



# Government Actuary's Department

**Department for Education risk protection arrangement**

**Estimated provisions as at 31 August 2018**

**Summary of key results**

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## 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 August 2018. This work was undertaken between August 2018 and December 2018. This report is based on data and the policy environment as at 31 August 2018 and makes no allowance for changes since this time. We draw your attention to the limitations and reliance restrictions described below in paragraphs 1.42 to 1.44.
- 1.3 The scope of this review includes the following estimates of provisions for:
- > The academic years 2014/15 to 2017/18
  - > The financial years 2014-15 to 2018-19
  - > Each future academic year from 2018/19 up to and including 2024/25
  - > Each future financial year from 2019-20 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 August 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 participated in the arrangement during the 2016/17, 2017/18 and 2018/19 academic years, £20 per pupil was deducted.
- 1.7 The RPA covers property damage and business interruption ('PDBI'), public liability ('PL'), employers' liability ('EL') and UK travel ('Travel'). The main 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 March 2018. In this report we provide comparisons to the GAD provision estimates as at 31 March 2018, referring to these as the 'March 2018 review estimates'. Our estimates as at 31 August 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 48 months as at 31 August 2018. The number of academies within the RPA has been increasing since it first became operational, with 5,110 academies and 2.3 million pupils covered by the RPA as at 31 August 2018.
- 1.12 In the context of the PDBI and Travel types of cover, it is our judgement that the RPA's own claims experience is now sufficiently credible to make assumptions about future claims. Our provisions for these types of cover are therefore based entirely on RPA data and have not been influenced by industry benchmarks.
- 1.13 However, for the EL and PL types of cover, 48 months is still a relatively short period of time. This is because long delays can arise between a claim event occurring, the claim being reported to the RPA and the claim being settled. For these types of cover, we supplement the RPA data with industry benchmarks provided by Willis Towers Watson ('WTW') and Gallagher Bassett. WTW has previously provided consultancy advice to DfE regarding the RPA, and Gallagher Bassett has provided claims administration services for the RPA.
- 1.14 As more academies join the RPA and the RPA becomes more established, the EL and PL claims activity will becoming more statistically credible for estimating future claims experience. Over time, we will continue to take greater account of actual experience and place less reliance on the WTW and Gallagher Bassett benchmarks. This transition 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.
- 1.15 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 August 2018 and as at 31 March 2018 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.

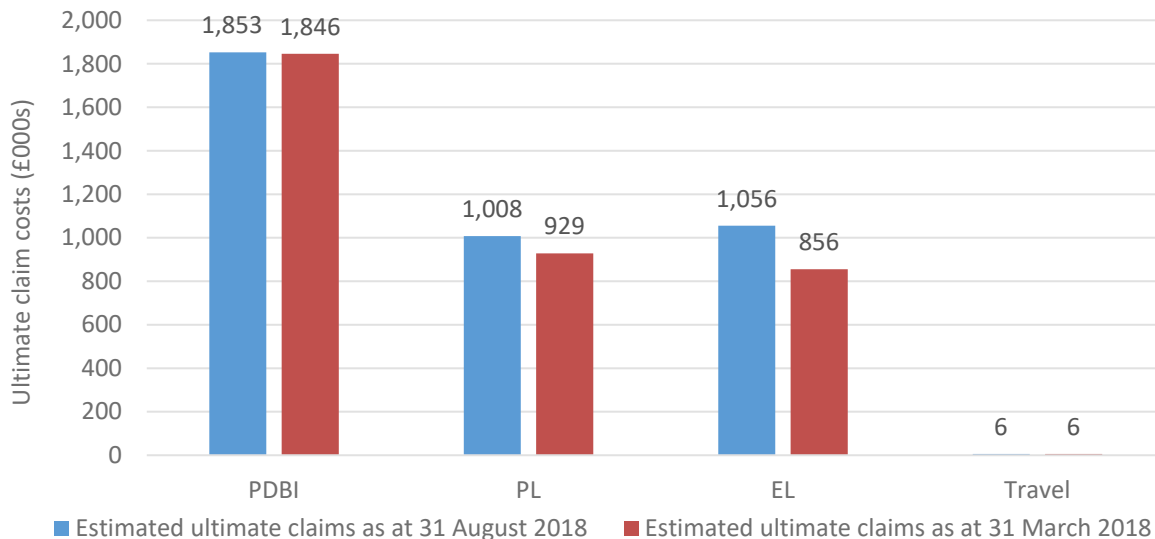


Figure 1: Summary of GAD academic year 2014/15 ultimate claims estimates by class (£000s)

- 1.17 Our current ultimate claims estimate for the 2014/15 academic year is £3.9m. This is an increase of £0.3m compared to the March 2018 review estimate.
- 1.18 The result is driven by a number of known EL and PL Injury claims where case reserves have deteriorated since our previous review.
- 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 2.30 to 2.33.



### 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 August 2018 and as at 31 March 2018. The 2015/16 academic year covers the 12 month period from 1 September 2015 to 31 August 2016.

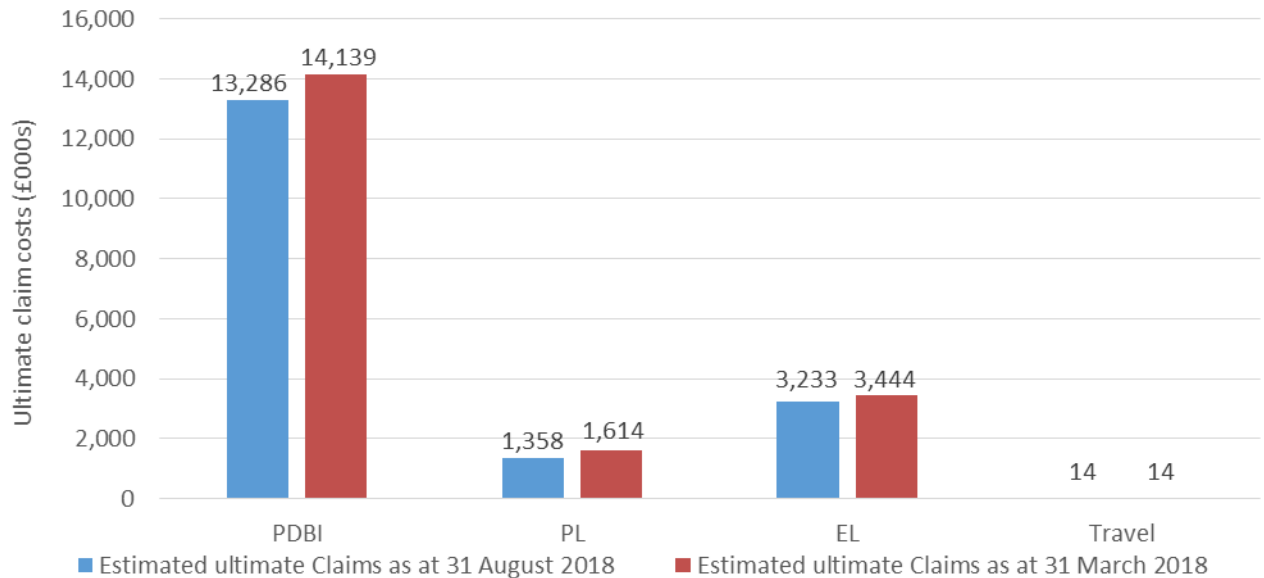


Figure 2: Summary of GAD academic year 2015/16 ultimate claims estimates by class (£000s)

