

# **THE REGULATORY ROLE OF THE ACTUARY IN AUSTRALIAN GENERAL INSURANCE**

A retrospective view of the first 30 months' experience

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## **1 Purpose and Acknowledgements**

Actuaries were only given a “mainstream” role as part of the regulation of the Australian general insurance business through the 2002 regulatory reforms. In this paper, my aim is to review the success of the reform process to date, with particular focus on the actuarial role, and the difficulties we in Australia have overcome in applying the needs of the role. In doing this I am much indebted to my actuarial colleagues within the Insurance Australia Group, many of who were more involved in the practical elements of the implementation of the reforms than myself. I would particularly like to acknowledge the contribution of Andrew Matthews, Head Actuary, Commercial Insurance for IAG. Andrew made available to me his own material on this subject, including a paper he presented in November 2004 to the New Zealand Society of Actuaries’ Annual Conference.

In the paper I also discuss the next stage of the reform process, and the concomitant increased role for the actuary.

## **2 Background**

Prior to the turn of the century, regulation of the general insurance industry in Australia had remained relatively stable over a number of years. After the passing of the Insurance Act in 1973, a clear means of authorisation of general insurance entities was in place. In addition to the Insurance Act, other relevant legislation necessary for the management of the business had been in place for some time. This included the Agents and Brokers Act (1984) and The Insurance Contracts Act (1984) as well as assorted state-based legislation (mainly related to personal accident business through workers’ compensation insurance and motor accidents). The statutory role of the actuary, although very much integral to the life insurance business, was a peripheral one for the general insurance business. The Insurance Act referred to the potential use of independent actuarial advice on general insurers’ reserves, but it was used very much as a “last resort” for the regulator of the time.

### **The Previous Regulator (The ISC)**

The Insurance and Superannuation (i.e. Pensions) Commission maintained a good rapport with the industry and the actuarial profession (through the Institute of Actuaries of Australia) in the 1990’s and discussed a number of areas of potential reform, including a risk-based approach to minimum solvency requirements and capital management. However, the letter of the legislation and regulation remained largely unchanged throughout the decade.

### **Wallis Report**

The Federal Government charged a committee, headed by Stanley Wallis, to report on regulation of the financial services industry in the mid-1990’s. The Wallis Committee’s report, which included very little specific input on the general insurance industry, made a number of recommendations including advocacy for the regulation of banking, credit unions, insurance, friendly societies and superannuation under a single authority.

### **Establishment of APRA**

Following adoption of the large majority of the Wallis recommendations, the Australian Prudential Regulation Authority was formed (1998) to supervise the financial services industry. Unfortunately, for a number of reasons, much of the intellectual capital and experience in general insurance was lost shortly afterwards. The main practical reason for this loss of resources was the location of APRA’s offices in Sydney (whereas the ISC had been headquartered in the Nation’s capital, Canberra). From an external perspective, there were also signs that some of the characteristics of the general insurance industry were not receiving the full attention they once had due to the new “Financial Services” focus.

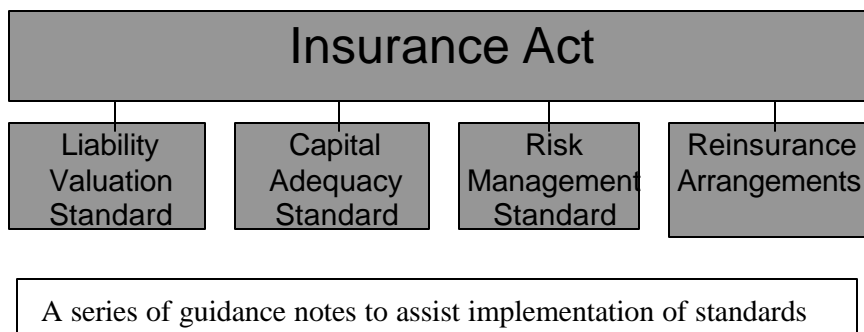
### **Legislative Reforms**

A series of financial sector reforms (notably including the General Insurance Reform Act 2001 – or “GIRA”) were enacted to support the revised regulatory process. The GIRA was aimed at updating the 1973 Insurance Act, and included the introduction of a risk-based minimum capital requirement,

stronger governance requirements (including the “Approved Actuary” role) and mandatory re-authorisation of all existing general insurers.

