
- > On average approximately 2% of existing academies that have not yet joined the RPA, join each month; and
- > Once an academy has joined the RPA we assume that it will not opt out, as the proportion of academies that choose to opt out of the RPA for another arrangement is so small as to be effectively 0%.

- 2.9 We take into account that a higher uptake is expected at the beginning of the academic year.

- 2.10 We also assume that the new academies joining the RPA will mirror the assumed school type split which is used within the DfE academy population projections.

Comparison to August 2017 review estimates – academies forecast

- 2.11 The actual number of academies that joined the RPA over the 7 months between August 2017 and March 2018 has been broadly in line with our expectations.
- 2.12 As such, we have not amended our methodology for estimating the number of new or existing academies joining the RPA in the future.

Projection of pupils within the RPA

- 2.13 We multiply the total estimated number of academies within the RPA by the assumed average number of pupils for each school type, to get an expected number of pupils for each school type for each future month until the end of the 2024/25 academic year.

- 2.14 For academies that participated in the RPA during 2014/15, 2015/16, 2016/17 and 2017/18, the average pupil numbers for primary academies and secondary academies are lower than the averages within the WTW benchmarks and the total UK school population.



2.15 This is driven by a significant proportion of academies within the RPA being new free schools, studio schools and university technical colleges. These schools currently on average have lower pupil numbers, as often they start with fewer classes and expand each academic year. This trend has already been observed during the first four academic years that the RPA has been in existence. Over time, we expect that as these academies grow, and more academies join the RPA, the average number of pupils within the RPA will increase to be more in line with the general academy population.

Comparison to August 2017 review estimates – pupil number forecast

2.16 The actual number of pupils covered by the RPA over the 7 months between August 2017 and March 2018 has been broadly in line with our expectations.

2.17 As such, we have not amended our methodology for estimating the number of pupils covered by the RPA in the future.

Comparison to August 2017 review estimates – pupil years of exposure

2.18 We convert these pupil numbers into pupil years of exposure for each academic year by cumulating the time on risk for each school within each year. For example, a school that joins the RPA at the end of July will be on risk for that academic year for one month, so will contribute one twelfth of a year of exposure.

2.19 The following chart shows the expected ultimate pupil exposure based on data as at 31 March 2018 alongside our 31 August 2017 review estimate of ultimate pupil exposure, for the 2014/15, 2015/16, 2016/17 and 2017/18 academic years.

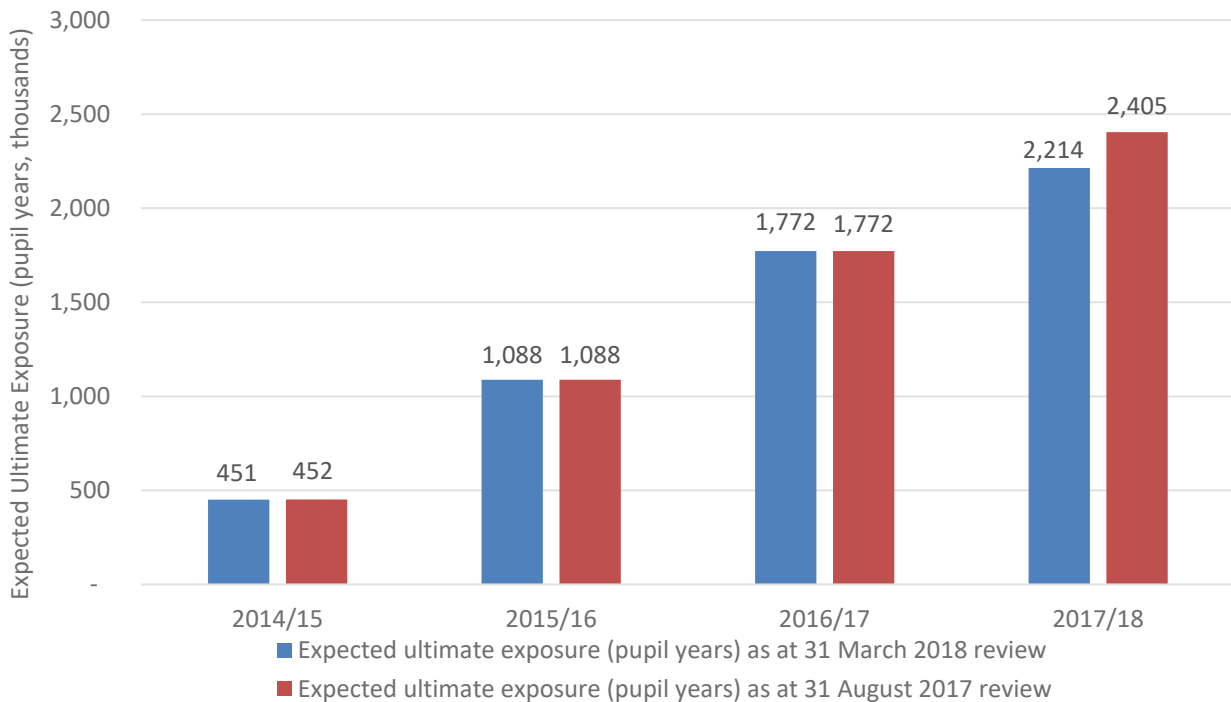


Figure 6: Summary of GAD ultimate exposure in pupil years (pupil years shown in 1,000s)



- 2.20 This chart shows that our 2014/15, 2015/16 and 2016/17 exposure estimate is largely unchanged and that there has been a decrease (8%) in our 2017/18 exposure estimate as participation data begins to emerge and is slightly lower than forecast.

Projection of claims

- 2.21 For each claim type, we make an estimate of the ultimate claims, i.e. the total final amount that will be paid for claims originating in a given academic or financial year. As there are often delays before a claim is reported or settled, claims are often paid in the years subsequent to the one in which the claim event occurred.
- 2.22 To estimate the ultimate claims we need to estimate future claims for incidents that occur during the academic year or financial year. The future claims include:
- > Claims that have happened but have yet to be reported to Gallagher Bassett (known as 'incurred but not reported' or IBNR). IBNR could occur, for example, if a child has an accident but the parent delays reporting this to the school (perhaps because they didn't realise that they would have grounds for a claim).
 - > Claims that have happened but not enough has been reported, which are known as 'incurred but not enough reported' or IBNER. IBNER could occur, for example, if a fire claim is reported and a standard initial loss estimate is recorded against the claim but then, following a more detailed assessment of the fire damage by a loss adjustor in the future, the expected cost of the claim is increased.
 - > Claims that will arise from unexpired periods of coverage. These types of claims are only applicable, for example, to the 2017/18 academic year where there are still five months of future coverage as at the time of this review.
- 2.23 Ultimate claims include all of the above along with the current value of claims that have been reported as at 31 March 2018 (known as the reported claims).
- 2.24 To estimate ultimate claims we have taken into account WTW benchmarks and experience to date where it differs significantly from those benchmarks.
- 2.25 We also use industry benchmarks and data from Gallagher Bassett, in order to estimate the following reported claim amounts and reported claim numbers development patterns.