- 1.22 Our current ultimate claims estimate for the 2015/16 academic year is £17.9m. This is £1.3m lower than the March 2018 review estimate.
- 1.23 This result is driven by a saving on a historical large loss, a number of smaller claim savings within the PDBI General Damage & Other class, and fewer than expected new claims being reported in the EL and PL Injury classes.
- 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 2.34 to **Error! Reference source not found.**



### 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 August 2018 and as at 31 March 2018. The 2016/17 academic year covers the 12 month period from 1 September 2016 to 31 August 2017.

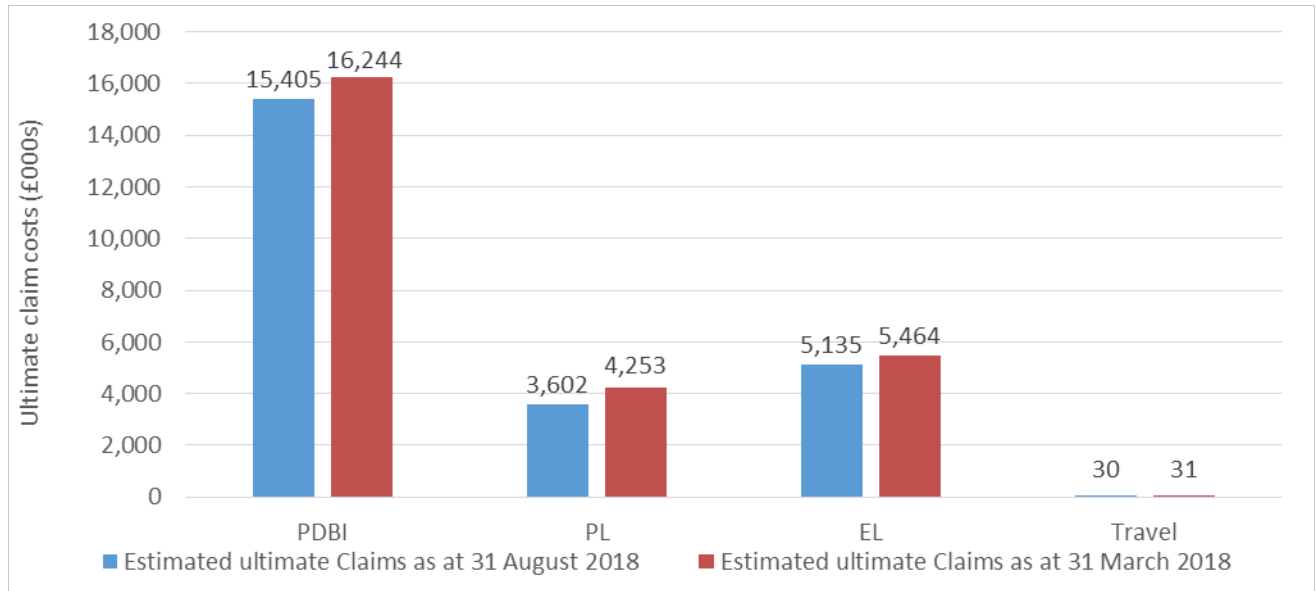


Figure 3: Summary of GAD academic year 2016/17 ultimate claims estimates by class (£000s)

- 1.27 Our current ultimate claims estimate for the 2016/17 academic year is £24.2m. This is £1.8m lower than the March 2018 review estimate.
- 1.28 The reduction is driven by the PDBI Fire, Flood and General Damage & Other classes of business that have cumulatively improved by £1.3m as experience over the period has been better than expected, with reductions in reported claims rather than increases.
- 1.29 An additional reduction arises from the PL reserving classes which have improved by £0.7m as a number of previously reported injury claims have been reassessed and closed as nil claims without any payments or case reserves.
- 1.30 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.
- 1.31 Further details on the academic year 2016/17 results can be found in paragraphs 2.39 to 2.42.



### Academic year 2017/18 results

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

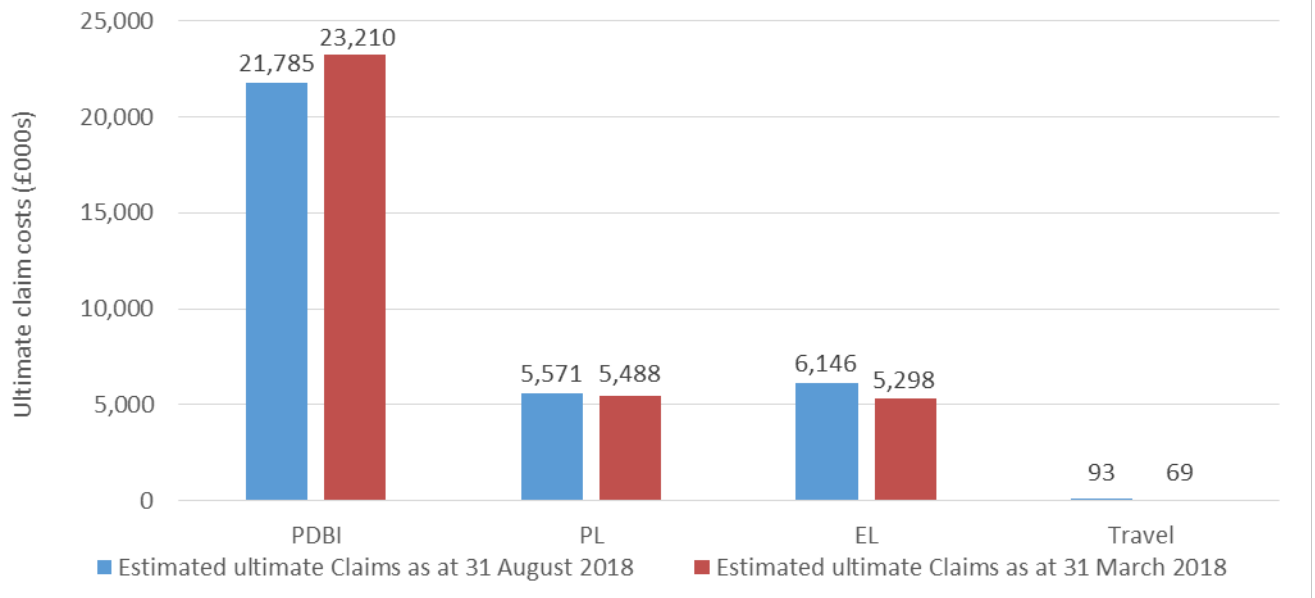


Figure 4: Summary of GAD academic year 2017/18 ultimate claims estimates by class (£000s)

- 1.33 Our current ultimate claims estimate for the 2017/18 academic year is £33.6m. This is £0.5m lower than the March 2018 review estimate.
- 1.34 The reduction is driven by the PDBI class of business where there has only been one additional large loss from the Fire class. This beneficial result has been dampened by the PDBI General Damage & Other, PDBI Flood, and the EL classes where more claims than expected have been reported.
- 1.35 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.
- 1.36 Further details on the academic year 2017/18 results can be found in paragraphs 2.43 to 2.47.