### The Developing Regulatory Role of The Actuary in Australia- July 2002 Reforms

A “three tier” structure of reform was put in place as illustrated below:



**Note:** Reform was founded upon revision of the underlying legislation (i.e. the Insurance Act as well as other relevant acts). These were supplemented by a range of “Prudential Standards” on capital adequacy, assets, liability valuation, risk management, reinsurance strategy and other relevant matters. Further to these Standards were provided a series of “Guidance Notes” which supplied advice on how insurers could apply the Standards.

The reforms emerged from a lengthy consultative process between various industry bodies and APRA. A clear outcome from the discussions was a need for a principle-based regulatory process rather than one that depended on “uneducated” prescription of rules. Each Australian-based general insurance company was required to apply to APRA for reauthorisation under the revised structure, prior to the APRA reforms becoming effective from 1 July 2002.

A complicating factor for the reform process was the failure of HIH Insurance in early 2001. HIH was the second largest general insurer in Australia and its insolvency had immense and immediate consequences for a large number of Australian businesses and individuals. Although the failure occurred at a mature stage in the existing reform process, it had implications for implementation of the reforms and for the potential for further reform.

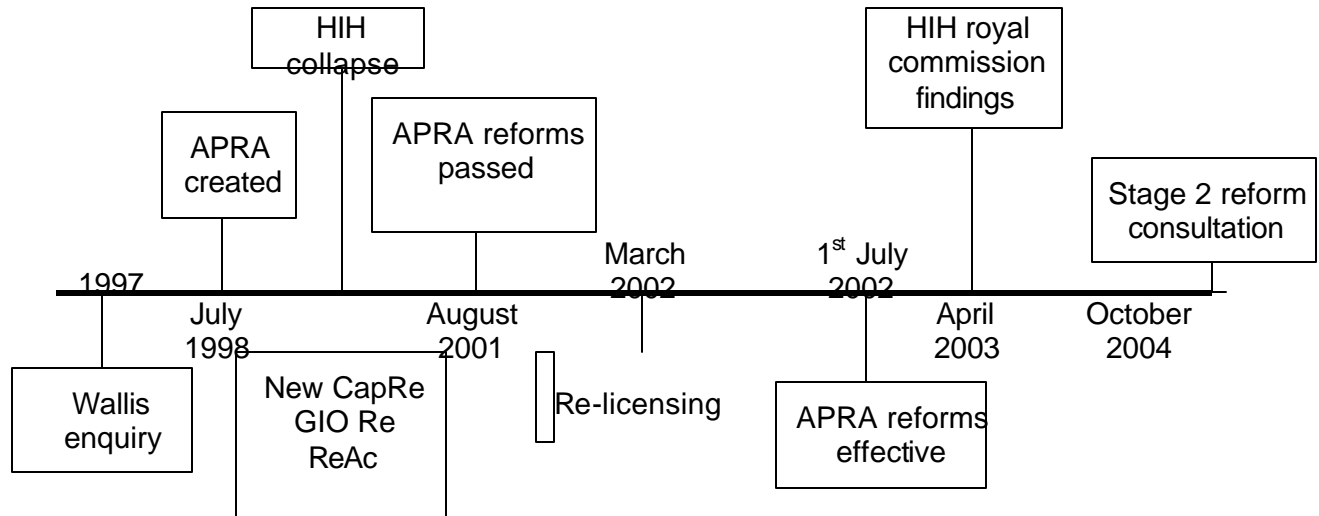
It is also relevant to note that the reform process was (and is) embedded in an environment that already was imposing additional levels of compliance from a range of perspectives, including financial accounting, tax and the insurance environment in general. For instance:

