



Institute of Actuaries of Australia

Insurance Accounting Developments

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1. Background

At the time this paper was finalised the Exposure Draft (ED) for the New Insurance Contracts Standard is expected to be published in May 2010. This paper reflects IASB deliberations and tentative decisions made up to the end of March 2010. There will be further discussion on a number of topics in April and the Boards actual decisions will only be locked in by the balloting on final content of the ED. Where significant decisions are resolved by bare majority, the ED is likely to ask for comments as well on the minority position. Also where the IASB and FASB adopt significantly different positions, both will be covered in the ED.

Significant developments prior to the Financial Services Forum will be mentioned in the actual presentation.

As this paper is being prepared for the 2010 Financial Services Forum, the focus is on insurance accounting developments from the perspective of a life Insurer.

1.1 Current IFRS Insurance Standard

The existing International Accounting Standard for Insurance Contracts (IFRS 4) issued in 2004, defined what is an "insurance contract" and a "discretionary participating features" (DPF) and permitted insurers to retain most of their existing approaches to accounting for insurance contracts (i.e. MoS for Australian Life Insurers), including those that did not qualify as insurance but were participating (i.e. had a DPF), subject to certain minimum requirements (such as a liability adequacy test) and enhanced disclosure.

Since then, under phase 2 of the Insurance Project, the IASB has been working on the development of full insurance standard which would remove the grandfathering of a wide variety of existing approaches used around the world and resolve the treatment of participating contracts, regardless of whether they are qualify as Insurance or Investment contracts.

1.2 May 2007 Discussion Paper

In May 2007, the IASB issued a Discussion Paper (DP) on Insurance Contracts which proposed a fair value measurement based on current exit value, essentially the amount the insurer would have to pay to transfer the rights and obligations arising from the insurance contract to another party on market. As there is only at best a limited market for the transfer of insurance contracts, not the least because of the regulatory and legal impediments to such a transfer, the insurance liability was to be built up from three building blocks:

- Unbiased probability weighted current estimates of all cash flows;
- Current market discount rates that adjust the cash flows for time value of money; and
- An explicit unbiased estimate of the margin that market participants require for bearing risk (risk margin) and for providing other services if any (a service margin?).

A number of issues of concern arose out of the DP;

- Level of diversification that could be assumed in setting risk margins, e.g. within actual portfolio only, between portfolios, or that of a well diversified market participant?
- Basis for experience and expense assumptions, that of the company holding the portfolio or that of a market participant who might for example manage claims more stringently and have different expense levels; and the great difficulty of assessing what the latter might be!
- Recognition of future premiums and subsequent claims was potentially limited to only where guaranteed insurability applies;
- Potential for profit at inception to occur, or if limited it was unclear how the resulting residual margin would be run off;
- The impact of current re-measurement of cash flows, discount rates and risk margins – this would all flow straight to current period profit, with no re-spreading into residual margin. This was seen as a significant issue for life insurance, where the capitalisation of changes in future assumptions into current period profit would result in both significant profit volatility and opportunity for profit management;

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- Potential tax disconnect with policyholder taxes being treated the same as shareholder and coming under IAS12 where discounting is not allowed and can not properly be included in the Insurance liability;
- Recognition of own credit risk in measurement of insurance liabilities;
- IAS 37 constructive obligation test for recognition of participating liability – it was unclear if this captured unvested benefits that could flow to future policyholders.

Very strong concerns were registered by a majority of respondents to the DP about the impracticalities of trying to measure something that in most cases can not happen and calibrating expenses and experience assumptions to that of a hypothetical market participant in a largely hypothetical market.

1.3 Subsequent Developments

This led the IASB to consider an approach based on current fulfillment value. This was subsequently seen as aligning very closely with IAS 37 *Constructive Obligations*. The IASB spent a lot of time in 2009 dealing with building blocks and certain key issues with the aim of issuing an Exposure Draft (ED) for Insurance Contracts in December 2009. With FASB formally joining the project in late 2009, the IASB has taken to having joint meetings with FASB to discuss the issues put to them by staff with separate votes by IASB and FASB. This has led to the publication date for the ED being set back to May 2010 as well as certain tentative decisions already made by the IASB, albeit by very small margins, being revisited and in some cases changed.

