



Institute
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ROC Working Party: Towards the Optimal Reserving Process

The Fast Close process

by Neil Bruce (Chair), Alastair Lauder, Cameron Heath,
Camilla Bennett, Chi Wong, Gregory Overton, Joe Ryan,
Katherine Laidlar, Keith Taylor and Tim Jenkins

Abstract

Our principle focus in this paper is on ways that a Fast Close process (or indeed any reserving process) can be structured to maximise the value added within the process given the time and resource available. This builds on the use of actual vs. expected techniques we investigated in our previous paper, and also looks at forces external to the reserving function that may derail smooth progress. We highlight a number of practical ways that the balance can be restored in favour of adding value rather than crunching numbers. This paper forms the second in the TORP series.

1. Background

This paper is part of the follow-up work from the GRIT working party by the IFoA GI Reserving Oversight Committee. That work is split into three workstreams: “Towards the Optimal Reserving Process (“TORP”), Research, and Education.

The stated aim of TORP is set out in three parts:

- Governance and design of reserving processes
 - governance issues including interaction of various reporting bases
 - identifying key aims and pitfalls of the reserving process and function
 - links to other departments/processes within the company (Claims, Risk, Finance, Planning, Pricing, Capital)
- Reserving methods available and their strengths and weaknesses
 - including how methods can assist in populating various reporting bases (and where they do not)
 - ways to apply methods to achieve outputs required for certain reporting bases
 - possible high-level review techniques
- Best practice in documentation and housekeeping
 - identifying alternative ways of approaching reporting
 - setting and monitoring operating standards

As the potential scope of the work involved in meeting the above aims is immense, we will not attempt to address all aspects of the process in the same level of detail, or at the same time. This is intended to make the work more user-friendly and allow current topics to be addressed in a timely manner.

In particular we note that the philosophy and culture within each organisation is unique, and hence the ideas presented here will not be appropriate in all instances. We do note that having a clear philosophy and culture relating to reserving (including ownership) is critical, but what that “should” be is for each individual organisation to decide, and will not be considered in this paper.

2. Introduction

To reflect this approach TORP is intending to set out its findings in a structure that will develop over a number of years and papers. The current paper is the second in this series and concentrates on the Fast Close process.

This area was selected based on the working party members' views and the results of a general survey of opinions carried out by the IFoA.

The predominant reason for the importance of Fast Close at this time is the extreme and increasing amount of reporting from the reserving process, sometimes on wildly different bases, which can be very difficult to deal with and reconcile efficiently. This is particularly true where a fast close process is in operation, which may only leave a few days for updating analyses and reporting results.

We have looked at the various stages of the process to identify practical ways to increase the robustness of the process and also ensure the maximum value is obtained from the available resource.

Our work can be divided naturally into five sections:

1. Setting the scene, including description of the processes within Fast Close and identifying the "starting point", particularly what is required in the preceding exercise (the "Early Close");
2. Analysis of available information through an automated process to feed the roll-forward process;
3. Selecting the roll-forward ultimates and hence reserves;
4. Processing these selections to the required bases and reporting the results (the true "Fast Close"), and
5. Issues that can derail the process.

Each of the first four above is discussed in a section below, looking at the related pitfalls and potential solutions. Issues will be discussed in the sections as they arise and will be summarised in section 7, which will also include some practical solutions. Finally our conclusion summarises the characteristics of the "ideal" Fast Close process, which we expect individual firms to consider in light of their own constraints and select elements that will be most helpful to them. We do not envisage that all (or indeed any) of these suggestions are universal in their appropriateness, but we are certain that they will form a strong core set of ideas from which to assist in the development of a more efficient and effective reserving process.

We also comment on our views of how such a process may be implemented.

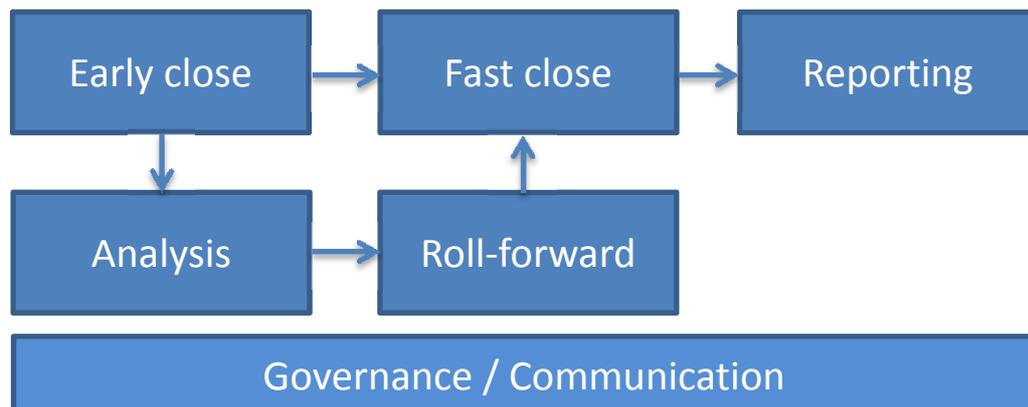
We are particularly aware that various firms are at differing points in the development of their own reserving process, and may already have the properties we suggest. In which case, we encourage them to share their more advanced ideas, which would undoubtedly benefit the rest of the reserving community.