- Increased ‘Audit Intensity’ especially post HIH, Enron, Worldcom. – No longer is a “tick a box” approach to the audit considered sufficient and a new layer of consultancy between a company and their auditors is being formed
- A new tax system implemented including a goods and services tax (GST) – This tax was intended to increase the level of direct taxation in Australia, but because it was not part of a comprehensive reform of the tax system, it has added to complexity.
- Tort Reforms of Public Liability – These reforms enable a clearer view of coverage under liability insurance to be obtained
- Competition reviews from the “monopolies” commission (i.e. the ACCC) – The onus is now on the insurance industry to demonstrate the fairness of all insurance premiums charged to customers, leading to increased technical pricing requirements
- Increased focus on ‘risk management’ and awareness by Boards, auditors etc especially following the National Australia Bank currency issue – “Governance” is now the buzz-word
- Financial Services Reform Act (FSRA) and associated requirements – This has imposed a massive increase in the “form filling” needed by insurance intermediaries and other advisers.
- Introduction of a project by APRA to establish an industry National Claims and Policy Database – The database was prompted by the industry’s inability to report with sufficient clarity on the profit position of the liability insurance sector in particular.

- International Financial Reporting Standards (IFRS) – commencing 1 January 2005, and in particular the increased disclosure that are part of IFRS.

### Timeline

The following diagram helps put in perspective the reform process.



### 3 The Role of the Approved Actuary

Under the revised Insurance Act, an Approved Actuary (“AA”) – as approved by APRA - is required for each (re-) authorised general insurance entity (with some exceptions). The Actuary is required to give written advice to the Board of Directors of the insurance entity at least annually. The Actuary may either be internally employed by the insurer, or may be retained as a consultant. The advice needs to include determination of the valuation of central estimates for both outstanding claim liabilities and “premium” (i.e. unexpired risk) liabilities. It also needs to include a margin sufficient to secure the overall liabilities at a 75% level of sufficiency (on a discounted basis). There is no obligation on the Board to accept the Actuary’s advice. However, in such a case, the Board must fully disclose its reasons to APRA. The Approved Actuary also has a formal risk management role and is expected to play a leading part in the formulation and maintenance of the company’s risk management strategy.

#### A “Chicken and Egg” Issue?

There was significant doubt, both within the profession in Australia and externally, whether the skills and experience of actuaries would meet the demand from the reforms. (In the early 1990’s there was no more than a handful of full-time general insurance actuaries in the Australian market, and although that number had grown steadily during the decade, by definition very few had substantial experience in the industry.) APRA also required a minimum of 5 years’ “experience in the general insurance industry”. There were over 160 authorised insurers at the time the reforms took effect.

#### The Proof of the Pudding?

Today, there are over 150 actuaries working exclusively in the general insurance industry in Australia. There has been no perceived problem in meeting the demand for Approved Actuaries. Many actuaries have multiple Approved Actuary accreditations. In any case, most larger insurers consist of groups of subsidiary insurance entities, and it often makes sense for the same actuary to be AA for each of the group’s entities. From a situation before the reforms where many (shorter tailed?) lines of business didn’t receive an actuarial opinion on outstanding claims, the large majority of portfolios now benefit from such advice. Also,

premium liabilities can almost be described as a new industry for actuaries. There is much more consistency across the industry on risk margins (including diversification effects). Solvency is now an area that has been brought firmly within the actuarial “preserve”. Perhaps the most important change though is that the actuary is now very firmly considered an essential “cog” in the “financial management machinery” of a general insurer.

#### **The Jury is Still Out?**

Whilst the thirst for Approved Actuaries appears to have been assuaged, there are still some areas of “thin coverage” in terms of the gathering and delivery of actuarial techniques, particularly in the areas of risk margins and diversification effects. One could argue that – in these relatively “pressure-free” days, with the insurance cycle still not yet feeling the full effect of pressure on prices - the real test of actuarial advice has yet to be met.

The following sections, which draw on the experiences of actuaries within IAG, provide a retrospective view of the implementation of the AA role and attempt to portray the level of difficulty in applying the various needs of the role.

