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Managing your portfolio liability – using effective monitoring to change outcomes

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Managing your portfolio liability – using effective monitoring to change outcomes

Liability management for long tail portfolios is difficult, particularly when the annual result is decided by an actuarial valuation that most people see as a black box. But effective monitoring tools can make liability management more like science than magic.

RICHARD BROOKES, KRIS BRUCKNER AND DAVID WRIGHT

Introduction

In 2002 WorkCover NSW introduced a tail liability monitoring tool that tracks insurer performance against actuarial indicators. A refined version of this tool is in use today.

This paper describes the reasons for introducing the tool, its development and how it is improving insurer management of the NSW Managed Fund tail liability.

Valuations Alone are not Sufficient for Effective Liability Management

Use of actuarial valuations for liability management is confounded by:

- The complexity and uncertainty of actuarial valuations
- The unsuitability of traditional valuation measures for managing operational activity.

The black box

Regulators and managers are constantly confronted by potential for surprise shifts in the valuation of their outstanding claims reserves.

The authors would like to acknowledge the contributions of WorkCover NSW and John Walsh of PricewaterhouseCoopers to the ideas presented in this article.

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This paper is a continuation of the paper ‘Claim segmentation, valuation and operational monitoring’ by Richard Brookes, Anna Dayton and Kiat Chan that was presented to the Institute’s General Insurance Seminar in 2002. The NSW tail monitoring system was developed as an application of the valuation methodology outlined in that paper. However, we do not believe that the general monitoring approach depends on having such a valuation methodology in place and so we have discussed the monitoring system in a self-contained context.

Unsurprisingly, this is because many people find liability valuations decidedly complex. Full and transparent understanding of the valuation is extremely difficult when confronted by actuarial triangles, sophisticated models and complex valuation techniques.

The result is that valuations can be more like a black box than an understandable and controllable process.

Difficulty in responding to valuation outcomes

Even where regulators and managers understand valuation outcomes well, valuation information does not empower them to take control in managing the outstanding claims liability.

This is because valuation information is a poor guide for managing current operational activity.

Valuations are lag indicators

Liability valuations commonly occur two to three months after the completion of a reporting year. This means the most recent payments information included is two to 15 months old. Payments can reflect operational activity one to nine months prior. So the most recent payments information in a valuation can reflect activity 3 to 24 months prior. Then actuaries look at longer-term histories in making projections. 8, 12 and 20 quarter averages can also impact projections.

As a result, valuation outcomes significantly lag operational activity.

Valuations provide a poor barometer of today's operational performance.

Valuation indicators aren't operational enough

If you want to improve claims management, monitoring needs to be at a level of detail and frequency where it impacts the claims management.

Valuation measures focus on the big picture of what is going on such as payment and case outcome trends, and portfolio averages. These trends do not indicate what is going on at an operational level in a specific enough way to be easily actionable. The behaviour of specific teams and the performance in specific areas is hidden in the averages and the volatility of the measures.

Managers confronted by a negative trend cannot respond unless they know who and what is causing the trend. Unless you change the way an individual interacts at the claim/claimant level, all the monitoring in the world doesn't help you.

Development of a tail monitoring tool in NSW

Confronted by this complexity and the need to improve management of the tail liability, WorkCover NSW and the authors of this paper developed an actuarial tool for monitoring tail claims in NSW. At the time, tail claims were defined as claims that were more than two years old.

This paper details:

- The requirements of a system designed to influence manager behaviour and why these requirements might be different from those for other monitoring systems with different objectives
- How to build a monitoring tool for liability and claims management, including a description of the system used for the NSW workers compensation tail claims
- How delivery of a liability and claims monitoring system can improve liability management.

Our Propositions

We forward the following propositions.