As last year, we welcome feedback both in seminars and directly on what reserving areas the wider community would like us to tackle next, as well as any improvements to the current paper.

3. Setting the scene

In this section we set out what constitutes a “normal” early/fast close process.

Figure 1 – The fast close process



The key point relating to the definition of a fast close, is that there isn't time to complete a full analysis at the as at date in the time available (typically a week to report final reserves, etc.). Therefore we need an approach that will allow us to prepare estimates in a short space of time that sufficiently allow for emerging experience and are governed and communicated appropriately.

The process has been sectioned into the above five areas, with the governance and communication element being a critical constant throughout the entire process. The importance of this cannot be overstated and is absolutely key in designing and operating an effective fast close process.

We briefly outline each of the five areas, but spend a little more time on the early close stage, as this is important in being prepared for the fast close process.

a. Early close process

We are defining early close process as being roughly aligned to a “normal” analysis that requires reports approximately a month after data is received. The main distinction between early close and fast close is that there is more time available to complete the exercise, e.g. 4-8 weeks. The extended timeframe is intended to allow sufficient time to complete analysis and review of all items in support of the various deliverables, and pinpoint areas for further detailed review and investigation where estimates are particularly material and/or uncertain.

Early close process is often prepared based on data one month prior to actual close, but could be a quarter or longer in arrears. Depending on reporting requirements the scope of early close may either be to directly populate all quarterly financial reports or alternatively may be to prepare all actuarial base assumptions so that a

mechanical roll-forward of all necessary reporting items can be applied very quickly and efficiently to actual quarter end data once it is available.

The overriding objective is to set expectations for future experience for all actuarially created items so that they can be used directly or rolled forward quickly and efficiently for a fast close.

It is important to be very clear about the basis being used for setting the expectations as we discuss in the Analysis section below. The basis may be a true best estimate, booking basis, or an alternative. This should be well documented and communicated to all stakeholders in advance (and during) the fast close process.

b. Roll-forward analysis

The analysis stage concentrates on applying the new data through one or more mechanical processes to provide information to be used in the selection of the revised quantities of interest (usually estimates of ultimate claims and/or premium).

Analysis carried out during the early close process forms the basis of fast close estimates. This may be achieved by rolling forward early close estimates, using some form of Actual vs. Expected (AvE) or other techniques to provide diagnostics.

c. Selection of roll-forward ultimates and reserves

The roll-forward process has been separated out as it involves the application of expert judgement. This requires careful planning as it is arguably where the most value will be added in the process (subject to appropriate reporting).

d. Fast close process

In this paper we allocate the processing of the expert judgement into usable data to the “fast close”. Although this is not a widely held definition, it serves to highlight that the processing of the expert judgement into the various exhibits, reporting bases and other management information schedules can be a very time consuming task, and is potentially one where the most time could be freed up and reinvested within the previous section and also assist in the reporting section.

Fast close includes any mechanical processes required to derive the reserves, and any additional “numbers” for reporting.

e. Reporting requirements

The list of reporting requirements from a reserving exercise is remarkably long in many cases. This will almost always include one or more reports that are used in the governance process, but may well include a large number of exhibits and schedules that are required for internal and regulatory reporting.

Our discussions focus on the principles relating to how to best integrate this reporting and ensuring that the time spent is proportionate to the value gained in each case.

f. Governance and communication

A key aspect of a successful early close/fast close approach is a clear governance design that enables stakeholders to provide input throughout the early close process in setting expectations and trigger points to be used within fast close.

Providing this transparency of controls allow stakeholders to gain comfort that they have appropriate influence at the appropriate time within fast close, without the need for communication and updates in a sporadic or uncontrolled way. Uncontrolled interventions brought on by discomfort with or ignorance of the process can be very inefficient. These are usually generated where those not intimately involved in the process do not understand exactly what they can and can't do at any given point in the process, and so feel that they need additional information continuously to gain comfort that appropriate decisions are being made.

This may require a shift in governance to rely more on pre-quarter end committees for the wider picture, with post quarter end committee focusing on exceptional items and deviations. Such a change will almost always require a process of education and re-education for all stakeholders.

This is particularly important where other departments (i.e. Finance) rely on the output of the process. They must be very comfortable about any change that may affect their processes and the reserving function is well advised to work hard to fully understand such related impacts to users of their output before proposing changes to their own processes.

We now look at each of the sections in more detail.

4. Roll-forward analysis

This section sets out some of the areas for consideration when determining the analysis that feeds into the roll-forward process. We expect that this analysis will be driven by a series of automated calculations that provide the raw data from which to determine any changes required in the selections of ultimate claims and/or premiums to be used within the fast close process. The corollary in "normal" reserving is applying chain-ladder and BF methods to a set of data in preparation for selecting an ultimate.

We would expect the primary focus in these calculations to be best estimate assumptions and selections, with deviations from these being assessed to identify emerging issues, however it is also possible to derive expectations on other bases.

The analysis can be broken down into the following phases:

- Define the scope of the analysis.
- Determine the expectations.
- Compare actual experience to those expectations.
- Present the deviation.

