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Analysing Expenses: Should General Insurance Actuaries Get Excited?

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1 Introduction

In the maelstrom of change in the insurance industry over recent years, general insurance actuaries have had many issues to focus on. These have included premium liabilities, risk margins, and increased responsibility associated with the approved actuary regime, as well as a raft of legislative changes which have had significant impact on the emerging experience for most long tail classes. In this whirlwind of activity, it has been hard for actuaries to get very excited about the expense assumption, which after all is a relatively small component of the insurance liability. It is quite easy to leave this assumption unchanged from year to year, and to justify it based on “industry benchmarks” or very crude analysis of recent expenses relative to payments. An informal survey we conducted of approved actuaries revealed that the expense assumption ranks relatively low in importance relative to other valuation assumptions. While this is understandable in the context of the uncertainty of the insurance liabilities, we believe that it does deserve some detailed attention at least once in a while. Our survey also indicated that the methods used to analyse expenses, and the frequency of these analyses, currently vary considerably between insurers.

Our paper sets out to provoke thought on the claims handling expense assumption, in the context of outstanding claims and premium liabilities. To our knowledge, the last Australian paper dealing specifically with expenses was written ten years ago¹. Given changes in the industry since then, as well as upcoming requirements for Financial Condition Reports, the authors felt it was time to “challenge the status quo” on claims expenses, as well as provide some updated practical advice for actuaries estimating future claims handling expenses for different purposes.

Our paper proceeds by:

- Discussing current practice, based on our informal survey of several approved actuaries;
- Outlining a methodology for projecting claims handling expenses directly, that builds on the method outlined in the 1995 paper, and is extended to cover premium liabilities;
- Setting out a worked example, using data for a large hypothetical NSW CTP industry participant, to illustrate the sensitivities of the methodology, and the flaws of using more basic ratio methods to analyse expenses;
- Discussing our conclusions.

¹ Focus on Expenses in General Insurance, presented to the 10th General insurance Seminar (November 1995) - Peter Lurie and Christa Marjoribanks

2 Current Practice

Given our intention to “challenge the status quo” with respect to claims handling expenses, we felt it was prudent to first assess the status quo. We therefore conducted an informal survey of nine approved actuaries (across both small and large companies), to gauge the frequency and method of expense analyses currently being undertaken. We also collected quantitative information on the expense assumptions adopted by class for the nine insurers. A commonly quoted benchmark assumption for claims handling expenses is 5%, and we thought it would be useful to see how this compares with current practice. Of course, because this benchmark is quoted and adopted so frequently, there is a danger that it becomes self-perpetuating. So, how well supported are expense assumptions across the industry? Our survey revealed that:

- Expense analyses range from
 - reviewing the ratio of claims expenses (as identified in the general ledger) to claim payments, and either adopting this or using it as a reasonableness check on the adopted claims handling expense assumption
 - through to
 - projecting claims handling expenses directly, using a detailed projection model
- Expense analyses are conducted anywhere from quarterly to very infrequently.
- Great reliance is usually placed on the company’s own allocation of historical or budgeted expenses into claim related, policy related or other categories of expense. The rigour behind these allocations varies, and the actuary’s knowledge of how this is done also varies.
- Some companies, for simplicity, apply the same claims handling assumption across all classes, while others have different assumptions for each class.
- The overall average assumption across all classes and all actuaries surveyed was 5.6% of the gross central estimate of outstanding claims. Appendix A contains a range of assumptions adopted by class.
- In some cases reliance is placed, either directly or indirectly, on an industry benchmark of 5%.
- Some actuaries use the same claims handling expense assumption for premium liabilities as for outstanding claims, then add something for policy administration costs.

So, based on our survey, how does current practice stack up against current professional requirements?

Paragraph 44 of Guidance Note 353 notes that *"As with all assumptions, the actuary should attempt to analyse historical levels of expenses. However, it is often the case that internal insurer expense analyses do not properly allocate expenses between policy issue, ongoing policy administration, claim establishment and claim management. In such cases, it is acceptable to have regard to allowances made elsewhere in the market, with a comment to this effect included in the actuary's report. The actuary should always ensure that the allowances seem reasonable when considered in the context of the insurer's total administration expenses."*

This guidance is fairly broad, and in our view all of the approved actuaries surveyed comply with it.