- A monitoring system for liability management is an important lever for regulators and managers to improve management of scheme performance. Frequent monitoring fosters active management of liability outcomes
- To be effective, liability management monitoring tools need to cascade from aggregate liability drivers to a meaningful and actionable operational level. What this means is that performance needs to trace to specific teams and processes. Tools need to be provided for case managers to rectify adverse trends as required
- Liability management is enhanced by performance benchmarking against realistic targets. Performance relative to actuarial forecasts can provide an immediate barometer of current performance. It specifically identifies areas that are likely to positively or negatively impact the outstanding claims liability
- There are commonsense steps in building an effective liability monitoring tool.

Customisation to audience and objectives

Monitoring systems can have a variety of purposes. Not all of these will be satisfied by the same set of measures. It is very important to keep sight of the objectives of whatever system is being designed.

The design of a monitoring tool is defined by who will use it and the nature of their objectives.

Applications of Monitoring Tools

Some distinct purposes that we think are often insufficiently distinguished include:

- Governance of a scheme or portfolio
- Evaluating the validity of actuarial assumptions for valuation purposes
- Assessing process compliance
- A guide for portfolio or claim managers in liability management.

We make some brief comments on each of these to illustrate the differences and then, for the remainder of this paper, concentrate on the liability management objective.

Governance of a scheme or portfolio

Those with the ultimate responsibility for a Scheme will probably be concerned with whether the Scheme is meeting the high level objectives set for it.

Potential Scheme objectives are described in the table.

Objective type	Examples
Hygiene	<ul style="list-style-type: none">• Access, correctness and timeliness of benefits to claimants• Correctness and timeliness of payments to service providers and of premium collections• Robustness of accounting systems and data provision• Meeting of legislative constraints
Non-financial objectives	<ul style="list-style-type: none">• Maximizing the improvement in the health status of claimants• Minimizing the number of disputes• Maximizing the satisfaction (however this is defined) of the various stakeholders

Objective type	Examples
Financial objectives	<ul style="list-style-type: none"> • Meeting the other objectives for an acceptable cost • Charging the correct overall premium rate • Investment of the assets with an appropriate balance of risk and return.

Figure 1: Monitoring for Governance.

Quantitative measures for these objectives can be formulated and it will normally be enough for say, a Board, to review these measures quarterly at the overall Scheme level and request further analysis in cases of poor performance or where a trend in performance indicates a possible future problem.

Validity of actuarial assumptions

The actuary, in his or her role of determining the claims liabilities and premium rate, will be more concerned with experience against the actuarial assumptions and any underlying trends. He or she could (and should) investigate further any unexpected issues but the focus of the monitoring will be experience against the actuarial assumptions, possibly for significant subgroups of claims.

The actuarial assumptions could be quite different from the governance measures, in that they will consist largely of financial assumptions and be framed in such a way as to facilitate financial modelling rather than reporting at the board level.

Actuarial monitoring tools would focus on measures such as:

- Reporting patterns
- Continuance and finalization rates
- Payments Per Claim Incurred, Payments per Active Claim, and Payments Per Claim Finalised.

Assessing process compliance

Insurers typically have a collection of process requirements and a system that alerts them when these have not been carried out.

Examples include:

- The setting and review of case estimates
- The payment of invoices
- The completion of injury management plans.

These systems tend to run very frequently, even daily. As these process requirements are satisfied mostly as a matter of course, reporting is typically by exception, with the attribution of exceptions to the individual claim manager level.

Monitoring for Liability Management

Here the purpose is to use the monitoring to influence the behaviour of the people actually dealing with the claims and the claimants, in a manner that goes beyond simple process compliance. This means that there are a number of requirements that are not present for other purposes:

- The measures being monitored should reflect actions that individuals are able to undertake or characteristics that they are able to influence, where this action or influence will have a material impact on the outcome of the claim.
- The measures should be directly translatable to these actions or characteristics. Actuarial assumptions are often reflections of a claim manager's actions but at such a distance that it is difficult for the manager to connect the action with the result. For instance, an actuarial PPCI value for claims from a particular accident year is, from a claim manager's point of view, an unnecessarily indirect reflection of payments per claim over a particular period.
- Targets or benchmarks for the measures should be fair and so reflect achievable objectives that are adjusted to reflect circumstances that the individual is unable to control.
- The monitoring should give results at the portfolio level and then drill down to the smallest operational grouping that has sufficient volume to make inferences about performance.
- Monitoring should be frequent and timely. The purpose is to drive action that changes the monitoring results so the results must be provided at a time that the individual can connect them with his/her actions.
- Monitoring indicators should have a high probability of correlating with the change or outcome in liability at next actuarial valuation