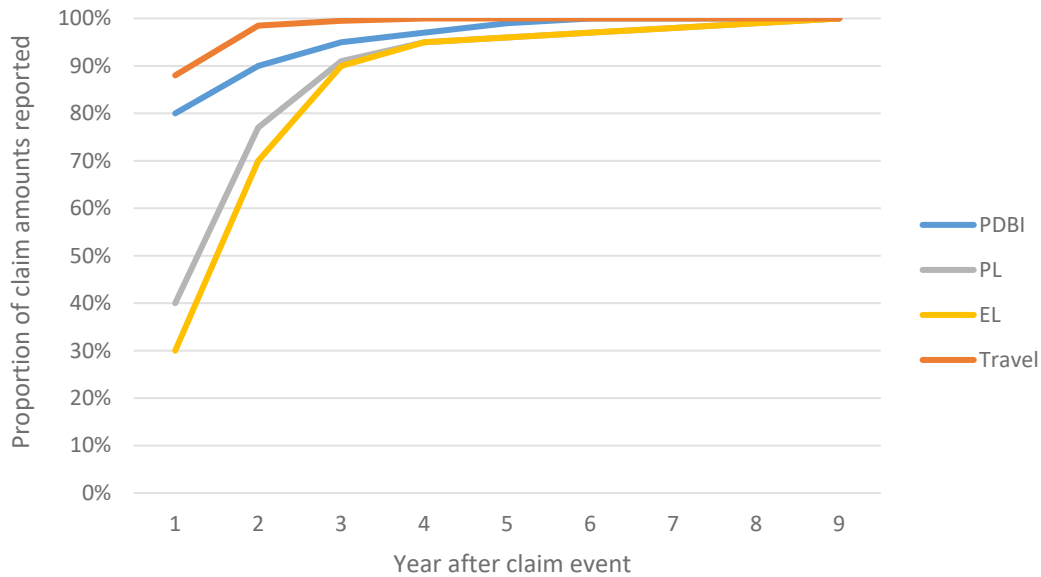


Figure 7: Claim amounts reported cumulative development patterns for each class

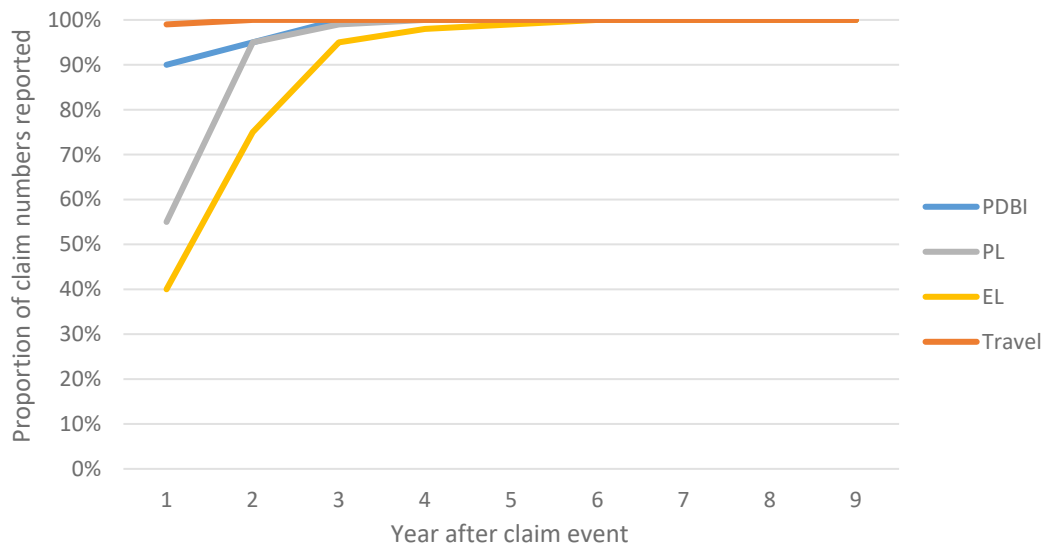


Figure 8: Claim numbers reported cumulative development patterns for each class

- 2.26 The benchmark patterns in figures 7 and 8 above show the expected reported claim amounts and reported claim numbers as a proportion of their ultimate position for an average academic year, during each year following the initial academic year period. Note that we expect longer delays until claims are paid than for claims to be reported.
- 2.27 We expect that claims from the Travel class will emerge the fastest (two years for claim numbers to be fully reported and three years for claim amounts), with the least uncertainty in their value. The PDBI class is also expected to develop relatively quickly (three years for claim numbers to be fully reported, six years for claim amounts).



- 2.28 The liability classes (EL and PL) take longer to emerge as there is a significant component of personal injury claims in these (at least four years for claim numbers to be fully reported and nine years for claim amounts).
- 2.29 Adjustments have been made to take account the rapid growth in the number of pupils within the RPA during the first two academic years (2014/15 and 2015/16 only).
- 2.30 We considered the results from several methods when selecting the ultimate number of claims and the ultimate claim amount for each class.
- 2.31 We also project the expenses associated with the claims. These expenses are claims expenses related to individual claims such as claims handling and loss adjustor fees. Any expense figures within this report do not include any further expenses that DfE incur in the operation of the RPA, such as staff and consultancy costs.



Projection of claims for academic year 2014/15

2.32 The chart below shows our estimate of ultimate claims for the 2014/15 academic year as at 31 March 2018, split by reserving class. The equivalent results from the 31 August 2017 review are also shown. All figures exclude claims expenses.