So if the guidance condones a minimalist approach, and a small change in the expense assumption would not be material in the context of the overall uncertainty of the insurance liabilities, why take a more sophisticated approach such as that outlined in this paper? Our view is that

- Depending on the size of the liability, a small change in the expense assumption could have a material dollar impact, particularly on the profit and loss account.
- As shown in the 1995 paper, simple ratio methods are flawed. This is illustrated later in our NSW CTP example.
- Tort reform has affected the volume and nature of claims in a number of long tail classes, and has impacted on payment patterns, changing the relationship between claims expenses and payments from year to year. It is difficult to understand these dynamics and how they impact on claims handling expenses without conducting a more sophisticated analysis.
- The claims handling expenses included in premium liabilities should generally be different from that included in outstanding claims. For premium liabilities, allowance should be made for the portion of claims expenses involved in initial reporting of all claims, while for outstanding claims, this portion is required only for IBNR claims. Similarly, the portion of expenses relating to claims both reported and finalised in the first development period is required for premium liabilities but not outstanding claims. Without some detailed analysis, it is difficult to assess the relative loadings required for each purpose.
- Following the method outlined in this paper provides interesting insights on claims handling practices and the overall claims process, which can add considerable value to the understanding of the trends in the main valuation of outstanding claims. For example, discussions with claims handling staff about claims handling efforts can highlight changing practices that may impact on the future projected claim payments.
- Taking a more detailed approach can provide valuable information to feed back into the pricing assumptions used in each class.

3 Methodology

So having blatantly advertised the advantages of using our suggested methodology, what is it and how difficult is it to apply?

Our method is fairly simple in concept, being quite similar to analysis of any of the claim payment types in the main valuation. The total claims expenses for a selected historical period are converted into “per event” claims expenses, using the actual number of claim events that occurred during the selected period, together with estimates of the relative efforts required for each type of claim event. In our method we have considered the following claims events:

- Claims lodgement: reflecting the immediate effort involved in receiving and recording a claim.

- Claims finalisation: reflecting the steps involved in paying and finalisation of a claim.
- Ongoing administration per open claim in each development period: This represents the effort expended on a claim after it has been lodged through to the point where finalisation occurs, on a per development period basis.

Converting past expenses into an expense per event is akin to selecting the average claim size in a payment per claim model. Total future claim expenses are then projected directly by multiplying the projected future claim events by the per event claim expenses – again, in the same way as a payment per claim projection. The resulting total projected claims expenses can be expressed as a percentage of projected claims costs to derive an expense rate.

The method can be expressed symbolically as follows:

Let

i represent the claims event type. (In our example, we have defined three event types, lodgement, ongoing administration and finalisation.)

j and k represent the accident and development periods respectively

N_{ijk} is then the number of claim events of type i which are projected to occur in accident period j and development period k

E_i is the expense for each claim event of type i

Then the uninflated undiscounted projected claims handling expenses (CHE) will be defined as follows:

$$CHE = \sum_{ijk} N_{ijk} E_i$$

If we further define

F_{jk} as the inflation factor applying to the projected expenses in accident period j and development period k , and

C_{jk} as the projected inflated, undiscounted gross claims payments in accident period j and development period k

D_{jk} as the appropriate discount factor, and

Then, the overall claims loading can be determined as follows

$$CHE\% = \frac{\sum_{ijk} N_{ijk} E_i F_{jk} D_{jk}}{\sum_{jk} C_{jk} D_{jk}}$$

For those who prefer, a worked example is provided in the spreadsheet attached to our paper. Note that the formulae above describe the basic methodology for modelling the expense loading. A more sophisticated method using time variant factors is described later in the paper and a worked example is also provided in the spreadsheet.