It can be seen that these requirements are quite different to those for governance or assessing the validity of actuarial assumptions, so that both the measures and frequency could be quite different. One way of viewing monitoring for liability management is as an extension of process compliance monitoring to include outcome objectives or lead indicators of outcomes.

A Customised Tool for Tail Liability Management in NSW

The foundation for a monitoring tool is a clear understanding of the users and how they will respond to the measures.

The table below describes the scope for the monitoring tool we describe in this paper.

Users	Response mechanism
The Regulator	Identification of insurer performance and specific areas of their under or over performance
Insurer Management	Identification of team performance and specific areas of their under and over performance
Team leaders and case managers	Provision of claims lists underlying adverse trends

Figure 2: NSW Tail Liability Monitoring. The tool developed in NSW focused on improving monitoring and management of the tail liability.

The tool building process

For the remainder of this paper we outline how such a system was designed and built for the NSW tail and document some lessons from that experience.

There are commonsense steps in building an effective liability management monitoring tool. These comprise:

- Break the portfolio into operationally similar segments
- Understand what you need to achieve with claims in each segment
- Measure the key operational steps in achieving segment objectives.

We describe these steps for the NSW case below.

Segmentation of portfolio

The first part of understanding the dynamics of the portfolio was to divide it into groups that were relatively homogeneous with respect to outstanding liability and also with respect to management process. This was done based on judgement but the definitions were subsequently lent some statistical justification by analysis from another project. The definitions of the various segments are described fully in the previous paper but are given below in an abridged form:

- Open deafness claims
- Open common law claims
- Active weekly claims¹
- Non-active weekly claims² with active medical payments
- Non-active weekly claims with no active medical payments
- Other open claims
- Closed claims (broken into various segments).

Note 1: Active weekly claims are those claims in respect of which income support benefits were made in the previous quarter

Note 2: Non-active weekly claims are those with a case estimate for income support but with no income support payments in the previous quarter.

A table showing the relative importance of the open claim segments as at 1 July 2003 is given below:

Claim segment	Open claims	
	Liability ³	
	Open claims	
	Liability ³	
Open deafness	4%	0%
Open common law	6%	18%
Active weekly	32%	57%
Non-active weekly but active medical	3%	3%
Non-active weekly non-active medical	9%	7%
Other open	45%	14%
Total	100%	100%

Note 3: Approximate percentage of total portfolio actuarial liability excluding closed claims and IBNR.

At an individual claim level, the outstanding actuarial liabilities per claim look something like:

Claim segment	Approximate liability per claim (\$) ⁴
Open deafness	5,000
Open common law	250,000
Active weekly	100,000
Non-active weekly but active medical	50,000
Non-active weekly non-active medical	50,000
Other open	20,000
Closed	1,500

Note 4: There is a strong dependence on time since injury that is not shown here.

To complete the picture, we give the relative importance of the various payment types by open claim segment below:

Claim Segment	Statutory							Death and		Total
	Weekly	Medical	Rehabilitation	Lump Sum	Common Law	Legal	Investigation	Other	Recoveries	
Open Deafness	0%	10%	0%	38%	0%	38%	0%	17%	-3%	100%
Open Common Law	3%	1%	0%	0%	93%	4%	1%	0%	-3%	100%
Active Weekly	65%	14%	2%	11%	0%	8%	3%	1%	-5%	100%
Non-active weekly but active medical	-1%	33%	5%	41%	0%	24%	10%	2%	-15%	100%
Non-active weekly non-active medical	-1%	0%	0%	39%	0%	48%	25%	7%	-17%	100%
Other Open	0%	10%	0%	48%	0%	38%	10%	4%	-11%	100%

Segment objectives and measures

Having broken the portfolio into operationally similar segments, we then ask ourselves – what are the key outcomes and drivers of outcomes that define the successful management of a claim in each segment? How do we prioritise these and how do we monitor the important ones? We consider this below. This exercise was carried out from a financial point of view so the prioritization was a financial one.