1.4 Field Testing

To support the development of the standard, the IASB staff carried out targeted field testing to assist the IASB in assessing whether the proposals for Insurance Contracts are capable of being applied consistently and rigorously in practice as well as to gauge the costs and benefits involved in moving to the proposed measurement approach.

The first round was conducted over September to December 2009, involving 16 insurers including two from Australia, AMP and QBE. This involved a series of questionnaires on specific topics, which were published on the IASB website, with the actual responses being confidential. A high level public summary was prepared for the February Board meeting.

Unsurprisingly, where local practice or requirements are similar to the proposals, the participants were more comfortable with the proposals. For example, some life insurers already use projected cash flows for policy liabilities, embedded values, economic capital or risk management and those involved in preparing for Solvency II in the EU were more familiar and comfortable with a risk margin.

The following summarises topics and key results from the field testing.

Acquisition Costs

At the time the questionnaire was issued, two options were being considered. One, reflecting a previous tentative decision of the IASB (but not FASB), would allow revenue at inception to be recognised to cover incremental acquisition costs (Incremental DAC). The second, reflecting the approach being adopted for the draft standard for accounting for revenue from customers, would allow no revenue to be recognised at inception (No DAC). Both would require all acquisition costs to be expensed when incurred. By the time the targeted field test results were summarised, both Boards had decided to adopt the No DAC approach. Subsequent further discussion of the topic by the boards in March 2010, has resulted in the IASB reverting to allowing Incremental DAC, but FASB remains opposed to any DAC.

Generally, current practice across the participants, allows acquisition costs (both incremental and non-incremental) to be deferred and run off over the life of the book to the extent that they are recoverable from future profits. The mechanics of how this is done, do of course, vary significantly.

The field test results illustrated that for life insurers the impact under the No DAC proposal will indeed be significant, resulting in as much as a 50% decrease in shareholder equity and could even be worse at both transition and ongoing, e.g. when an insurer is in a high growth cycle vs a mature steady state portfolio. In this situation, the loss of the amortisation charge for prior period DAC would be insufficient to offset the cost of writing-off the acquisition costs for the new business.

Participants did not see the No DAC approach as being helpful to decision making and made the following arguments:

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- Increased profit volatility, with large day one losses when acquisition costs are expensed followed by inflated profit;
- Reported profit would be dependant on whether the business is growing (high acquisition costs) or shrinking;
- Contracts are priced to recover acquisition costs and value is created on sale of new business;
- It fails to reflect the economics and business model of Insurers;
- It is inconsistent with European Embedded Value and Solvency II.

A number of practical concerns were raised with the Incremental DAC approach, including determining what is incremental as well as requiring significant historic analysis for long term business to split out the incremental component of the current DAC balance.

Discount Rates (Non – Participating Business Only)

The questionnaire focussed on the practical implications of moving to discounting all cash flows using a current rate (not locked in) that reflects the characteristics of the liability rather than on the backing assets. None of this is new to Australian Insurers. However, unsurprisingly, while some participants were in favour of discounting, a number of non-life insurers were strongly against discounting.

Many participants would use:

- A swap curve or government bond rate as a proxy for risk-free discount rate;
- A liquidity premium where appropriate (eg for annuities) and many noted they would not incur significant day one losses even if no adjustment was made;
- A number of different approaches are used for determining the liquidity premium, including:
 - Using high quality corporate bonds;
 - From analysis of covered bonds / matched pairs where the liquidity premium is observed from a pair of assets with equivalent cash flows and credit risk but different liquidity;
 - Deducting Credit Default Swap (CDS) spreads from the equivalent corporate bond; and
 - Structural method which uses option pricing techniques to calculate the theoretical spread for credit risk enabling a liquidity premium to be decomposed from actual market spreads.
- Some concerns were raised with how to set rates for long durations where markets are thin or non-existent, and in countries where markets are thinner or less developed.

Margins at Inception

The Board's tentative decision to not allow any profit to emerge at inception, requires residual margin (calibrated to premium and future cash flows excluding acquisition costs at day one) to be included in the model in addition to the risk margin required to reflect the insurers' view of uncertainty associated with those cash flows.