Each of these is addressed in a sub-section below. Note that we assume that a full reserving exercise has been completed at a previous as at date, consistent with the early close definition, from which the expectations and deviations will be derived. A list of the sort of exercises involved in that process are listed in appendix A as background, although we understand that not all companies will need to perform all aspects of this list.

a. Scope of analysis

The scope may simply relate to aggregate claims movements (paid and/or incurred), however, they may also look at numbers and average costs of claims (reported, closed etc.). Premium may also be monitored (both signed and written).

In addition to gross data, reinsurance measures may also be monitored, although given the timeframes, we would not expect this to be common for those with excess of loss programmes.

The analysis should be at an appropriate level of granularity – we would suggest at the same level as the core reserving process, but more aggregated views may also be used within the fast close process. This granularity can relate to both classes and claim types, where reserving differentiates by attritional/large/catastrophe; property/bodily injury or other divisions.

Finally the reserving strength is crucial to the process: an analysis relating to best estimate assumptions will give very different results to one on a more prudent financial reporting basis.

All of the above should be made clear to stakeholders as decisions made here will dramatically affect the granularity and interpretation of any output from the fast close process.

b. Set expectations

This phase calculates what the expected development in the chosen metrics is.

Although at its simplest, this can be as simple as applying the early close development patterns to the previous data position, it can also involve more complicated calculations:

- Applying the pattern from the selected ultimate to infer the position at the end of the roll-forward period where experience is expected to be volatile, current claims are very low, or a different ultimate from best estimate is used.
- Considering the chosen reserving method and putting the new data through the previous methods (considered further under “Presenting the deviation” below).

- Combining the results from paid and incurred methods using a weighted average.

For more information on the variety of AvE techniques available, please refer to our 2013 GIRO paper.

c. Comparison to actual

In this stage of the process, the critical element is that the data flows populating the AvE calculations are as slick as possible. Delays and errors in data can cause delays and inappropriate conclusions if not corrected, so having appropriate automated systems and checks is vital for an efficient process.

d. Presenting the deviation

This section has been deliberately split from the comparison stage to underline how important the design of the exhibits is in enabling the most efficient review process.

Again our 2013 GIRO paper sets out a wide variety of ways to present the results of an AvE exercise, however here we are most concerned about how to flag those areas that need individual attention.

The comparison does not have to be at the same level of detail as the underlying calculation. If your processes have agreed materiality limits at different granularities, these are the levels at which your exhibits should concentrate - although we would expect to maintain the more granular data to enable drilling into any areas that are identified as exceptions.

For example, the analysis may be presented at a total class level, a total origin period level, or even combinations of years within a class to indicate whether the selected patterns are appropriate in various ranges of development.

Deviations may also be presented as an absolute amount or a relative amount compared to the expectation, or both.

The true art in making this process work is to design the metrics and thresholds in such a way that they correctly identify areas for concern, and particularly indicate which assumption has not been validated, or where the specific event/deviation is arising.

We believe that there is no “one size fits all” either across companies, or even across classes within a company. Different amounts of deviation will be acceptable in each case, and any process that is used to flag these issues should be sensitive to this.

Finally, we would strongly recommend that a clear flagging system using RAG status or a system that only shows the deviations above a certain criticality is implemented. There is a risk that when presented with reams of numbers, even with colour codes,

reviewers are distracted, or worse, miss flagged items due to the sheer volume of data. Any methods that can limit this possibility should be encouraged.

5. Selection of roll-forward ultimates and reserves

The aim of the roll-forward is to help produce reserves quickly as part of the fast close process. The key issue is that there is insufficient time to complete a full analysis as part of a fast close. Instead the analysis carried out is based on the output from the early close process along with minimal adjustments, as a result of the latest available information. The key input to this process is the result of the ideas outlined in the previous section.

The overall approach should be to act on that analysis, identifying which areas need manual review and mechanically roll-forward the remainder, thus minimising the time taken to complete the selection of the revised ultimates and hence reserves.

The principles outlined below can be applied to any of the analysis combinations highlighted in the previous section (paid claims, incurred claims, claim counts etc.).

This section initially sets out the various options for choosing fast close ultimates, it then considers challenges relating to applying those methods before setting out our suggested high-level process.

In all cases we indicate a quarterly roll-forward, but the same principles apply to any length of roll-forward period.

a. Roll-forward Options

There are various options available for selecting roll-forward ultimates.

i. Static Ultimates

This option involves rolling forward ultimate amounts (premiums, claims amounts etc.), such that the ultimates remain the same and the reserves are calculated as ultimates minus new paid position.

The following example demonstrates the use of this method.

Review as at QX					
Premium	Paid Claims	Outstanding Claims	IBNR	Ultimate	ULR
100	40	20	20	80	80%

Review as at QX+1					
Premium	Paid Claims	Outstanding Claims	IBNR	Ultimate	ULR
100	45	20	15	80	80%

The paid and incurred claims have increased between QX and QX+1 but we have selected the same ultimate.

This method is most appropriate where:

- High-level calculations are being employed;
- Actual development is similar to that expected;
- The overall movements and/or volumes are small in comparison to the total portfolio, and/or
- The calculation relates to attritional claims.