Where some of the drivers are the same across the segments, we consider the segments together.

Active Weekly claims

The most important claim segment in the portfolio is the Active Weekly segment. The strategic aims are a return to maximal functional capacity and a durable return to work. Although the ideal outcome is a total return to work, partial return to work is also an important outcome. Therefore, one should seek to measure the rate of incapacity and return to work status for each claim along with any relative improvement and deterioration.

However, definitional issues aside, the NSW database does not currently lend itself to a robust measurement of these quantities. Instead, we use a proxy – time on benefits. Time on benefits is the main financial value driver for this claim segment and the whole portfolio.

To get some visibility of partial incapacity, the progression from total to partial incapacity benefits and the cessation of benefits we make use of the fact that there are three types of weekly benefits available under the NSW scheme:

- Total incapacity
- Rehabilitation and retraining
- Partial incapacity.

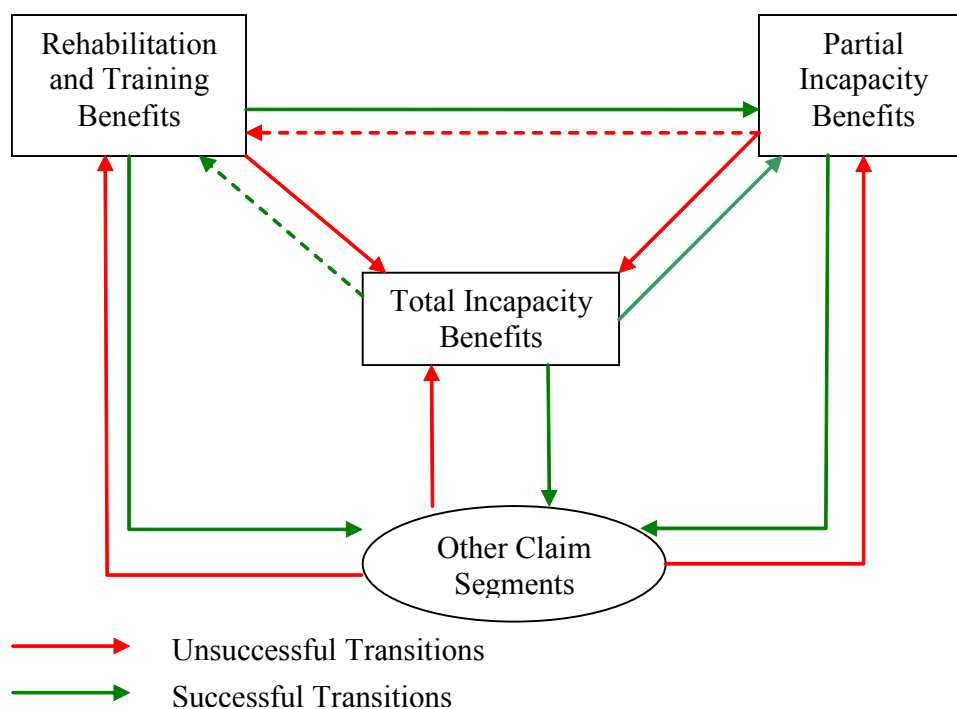
Payments under these benefits are separately recorded so we can use them to track changes in the weekly status. We can define a successful outcome as:

- A durable cessation of weekly benefits; or
- A move from total incapacity benefits, or rehabilitation and retraining benefits, to partial incapacity benefits (less successful than cessation).