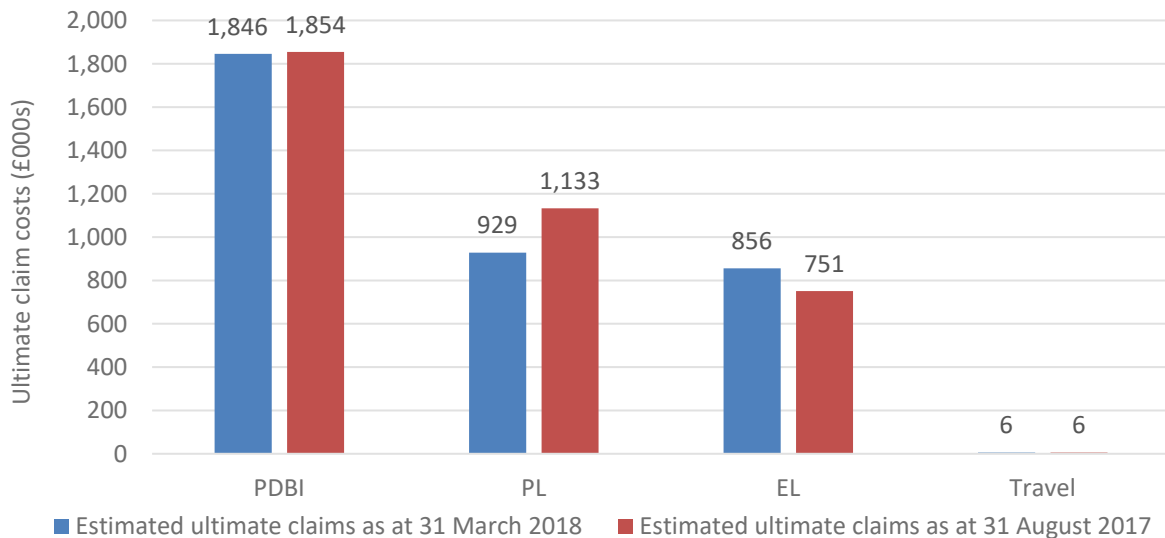


Figure 9: Summary of GAD academic year 2014/15 ultimate claim estimates by class (£000s)

2.33 In total, our estimate of the 2014/15 academic year ultimate claims stands at £3.6m which is a decrease of £0.1m (or 3%) against our estimate as at the August 2017 review. The ultimate cost per pupil year is £8.07, a decrease of £0.22 (or 3%).

2.34 The decrease is due to the PL reserving group where our estimates of ultimate claims have decreased by £0.2m (or 18%), which is equivalent to a decrease of £0.45 on a per pupil year basis. This is a result of a number of PL Injury claims which had previously been reported to the RPA and given a small case reserve, but which have now been reassessed to be nil claims.

2.35 Offsetting this, the next largest movement is in the EL reserving group which is shown as having an increase of £0.1m (or 14%). This is due to the EL Injury class, which in contrast to the PL Injury class has seen several known claims have their case reserves reassessed as larger amounts.

2.36 The PDBI and Travel reserving groups are considered to be fully developed. This means we no longer expect any new claims to be reported, or any material movements in existing claims.



Projection of claims for academic year 2015/16

2.37 The chart below shows our estimate of ultimate claims for the 2015/16 academic year as at 31 March 2018, split by reserving class. The equivalent results from the 31 August 2017 review are also shown. All figures exclude claims expenses.

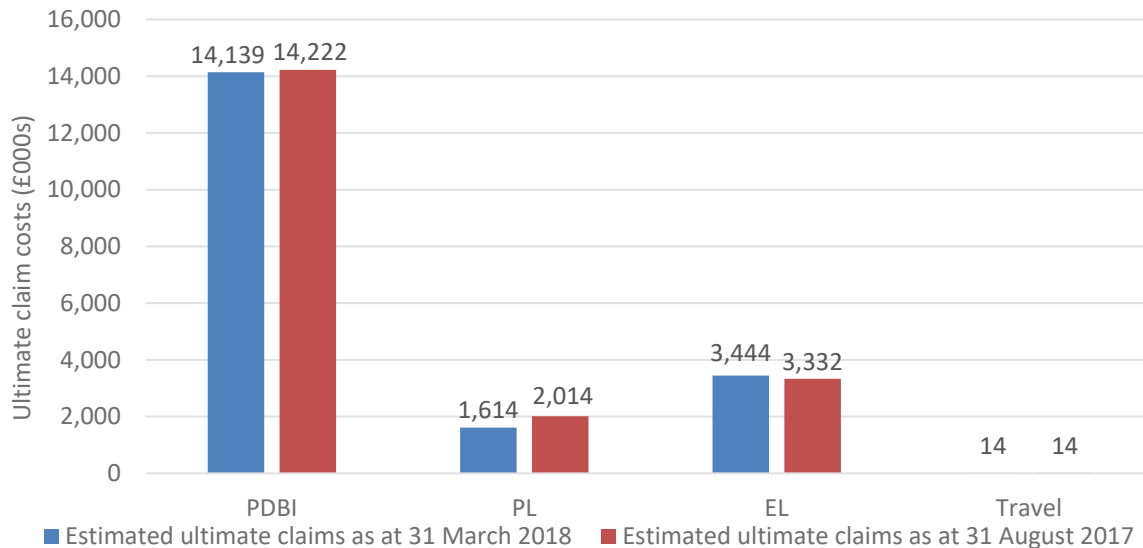


Figure 10: Summary of GAD academic year 2015/16 ultimate claim estimates by class (£000s)

2.38 In total, our estimate of the 2015/16 academic year ultimate claims is £19.2m, which is a decrease of £0.4m (or 2%) since the August 2017 review. The ultimate cost per pupil year stands at £17.66 which is a decrease of £0.33 (or 2%).

2.39 The largest absolute movement in ultimate claims is a decrease of £0.4m (or 20%) in the PL reserving group. This is driven by the Injury reserving class, where a large number of claims were reassessed by the claims handler to no longer require case reserves, in contrast to our assumption that reported claim amounts would grow over the period.

2.40 Ultimate claims for the PDBI reserving group are shown as unchanged over the period, however this masks more material movements in the underlying analysis:

- > The PDBI Fire class has deteriorated by £0.3m as a result of a £0.9m deterioration on a known large loss. The impact of this deterioration is reduced by a £0.4m saving on another known fire loss, combined with a lack of new claims / deteriorations on other known claims.
- > The PDBI General Damage & Other class has improved by £0.3m following a £0.2m reduction in a known loss.

2.41 No other classes have seen material movements during the review period.

2.42 Stepping back from the movements during the review period to focus on the overall estimate of costs, we note that 2015/16 has performed more poorly than 2014/15. In terms of our estimated costs per pupil year, 2014/15 is forecast to be £8.07 whilst 2015/16 is forecast to be £17.66. This is because 2014/15 did not have any large losses, whilst 2015/16 had several.