Based on the APRA’s need for actuarial opinion as set out in the Prudential Standards, the role has been split into four key areas:

*Central Estimates of Outstanding Claims* – and in particular the focus on the mean of the distribution of potential outcomes

*Risk Margins* – and the need to look more formally at a stochastic model of the business particularly as it relates to APRA’s requirements for the provision demonstrating “75% probability of sufficiency”.

*Premium Liabilities* – a new area of focus for many actuaries; and

*Solvency* – and the new risk-based Minimum Capital Requirement (MCR)

## **4. Outstanding Claims Reserves - Central Estimates**

The reforms implemented a requirement for an actuarial view of the “central estimate value” of the outstanding claims liabilities for all general insurance classes of business.

### **Summary**

The existing actuarial professional standards stood up well for the central estimate requirements of the Prudential Standard. This also meant that much of what APRA required was in place. Major challenges were in:

- Increased focus on improving estimation of gross liabilities and recoveries
- Risk Margins – Many existing methods did not fit with the stochastic approach implied by the used of “75% probability of sufficiency
- Actuaries’ coverage expanded to 100% of liabilities

**Note:** The IAAust Standard on outstanding claims reporting (PS 300) had already been in place for a number of years prior to the reform process. It received a “revamp” to enable it to fit more clearly into the Reform structure, but was essentially unchanged in scope and intent.

The following example table attempts to provide some insights on the differences between short tail and long tail claim provision requirements.

Class	Central Estimate (\$m)				Risk Margin at 75% %	Risk Margin Amt (\$m)	Net provision (\$m)
	Gross Provision	Reins & Recoveries	Net Undisc'ted	Net Disc'ted			
Long Tail	1,400	200	1,200	950	13%	119	1,069
Short Tail	500	150	350	340	4%	15	355
Total	1,900	350	1,550	1,290	10.4%	134	1,424

The main issues highlighted by this table are the increased focus on discount rates and risk margins for the longer tailed business. It is also interesting to note that prior to the APRA changes, actuarial opinions on short tailed classes were far from compulsory in the general insurance market. The major changes for the actuary in his/her treatment of the reserving process and how well they have been dealt with are discussed below:

- **Increased Focus on Recoveries** – APRA standards forced the Actuary to improve focus on gross and recoveries. Calculating recoveries explicitly was a challenge. New requirements put increased onus on reliability of the gross reserves and separate estimates of the outstanding recoveries. Previously, emphasis had been on having the “right” net provision with pursuit of the separate gross reserve and recovery figures suffering from some data limitations.

*A Hard or Easy Change?* – Quite difficult as gross data was often not available. Also, difficult for actuary to be across all reinsurance arrangements - for example all facultative placements.

*How Implemented?* – Started to write off some recoveries or take a harder line on information needs. Tended to rely on management summaries but highlighted the need for specific reliance wording in the report.

- **Discount Rate**- The standards prescribed a risk free rate resulting in little debate around what was the right discount rate. This also created some (much needed) consistency in the treatment of classes of business across the industry.
- **100% Coverage Extension** - Previously actuaries had been involved in many classes but not always 100% of all reserves in all companies. The new requirements required the Insurance Liability Report to cover and document 100% of reserves.
- **Definition of Central Estimate** – The introduction of the standards coincided with a change in the definition of central estimate from:
  - “...no deliberate or conscious bias to under or overestimation...”
  - to
  - “...the central estimate is intended to reflect the mean value in the range of possible values for the outcome (that is the mean of the distribution of probabilistic outcomes).”

This removed any remaining misunderstanding regarding the median or mode of the distribution of outstanding claims.

Also, the recently released draft accounting standard AASB1023 states:

*"Central Estimate - In estimating the outstanding claims liability a central estimate is adopted. If all possible values of all outstanding claims liabilities are expressed as a statistical distribution the central estimate is the mean of that distribution."*

While pedantic this did cause some reflection on whether low probability events (perhaps not even in past data) should be included in central estimate or were best considered with risk margins.