For most participants, the residual margin would be significant - even more so, if no DAC were allowed. Its calculation was not seen as problematic by most participants assuming it was broadly defined as premiums less discounted expected losses and expenses. However, the determination of risk margins was seen as much more of a challenge and even those participants familiar with risk margins thought that it would require significant changes to models and computational cost as well as presenting audit challenges. Approaches identified for risk margins include:

- Cost of capital approach (a preferred choice for those familiar with EEV and Solvency II);
- Probability of adequacy method (POA) – used in Australia for GI
- Wang Transform Method

Financial Statement Presentation

The questionnaire covered four different models:

- traditional non-life (earned premium) – supported by many non-life insurers and some composites;

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- traditional life; (written premium) – tentatively rejected by the Boards on the basis that it recognises revenue on the basis of written premium rather than performance under the contract.
- fee (deposit element unbundled) – had very little support amongst participants; and
- summarised margin – supported by many life and composite insurers.

While, many participants supported the idea of one model for all insurance, they questioned whether it would be workable.

Policyholder Behaviour

The questionnaire dealt with the issues related to the boundary between existing and new contracts and which cash flows relate to the existing contract. Participants generally thought a test based on the insurers unrestricted ability to re-underwrite and re-price (or changes to other terms or conditions of) an individual contract provides the best basis for delimitating between existing and new contracts.

2. Emerging IASB Approach

2.1 Summary of the Current Model

Based on what has been discussed and voted on to date (end March, session will cover all developments to early May), it now appears that, in summary, the IASB approach in the Insurance Contract ED will be to:

- retain the building block approach with a risk margin with as a current fulfilments measurement;
- require all acquisition costs to be expensed, no DAC (deferred acquisition cost) asset, but allow incremental acquisition costs to be offset in revenue or liability;
- prohibit day one profits and require a residual margin calibrated to exclude day one profits. The basis for release of the residual margin over the period of coverage is to be the passage of time or expected benefits and claims, if significantly different from the passage of time. It is coverage, not release from risk, based and the residual margin is locked and hence will not absorb the impact of changes in future estimates (unlike MoS);
- Exclude own credit risk from measurement of insurance liability;

The incremental DAC decision will undoubtedly be opposed by Industry and possibly even by regulators and will significantly hit profit for those with growing non-incremental acquisition costs due to strong business growth. FASB, however, remain of the view that there should be no offset in revenue or liability for any acquisition costs, not even incremental. Hence, it is likely that both the Incremental DAC and No DAC views will be presented in the ED.

The decision on locking residual margins reflects among other things a view by Board and staff, that the need for current measurement precludes re-measuring residual margins, as this potentially ameliorates the impact of current measurement on reported results for the period. While this may be correct for a one period contract, which is the example given to IASB by staff, it is a major problem for multi period contracts which is normally the case for life insurance. This means that the impact of changes in assumptions relating to future periods will be capitalised into current period profit, making risk profits very volatile, dominated by assumption changes, and put pressure on actuaries setting assumptions. There will also be the ability for profits to be changed by nudging assumptions into the future.

2.2 Building Blocks

The original three building blocks of the DP have now become four key blocks:

- (1) the unbiased, probability-weighted average of future cash flows expected to arise as the insurer fulfils the obligation;
- (2) incorporation of time value of money;
- (3) a risk adjustment for the effects of uncertainty about the amount and timing of future cash flows (risk margin); and
- (4) an amount that eliminates any gain at inception of the contract (residual margin).

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While the measurement perspective has changed to one of the insurer fulfilling its obligations (fulfilment value) from one of an on market transfer (current exit value) the key concept of an unbiased probability-weighted average of future cash flows remains. This means that any asymmetry, or low likelihood catastrophic events, needs to be appropriately captured in the measurement. While the former is also required in MoS, if material, the latter is probably assumed to be immaterial or covered by reinsurance, even though liabilities are required to be established gross of reinsurance. Auditors are likely to require more rigour in this area under the new standard.