It should be noted that the projected number of claims reported, claims finalised and claims open in each development year are readily available if a payments per claim finalised (PPCF) methodology was used in projecting the value of the insurance liability. However, a little more effort is required if the valuation technique does not provide as much event information. For example, a payments per claim on weekly benefits (PPCOB) methodology will not provide a projection of claims reported or finalised. In this case, the number of claimants on weekly benefits can be used as the event, with expenses mapped accordingly. However, alternative event definitions may require more careful interpretations when being presented to the business.

3.1 Collecting expense data for analysis period

The first step is to collect the total claims expense data for the historical analysis period for each class – this item is important as it has a large influence on the final results. The choice of period for the analysis will depend on what information is available, and if there have been any significant changes in any of the claim processes. Ideally, the analysis would include multiple years, but this may not be possible. It is important to understand and allow for any unusual features of the data during the selected period, such as one-off expense items.

In order to get the total claims expense data, it will be necessary to estimate what portion of total expenses from the accounts relate to claims handling. The starting point will normally be the portion of expense allocated to this category in the accounts, however it is important to understand how this allocation has been carried out and whether all overheads have been fully allocated on a reasonable basis to acquisition, policy and claims related expenses. The allocation of total expenses between products and between activities within each product (claims, policy activities etc) is critical to generating a credible expense model. Almost certainly the existing expense allocation was not designed with your current investigation in mind, and you may need to adjust the amount allocated to claim handling expenses, for example if it does not appear to include a full allocation of overheads. The 1995 paper included some discussion of allocation – often, this will already have been carried out by the company, but discussion with both the business (product teams) and the finance/accounting function are critical to ensure the modelled results are credible.

3.2 Modelling the per event cost

Once the total claims expense data is collected, the next step is to model the per event expenses for each type of claim event during the analysis period. This will involve first tabulating the past claim events. Ideally, the counts of past claim events should be taken directly from the main valuation analysis triangles, although extra tabulation may be required depending on the methods used. The next steps are estimating the relative effort involved in each type of claim event, and calculating the per event expense. These steps are described below.

3.2.1 Relative Effort spent on each event

Over the analysis period, a different amount of effort would have been spent on processing the events of claims report, finalisation and administering open claims, as measured by the time spent on these events.

This relativity may be established by first interviewing claims staff to identify all the steps involved with processing a claim from start to finish, and how much time it typically takes to carry out each step. For example, the first step would be the reporting of the claim and the

recording of its details etc. A case estimate might be set up. Then the claim may be subject to quarterly reviews. Case estimates may be revised, initial payments may be made, followed by further payments. A claim may then be referred to the legal team or other experts until it is finally settled. A claim may often pass through a step more than once. Once all the steps have been identified, these steps and the corresponding time estimates are mapped to the events of claims reporting, administration and finalisation. For example, it may take 2 hours to process one claim report, taking into account all the steps relating to claim reporting.

Once a time estimate per event is established, the total time spent on that type of event during the analysis period can be calculated, by multiplying the time estimate per event by the number of times each event was processed during the analysis period. For example, if it takes 2 hours to process a claim report and 400 claims were reported during the analysis period, then 800 hours were used to process claim reports during the analysis period. To check for consistency and reasonableness, the total calculated time spent on all the events should be added up in this way, and compared to the total number of staff hours worked during the analysis period. There will not be an exact match, but the modelling should account for the majority of hours worked.

The relative effort spent on each event is then the proportional amount of time that was spent on processing claim reports, finalisations and administering claims during the analysis period. For example, after adding up all the hours spent on different activities, it may be that 30% of the effort spent in the analysis period was spent on processing claim reports, 20% was spent on processing claim finalisations and 50% was spent on ongoing claims administration.

Note that the key assumption underlying this approach is that it is reasonable to split total claims expenses between the various events based on “person hours” expended by claims staff. This would certainly be reasonable for the salary component of claim expenses. However, it is worth considering whether this is the most appropriate basis for splitting other expenses, such as IT costs.