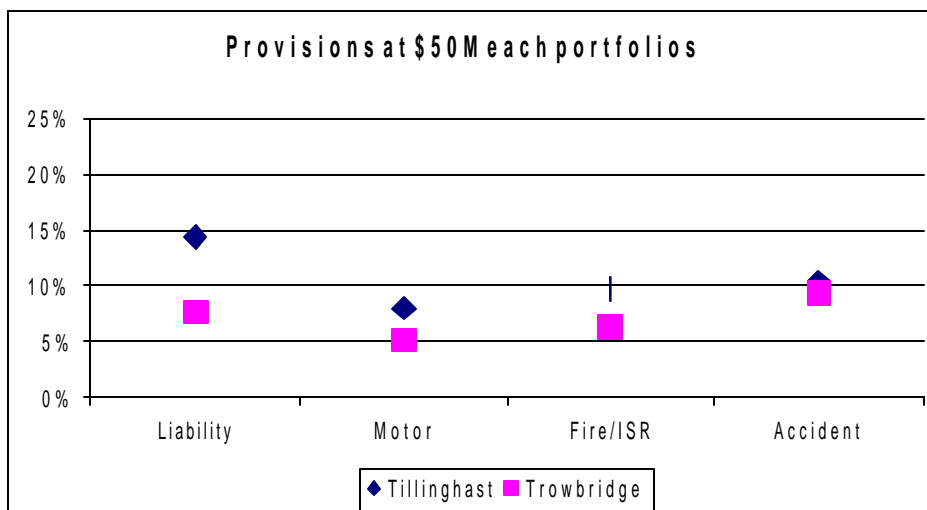
## 5 Risk Margins

The reforms introduced the need for risk margins to be included in the valuation of insurance liabilities for each class of business. The margin was defined as the amount needed to provide a 75% "level (or probability) of sufficiency" (or the central estimate plus one half of the coefficient of variation of the distribution of outcomes if greater)

### Summary

Risk margins are relevant for both outstanding claims and premium liabilities. The concept improved focus on uncertainty but the science behind it was ill developed. There are very few technical papers internationally on risk margin estimation and little in the way of industry benchmarking. The requirement massively increased discussion, focus and effort on this issue.

Two industry analyses became available that provided some benchmarking. Illustrative risk margins estimated based on these reports are as follows:



Note: The graph is not derived directly from either report.

This might result, say, in an overall portfolio average risk margin of 10%.

A general concern is that the risk of getting central estimate wrong (from incorrect models, say) may exceed the uncertainty around the central estimate.

Issues faced included:

- ***Should company accounts be at 75% probability of sufficiency or a different level, given companies may have had different policy to APRA?***

*Hard or Easy?* – Relatively easy since the issue actually helped focus on the appropriate risk appetite of the company

*How Implemented?* – Actuaries are required to provide an estimate of the reserves sufficient to cover 75% of the range of potential financial outcomes. In addition a company can reserve at a higher level of sufficiency if that is company policy and actuarial reports can include reserves at these levels.

- ***What does 75% probability of sufficiency mean, and how should it be estimated?***

*Hard or Easy?* - Very hard. The concept was sound but there was little science to rely on. This certainly created a challenge for us as actuaries to improve our knowledge and application of statistics.

- ***Diversification Benefit – Should we allow for one and, if so, how much?***

Other challenges in the quantification issue were how much ‘diversification benefit’ to allow. Intuitively, we believed that a portfolio would be less volatile than classes individually but quantifying this was a challenge. Some empirical analysis showed there appeared to be less than perfect correlation and hence some diversification benefit. However, this was difficult to estimate.

- ***Reporting - Gross and Net- the same % margin or the same \$ margin?***

Once a net risk margin is selected, how should we report a gross provision? Should the risk margin be a constant percentage of gross and net or should a constant dollar margin be selected? Also, noting that gross claims experience could exhibit different distributions particularly around size and hence variance, how technically correct should we get?

For example, with a net central estimate of 100 and a risk margin of 10% two alternatives are :

**Example of alternate reporting of gross and net with Risk Margin**

	<b>Gross</b>	<b>Recoveries</b>	<b>Net</b>
Central Estimate	120	20	100
<b><i>Const \$ RM for Gross and Net</i></b>			
Provision	130	20	110
<b><i>Constant % RM for Gross, Net and Recoveries</i></b>			
Provision	132	22	110



## 6. Premium Liabilities

The reforms required premium liabilities to be calculated as the present value of future claims and related costs on a fully prospective basis, both gross and net of expected reinsurance recoveries.