The move from total incapacity to rehabilitation and retraining benefits is a little more complex since the average rehabilitation and retraining benefit is higher than the average total incapacity benefit. Such a move is only a successful one if it *subsequently* results in a move to the partial incapacity benefit or cessation, indicating that the claimant has had his or her potential to work improved by the rehabilitation or retraining process. We have not tried to monitor this.

An unsuccessful outcome is one where:

- Weekly benefits continue
- Weekly benefits recommence after a period of cessation
- Weekly benefits have not actually recommenced but a weekly case estimate has been raised; or
- There is a move to total incapacity benefits from one of the other weekly benefits.



With this in mind, the monitoring tool reports:

- The number of Active Weekly claims, split by type of benefit, against forecast;
- The number of weekly benefit re-activations, against forecast, split between

- Re-openings from closed states
- Re-activations from other open states, and
- Potential re-activations (where a weekly case estimate has been raised);
- The number of exits from Active Weekly benefits, separately depending on whether or not the weekly case estimate has gone to nil (and so the exit might be expected to be a genuine cessation of benefits, rather than just due to a process delay), against forecast; and
- The movements between the weekly benefit types.

Statutory lump sums

The next most important financial area is the level of statutory lump sum benefits. An ideal management process would:

- Recognise the benefit entitlement as soon as possible;
- Obtain a fair and robust assessment of the impairment level;
- Pay the benefit quickly; and
- Minimize disputes, and legal and administrative costs associated with the entitlement.

The monitoring tool attempts to measure performance against these requirements by reporting:

- The number of case estimates raised, against forecast;
- The proportion of claims with case estimates for which payments are made, against forecast;
- The number of settlements, against forecast;
- The size per settlement, against forecast (a proxy for the impairment level); and
- The legal payments associated with delivering the payment.

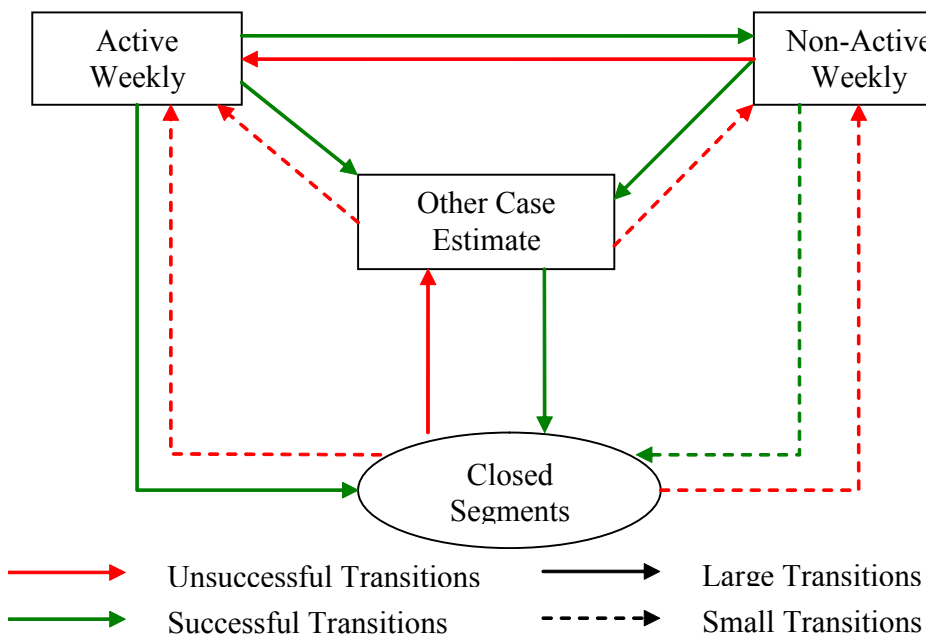
These measures are less than ideal and are arguably more suited for an actuary assessing portfolio experience. Amongst other issues they report excess settlements as resulting in a loss of value for the portfolio and therefore they are, by implication, a poor result for the claim manager. So long as the entitlement is genuine, the number of benefit entitlements is largely outside the control of the claim manager, so reporting in this way is at best misleading and at worst could reinforce the delayed recognition and payment of benefits. The key is that there may be no valid means for the manager to control the number of statutory entitlements.