The boards have tentatively decided that the cash flows should measure the combination of rights and obligations arising from the contracts and present them on a net basis. Essentially this means that future premiums (rights) and future claims (obligations) can continue to be measured together in establishing the insurance liability as is done under MoS, rather than establishing a separate asset for future premiums and a separate and higher insurance liability.

The incorporation of the time value of money requires discounting and an approach has been tentatively agreed upon by the IASB, FASB have yet to discuss it. It is very similar to MoS, in that it requires that the discount rate used should “conceptually adjust estimated future cash flows for the time value of money in a way that captures the characteristics of that liability rather than using a discount rate based on expected returns on actual assets backing those liabilities”. Note, this is in the context of non-participating insurance liabilities. The IASB are also of the view that “the standard should not give detailed guidance on how to determine the discount rate”.

This means that the current discussion within the Institute as exactly what is the appropriate reference point for risk free discount rates, swap curve or government bond rate and place for a liquidity premium will not be directly addressed by the IASB. Considerable research and work on these topics is being done in Europe in the context of Solvency II, for example CIEOPS (Committee of European Insurance and Occupational Pension Supervisors) published on the 1 March 2010, an excellent in depth taskforce report on the liquidity premium.

The measurement perspective is now one of an insurer fulfilling its obligations under the insurance contract and needs to consider all inputs relevant to the fulfilment of the insurance contract. This would include “but not be limited to industry data, the entities historic cost data, as well as market inputs relevant to the contract” and of course should include “current estimates of market financial variables that are as consistent as possible with observable market prices”.

The move from current exit value to fulfilment value, removes the DP issue of whether the basis for experience and expense assumptions, is that of the company holding the portfolio or that of a market participant who might for example manage claims more stringently and have different expense levels.

2.3 Policyholder Behaviour and Contract Boundaries

The boards are of the view that policyholder options, as well as options and guarantees related to existing coverage, should be included on a look through basis in the expected value of future cash flows (to the extent that those options are within the boundary of the existing contract). As a consequence of this, the Boards are also of the view that no deposit floor would apply, unlike fair value under IFRS 39 *Financial Instruments*. The Boards have recognised that it is inappropriate to put particular weight on the amount that would be contractually payable upon demand, when measuring an insurance liability based on probability weighted average of all possible cash flows, including those arising from the policyholder’s ability to exercise such options under the contract.

A number of approaches to determining contractual boundaries have been proposed:

- (1) Only those that are contractually enforceable. This would exclude future premiums (as there payment can not be compelled) and coverages arising from renewal of contract upon payment of the premium (unless onerous, in which case one would value the right to renew as an option). This approach appears to be favoured by some board members.
- (2) Those that are either contractually enforceable, or enable to the policyholder to renew with out further underwriting at a price that is contractually constrained; or are onerous (i.e. including the premium and resulting policyholder benefits will result in a higher liability). This was the approach proposed in the ED.

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- (3) That a current contract terminates when the insurer has an unrestricted right to re-underwrite and re-price that contract. This approach is currently favoured by the IASB, but staff have been asked to consider if more guidance is required. FASB have yet to consider this topic.
- (4) That the relevant cash flows are bounded by the earlier of:
- contractual termination (allowing for any unilateral extension option available to policyholders);
 - the insurer having a unilateral right to cancel or freely re-underwrite the policy;
 - both the insurer and policyholder being jointly involved in a bilateral decision to continue the policy.

This last definition was proposed to the Boards at their February 2010 meeting in a presentation by Rob Esson on behalf of the International Association of Insurance Supervisors (IAIS).

2.4 Risk Margins

At their January and February 2010 meetings, the boards decided tentatively that the risk adjustment should measure the insurer's view of the uncertainty associated with the future cash flows and clarified that:

- the risk adjustment should be the amount the insurer requires for bearing the uncertainty that arises from having to fulfil the net obligation arising from an insurance contract, with staff being asked to develop guidance on how to determine the risk adjustment.
- the risk adjustment should be updated (remeasured) each reporting period.

The topic was brought back to the March joint board meetings and staff recommended that:

- no particular method be required for determining a risk adjustment as the range of contracts is wide and no one method is superior across all insurance contracts and this leaves room for new and improved techniques to be developed.
- the disclosures required should be similar to that required for fair value measurements using unobservable (level 3) inputs.
- the risk adjustment should remain the amount the insurer requires for bearing the uncertainty that arises from having to fulfil the net obligation arising from an insurance contract.