There may be problems applying this when:

- The roll-forward is considering an earned ultimate in total (as we would expect this to increase with time), and/or
- Actual experience is very far from that expected.

ii. Static Ultimate Loss Ratios (ULRs)

This involves rolling forward the ultimate loss ratios and applying to a revised ultimate premium, to arrive at ultimate claims.

The following example demonstrates the use of this method.

Review as at QX						
Premium	Paid Claims	Outstanding Claims	IBNR	Ultimate	ULR	
100	40	20	20	80	80%	

Review as at QX+1						
Premium	Paid Claims	Outstanding Claims	IBNR	Ultimate	ULR	
110	45	20	23	88	80%	

The premium has increased and the ultimate has increased in line with this, with the ULR remaining static.

This method is most appropriate where:

- The origin period is relatively undeveloped;
- The exposure measure may vary materially, and/or
- We are calculating incremental amounts (e.g. multiplying incremental earned premium by the selected ULR).

There may be problems applying this when:

- The measure being considered is very volatile (particularly if the primary reserving basis is on an earned basis) and/or
- Actual experience is very far from that expected.

iii. Static IBNRs

This involves simply adding the IBNR figure from the previous review as a loading on top of the latest incurred position to arrive at ultimate claims.

The following example demonstrates the use of this method.

Review as at QX					
Premium	Paid Claims	Outstanding Claims	IBNR	Ultimate	ULR
100	40	20	20	80	80%

Review as at QX+1					
Premium	Paid Claims	Outstanding Claims	IBNR	Ultimate	ULR
100	45	20	20	85	85%

The incurred claims have increased but the IBNR has remained static so the ultimate has increased.

This method is most appropriate where:

- There is significant negative incurred development and/or
- Experience is expected to be volatile.

There may be problems applying this when:

- The roll-forward period is particularly long, and/or
- Expected development is very strong (in either direction).

iv. Static Reserves

This involves simply reporting the same reserve as in the early close.

This obviously not only ignores any paid development, but also any incurred development.

The following example demonstrates the use of this method.

Review as at QX					
Premium	Paid Claims	Outstanding Claims	IBNR	Ultimate	ULR
100	40	20	20	80	80%

Review as at QX+1					
Premium	Paid Claims	Outstanding Claims	IBNR	Ultimate	ULR
100	45	25	15	85	85%

The paid and incurred claims have increased but the reserve has remained static, hence the ultimate has increased.

This method is most appropriate where:

- Experience is expected to show limited development and/or
- The book is relatively stable over time.

There may be problems applying this when:

- The portfolio is growing or shrinking rapidly and/or
 - Expected development is very strong (in either direction)
- v. Roll forward methods & assumptions on new data

This option involves keeping the method (e.g. Chain Ladder) and all assumptions (e.g. development patterns) the same as the early close process and applying the new data point using this same methodology.

This method is the most complicated of those outlined here. It can perform well in almost all circumstances, but can also cause potential bias if not treated with care as discussed below.

b. Challenges

Whichever option or options are used there is likely to be some challenges to overcome, these include:

- i. The reserving philosophy may preclude some roll-forward methods.

For example, having a reserving philosophy that uses the Expected Loss Ratio (“ELR”) method, or has a defined release of catastrophe load during a period, is likely to prevent the use of the constant ultimate roll-forward option.

- ii. The roll-forward option may not be appropriate for all scenarios.

The following example demonstrates that keeping the ultimate claims static is less likely to be appropriate if premium has changed.

Review as at QX						
Premium	Paid Claims	Outstanding Claims	IBNR	Ultimate	ULR	
100	40	20	20	80	80%	

Review as at QX+1						
Premium	Paid Claims	Outstanding Claims	IBNR	Ultimate	ULR	
110	40	20	20	80	73%	

The premium has increased but the ultimate has remained the same, resulting in a lower ULR. Essentially, the additional premium is assumed to be all profit (i.e. 0% LR).

Similarly, applying new data to previous methods may be appropriate where Chain-ladder approaches are applied. However, if the ELR method is in use to calculate ultimate claims, any such calculation will be independent of the new data, which could lead to material errors within the new estimates.

- iii. Different approaches will be required for different segments.

The approach required may be different for attritional, large and catastrophe losses. In addition, different lines of business have different development patterns with some being short-tailed and others long-tailed, which may need to be treated differently.

The use of multiple methods either across the portfolio or as alternates for a single selection given different trigger conditions is particularly tricky. Great care must be taken when setting these selected methods to ensure that appropriate selections are made in all potential eventualities. Alternatively, where experience falls outside the “norm”, flags must be in place to ensure appropriate manual review is carried out.

This is one of the key conclusions in this section.

- iv. Limited time for review

The process of selection should be very quick to ensure time is spent on the more difficult decisions. A policy with automated decision rules would help to make the process more efficient. Again a series of flags highlighting those areas with the most material concerns will assist in targeting resources appropriately given the limited time available.

- v. Reinsurance may require a different approach entirely.

The reinsurance programme may mean it is not straightforward to roll-forward the reinsurance recoverables.

Approaches may need to have specific features depending on the specifics of the firm in question. If reinsurance data is available concurrently with the gross data, the RI element may be best calculated from the gross IBNR, whereas if reinsurance data is not directly available, then a more high-level approach may be required to both the ultimate recoveries and the paid position.