Projection of claims for academic year 2016/17

2.43 The chart below shows our estimate of ultimate claims for the 2016/17 academic year as at 31 March 2018, split by reserving class. The equivalent results from the 31 August 2017 review are also shown. All figures exclude claims expenses.

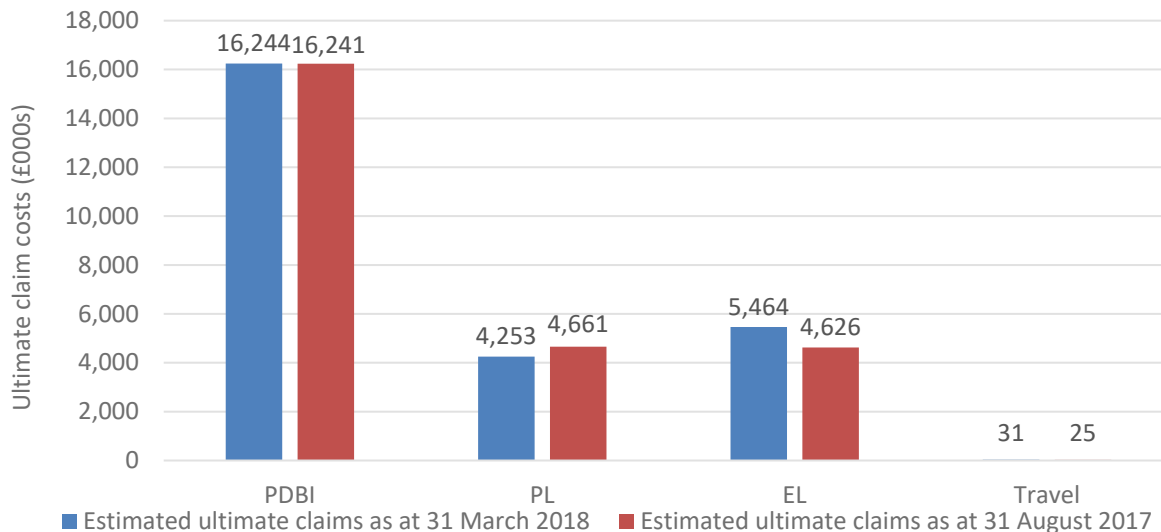


Figure 11: Summary of GAD academic year 2016/17 ultimate claim estimates by class (£000s)

2.44 In total, our estimate of the 2016/17 academic year ultimate claims is £26.0m, which is an increase of £0.4m (or 2%) since the August 2017 review. The ultimate cost per pupil year stands at £14.67 which is an increase of £0.25 (or 2%).

2.45 The increase is driven by the EL reserving group, and each of the reserving classes within it:

- > Our estimate of EL Injury claims has increased by £0.4m (or 13%). This is due to a known claim which relates to a potential brain injury. In our previous review the loss was assessed to be £0.1m but this has now increased to £0.5m.
- > Our estimate of EL Dispute & Other claims has increased by £0.5m (or 27%). This is due to poorer than expected claims frequency experience from Secondary academies (i.e. more claims were reported than we had forecast).

2.46 Partially offsetting this is the PL reserving group. PL Injury claims have improved by £0.2m (or 5%) following fewer than expected new claims being reported during the period. PL Property & Other claims have also improved by £0.2m for the same reason.

2.47 Whilst the PDBI reserving group is shown as unchanged over the quarter, there are notable movements within the underlying reserving classes:

- > Fire claims have deteriorated by £0.2m (or 5%) driven by an arson loss. Whilst this loss was known to the RPA at the date of our previous review, based on the information available at that time the claims handler considered that there was virtually no loss. Since then the claim has been reassessed to be a £0.45m loss.



- > General Damage & Other claims have deteriorated by £0.3m (or 6%). Whilst there have been significantly fewer new claims reported during the period compared to our previous expectations, several of those which have been reported are much larger than we would expect.
- > Flood claims have improved by £0.3m (or 18%) following a number of known claims which are now thought to cost less than at the time of our previous review.



Projection of claims for academic year 2017/18

2.48 The chart below shows our estimate of ultimate claims for the 2017/18 academic year as at 31 March 2018, split by reserving class. The equivalent results from the 31 August 2017 review are also shown. All figures exclude claims expenses.

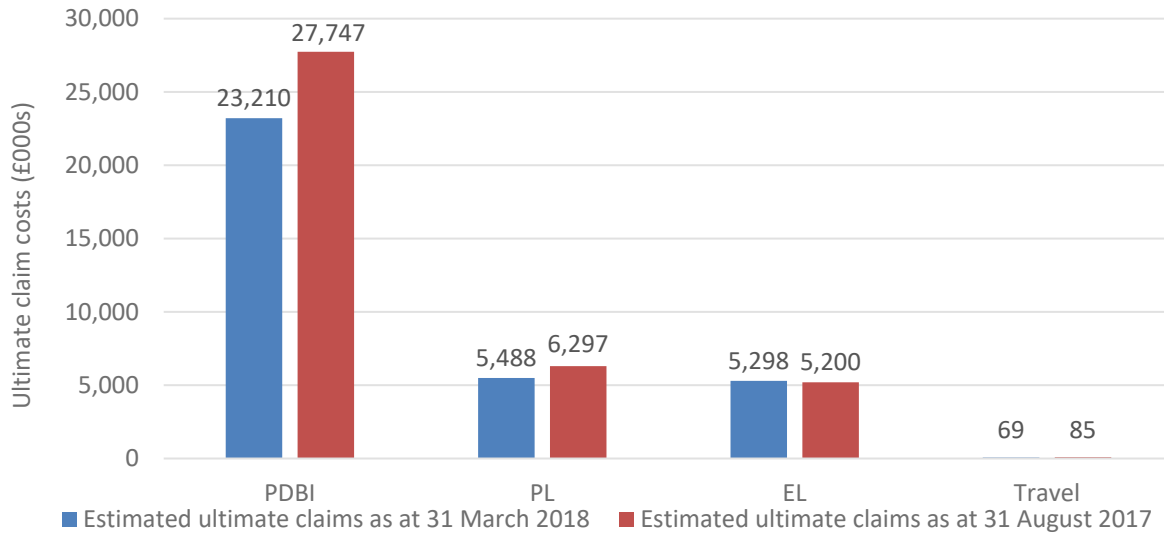


Figure 12: Summary of GAD academic year 2017/18 ultimate claim estimates by class (£000s)

2.49 In total, our estimate of the 2017/18 academic year ultimate claims is £34.1m, which is a decrease of £5.3m (or 13%) since the August 2017 review.