### Summary

A whole new approach had to be developed. The interaction of premium liabilities with the company's financial accounts is an issue along with working with the Finance Team to explain differences to the unearned premium approach. Methodology is still developing and improving, including data requirements. The next phase of the insurance cycle with its reducing prices will test the approach.

The actuary's valuation of premium liabilities could differ from the calculated unearned premium used in the accounts. The difference could be because of different assumptions or a difference in reserving policy (risk margin) as opposed to pricing policy (profit margin).

### Illustration – What does it mean if there is a \$50m difference?

Premium Liabilities	
Net Unearned Premium (in accounts, with profit margin)	\$600m
Premium Liability (by actuary, with risk margin)	\$650m
Difference	\$50m

This example demonstrates the more fundamental issues broached by this area:

- *The unearned premium provision used previously (and essentially applied by finance departments) is replaced by 'premium liabilities valuation'. The premium liabilities valuation is intended to estimate expected future claim costs and expenses.*

*Hard or Easy?* – Hard technically – but the degree of difficulty was moderated as Company accounts are currently still based on unearned premium per accounting standards. This has meant that volatility in measurement of premium liabilities has not been flowing directly to reported profits that would have caused much angst. The APRA financials and solvency calculations require premium liabilities. In effect this has enabled premium liability to be built up offline from profit reporting but part of solvency reporting.

*How Implemented?* - The premium liability provision was determined as follows:

- Projection of gross claim payments – for key classes this projection is based on frequency and severity assumptions; for other classes the projection is by loss ratio applied to unearned premium (initially most classes used loss ratio due to data issues).
- Less expected recoveries – estimates of future recoveries (reinsurance and other) are deducted from the gross liability.
- Add expenses – estimates of expenses (claims handling, policy maintenance and treaty renewal expenses) are added to the net liability.
- Apply Discounting – estimates are discounted based on “risk free” rates. Cash flow assumption are applied to claim payments and expenses
- Add Risk margin – Similar estimation issues to discussed for outstanding claims

- ***Developing approach and data***

Data for exposure-based models is not easy to obtain for all portfolios.

- ***Central Estimate***

This is a more difficult issue than for outstanding claims liabilities for some portfolios – especially where very low frequency claim outcomes are expected

- ***Reinsurance***

Estimating expected future recoveries and ensuring consistency with accounting for ‘deferred reinsurance expenses’ is tricky.

## **7. Solvency**

The revised solvency requirements need the calculation of the company’s capital and its relationship to the new risk-based MCR for the company

### **Summary**

The solvency calculations themselves were relatively easy. The prescribed framework was relatively easy to implement. It was the components such as premium liability and maximum event retentions that caused most difficulty. It has contributed to an increased focus and awareness of capital and issues related to appropriate returns on capital.

The concept of a simple solvency formula with minimum as percentage of premium or outstanding claims was replaced by a risk-based minimum capital requirement (MCR). The MCR has multiple components, for example the charge now consists of elements of outstanding claims, premium liabilities, assets and concentration charges (e.g. Maximum Event Retention and asset related charges)

- ***The issues mainly relate to implementation***

*Hard or Easy*– Moderate: Came together pretty well. The main difficulties tended to relate to reinsurance:

- Grading reinsurance recoveries by credit rating of reinsurer (to apply different asset charges)
- Estimating maximum event retention and particularly how to deal with classes such as professional risks. This was particularly difficult at subsidiary/licensed entity level where group catastrophe covers had to be allocated down.
- Group consolidated view vs. licensed entity and pulling it all together.

Generally, the calculations were pretty easy. It was preparation of the components eg premium liabilities that caused the most difficulty. Once they were in place the MCR calculation itself

was pretty straightforward. There is scope under the standards for insurers to use an ‘internal model’ rather than the prescribed (i.e. factor-based) method. To my knowledge, no insurer has so far applied for authorisation of such an alternative approach.