3.2.2 Calculating the per event cost

The next step is to calculate the per event expense. This is akin to the average claim size in a payment per claim model. Firstly, we allocate the total claims handling expense in the analysis period between event types. For example, if the total claims expense during the analysis period was \$1m and 30% was spent on processing claim reports, then \$300,000 is allocated as the expenses associated with claim reporting in the analysis period.

The cost per count of that event is then equal to the claims handling expenses associated with that event, divided by the count of the number of events processed. If 400 claim reports were processed during the analysis period, then \$750 is the per event expense for claim reports.

3.3 Projecting the future claims handling expenses

The claims handling expense is projected as follows:

3.3.1 Project the count of future events

For each event, the projected count of future events can be obtained from the main valuation projections, depending on the method used. For example, if a PPCF method has been used, the count of future claims finalised can be obtained directly by accident/underwriting period and development period. As discussed earlier, if this method has not been used, the claim event definitions can be modified, or a separate analysis and projection of claims finalised can be performed.

Note that by including future accident periods in the projection, based on the assumptions underlying the valuation of premium liabilities, the claim handling expenses associated with premium liabilities can also be directly projected. An extra allowance for policy handling expenses would also be needed to calculate the central estimate of premium liabilities.

3.3.2 Project the future claims handling expense

For each event, the projected count of future events should be multiplied by the per event expense. This gives the projected claims handling expenses for each event by accident/underwriting period and development period.

Future inflation and discounting can be allowed for, in the same way as applied to the projection of claim payments. The sum of the projections across all events gives the total future inflated and discounted claims handling expense – these projections should be summed separately for past and future accident periods to obtain the claims handling expenses associated with outstanding claims and premium liabilities.

3.4 Calculate claims handling expense loadings

The steps above can be repeated at each valuation to directly project the future claim handling expenses, in the same way as claim payments. However, in some cases, for example if the portfolio is stable, it may not be necessary to conduct a full expense analysis at each valuation. For convenience, we recommend converting the future claims handling expenses into separate loadings for outstanding claims and for premium liabilities. This can be done by dividing the projected claims handling expenses by the corresponding gross inflated and discounted future claim payments, for outstanding claims and for premium liabilities. This can generally be done at an aggregate level, although it may be done by accident period if a higher level of accuracy is required. The loadings can be used in each valuation until the next full expense analysis.

Note that there are circumstances where it would be appropriate to conduct a full expense analysis more frequently – for example, if the portfolio is growing, in run-off or if the claims experience is unstable. If a full expense analysis is carried out at each valuation, there would be no need to convert the claims handling expenses into a loading.

3.5 More Sophisticated Expense Modelling

Whilst the above describes the basic methodology for modelling the expense loading, a more sophisticated model can be built to allow for different features of claims handling practices. For example, it is possible to allow for the expectation that claims that are reported later, open later and finalised later will require greater effort to process. Time variant factors can be used to reflect the differing level of effort required to handle claims at different development times.

Fixed expenses can also be built into the model to allow for a closed or declining portfolio. Careful consideration needs to be given to modelling fixed expenses. The fixed expenses can be held constant until the last claim is settled or they can be modelled to step down in some manner.

4 Example

The following is an example of how the claims handling expenses can be modelled for a large theoretical participant in the NSW CTP industry, using the methodology described in our paper. Further details on this worked example are available in the appendices and attached spreadsheet.

4.1 Summary of Example Data

The following table summarises the data and assumptions used in our example – this data is illustrative only, but the claims reporting, finalisation and payment trends have been based on NSW CTP industry data for 2002/03, to ensure the example is realistic.

Analysis period:	2002/03
Total gross claim payments during analysis period:	\$172 million
Total historical claims handling expenses during analysis period:	\$20 million a
Ratio of claim expenses to payments in analysis period:	11.7%
Relative effort spent on:	
o processing claims reports	25% b
o processing claims finalisations	10% c
o ongoing administration of open claims	65% d
Claims open at start of period	5,878 e
Claims reported in analysis period:	2,099 f
Claims finalised in analysis period	3,125 g
Average number of claims open in analysis period:	5,365 $h=e+(f-g)/2$
Expense per claim report:	\$2,382 $(a \times b)/f$
Expense per claim finalisation:	\$640 $(a \times c)/g$
Expense per claim open per development year:	\$2,423 $(a \times d)/h$
Inflation rate	4% pa
Discount rate	5.25% pa

Note that the expenses per claim event calculated in the above table are illustrative of past experience only and may not be reflective of future experience. In practice, care needs to be taken to consider any expected changes in claims processing or upcoming costs such as system upgrades, before selecting the expense assumptions to be used in the projection.