### Future academic year results

1.37 The following chart shows our current estimate of ultimate claims for the 2018/19 to 2024/25 academic years alongside the corresponding estimates from our March 2018 review.

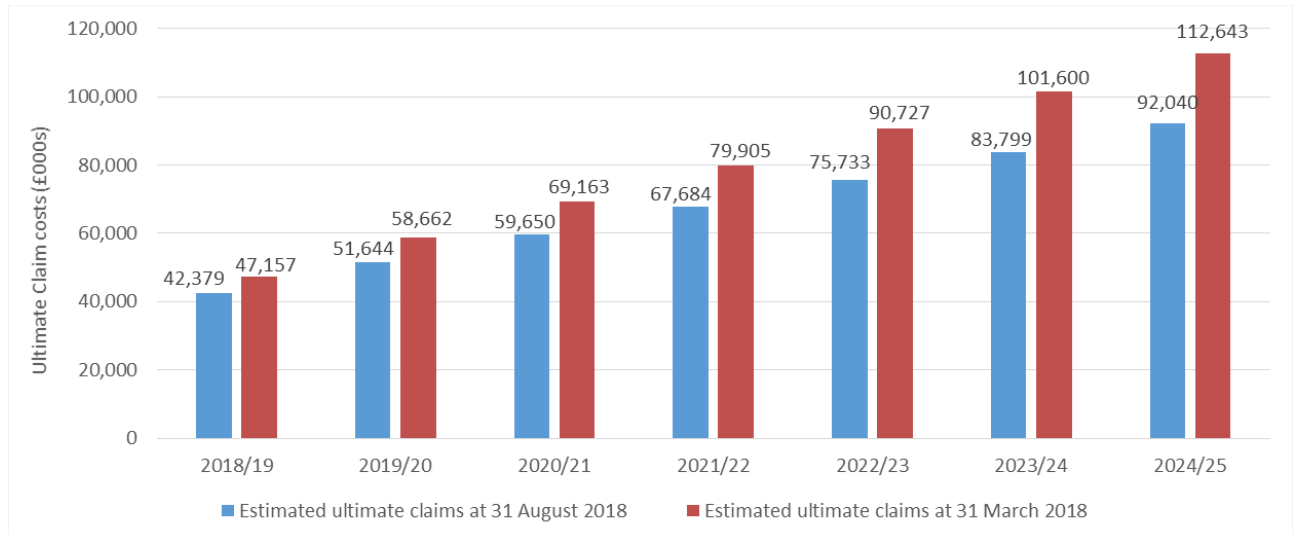


Figure 5: Summary of GAD future academic year ultimate claims estimates (£000s)

- 1.38 Our current ultimate claims estimates for the future academic years (2018/19 to 2024/25) are approximately 10% to 18% lower than the March 2018 review estimates. This decrease is driven by both a decrease in expected exposure and improvements in PDBI Fire and PDBI Flood Claims (where our estimate of average claim severity has improved) and PDBI Theft claims (where our estimate of claim frequency continues to reduce). There is, however, a notable offsetting deterioration from EL Dispute & Other where average frequency is now thought to be higher.
- 1.39 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.
- 1.40 Further details on the academic years 2018/19 to 2024/25 results can be found in paragraphs 2.48 to 2.54.



### **Terms of reference**

- 1.41 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 August 2018 from advice provided to DfE by GAD between August 2018 and December 2018.

### **Distribution and limitations**

- 1.42 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.
- 1.43 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 March 2018.
- 1.44 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 August 2018. It covers:

- > The academic years 2014/15 to 2017/18
- > The financial years 2014-15 to 2018-19
- > Each future academic year from 2018/19 up to and including 2024/25
- > Each future financial year from 2019-20 up to and including 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 August 2018.
- > Additional claims data table as at 30 September 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. Our methodology has been amended since our previous review by making an allowance for academies choosing to leave the RPA. Our methodology is otherwise unchanged but we note that the underlying 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 1.5% of existing academies that have not yet joined the RPA, join each month; and
  - > On average approximately 0.2% of academies that have joined the RPA will opt out for an alternative arrangement.
- 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 March 2018 review estimates – academies forecast*

- 2.11 The actual number of academies that joined the RPA over the 5 months between March 2018 and August 2018 has been slightly lower than expected. This motivated a change in our methodology to allow for academies choosing to leave the RPA.

### *Projection of pupils within the RPA*

- 2.12 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.
- 2.13 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.



2.14 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 March 2018 review estimates – pupil number forecast*

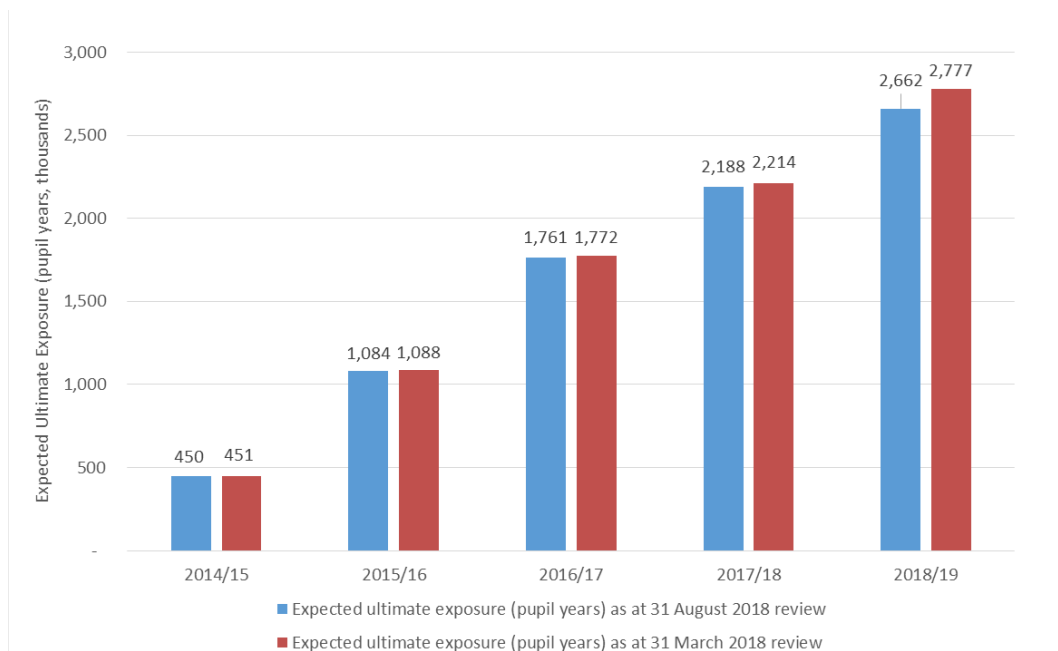
2.15 The actual number of pupils covered by the RPA over the 5 months between March 2018 and August 2018 has also been slightly less than expected.