- *What does risk based mean?* –

The charges applied to various assets and liabilities differ based on perceived risk. For example, here are some of the different asset and liability charges that go into the MCR.

<b>Asset Charges</b>	
Cash/ Government Securities	0.5%
Unpaid premiums less than 6 months	4.0%
Listed Shares	8.0%
Reinsurance recoveries charge varies with grade/rating	2% -8%

<b>Insurance Risk Capital Charges</b>	<b>Outstanding Claims</b>	<b>Premium Liability</b>
House, Motor, Travel	9.0%	13.5%
Fire & ISR, Marine & Aviation, Consumer Credit, Mortgage, Other Acc, Other	11.0%	16.0%
CTP, Public/Product Liability, Professional Indemnity, Employer's Liability	15.0%	22.5%

## 8. Summary Observations – Burden or Value?

### Summary

Initially, meeting many requirements was a burden in sense of focusing on meeting regulator requirements. Increasingly focus has shifted to developing sound frameworks that efficiently meet compliance requirements.

### What has gone well...

- Responsibility and accountability increased for actuaries, auditors, Board.
- Documentation much better –this in turn increases the accountability

- Intensity of audit and scrutiny increased (likely also attributable to the environment)
- Focus on adequacy of reserve issues increased vis a vis focus on impact on profit and loss of reserving changes.
- Improved focus on gross and net reserves and different charges by reinsurer credit rating have increased awareness of counter party credit risk in the industry.

#### **Implementation challenges...**

- Reinsurance issues have been very difficult to deal with, largely related to traditional views on the (lack of) documentation for reinsurance contracts
- Accountability for actuaries has increased. This has yet to be fully tested given the current environment for the industry.
- Management of relationships and communication at senior levels in the company
- Meeting the test set by falling insurance prices as the cycle continues.

## **9. Next Steps – Stage Two of the Reform Process**

It is fair to say that the continuing reforms to the insurance regulatory system in Australia are driven less by observations from the implementation of the first stage of the reform process, and more by recommendations from the Royal Commission into the collapse of HIH.

#### **Summary of the Royal Commission’s Findings on HIH**

One key comment was that there was no single reason for the failure. Inadequate reserving (in turn leading to inadequate pricing) was certainly part of the story. However, the breakdown of internal governance processes, resulting in an apparent “blind faith” in the leadership (and the CEO in particular) was an important factor. As was the insatiable hunger for growth (within Australia but more especially international expansion). Other factors were also highlighted, including the lack of a robust premium control process and other financial management issues.

The Commissioner made a total of 61 recommendations for change in the legislation and regulation of general insurance in Australia, the majority of which appear to have been actioned, and which are gradually being implemented. The actuarial profession emerged with a significant additional responsibility to minimise the chance of a “future HIH”.

#### **The Developing Regulatory Role of The Actuary in Australia**

In November 2003 an APRA discussion paper acknowledged the influence of the HIH Royal Commission and introduced the potential for a raft of technical reforms and more detailed governance standards. Although the discussion process continues, and may even spring a “Stage 3” on top of a revision to Stage 2, actuaries are perhaps mostly focused on two main areas of change

- **Capital Management Plan (CMP)**
  - The intention of this proposal is to (at least) improve the documentation and monitoring of existing compliance with the risk-based Minimum Capital Requirement (MCR). The result would likely be an actuarial report on the appropriate capital adequacy level for an individual insurer and its ability to maintain an appropriate margin above the MCR over a period of at least 3 years into the future
- **Financial Condition Report (FCR)**
  - The proposed FCR is required to not only support “current balance sheet” issues such as technical liabilities, asset valuation, asset/liability “matching” (management?) and concentration risk, but also potentially some “future balance sheet” issues such as premium adequacy and risk management systems and controls. There is significant debate in the market about the Approved

Actuary's ability to carry out such a role. However, APRA appears adamant and an IA Aust Working Group has already drafted guidance on the production of FCRs

It is clear that the Approved Actuary's role will grow, perhaps considerably as a result of the continued reforms, adding considerably to the challenges already established by the first stage of the reforms.