2.50 The ultimate cost per pupil year stands at £15.39 which is a decrease of £0.97 (or 6%). The percentage decrease in the ultimate cost per pupil (6%) is significantly smaller than the decrease in the ultimate cost (13%) as this measure also takes into account our estimate of exposure which has been reduced since the August 2017 review. Specifically, it has reduced from 2.40m pupil years to 2.21m pupil years (a reduction of 8%) as participation data begins to emerge and is slightly lower than forecast.

2.51 The reduction is driven by the PDBI reserving class, which is expected due to its 'short-tailed' nature, and an absence of large losses. As a result there have been material movements within a number of the individual claim types within this class:

- > There have not been any Storm losses so far in 2017/18 and there has been one medium sized Flood loss. As a result, the Flood class has improved by £1.9m (or 31%) and the Storm class has improved by £1.2m (or 36%)².

² For consistency with the way we have discussed movements elsewhere in this report, we have given the absolute change in our estimate of ultimate losses. Because of the reduction in exposure during the period, this can be a misleading measure. The corresponding changes on a per pupil year basis are: PDBI Flood has improved by 25%, PDBI Storm has improved by 30%, PDBI Fire has deteriorated by 4%, and the PL reserving group has improved by 5%.



- > There has been a large Fire loss of £3.0m. This was broadly in line with our large loss allowance and our estimate of ultimate claims has improved by a more modest £0.3m (or 4%).
- 2.52 We have also seen an improvement in the PL reserving group of £0.8m (or 13%). Both the PL Injury and PL Property & Other reserving classes have experienced better than expected claim severity.



Projection of claims for future academic years 2018/19 to 2024/25

- 2.53 In a further change this review, we have increased the number of future academic years which we consider. Our previous projection horizon of 2021/22 has been extended by three years so that we now consider academic years up to and including 2024/25. This broadly matches the time horizon considered in DfE's academy projections, and provides greater insight into the long term trends affecting the RPA.
- 2.54 The following chart shows our current ultimate claims estimate for the 2018/19 to 2024/25 academic years, alongside the corresponding estimates from our August 2017 review. These academic years cover the 12 month periods from 1 September 2018 to 31 August 2025. All figures exclude claim expenses.

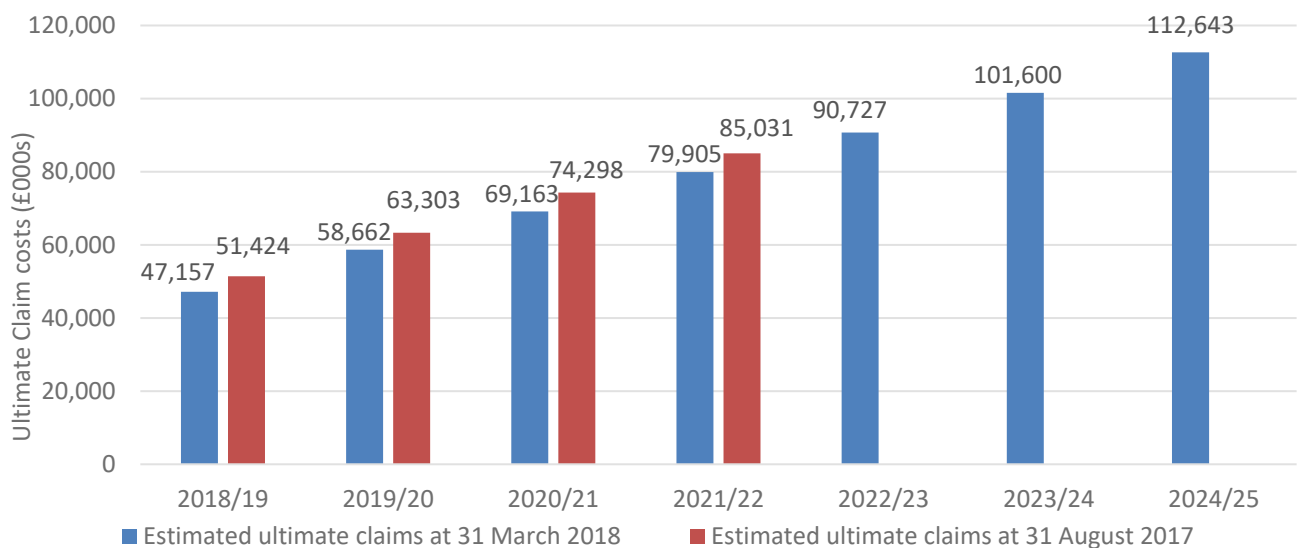


Figure 13: Summary of GAD future academic year (2018/19 to 2024/25) ultimate claim estimates (£000s)

- 2.55 Our current ultimate claims estimates for the first few future academic years (2018/19 to 2021/22) are approximately 6% to 8% lower than the August 2017 review estimates. This decrease is driven by both a decrease in expected exposure and improvements in PDBI Flood claims (where our estimate of both claim frequency and the average claim severity have improved), PDBI Theft claims (where our estimate of claim frequency continues to reduce) and PL Injury (also due to an improvement in claim frequency). There is, however, a notable offsetting deterioration from PDBI Fire where average severity is now thought to be higher.
- 2.56 The ultimate claims per pupil year is £16.98 in 2018/19, rising by approximately £0.98 per year to £22.83 in 2024/25 due to expected claims cost inflation. Inflation is assumed to be 4% per annum for PDBI and Travel and 5% per annum for PL and EL.
- 2.57 The estimates of ultimate claims per pupil are 1.5% lower than the August 2017 estimates. This reduction is smaller than the reduction in ultimate cost as this measure isolates the effects of changes in the frequency and severity assumptions.



2.58 To help visualise the drivers of change to the future academic year estimates, the exhibit below shows how the estimate for the first future academic year (2018/19) has improved. In our previous review we forecast that the ultimate claims per pupil would be £17.24, whilst in our current review we estimate that this has reduced to £16.98.