2.16 This is due to the slightly lower number of academies, and as such we have not made any additional amendments to our methodology.

*Comparison to March 2018 review estimates – pupil years of exposure*

2.17 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.

2.18 The following chart shows the expected ultimate pupil exposure based on data as at 31 August 2018 alongside our 31 March 2018 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)*

2.19 This chart shows that our 2014/15, 2015/16, 2016/17 exposure estimate are largely unchanged, and that there has been a small reduction in our 2017/18 and 2018/19 exposure estimates.



### Projection of claims

- 2.20 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.
- 2.21 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 the RPA's claims administrators (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 when GAD carries out a provision review as at 31 March when there are still five months of future coverage for the latest academic year.
- 2.22 Ultimate claims include all of the above along with the current value of claims that have been reported as at 31 August 2018 (known as the reported claims).
- 2.23 To estimate ultimate claims we have taken into account the RPA's past experience alongside the industry benchmarks previously described.

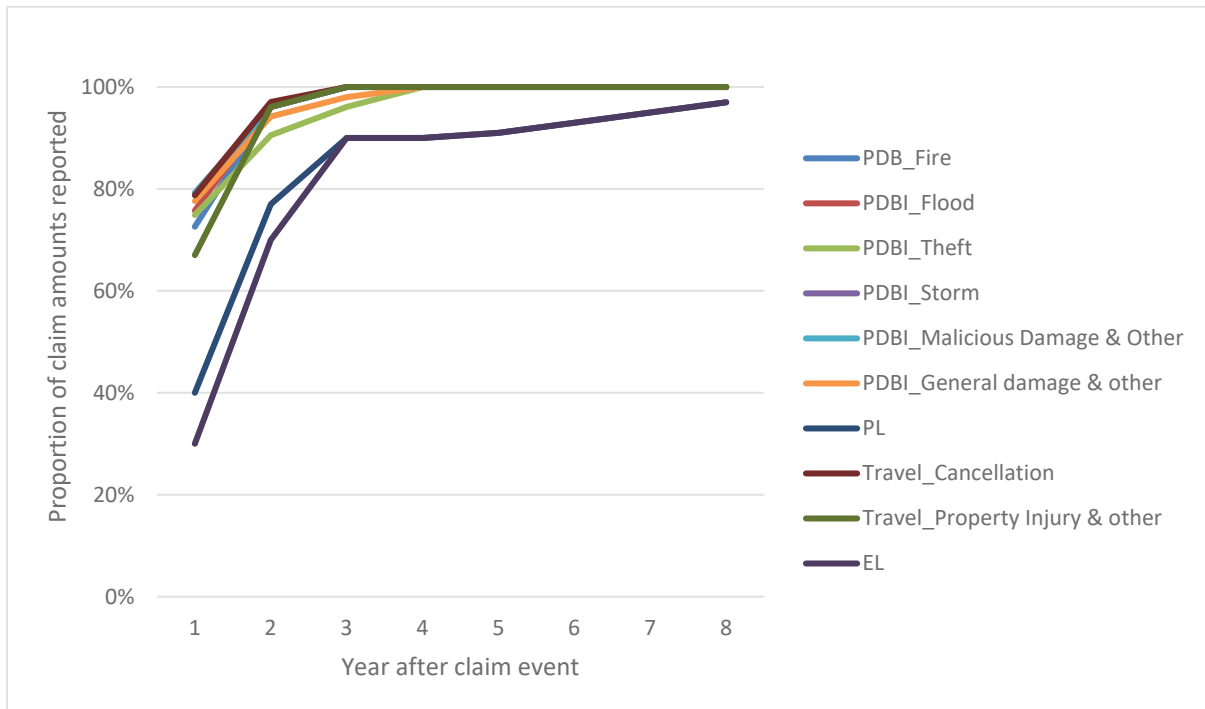


Figure 7: Claim amounts reported cumulative development patterns for each class

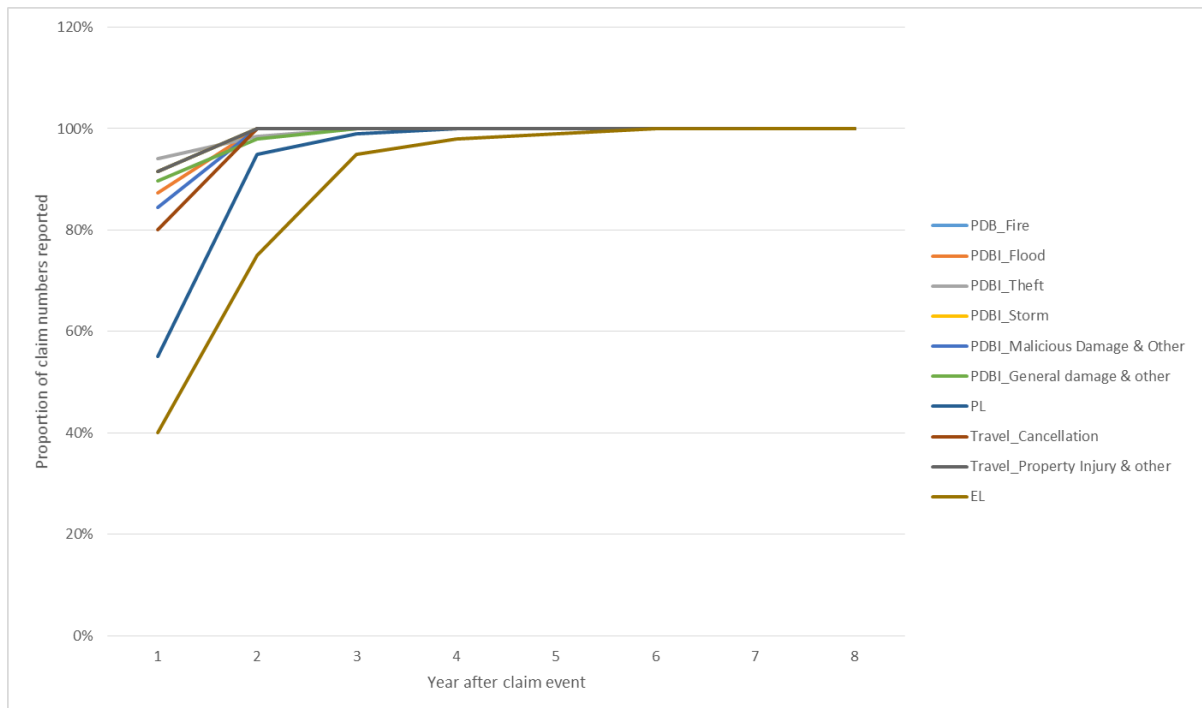


Figure 8: Claim numbers reported cumulative development patterns for each class

2.24 The 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.



- 2.25 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).
- 2.26 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).
- 2.27 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).
- 2.28 We considered the results from several methods when selecting the ultimate number of claims and the ultimate claim amount for each class.
- 2.29 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