4.2 Projection of future claims handling expenses

The projections of numbers of claims reported, finalised and open are shown in the attached spreadsheet, and are again based on realistic projections from NSW CTP industry data. The expense per event assumptions from the above table were applied to these projections to obtain the total projected claims handling expenses.

The projected expenses were then inflated (for normal inflation) and discounted in a manner consistent with the claim payments projection. It would be unusual to apply superimposed inflation to the projected expenses.

The projection results are summarised in the table below.

	Outstanding Claims	Premium Liability
Projected number of claim reports	1,186	941
Projected number of claim finalisations	6,037	941
Projected number of open claim years*	11,344	1,989
Inflated & Discounted Projected reporting expenses	\$2.8 million	\$2.3 million
Inflated & Discounted Projected finalisation expenses	\$3.8 million	\$0.6 million
Inflated & Discounted Projected ongoing admin expenses	\$27.2 million	\$4.8 million
Total projected claim handling expenses (infl & disc)	\$33.9 million	\$7.6 million
Gross Central Estimate of future claim payments (infl & disc)	\$747.1 million	\$83.4 million
Claims Handling Expense loading	4.5%	9.1%
Per claim payment	\$123,800	\$88,600
Per claim expense	\$5,600	\$8,100

*This is the sum of the number of claims open in each future year until they are finalised. These claims would incur claims administration expenses in each year the claims are open.

4.3 Discussion of results

Note that the estimated loadings of 4.5% and 9.1% compare to a simple ratio of expenses to payments in the analysis year of 11.7% (as shown the first table). The example demonstrates the flaws of using a simple ratio of claim expenses to payments to determine the expense loading, and shows that the appropriate loading for premium liabilities can be significantly different to that for outstanding claims.

The example illustrates how the method uses the actual characteristics of the outstanding claims and premium liability portfolios to determine the expense loadings required. It is especially useful in a scenario of legislative reform, where the projected future count of events can be different to historical experience. For example, the tort reforms in public liability have reduced the number of claims reported and hence the expenses associated with processing claim reports. Using a full projection method will allow for the reduction in the number of future claim reports projected.

Note that it is very important to understand the results coming out of the analysis, to consider their reasonableness and to test their sensitivity to changes in assumptions.

In our example, we see that the outstanding claims loading is much lower than for premium liabilities. Why? Firstly, we note that every claim in the premium liability valuation will have an associated expense for claim reporting, whilst a reporting expense will only be needed for IBNR claims in the outstanding claims valuation. In addition, the number of open years per claim is higher for premium liabilities than for outstanding claims. These effects combine to make the total dollar expense per claim higher for premium liabilities than for outstanding claims (\$8,100 relative to \$5,600). Secondly, the average projected payment per claim is lower for premium liabilities than for outstanding claims (\$88,600 relative to \$123,800), because smaller claims tend to get settled first, and there is therefore a greater proportion of smaller claims in the premium liabilities. Dividing a higher dollar expense per claim by a lower payment per claim, obviously results in a higher loading for premium liabilities than for outstanding claims.

Intuitively, then, it makes sense that the loading should be different for premium liabilities and outstanding claims. However, whether the extent of the difference shown in our example is reasonable, comes down to the reliability of the underlying assumptions. For this reason, while the mechanics of our model are relatively simple, the reasonableness of the results depend very much on the rigour of the discussions with the claims team to formulate assumptions going into the model.