Alternative methods could project the reinsurance element using the same option as the gross, or recovery ratios could be used in all cases.

The exact procedure will be highly dependent on the materiality of the recoverables and the reserving and reporting processes within the firm.

- vi. Need to ensure the sum of detailed decisions makes sense compared to total diagnostics.

In all cases (not just fast close) there is a balancing act between the desire to have ultimates as accurate as possible at the detailed level with meeting deadlines and making sure the overall result reflects the total experience in the period.

There are two possible approaches: top down and bottom up.

Our consensus view was to apply the top down approach: consider the overall result from the analysis step and select specific detailed changes – however many or few

you chose to make – such that the total movement was reflected within an appropriate materiality range.

The alternative is to let the full analysis flow into the revised selections, and then adjust those that look incorrect.

Either approach is valid. However we note that the top-down approach has the advantage of making the number of changes to be explained in the reporting phase relatively limited.

In this, as in the entire fast close process, it is vital to ascertain the materiality level being applied to ensure that whichever approach is used, the extent of the reporting needed is manageable in the time available. This also stops the top-down approach morphing into a bottom-up approach due to the number of adjustments required.

vii. Impact on alternative reporting bases

It is important to bear in mind what effect the use of each of the roll-forward approaches may have on non-core reporting bases. Any roll-forward that holds ultimates constant may generate negative IBNR in an alternative view (which may or may not be appropriate or desired).

This is a potential area that the working party may research further, and would like feedback on whether such considerations would be welcomed.

viii. The roll-forward process might raise some cultural questions

This is a critical area, for example:

- a. Will Boards be happy with “no change”?
- b. Will actuaries be happy with “no change”?
- c. Does this achieve sufficient accuracy for tertiary uses (base for planning etc.)?
- d. Can this approach be extended to replace a “full” quarterly reserving process?

In our experience we have seen underwriters feel that they are being ignored, or not taken seriously if their line is not given a full review. Similarly senior management may struggle with having a full reserving team and apparently getting very little output from them during a fast close process, or even more so if a “light touch” quarterly reserving process is carried out.

Actuaries too can feel that they are not performing their role appropriately if they do not carry out a detailed analysis to support the booked reserves for financial reporting.

With all of these, it is important to consider the opportunity cost of the time spent within the reserving team to the benefit added to each of the stakeholders. It is also

extremely important that each stakeholder is getting what they need from the reserving process/team, subject to reasonableness of the requests.

As mentioned in many parts of this paper, the ability to manage expectations and set agreed protocols is vital to the success of the wider reserving process. In the above examples, the stakeholders may get what they need from analyses or exhibits that are either off the critical path, or able to be produced automatically. This aspect is discussed in more detail in the reporting section.

In relation to the actuarial concerns it is worth noting that the reserves are usually a very large number on the balance sheet, with a reasonable level of uncertainty attached to it. Any volatility and operational risk around the selection process should be weighed against the uncertainty in the overall reserves and the relevant impact on the profit & loss account.

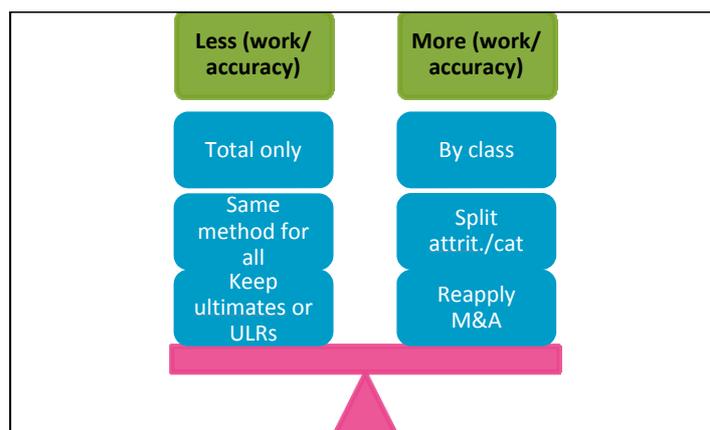
The work carried out in this selection process could alternatively be applied to more detailed analysis in emerging risk areas, or where trends are not following expectations, or even portfolio analyses to assist in the strategic direction of the portfolio.

It is the responsibility of the reserving team to balance these competing pressures and provide the most value to their stakeholders.

c. Conclusion

Overall, a balance needs to be struck between making the analysis as ‘accurate’ as possible and the time and resources available.

Figure 2 – The balancing act



Our preferred solution is to ensure that movements away from the early close selections of ultimate are based on a limited number of specific known issues/effects to reduce the amount of explanation and increase clarity and speed of reporting. To aid in this, we recommend the following:

1. Do the analysis at a granular level (to facilitate drill-down and reporting).

2. Apply an automated decision rule, to speed up decision making and allow time to be used most efficiently.
3. Any top level adjustments are held as a margin (or are specified at a detailed level).

The first point is critical for any automated conversions between reporting bases. Many conversion processes will struggle if the ultimates are selected at a grouped level (which may vary at each exercise), and this can cause unexpected effects if an allocation routine is used to generate more granular reporting data.