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

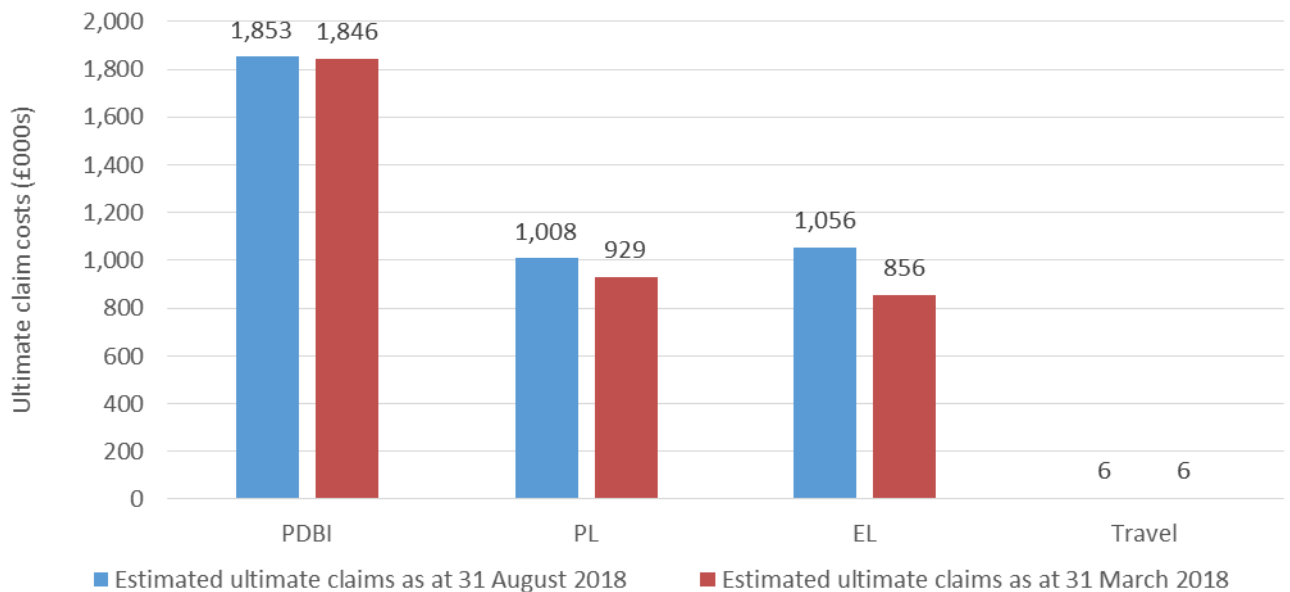


Figure 9: Summary of GAD academic year 2014/15 ultimate claim estimates by class (£000s)

- 2.31 In total, our estimate of the 2014/15 academic year ultimate claims stands at £3.9m which is an increase of £0.3m (or 8%) against our estimate as at the March 2018 review. The ultimate cost per pupil year stands at £8.71 which is an increase of £0.64 (or 8%).
- 2.32 The increase is mainly due to the EL and PL reserving groups where our aggregate estimates of ultimate claims have increased by £0.3m (or 16%), which is equivalent to an increase of £0.62 on a per pupil year basis. The result is driven by a number of known EL and PL Injury claims where case reserves have deteriorated since our previous review. In a number of instances, these deteriorations have arisen from claims that were thought to be closed, but have since re-opened and the case reserve has increased.
- 2.33 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

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

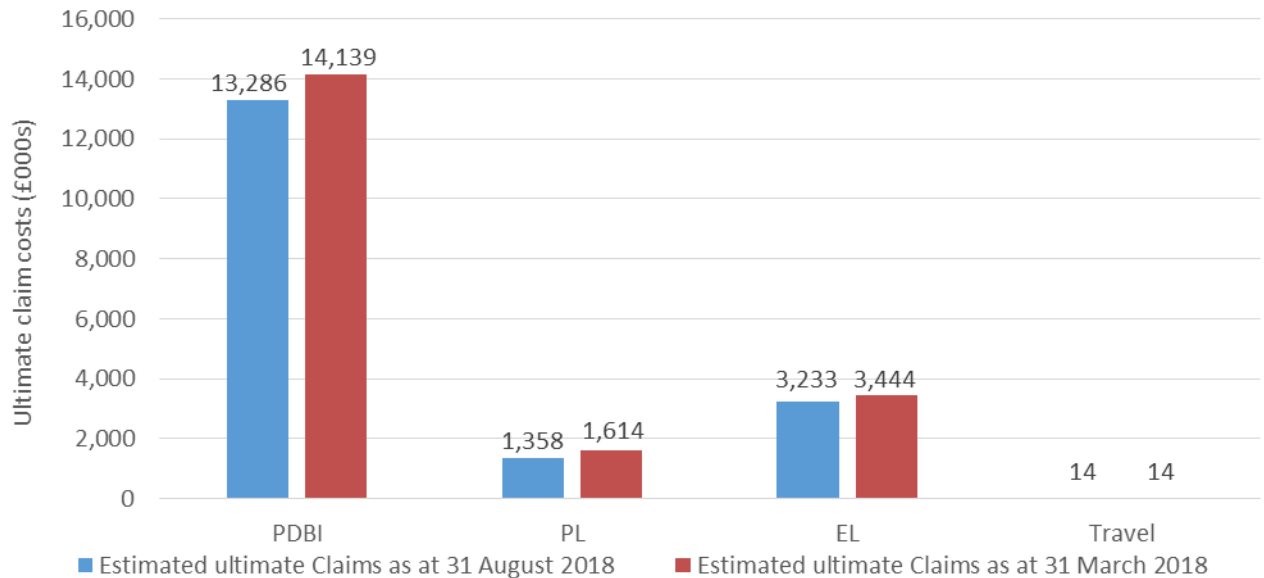


Figure 10: Summary of GAD academic year 2015/16 ultimate claim estimates by class (£000s)

2.35 In total, our estimate of the 2015/16 academic year ultimate claims is £17.9m, which is a decrease of £1.3m (or 7%) since the March 2018 review. The ultimate cost per pupil year stands at £16.50 which is a decrease of £1.16 (or 7%).