A more sophisticated approach could be to monitor:

- The delay between the claim being reported and the impairment level being set;
- The distribution of impairment levels for different claim segments
 - In particular, one could monitor any drift in this distribution, both for existing claims and new claim cohorts paying particular attention to the levels with statutory significance i.e. 10% and 15%
- The delay between the setting of the impairment level and payment
- The size per settlement, assessed in relation to the level of impairment; and
- The legal costs associated with delivering the payment.

Closure and re-opening

Although arguably of lesser financial importance, the level of claim closure and re-opening is still important from the operational and measurement points of view. The framework for the measurement of closure, re-opening and re-activation is shown in the diagram below. Re-activation has been discussed above. Closure and re-opening are discussed below the diagram.



Closure

As regards claim closure, the normal process is that weekly payments cease and the weekly case estimate is removed. Other payments may or may not have been finalized at this time and the claim often remains open for a further period until statutory lump sum entitlements, medical invoices or legal invoices have been paid.

In the language of the claim segment definitions, this means that the claim moves from one of the Active Weekly, Non-Active Weekly But Active Medical or Non-Active Weekly segments directly to a closed state or to the Other Case Estimate segment, from which it closes.

Operationally, it makes sense to pay the outstanding benefits and invoices, then close claims from the Other Case Estimate segment reasonably quickly, so long as one does not pay too much in order to do so. The payment and closure of these claims means that:

- Claims staff can focus instead on claims that require active management; and
- There is no potential for large invoices levels to be outstanding for these claims.

The other significant advantage of speedy, stable and robust closure practices is that they make measurement of the portfolio easier.

However, with closure comes a lack of oversight and control. To prematurely close a claim means that the eventual outcome may deteriorate due to a lack of management.

The monitoring tool reports:

- Closures from the various claim segments against forecast, the most numerous being from the Other Case Estimate segment
- The numbers of claims in the Other Case Estimate segment, against forecast with the claims classified by their largest outstanding case estimate
 - Statutory lump sum
 - Legal
 - Medical
 - Other;
- The average payments made per closure from the Other Case Estimate segment, against forecast.

Re-opening

If one is going to monitor and encourage claim closure then one must also monitor re-openings and assess whether or not the original closure was justified. We note that re-opened claims have a significant financial liability attached to them.

Claims can re-open for a variety of reasons, the main ones being:

- The need to pay outstanding invoices or one-off weekly benefits which have been notified since closure;
- A re-activation of ongoing weekly or medical payments; and
- The need to make statutory lump sum benefits that had not been anticipated at the point of closure.

The last two types are clearly more serious than the first since the lack of attention during the period of closure may have materially affected the outcome. The monitoring tool provides some analysis of re-openings by analysing the number of claims reopening into each claim segment. If the re-opening is to the Active Weekly segment then it may be reasonably concluded that the re-opening is more serious than a re-opening into the Other Case Estimate segment.

However, it would be better to analyse the specific benefit paid in respect of the re-opened claim and its duration. For instance, one could measure separately claims that re-open for:

- A one-off weekly payment and subsequently close
- A continued weekly payment stream
- A single invoice payment then close
- Statutory lump sum benefits.

Benefit and expense control

The other main financial driver is expense control. The monitoring tool reports on 10 payment types, as detailed below:

Payment types	
Benefits	Expenses
Weekly	Legal
Medical	Rehabilitation
Permanent impairment	Investigation
Pain and suffering	Recoveries
Death and Miscellaneous	
GST recoveries	

Actual monthly payments are reported, against a forecast, where the forecast is adjusted to reflect the current claim profile, including the number of closures and statutory lump sum settlements. This is to separate out the effects of good/poor profile management from good/poor expense control. The number of payments exceeding certain trigger levels is also reported. This might be evidence of, say, irregular weekly payments.