Automated rules can be very helpful in flagging up areas for further review efficiently. Colour coding or even exception reporting can ensure that time is not wasted looking at areas that are within acceptable bounds of experience.

If desired, automated checks can also include patterns rather than individual origin periods by also having boundaries on the total deviation for a class, or even sub-totals over given years, although we would recommend any analysis relating to change of pattern is carried out off-cycle and fed back into the next early close or fast close process.

Finally, top level adjustments that may be generated by the Board or other management structure should be treated as a block, or assigned to a very few specific areas. This is partly to cover the first point above, but also so that the integrity of the best estimate and roll-forward process is maintained – it can be very difficult to unpick such adjustments after a conversion process otherwise.

6. Fast close reporting

In a typical reserving exercise, as we have previously noted, there is an ever-increasing list of reporting requirements.

The key for meeting these reporting requirements in an efficient manner is to be clear on how all of the key outputs that are needed from the reserving exercise will be produced during the early close / fast close process. The potential options for this have already been covered in the roll-forward process (with the extremes ranging from no ultimates/reserves expected to change (i.e. not even paid claims are updated) to all ultimates/reserves expected to change (i.e. new data flows in throughout).

Whatever the approach, the key outputs that are needed at the final as at date may include the following:

1. Actuarial best estimate claims & premiums ultimates & reserves on the primary financial reporting basis at the necessary granularity to support reporting (e.g. PRA return, Lloyd's Trust Fund returns).
2. Actuarial best estimate claims & premiums ultimates & reserves on any other financial reporting basis (e.g. US GAAP vs UK GAAP vs Lloyd's) at the necessary granularity to support reporting.

3. Booked claims & premium ultimates & reserves on all relevant financial reporting bases at the necessary granularity to support reporting (to the extent that the reserving team supports the finance team in producing these, which could be through scenario/stochastic based margin assessment or adding the agreed margin into the actuarial best estimates for use in financial reporting models for example).
4. Other technical provision items for financial reporting as relevant and to the extent that the reserving team supports the finance team in producing these (for example UPR, URR, ULAE, Reinsurance bad debt).
5. Solvency II Technical provisions (including assessment of Bound But Not Incepted, binary events (or Events Not In Data) and cashflow patterns for discounting to highlight some of the additional requirements) at the necessary granularity to support reporting (again often working closely with other finance colleagues).
6. Analytics / diagnostics to support the reporting, e.g. AvE or Roll-forward summary outputs and/or other range analyses and/or financial control checks (e.g. data reconciliations to support internal financial control environments) .

These outputs will then become the basis of the reports/tables, which the reserving team will produce, sometimes as stand-alone reserving team documents and sometimes contributing to documents owned by others, e.g. Finance. A typical list of such documents can be split into two types:

Pure reserving team documents (as relevant to the organisation), e.g.:

- TAS compliant reserving report for the Reserving Committee (or equivalent)
- TAS compliant Board report
- Statement of Actuarial Opinion and supporting TAS compliant report
- Tax certification documents

Documents that the reserving team contribute to (as relevant to the organisation), e.g.:

- Investor briefing
- Lloyd's Trust fund submissions
- Lloyd's QMR
- PRA returns
- Solvency II Pillar 3 reporting requirements

As with the reserving outputs it is important to be clear on how all of the above reporting requirements will be met within the Early Close / Fast Close environment. Again the exact approach will vary depending on the roll-forward approach adopted, from a large proportion of the drafting/production happening before the fast close (if the expectation is that ultimates/reserves will not change) to a greater need for prioritisation / mechanisation in report production during the fast close (if the expectation is that the majority of ultimates/reserves will change).

The prioritisation approach should consider the amount of expert judgement needed in the production of the report and the materiality/sensitivity of the figures within the report, with reports typically falling into 3 categories:

1. Unchanged in the fast close, for example sections of the TAS compliant reports focusing on Other Technical provisions, e.g. ULAE and reinsurance bad debt, if for materiality/sensitivity reasons it is agreed through the governance process that these don't need to be updated in the fast close .
2. Updated mechanically in the fast close with some sense check manual review, for example Lloyd's Trust Fund & QMR submissions, PRA returns, Solvency II Pillar 3 reports, Tax certification documents.
3. Updated manually, for example TAS compliant reports, Investor briefing etc.

In all of the above and as we have already noted a number of times within this paper, effective communication with all relevant stakeholders is key to successful sign-off.

We recommend that subject matter experts and management are kept involved throughout the process as specified and agreed in the process documentation, and are given sufficient time to review and provide input in advance of formal reserving committee/sign-off committees.

This is vital to ensure that stakeholders are bought into the fast close process and that any "soft" information is appropriately allowed for in a controlled and timely manner and should help to facilitate a cohesive presentation of output and associated issues to the board for sign-off, without any left-field comments or information that could distract the sign-off process.

We would also recommend that the current reporting requirements be reviewed for appropriateness, and consideration given to whether "full" reports are required where a roll-forward process is in operation, or whether more addendum or expectation reports are used instead to improve efficiency within the process.

7. Issues

This section brings together some of the common strands arising in the previous four sections and indicate our views of how processes can be designed to better protect against common obstacles to a smooth reserving process. As mentioned in section 3, having a clearly defined governance process and communication structure already in place is key to discussing and resolving issues as they arise.