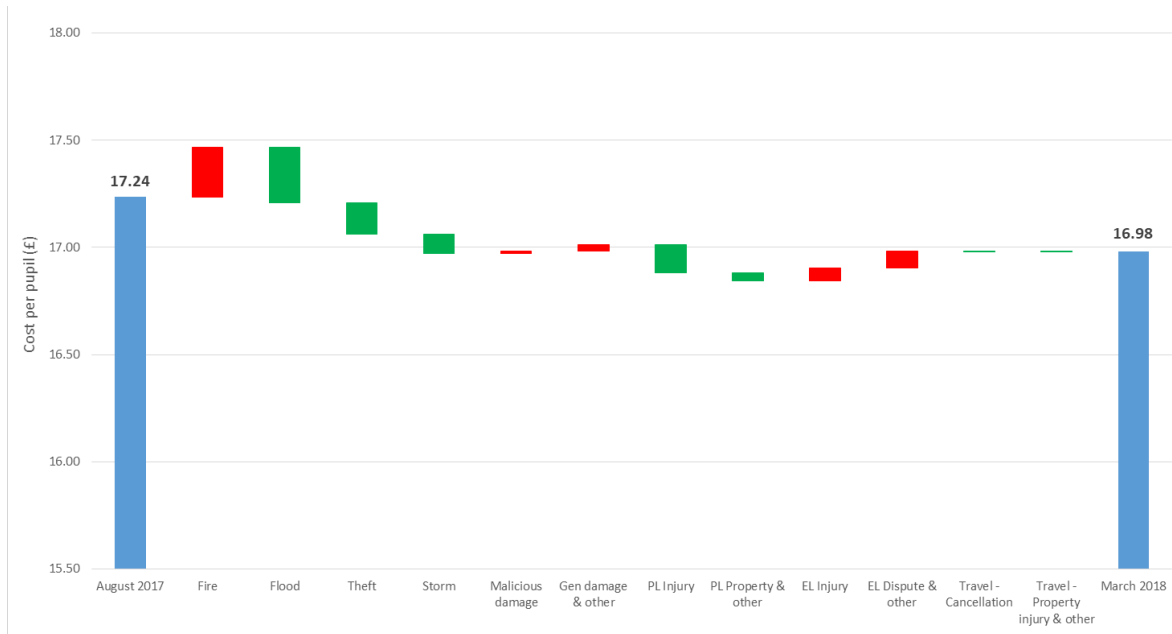


Figure 14: Changes to the cost per pupil year for the 2017/18 academic year

2.59 Our estimate of the future cost for each type of claim is constructed from separate assumptions for frequency and severity. These were initially based on external benchmarks but in our most recent reviews we have started to incorporate the RPA's own experience. The frequency assumptions are the same for all future academic years, whilst the severity assumptions are increased to allow for inflation for each future academic year.

2.60 The following changes are highlighted:

- > PDBI Fire - Our estimate of the overall cost has deteriorated by £0.23 per pupil as a result of a deterioration in average claim severity. This is due to the 2015/16 year where there has been a deterioration on a known large loss.
- > PDBI Flood - Our estimate of the overall cost has improved by £0.26 per pupil as a result of improvements in claim frequency and average claim severity. Claim frequency estimates improved in 2015/16, 2016/17 and 2017/18, whilst average claim severity also improved slightly across most years.
- > PDBI Theft - Our estimate of the overall cost has improved by £0.15 per pupil as a result of an improvement in claim frequency. Claim frequency estimates improved in 2015/16, 2016/17 and 2017/18, with all years being significantly below the benchmark. Claim severity saw a slight deterioration, but is still below the benchmark.



- > PL Injury - Our estimate of the overall cost has improved by £0.14 per pupil as a result of lower claim frequency. This lower claim frequency is a result of improvements across the 2014/15, 2015/16 and 2016/17 academic years. Claim severity also saw improvement due to an absence of large losses in 2017/18 so far.



Projection of claims for financial years 2014-15 to 2024-25

2.61 Our estimates of the ultimate loss for each financial year are calculated by reallocating the academic year results. The reallocation methodology is as follows:

- > The claims data provided by Gallagher Bassett contains information on each individual claim. This level of granularity allows us to directly calculate the paid and outstanding claims on a financial year basis without having to make any additional assumptions.
- > IBNR and IBNER claims have already been estimated as part of our academic year projections. In order to allocate these to a financial year basis, our default assumption is that IBNR and IBNER claims are equally likely to emerge from any earned amount of exposure within an academic year.
- > Estimated claims for unexpired periods of risk have also already been calculated on an academic year basis. We allocate these to a financial year basis by assuming they are equally likely to emerge from any unearned amount of exposure.

2.62 For each reserving class, we consider whether we are aware of any reasons why our default methodology would not be appropriate. For example, an adjustment would be considered for any classes where there is strong evidence that claims occur during specific seasons rather than uniformly throughout the year.

2.63 The figure below summarises the estimated ultimate claims for financial years 2014-15 to 2024-25.

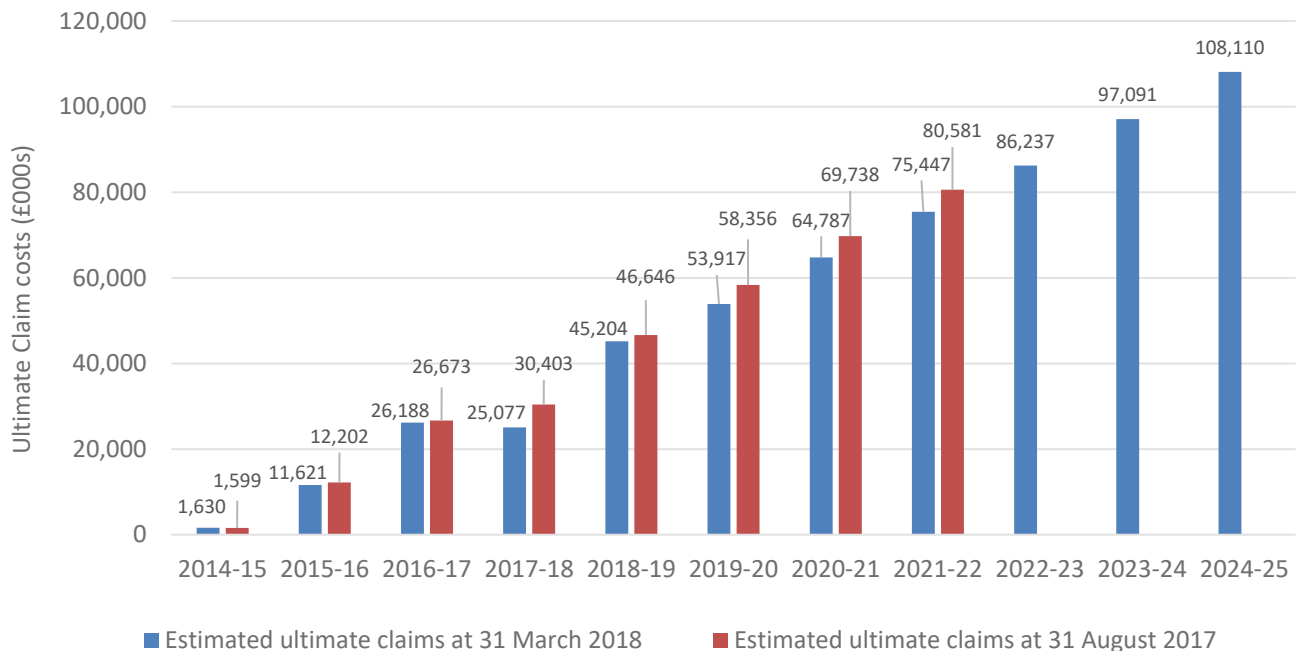


Figure 15: Financial year estimates as at March 2018 and August 2017 (£000s)