2.36 The largest absolute movement in ultimate claims is a decrease of £0.9m (or 6%) in the PDBI class. This is driven by the PDBI Flood class which has improved by £0.6m as a result of a large saving in respect of a historical large flood loss. A secondary factor is the PDBI General Damage & Other class which has improved by £0.2m following a number of smaller savings on known claims

2.37 The next largest movements are savings of £0.3m (or 16%) in the PL class and £0.2m (or 6%) in the EL class. This is due to the Injury classes which have not seen as large an increase in reported claims as expected.

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



### Projection of claims for academic year 2016/17

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

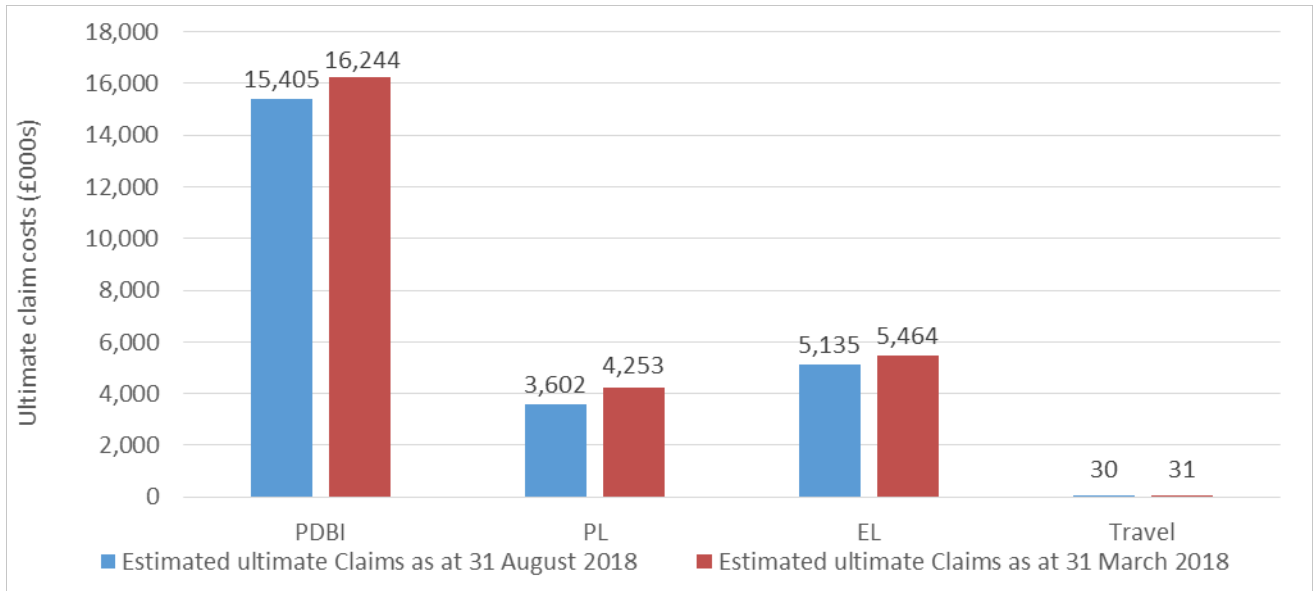


Figure 11: Summary of GAD academic year 2016/17 ultimate claim estimates by class (£000s)

2.40 In total, our estimate of the 2016/17 academic year ultimate claims is £24.2m, which is a decrease of £1.8m (or 7%) since the March 2018 review. The ultimate cost per pupil year stands at £13.72 which is a decrease of £0.94 (or 6%).

2.41 The reduction in ultimate cost is driven by the PDBI reserving class which has improved by £0.8m (or 5%). Underlying this headline result are the following movements:

- > PDBI Fire, PDBI Flood and PDBI General Damage & Other have cumulatively improved by £1.3m (or 11%). Although these classes were already at the 19 month development point at the last review (i.e. it had been 19 months since the academic year begun), provisions were still held to allow for an increase in reported claims, either due to late reported claims or deteriorations in known claims. Experience over the period has been better than expected, with reductions in reported claims rather than increases.
- > The PDBI Storm has deteriorated by £0.5m (or 15%). This is due to the deterioration of a known large loss.

2.42 PL Injury claims have improved by £0.7m (or 15%) due to a decrease in total amount of reported claims during the review period. This decrease was due to a number of previously reported Injury claims which have been reassessed and closed as nil claims without any payments or case reserves.



### Projection of claims for academic year 2017/18

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

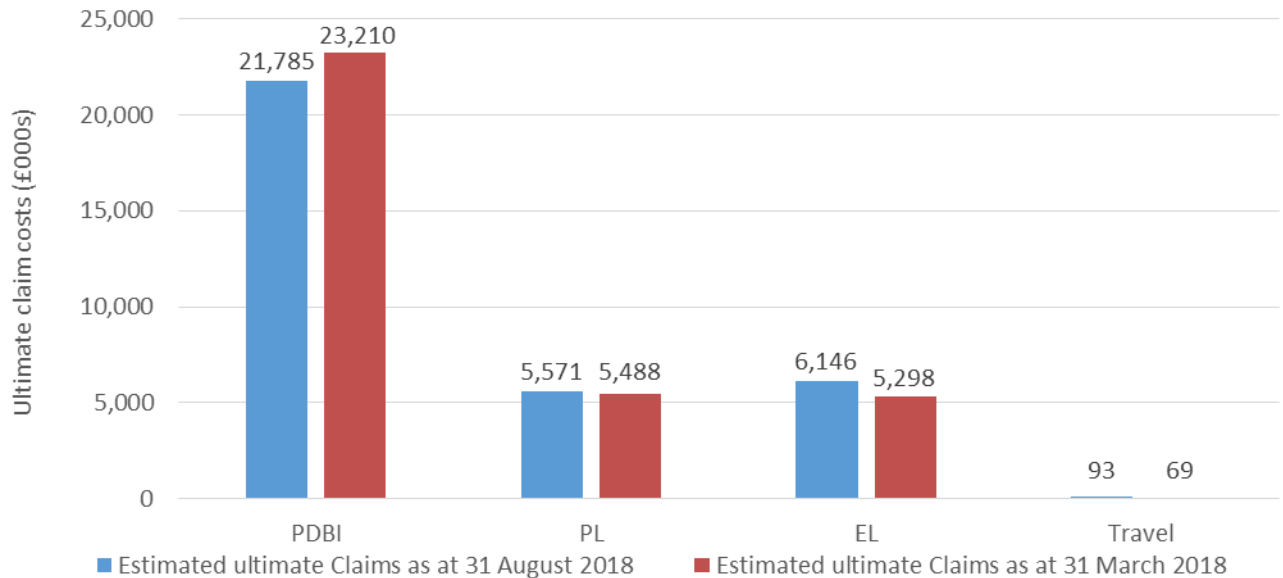


Figure 12: Summary of GAD academic year 2017/18 ultimate claim estimates by class (£000s)

2.44 In total, our estimate of the 2017/18 academic year ultimate claims is £33.6m, which is a decrease of £0.5m (or 1%) since the March 2018 review.