Benefits

In practice, the level of weekly benefits is a consequence of profile management (i.e. return to work etc) and payment correctness. Payment correctness should be monitored by another system focused on payment validity. This is arguably also the case for the other payment types shown as Benefits in the table above. Variations over time and/or across teams in the levels of these payments, after correction for the claim profile, are most likely to be the result of process delays.

Expenses

For expenses, the payment level is more controllable by the manager; for instance the level of rehabilitation or investigation payments. High levels of these payments are not necessarily evidence of a problem – so long as they are supported by improved exit rates from the Active Weekly claims etc.

Common law claims

At the time that this monitoring system was developed, changes to common law entitlements for NSW workers compensation had just been made. Claims arising from injuries in the accident periods covered by the tail portfolio gained an advantage by registering the claim before late 2001. Registrations after this date reduced markedly and the common law portfolio in the tail is running off. Therefore, the part of the monitoring system relating to common law claims has not received as much attention as the rest of the system.

In simple terms, good management of common law claims is characterised by:

- Early recognition of the likelihood of a claim and the likely level of cost
- Fast settlement; and
- Good cost control.

The monitoring tool reports on:

- The number of new common law claims (as measured by the establishment of a common law estimate of more than \$20,000), against forecast
- The number of settlements, against forecast; and
- The average cost of settlement, against forecast.

Forecasts and links to the actuarial valuation

This monitoring system was originally designed as a means of helping insurers manage their tail portfolios and achieve the financial savings targets that had been set for them. Therefore, most of the items monitored have a direct link to an actuarial assumption that has been set by reference to past experience. The monitoring tool shows these forecasts and the experience against them. There is no doubt that the effectiveness of the monitoring tool, in terms of motivating staff, is enhanced by credible forecasts that correctly reflect the underlying claim portfolio. However, the actuarial assumption setting process is not necessary for this and the forecasts could equally well have been set independent from their role as actuarial assumptions.

Where the actuarial valuation link is important is that the tool carries out a monthly actuarial valuation on the whole portfolio based on the claim profile at the end of the month. Since the valuation methods used rely on the number of claims in each segment, the liability reflects active weekly exits and reactivations, statutory lump sum settlements and so on. The tool then calculates the profit or loss on the portfolio, allocating it between:

- Profile management – that is more or less claims than expected in each claim segment;
- Benefit and expense control – split by payment type and adjusted for actual profile management;
- Statutory lump sums
 - Incidence
 - Settlement size; and
- Common law

- Incidence
- Settlement size.

The overall year to date profit/loss figure is used by the insurers as a guide to their performance related remuneration payments for the year. These are based on a full actuarial valuation at the end of the year. We stress that reliance on the figure given by the monitoring tool is a dangerous practice since an automatic spreadsheet valuation is no substitute for a full actuarial review. For one thing, the monitoring tool valuation does not make any allowance for changes in actuarial assumptions.

The practice of reporting a year to date portfolio profit or loss which responds to experience such as good/poor return to work rates does seem to have a significant motivational effect on the managers concerned. However, we do not yet have sufficient experience to assess the agreement of the monitoring tool result with the eventual outcome of a full valuation.

Examples of the tool in action

Before this tool was implemented, at least one of the authors thought (with well-trained actuarial cynicism!) that detailed monthly figures at the portfolio level would be too volatile to be useful. As it turns out, this opinion was doing a disservice to the portfolio and claim managers involved.

Workers compensation is a volatile business but much of the volatility is due to process issues and operational delays. People actually managing the business at an operational level are close enough to these issues to:

- Filter them out of the monitoring results, if needed; or
- Use the monitoring results to alert them to the process issue and fix it.

The emphasis is not on smooth established trends at the portfolio level but on a rapid feedback loop at a level that enables operational issues to be identified quickly and performance to be taken personally.

In the presentation to accompany this paper we will give some disguised examples of how the tool has been used in practice and how it has changed the management of the portfolio.