In addition, having a reserving policy in place which sets out the objectives of the early/fast close reserving exercises is crucial. Among other things the policy should clearly define any trigger points, materiality limits, etc. and the processes or methodologies that should be followed under these circumstances.

Having these processes and reserving policy in place will also assist in guarding against any unnecessary, inappropriate or untimely interventions by stakeholders.

These potential issues which could derail the Fast Close process can be grouped into Internal, External and Other factors:

a. Internal Factors

- Data – a common source of issues! Incomplete, inaccurate or missing data; corrupted control files e.g. reconciliations to ledger data, can all slow down the process and/or require manual intervention, particularly where there is reliance on external parties, e.g. within Lloyd's.
- Systems – for example failures in data systems e.g. batch data runs failing to complete, or systems breaches from cyber attacks. Alternatively, reserving software may be corrupted or simply not have licenses renewed in time.
- Processes – Both changes in processes and process failures could have significant impacts on the reserving analysis. For example, introduction of new claims handling processes, new processes for registering claims or changes to the type of flag used to identify specific types of claim. Similarly changes to the reserving process (e.g. new MI requirements) itself or delays in the preceding early close may cause disruption to the existing process.
- Policy & product changes - Changes to Terms & Conditions or new product launches may affect expectations, or indeed require expectations to be generated and included in the process. Large changes in volumes of policies written, including some or all of the portfolio being put into run-off can also impact the process by changing the focus of management.
- Financial and risk changes - Introduction of new financial arrangements e.g. new reinsurance cover, capital issues or changes to reserve risk appetite and hence margins could significantly impact the reserving processes.
- Resource constraints – These may arise through absences or new projects requiring dedicated resource.

b. External Factors

- Catastrophes / Major Events – Such events that occur, or are discovered close to or during the fast close process could divert management attention and require input from the reserving team.
- Regulation or reporting standards - Although unlikely to be required at short notice, changes in forms or additional information relating to specific areas can be very disruptive, and may need a long lead period to incorporate into an existing process.
- Third party suppliers – Failure or delay by 3rd party partners/suppliers to provide data or results on time can affect any reporting or processes further along the chain.
- Recent court rulings - This can be a very material issue (e.g. Ogden rates) requiring re-projections of existing claims and potentially deeper

investigations into specific areas of the portfolio that are not readily available.

- Business interruption – events such as fires or flooding affecting the office are often considered as part of disaster recovery plans, and these can cause issues if they occur during critical periods.

c. Other Factors

- Economic – Such as failure of a major sector (e.g. Banking, Finance) or financial institution could cause changes in claims trends or affect counterparty provisions including expected reinsurance recoveries.
- Exchange rates – Will always cause some disruption when incorporated into the reserving analysis, but in times of extreme change, this can cause significant movements, which will need careful explanation
- Transactions/projects – Similar to catastrophes above events such as mergers etc. can significantly divert reserving resources (and management attention).

d. Recommendations / Suggestions

In general the main defence for these events is to have thought about them before they happen. To assist in planning for any such event, the reserving process may need to have options to allow for any of the above.

The simplest process would be to simply take the early close as it stood, with no adjustments (a specific roll-forward method), or to adjust for just the recent catastrophe if that was the disruption. In such cases it is important to have communicated what the process would be, and why, to the stakeholders.

It will be a joint decision on the eventual process, but being able to present a few (pre-prepared) options at short notice can accelerate the decision making process and allow appropriate effort to be applied in those areas that most need it at the time.

Some specific ideas are set out below:

- Catastrophes / Events – Have a defined catastrophe process that operates independently from reserving, but then feeds the latest view into the process at a specified (pre-agreed) time.
- Data – Checking of data on an earlier extract can identify material issues early. Documenting key data items and have a contingency plan in place to deal with each particular missing or corrupt piece of data.
- Systems Failure – Alternative processes that bypass each (or all) systems can be planned for.
- Other internal changes – Impacts from internal process or financial changes or changes in the portfolio could be mitigated to a large extent by good stakeholder management.

- Priorities – The impact from changing priorities and resource requirements can again be managed by good stakeholder management, and temporary cover for illnesses can be managed by having good process documents, good regular training of internal cover staff and efficient business continuity planning.
- Reporting – Regular requests for feedback from Executives/Board and acting upon the feedback should go a long way to mitigating last minute/ad hoc requests for reporting changes. Regular education sessions of Executives and Board members will also help in this respect.
- External Parties – Regular catch-ups with Claims and Legal should give early warning of pending court rulings and the potential impacts on the business from the different possible outcomes.

These recommendations and suggestions should be included as part of the agreed reserving process.

8. Conclusion

The primary conclusion we have drawn is that for an effective fast close process, there should be a reserving policy in place supported by agreed and very transparent governance and communication processes. This aids in stakeholder management as it provides comfort that there are ways to influence the process if agreed triggers are met, and also helps guard against intrusive and disruptive activities that can result in an unsatisfactory exercise.

The design of such a process will be very specific to each company. Each will have its own selection of reporting requirements (both internal and external), with management having different “favourite” exhibits and relying on different tools to assist in the process.