2.45 The ultimate cost per pupil year stands at £15.36 which is a decrease of £0.03. The percentage decrease in the ultimate cost per pupil is smaller than the decrease in the ultimate cost (1%) as this measure also takes into account our estimate of exposure which has seen a reduction since the March 2018 review.

2.46 The result is driven by the PDBI reserving class which has seen a reduction in ultimate claims of £1.4m (or 6%). Significant movements in the PDBI classes were expected as the review period covers the last 5 months of 'live' exposure for this academic year and many of the PDBI classes have the potential to generate large losses which tend to be reported very quickly. As a result, there have been material movements within most of the individual claim types within this class:

- > Our estimate of Fire claims has improved by £2.0m (or 24%) following fewer than expected large losses since our previous review.
- > Our estimate of Storm claims has improved by £1.1m (or 50%) as a result of no large losses being reported during the period.
- > The Flood class has deteriorated by £0.1m (or 3%). This result is surprising given the absence of any large losses during the period, which would normally result in significant improvements in our estimate of ultimate claims. A reduction hasn't been realised as there have been a large number of mid-size losses, typically attributed to flooding caused by heavy rain.



- > General Damage & Other claims have deteriorated by £1.1m (or 18%). Unlike Fire, Storm and Flood, this not a PDBI class which tends to experience large losses, so an adverse movement of the size is unusual. It has been caused by poor experience from Secondary academies, where claim frequency has been higher than expected.
  - > The Malicious Damage class has deteriorated by £0.4m (or 63%) following a greater number of claims being reported than were expected.
- 2.47 The EL reserving class has deteriorated by £0.8m (or 16%). This is due to significantly more claims being reported than expected for both Injury and Dispute & Other claims.



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

2.48 The following chart shows our current ultimate claims estimate for the 2018/19 to 2024/25 academic years, alongside the corresponding estimates from our March 2018 review. These academic years cover the 12 month periods from 1 September 2018 to 31 August 2025. All figures exclude claim expenses.

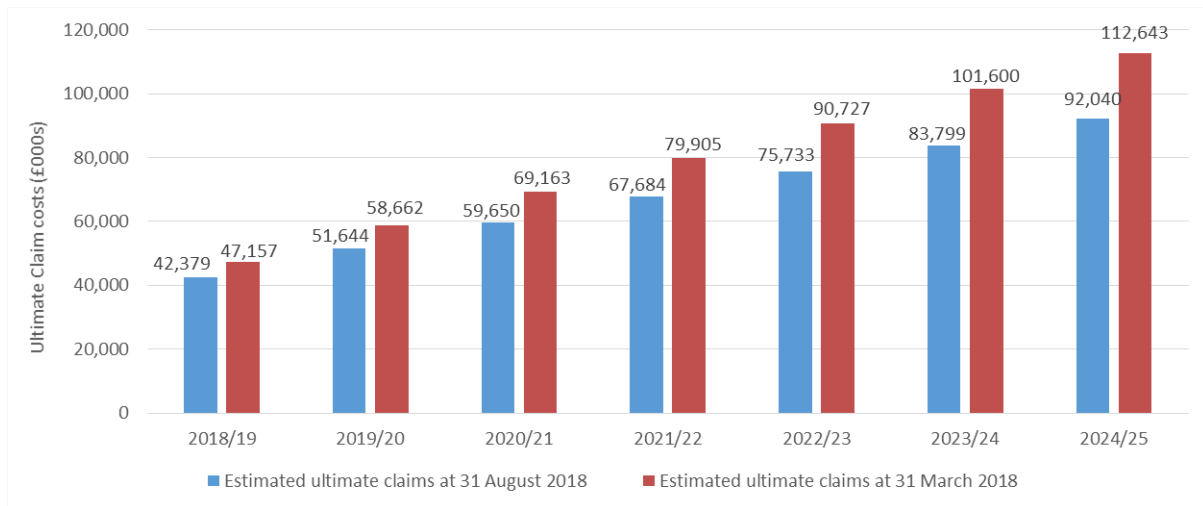


Figure 13: Summary of GAD future academic year (2018/19 to 2024/25) ultimate claim estimates (£000s)

- 2.49 Our current ultimate claims estimates for the future academic years (2018/19 to 2024/25) are approximately 10% to 18% lower than the March 2018 review estimates. This decrease is driven by both a decrease in exposure and improvements in the PDBI Fire and PDBI Flood claims (where our estimate of the average claim severity has decreased) and PDBI Theft claims (where our estimate of claims frequency has decreased). There is, however, a notable offsetting deterioration from EL Dispute & Other where average severity is now thought to be higher.
- 2.50 The ultimate claims per pupil year is £15.92 in 2018/19, rising by approximately £0.90 per year to £21.31 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.
- 2.51 The estimates of ultimate claims per pupil are between 6% and 7% lower than the March 2018 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.
- 2.52 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 £16.98, whilst in our current review we estimate that this has reduced to £15.92.