In the example above, it is assumed that the relative effort of administering a claim in its first year of development is the same as in the second and subsequent years, and similarly that the relative effort involved in reporting and finalising claims is the same regardless of development delay. This is usually not the case in practice. We have therefore extended the model to allow for time variant factors – ie, the extended model allows for the relative effort of reporting, administering or finalising a claim to be different in each development year. This extended model is not fully described in the paper, but the spreadsheet provides a worked example of how it can be done. If relatively higher effort is assumed in later delays, this tends to increase the outstanding claims loading and reduce the premium liabilities loading.

Appendix B provides further discussion on the sensitivity of the modelled expense loadings.

5 Conclusions

Our paper hopefully demonstrates that analysing expenses is not rocket science – it is simple to do, and if a PPCF method has been applied to claim payments in the main valuation, most of the work is already done, and the expense analysis can be integrated with the main valuation analysis. We emphasise that while the mechanical aspects of the calculation are relatively simple, of key (and time consuming) importance is the quality and rigour of the discussions with the claims team for each class of business. Fortunately, this more time consuming part of the expense analysis is also the most interesting bit, and can lead to significant improvement in the understanding of the claims process, which in turn improves the overall valuation of the insurance liabilities.

The results are proportional to the total expenses that are allocated to claims for that class for the analysis period, so it is very important to question and understand the allocation of expenses by class and between acquisition, policy and claims, and make sure that the claims expenses include a full allocation of overheads. It is also important to ensure that the total expense data in the analysis period is representative of future expenses. Our paper does not address the policy administration expenses that should be added to the premium liabilities expenses in addition to the loading for claims handling expenses, but this should not be forgotten.

Our paper highlights the importance of considering the claim handling expense loading separately for outstanding claims and premium liabilities. Note that a number of insurers surveyed currently adopt the same loading for both.

And finally, we must answer the question, should general insurance actuaries get excited? We accept that claims handling expenses may not be the most pressing issue on the minds of approved actuaries, but we believe a bit more excitement is warranted, and that there is a lot of value to be gained (and fun to be had!) by undertaking an expense analysis using the method outlined in this paper.

6 Acknowledgements

This paper was inspired by the full expense analysis conducted recently by Suncorp actuaries. We would like to thank Louis Lee (Suncorp) for his contribution to the analysis and documentation of the project.

We would also like to thank all the participants of the expense survey that was conducted as part of this paper. The survey participants were very helpful and provided their responses within a very tight timeframe.

Last but not least, we would like to thank Noeline Woof (PwC) for her thorough review of our paper and her valuable suggestions.

Appendix A

Survey of Claims Handling Expense Loadings

As part of our paper, we conducted a claims handling expense survey and collected responses from 9 general insurers of various sizes. The results of our quantitative survey are summarised in the table below.

Please note that the survey results give an indication of *current* industry practice and does not necessarily represent *best* practice. Where possible, we have collected expense loading information that is expressed as a percentage of the gross central estimate (i.e. gross of all recoveries, excluding the allowance claims handling expenses). There may be further adjustments that need to be made in order for complete consistency between insurers. We have not made these adjustments, as the survey is intended to give an indication only.

Claims Handling Expense Loadings (% of Gross Central Estimates)