- 2.64 The ultimate claim amount for the financial year 2014-15 has deteriorated slightly (by 2%), despite the 2014/15 academic year improving. This is because the deterioration in the EL reserving group is more heavily concentrated in this financial year.
- 2.65 Our estimate of ultimate claims for the 2015-16 financial year has improved from £12.2m to £11.6m (or 5%). This financial year is a mix of the academic years 2014/15 and 2015/16 which have also improved.
- 2.66 Our estimate of ultimate claims for the financial year 2016-17 has improved from £26.7m to £26.2m (or 2%), despite partially being made up of the 2016/17 academic year result which showed a deterioration. This is because one of the drivers of the 2016/17 academic year deterioration came from poor claims frequency experience in the EL reserving group, this mainly arose during the 2017-18 financial year.
- 2.67 The 2017-18 financial year has improved from £30.4m to £25.1m (or 18%), despite the deterioration in the 2016/17 academic year being focused in this financial year, as commented above. This is because it benefits from the lack of large losses in the 2017/18 academic year, all of which is focussed in the 2017-18 financial year.
- 2.68 The 2018-19 financial year has improved from £46.6m to £45.2m (or 3%), this is driven by the decrease in exposure over the 2017/18 academic year. A more informative comparison is the cost per pupil year, which has deteriorated despite the 2018-19 financial year having overlap with the 2017/18 academic year. This is because the lack of large losses in the PDBI reserving group from 2017/18 is concentrated in the 2017-18 financial year but the deterioration across the EL reserving group is largely concentrated in the remaining half of the 2017/18 academic year which is covered by the 2018-19 financial year.
- 2.69 The subsequent years (2019-20 onwards) are all future financial years which have yet to commence, and have each seen reductions in ultimate claims when expressed as sterling amounts of 6% to 8%. A more informative comparison is the cost per pupil year as this is independent of exposure, and this measure has improved by approximately 1.5%. This is driven by the changes to our future view of frequency and severity which have previously been described.



3 Further considerations

- 3.1 This section outlines further considerations that DfE should bear in mind when examining the results in this report.
- 3.2 The WTW benchmarks for claim frequency and severity continue to be key inputs into our reserving process. The major risk associated with using these benchmarks is that they are not appropriate for the academies which are members of the RPA. This could be because the WTW benchmarks are based on historical data, or because they are based on a different subset of the academy population. As claims experience from the RPA begins to emerge this risk diminishes.
- 3.3 Similar comments apply to the claim development patterns provided to us by Gallagher Bassett, however these only affect our claim estimates for academic years where coverage has commenced. Over time, data from the RPA can be used to initially challenge these benchmarks, and eventually there will be sufficient data such that benchmarks can be derived exclusively from RPA experience.
- 3.4 The insurance market would offer different premium rates to each academy based on their risk profile and claims history. The RPA will therefore vary in the amount of value that each academy receives from it, which may make it more likely that those academies currently paying high insurance premiums will join, which is a form of selection against the RPA (known as anti-selection). This would create a risk profile that may not be in line with the claims data.
- 3.5 The actuarial analysis undertaken for the arrangement does not include a specific consideration of latent claims. These are claims of a type that was not anticipated at the time that cover was provided, though these claims would be funded by DfE if they were to arise in the future. This represents a source of uncertainty in the level of claims to the arrangement.
- 3.6 There is no explicit allowance for Periodical Payment Orders, i.e. claims that, rather than settling as a lump sum amount, require regular payments to be made in order to compensate the claimant. Any Periodical Payment Orders would be funded from DfE funds if they were to arise.
- 3.7 In DfE's accounts, provisions, contingent assets and contingent liabilities are considered in accordance with International Accounting Standard 37 (IAS 37). Under IAS 37 future payments for claims made to the RPA will require a provision to be held by DfE. DfE utilise this provision as claims are reported and allocate budget at this point. DfE will therefore have to ensure that funds are available when needed.
- 3.8 The growing number of academies creates further uncertainty as the historical data may not be representative of the future experience.
- 3.9 The uncertainty associated with the relatively low number of claims in the data is mitigated, to an extent, through the use of relevant benchmarks. It is appropriate that the data is supplemented in this way. If possible, further relevant sources of data should be considered by DfE, for example any historical information available relating to losses in other (non-academy) schools.



Appendix A: Data

Exposure

- A.1 We were provided with the following data from DfE concerning the exposure of the RPA:
- > Actual number of academies and pupils in the RPA as at 31 March 2018, split by type of academy (Primary, Secondary, All Through and Special);
 - > Academies where there is information to suggest they may join the RPA in the future, alongside an expected opt-in date;
 - > Projected number of academies.

Claims data

- A.2 We were provided with the following data, as at the month ends from inception of the RPA in September 2014 to 31 March 2018 inclusive for each claim that had been reported by that date:
- > Paid loss amount (excluding claims expenses)
 - > Outstanding loss amount (which represents the Gallagher Bassett loss estimate (excluding claims expenses) that has yet to be paid)
 - > Paid claim expense amount
 - > Outstanding claim expense amount (which represents the Gallagher Bassett expense estimate that has yet to be paid)
 - > Accident date
 - > Date first reported
 - > Date closed (if the claim has closed)
- A.3 We understand the claims expense amounts to include claims handling and loss adjustor fees. Any expense figures within this report do not include any further expenses that DfE incur in the operation of the RPA, such as staff and consultancy costs.
- A.4 A nil claim is defined as a claim that has closed, but where the paid loss and outstanding loss are zero. These claims are excluded from the claim number triangle only from the point at which they close as a nil claim.