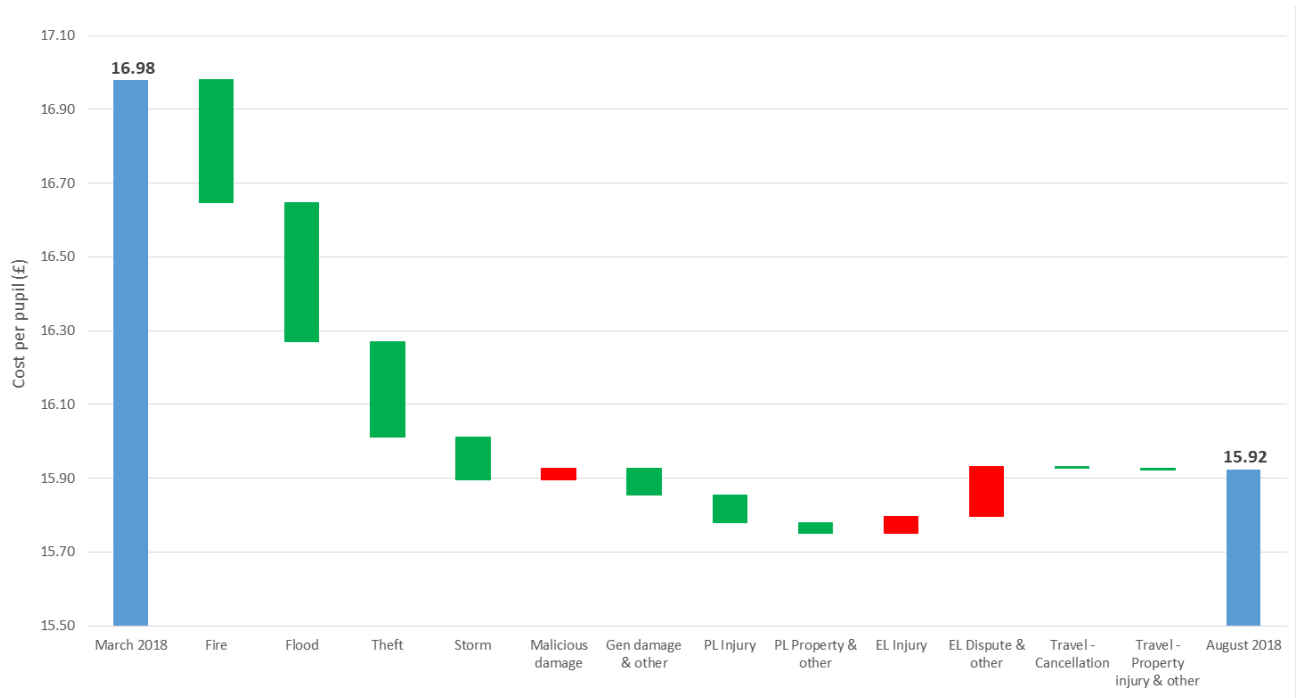


Figure 14: Changes to the cost per pupil year for the 2018/19 academic year

2.53 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.

2.54 The following changes are highlighted:

- > PDBI Fire - Our estimate of the overall cost has improved by £0.33 per pupil as a result of an improvement in average claim severity concentrated in 2017/18.
- > PDBI Flood - Our estimate of the overall cost has improved by £0.37 per pupil as a result of improvements in average claim severity. Claims severity estimates improved in most years.
- > PDBI Theft - Our estimate of the overall cost has improved by £0.26 per pupil as a result of an improvement in claim frequency. Claim frequency estimates improved significantly for 2017/18, and all years are now significantly below the benchmark. Claim severity saw a slight deterioration but this is more than outweighed by the improvement in claims frequency.
- > EL Dispute & Other - Our estimate of the overall cost has deteriorated by £0.14 per pupil as a result of higher claim frequency. There was a significant deterioration in claims frequency in the 2017/18 academic year.



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

2.55 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.

2.56 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.

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

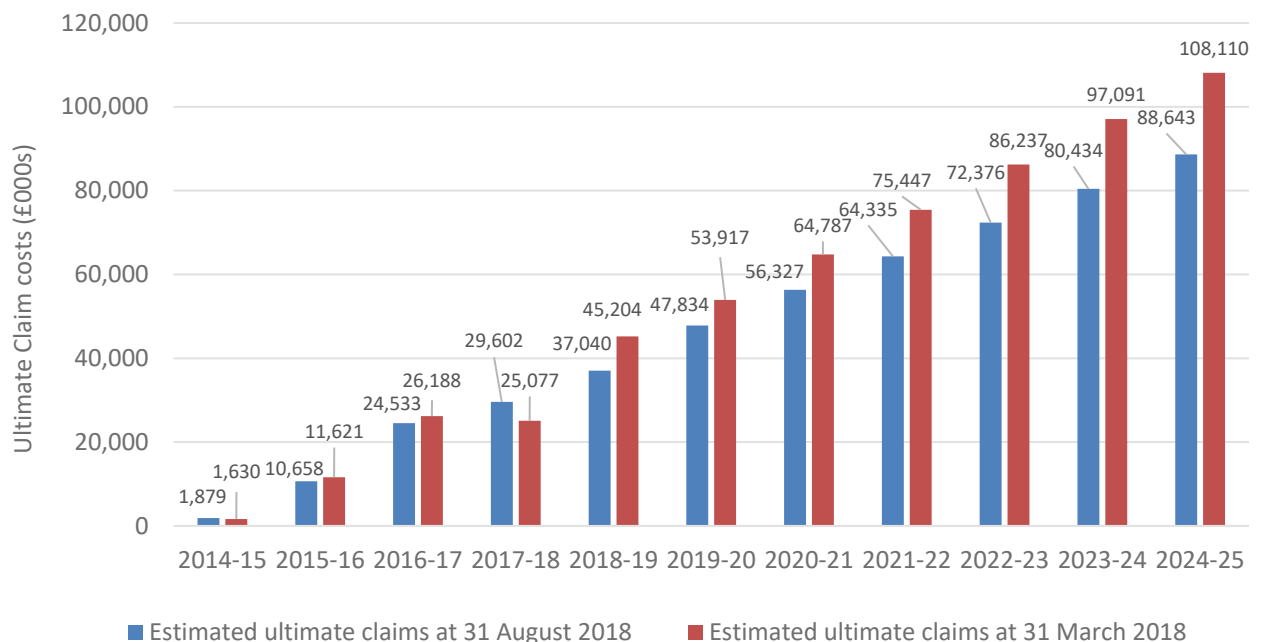


Figure 15: Financial year estimates as at August 2018 and March 2018 (£000s)





- 2.58 Our estimate of ultimate claims for the 2014-15 year has deteriorated from £1.6m to £1.9m as a result of the EL Injury class where case reserves have deteriorated since our previous review.
- 2.59 Our estimate of ultimate claims for the 2015-16 year has improved from £11.6m to £10.7m. This is a result of the PDBI Flood class where a known large flood loss has reduced by £0.5m.
- 2.60 Our estimate of ultimate claims for the 2016-17 year has improved from £26.2m to £24.5m. This is driven by the PDBI classes that have improved by £1.0m as experience has been better than expected.
- 2.61 The 2017-18 year has deteriorated from £25.1m to £29.6m. This is due to PDBI General Damage (which has deteriorated by £1.4m due to poor frequency experience) PDBI Storm (where a large loss has deteriorated by £0.7m) and the PL Injury and EL Injury classes (which have cumulatively deteriorated by £1.8m where claim frequency has been worse than expected).
- 2.62 The 2018-19 year has improved from £45.2m to £37.0m. This is due to the lack of large loss activity in the last five months, in particular in the PDBI Fire class (which improves by £3.1m) and PDBI Storm (which improves by £1.3m).
- 2.63 The subsequent years (2019-20 onwards) are all future financial years that have yet to commence, and have each seen reductions in ultimate claims when expressed as sterling amounts. A more informative comparison is the cost per pupil year as this is independent of exposure, and this measure has improved by between 6% and 7%. 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 and are only used for the PL and EL classes.
- 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 August 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 August 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 adjuster 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.

*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 2.21 to 2.31.



*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](http://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.