We believe that a triage approach to reporting requirements can assist in focussing effort where it is most helpful, and we encourage serious thought around where very light touch reports can be used to save valuable time, including shifting more focus onto early close reporting.

We expect that implementing a fast close process for the first time could take up to 18 months:

- Design of the governance and technical processes to meet all reporting requirements in the time available will take up to 6 months, looking at the current process in some detail.
- Selling the new process, emphasising the controls and governance to stakeholders will take some time, and is likely to result in amendments.
- A dry run for a non-critical quarter is essential, and at least one parallel run is likely to be necessary to refine trigger points before going “live”.

We expect that the process will evolve over time as stakeholders adjust to the new processes and gain comfort that it achieves the correct balance of speed and focus

on the important issues. In particular there will be times when the inevitable unexpected issue will arise, and the control process will be put under extreme pressure. This is likely to show both the worth and potentially frailties of the process, but we would expect that the greater flexibility through increased time for the most important discussions to win out!

In fact, we are aware that changes such as those included in this paper may be seen to increase the operational risk and/or reserving risk within a company, but we would argue the opposite – that using techniques to target attention and focus on those areas not behaving as expected will allow a much more robust control around the reserving process and ensure that each element is given the attention it deserves, rather than spreading that attention evenly independent of the inherent risk.

In fact, we believe that the principles set out in this paper can be extended to the wider, annual reserving process. This could lead to roll-forward analysis based on work a quarter or longer in arrears. More ability to focus on areas that have emerging issues off-cycle, as the AvE exercises begin to act as strong guides for deeper analyses, and eventually, perhaps, a fully risk-based reserving process...

APPENDIX: Early close processes

Below is a summary list of the processes we would expect to have been completed prior to a fast close exercise. We note that not all companies would require all of these outputs, and potentially some companies would not require them for every reserving exercise.

- i. Actuarial best estimate ultimate claims
 - o By appropriate reserving grouping for earned exposures.
 - o Additionally on an underwriting year ultimate exposure basis for Lloyd's.
 - o This continues to be the core requirement and deliverable of a reserving exercise. The early close process could include the following steps:
 - Initial cut of estimates based on roll-forward of previous quarters assumptions.
 - Update to development patterns and benchmark patterns.
 - Working groups for each class of business including Underwriting, Claims and Actuarial participants to review detailed actuarial diagnostics and discuss developments during the quarter and assist actuaries in refining assumptions.
 - Revisit analysis based on working group information, where appropriate.
 - Circulate draft set of estimates for initial review and feedback.
 - o Where earned/unearned and year of account bases are required we recommend that all of these bases are considered as part of the review as this allows the business to review and agree all estimates at the same time.
- ii. Ultimate premium estimates and view on appropriateness of earning and writing patterns applied.
 - o Initial ultimate premium estimates rolled forward from previous quarter.
 - o Actuaries test these estimates based on development of signed premium compared to previous years and where possible based on underlying policy development data.
 - o Underwriters and actuaries agree on proposed ultimate premium estimates for the quarter.
 - o For classes where earnings patterns are non-standard, review development of claims against premium and review appropriateness of underlying earnings pattern assumptions.
- iii. Loss ratios for earned / unearned / unwritten exposures.
 - o Update a-priori loss ratio estimates for more recent years.
 - o Prepare complete set of best estimate loss ratios for all reserving classes and years.
- iv. Recommendation for reserve margin.

- These can be based on statistical analysis and consideration of other judgmental information.
- It is likely that any reserve variability analysis will have been prepared in advance of early close, though there may be a requirement to update this analysis for certain classes of business if experience has been significantly out of line with expectation.
- v. Payment patterns and associated cashflow projections.
 - Payment patterns are required for financial planning and cashflow projections, and also for discounting reserves.
 - As part of early close, mechanical patterns for premium and claims based on development data should be reviewed and adjusted for large losses / timing of specific expected future payment.
- vi. Expectations for future development.
 - These can be set up to allow for quarter end roll-forward adjustment and for expectations at future quarters to provide a starting expectation for subsequent reserving processes.
- vii. Other SII technical provisions requirements.
 - Bound But Not Incepted (BBNI)
 - Events Not in Data (ENID)
 - Additional expenses
 - Discounting assumptions
- viii. Preparation of allocation methodologies.
 - Revisit and review allocation methodologies used to apportion estimates for reporting purposes, e.g. by original/settlement currency, risk code, SII class, etc.
- ix. Unallocated Loss Adjustment Expense (ULAE), bad debt assumptions, tax reserve calculations.
- x. Preparatory information for Statement of Actuarial Opinion (SAO) review / other external review.

Additional outputs if the early close is preparing full quarter end/year end deliverables.

- xi. Population of quarterly financial internal and external reporting (e.g. Lloyd's QMA/B/C)
- xii. Opinions.
- xiii. PRA returns.
- xiv. Audit reconciliations.

Whilst items i to iv are potentially the core requirement for an actuarial reserve review, all of the above items are of interest to stakeholders so effective communication is key to successful sign-off for the early close, with appropriate regard to potential adjustments from the fast close process i.e. stakeholders are aware of what will, might and won't change during fast close.