Class of Business	Outstanding Claims Valuation			Premium Liability Valuation		
	High	Low	Average	High	Low	Average
Total	8.5%	4.3%	5.6%	9.4%	4.9%	7.0%
Domestic Short Tail	8.5%	4.5%	5.9%	10.6%	4.9%	7.4%
Houseowners/householders	11.9%	3.5%	6.5%	17.4%	4.9%	9.1%
Domestic motor vehicle	7.6%	4.1%	5.6%	12.0%	4.9%	8.1%
Travel*	7.9%	4.9%	6.4%	6.0%	4.9%	5.5%
Other accident	7.2%	2.7%	4.8%	8.5%	2.4%	4.9%
Other*	7.4%	5.5%	6.4%	8.0%	6.4%	7.2%
Commercial Short Tail	6.0%	2.0%	4.5%	6.8%	3.2%	5.3%
Commercial motor vehicle	7.0%	3.0%	4.8%	9.2%	3.6%	5.5%
Fire and ISR	6.0%	1.9%	3.8%	6.5%	2.8%	4.7%
Marine	6.0%	3.0%	4.3%	6.5%	3.6%	5.4%
Aviation*	6.0%	1.5%	3.5%	6.0%	2.0%	4.1%
Consumer credit*	10.0%	4.9%	7.0%	10.0%	4.5%	7.1%
Other*	6.2%	3.0%	4.1%	8.3%	3.0%	5.9%
Long Tail	6.7%	4.2%	5.2%	8.3%	4.5%	6.2%
Mortgage Insurance*	7.2%	5.0%	6.1%	7.7%	4.7%	6.2%
CTP motor vehicle	7.5%	3.8%	5.1%	8.1%	4.2%	6.1%
Public and product liability	6.0%	3.9%	5.1%	7.5%	4.3%	5.6%
Professional indemnity	6.0%	2.6%	4.7%	7.5%	2.9%	5.4%
Employers' liability	7.8%	4.9%	6.4%	13.3%	4.9%	8.7%

Notes:

* Fewer than half the survey participants provided information regarding this class of business. Care needs to be taken when interpreting these results.

Appendix B

Sensitivity analysis

The modelled claims handling expense is sensitive to a number of assumptions made in the model. These include:

- The mapping of the claims handling activities to the claims handling events.
- The finalisation rate implied in the valuation of the outstanding claims and premium liabilities.
- Inflation and discounting of the projected claims handling expenses.
- Estimation of the fully allocated claims handling expense in the analysis period.

Mapping activities to events

The modelled claims handling expense in respect of the outstanding claims valuation can be particularly sensitive to the mapping of the claims handling steps to the claims handling events. Consider an outstanding claims portfolio where the number of IBNR claims is low compared to the number of open claims. If a claims handling activity that was previously mapped to the claims administration event is now being mapped to the claim reporting event, the modelled expense in respect of the outstanding claims liability will reduce. Care must be taken to ensure there is a valid reason for the re-mapping of the claim activities to ensure that the claims handling expense is correctly projected.

Whilst the modelled claims handling expense for the outstanding claims liability is sensitive to the mapping of the claims handling activity, this is not the case for the premium liability because all events relating to the premium liability will occur in the future.

Finalisation rate

The rate of finalisation assumed in the valuation can have a significant impact on the modelled expense rate. All other things being equal, a slower rate of finalisation can significantly increase the modelled expenses as each claim is assumed to be open longer incurring more ongoing administration expense. Care should be taken if the rate of finalisation of a portfolio appears to be changing. If, for example, the slower rate of finalisation observed is genuine, then we need to consider:

- Whether the same level of effort will be expended on the claims each development period until they finally close;
- Whether the number of claims handling staff employed will be reduced, leading to a lower base level of expenses;
- Whether the slowdown is caused by process or staffing issues that are expected to be resolved shortly.

The adjustment necessary to the expense model for the slower finalisation will depend on the underlying cause. The resulting sensitivity of the modelled expenses to changes in the finalisation rate should only be assessed once the cause of the changed finalisation rate is understood.

Inflation and discounting

The application of normal inflation and discounting should be consistent between the liability valuation and the expense modelling. If changes in the inflation or discount rates are applied consistently between the two models, the impact on the modelled expense loading should be small and limited to the extent that the projected cashflows for claim payments have a different pattern from the projected claims handling expense cashflow.

However, the impact of a change of a superimposed inflation assumption is expected to be evident as the projected expenses are unlikely to include any superimposed inflation but the projected claims payments will. The modelled loading will change when superimposed inflation is altered because of the change in the outstanding claims and premium liability values.

Base period estimate of the fully allocated claims handling expense

The modelled expense loadings are directly proportional to the estimated fully allocated claims handling expense in the base period. This makes the investigation of the expense allocation process of total company expenses between acquisition, policy and claims related expenses critical to the credibility of the modelled expense loadings. It is particularly important to ensure the correct allocation of overhead expenses if these represent a large proportion of the base period expenses.