Data detail

- A.5 We have grouped the data by each major class of business and peril separately. This creates 12 different reserving classes:
- > Property Damage and Business Interruption
 - Fire
 - Flood
 - Theft
 - Storm
 - Malicious Damage
 - General Damage & Other
 - > Public Liability
 - Injury
 - Property & Other
 - > Employers' Liability
 - Injury
 - Dispute & Other
 - > Travel
 - Cancellation
 - Property, Injury & Other
- A.6 Each of the 12 reserving classes is then further divided into Primary and Secondary academy types. This creates 24 unique reserving groups and this is the level at which outstanding claims provisions are set.
- A.7 The number of groups used must be balanced against the volume of data available, as each group must have sufficient data to achieve a robust statistical measure. This consideration, along with the requirements of DfE, led to the choice of the segmentation outlined above.
- A.8 As the RPA has only been operating for a short period of time there is limited claims data in some of these reserving groups. Where this is the case, there is a lack of statistical credibility which should be borne in mind. Following analysis we recommended that the data for Special and All Through academies was combined with the data for Secondary academies to create a new category called 'Secondary & Other' in this review. The number of reserving units have been halved from 48 to 24, creating meaningful efficiency savings without any adverse impacts on the accuracy of our forecasts.

Patterns

- A.9 Gallagher Bassett provided us with academies claims data which we supplemented with benchmarks to derive the development patterns for reported claim amounts and reported claim numbers. More detail on these patterns can be found in paragraphs 2.25 to 2.29.



WTW frequencies and average claims costs

- A.10 WTW provided estimates of claims frequencies, which are the expected number of non-nil claims per pupil year (where one pupil year represents one pupil being in the RPA for one year). These are provided for primary and secondary academies, and for each claim type and peril. The estimates for primary and secondary academies only differ for Travel (where secondary academies have a higher frequency) and PDBI (where primary academies have a higher frequency).
- A.11 For each claim type and peril, WTW estimated the same average claim cost for each academy type.
- A.12 WTW provided frequency and average claim cost estimates for the 2014/15 academic year and also for the future academic year 2015/16. Where we have used the WTW 2014/15 estimates, we used these as presented within the WTW report (i.e. frequencies based on pupil years and average costs per claim) although we have combined (but made no adjustments to) some peril estimates to match the peril split that we are modelling. For future academic years, where we have used WTW benchmarks, we have assumed the following:
- > No change in the frequency of claims year on year.
 - WTW benchmarks for 2015/16 had different changes in frequency from the previous year for each claim type.
 - We do not think that there is a clear reason for the frequency to change into the future so we have assumed no change in the frequency of claims year on year.
 - > Inflation of average claim cost per academic year of 4% for PDBI and Travel and 5% for PL and EL.
 - These inflation rates are based on inflation values in the WTW report. Based on an analysis of the Bank of England's inflation information, we consider these inflation rates to still be reasonable.



Appendix B: Glossary

- A.13 Expired exposure - The exposure corresponding to the expired risk period.
- A.14 Expired risk period - The risk period for which, up to a certain date, RPA policies have been in force.
- A.15 Exposure - A measure that represents the risk. Possibilities for the RPA are the number of academies and number of pupils. Pupil numbers were chosen since these give an indication of the size of the academies within the RPA, which will affect the risk. The exposure is measured in 'pupil years' such that the duration that pupils have been covered by the RPA is taken into account.
- A.16 Future claim amounts - This is all claims estimated to be reported and ultimately paid in the future relating to exposure within a given academic or financial year. For a given year this estimate is the sum of the IBNER, IBNR and estimated ultimate claims for the unexpired risk period.
- A.17 Future claim numbers - This is all claims estimated to be reported and ultimately settled in the future relating to exposure within a given academic or financial year. For a given year this estimate is the sum of the IBNR numbers and estimated ultimate claim numbers for the unexpired risk period.
- A.18 Government Actuary's Department ('GAD') - A non-ministerial government department providing actuarial advice to public sector clients. For more information see www.gov.uk/gad.
- A.19 IBNER - For the RPA, exposure is considered in academic years running from September to August. At the end of each exposure year there will still be outstanding claim amounts that have not yet been received, relating to that period. These amounts that are expected to arise in future are referred to as incurred but not enough reported ('IBNER') claims.
- A.20 IBNR - For the RPA, exposure is considered in academic years running from September to August. At the end of each exposure year there will still be claims that have not yet been received, relating to that period. These amounts that are expected to arise in future are referred to as incurred but not reported ('IBNR') claims. Often IBNR is used to refer to both 'pure IBNR' (as per the definition above) and IBNER combined, however in this report we refer to IBNR to just mean the pure IBNR, excluding IBNER. IBNR numbers are the number of claims that have incurred but have yet to be reported.
- A.21 Latent claims - These are claims of a type that was not anticipated at the time that cover was provided.
- A.22 Long tail - A claim type is referred to as 'long-tailed' where claims reporting and/or claims payments may occur many years after the risk period has expired. Long tail risk is the risk that claims may be made many years after the risk period has expired. (See also short tail)



- A.23 Peril - The specific source of loss to the risk pool. Examples include fire, theft and injury.
- A.24 Personal injury - Legal term for injury to body, mind or emotions.
- A.25 Reported claims - For a given academic year, the reported claims at a certain point in time is the total amount that the claim handlers estimate the claims that have been notified to date to ultimately cost, where these claims originate in the given academic year.
- A.26 Return period - An expression of the expected frequency of occurrence of an event. It represents the frequency on a 1 in 'x' basis, where x is the return period. A common event may have a return period of 1, implying an expected occurrence rate of once per year. More remote events will have much higher return periods.
- A.27 Risk period - The time for which the expectation is to have RPA policies in force.
- A.28 Short tail - A claim type is referred to as 'short-tailed' where claims reporting and/or claims payments occur within the space of a few years after the risk period has expired.
- A.29 Triangle or Claims triangle - Manipulating data into a triangle format is a way of presenting the data to aid analysis of the development of the data over time. Triangles are made of reported claims, paid claims, claim numbers and average claim cost. Going across in the triangle is the development period, for example claims reported month. Going down is the origin period, for example the academic month that the incident occurred. Each row then shows all claims where the incident occurred during the same time period, and going right in the row shows how the claim amount or number changes over time since the incident period.
- A.30 Ultimate claim - The total final amount that will be paid for claims originating from a given academic or financial year. This is the aggregate of claims that have been reported and estimated future claim amounts.
- A.31 Unexpired exposure - The exposure corresponding to the unexpired risk period.
- A.32 Unexpired risk period - The remaining risk period for an academic/financial year for which, as at a certain date, RPA policies are expected to be in force.