At that meeting, no decisions were made on this, although it appears that while the IASB remains supportive of the requirement for a separate risk margin, the FASB are reverting back to their initial view that single composite margin (calibrated to exclude profit at day one) is more appropriate.

Current Use

Risk margins, in some form, are currently included in the measurement of insurance liabilities:

- for accounts, in:
 - Australia for GI outstanding claims (and in liability adequacy tests for Unearned Premium Reserves {is latter correct?} based on probability of adequacy (which APRA mandates should not be less than 75%);
 - Canada for life insurance where the Canadian Asset Liability Method (CALM) is used which incorporates margins for adverse deviations (risk adjustments) for each assumption used in measuring the insurance liability;
 - US for long duration insurance, where provisions for adverse deviations (PAD) are included to allow for possible adverse deviations in assumptions for investment returns, claims, expenses and lapses.
- for solvency and regulatory reporting, where most regulators require the use of either implicit or explicit risk adjustments. The degree of sophistication and rigour varies greatly from simple implicit margins (eg net premiums) through explicit fixed margins (or ranges) added to assumptions (eg Aust Life Insurance solvency) to explicit principles based approaches (eg Swiss Solvency Test, Aust GI solvency and the developing European Solvency II).

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- for economic value (European Embedded Value uses a cost of capital approach to determine the risk adjustment required for risks that can not be hedged through financial markets) and risk based capital, where capital is allocated based on risk.

Methodologies

There are a range of methodologies in use or development for calculating the risk adjustments:

- **Quantile** methods, these use statistical approaches to derive the risk adjustment; and include the use of:
 - *Confidence intervals or probability of adequacy (POA)* where the adjustment for risk is determined in terms of the extra amount that must be added to the expected outcome so that the probability that the actual outcome does not exceed the liability inclusive of the risk adjustment is at the desired level of confidence. These are used in Australia for GI liabilities and regulatory reporting, and in Canada for determining risk adjustments under CALM for each assumption.
 - *Conditional Tail Expectation (CTE)* where the risk adjustment is determined in terms of the expected claim amount in the tail for the desired confidence level less the mean. It captures the impact of skewness and extreme losses occurring in the tail on risk, but requires the distribution to be known.
 - *Higher Moments* where skewness (third moment) and kurtosis (fourth moment) are used in addition to the mean (first moment) and standard deviation (second moment) in determining the risk adjustment.
- **Cost of Capital** method, where the risk adjustment is related to the cost of the capital that is needed to support the risk arising from the obligation. Under fulfilment value, the amount of capital required would be that required by the regulators and policyholders to give them comfort as to the insurer's ability to meet its obligations. The cost of capital is the overall return required on capital and is the required return in excess of the risk free rate (e.g. under CAPM, it is the equity risk premium times the insurer's beta). The risk adjustment is then the present value at the risk free rate of the cost of capital applied to the capital required to be held over the life of the contract. This method has the support of the European CRO Forum and utilised in EEV for non-market risks.
- **Other** methods, include:
 - *Explicit Stress Test*, where explicit margins are statistically determined for each assumption, the liability stress tested for impact of the required explicit margin for each assumption, and the risk margin is the sum of the explicit margin impacts after allowing for diversification (correlation between the risks in each assumption).
 - *Calibration to Markets*, this involves using the pricing for similar risks in capital and insurance markets to determine the adjustment for risk. As deep and liquid markets with same or equivalent risks are limited, direct application is similarly limited, although structural decomposition of market prices can assist.

Risk Margin Characteristics

Regardless of the methodology used, risk margins should have the following characteristics:

- The less that is known about the expected outcome and its trend, the higher the risk margin;
- Lower frequency, high severity risks lead to higher risk margins than high frequency, low severity risks;
- For similar risks, longer term contracts have higher risk margins than short term contracts;
- Risks with a wider distribution have higher risk margins than those with a narrow distribution;
- To the extent that emerging experience reduces uncertainty, risk margins reduce.

Diversification and Unit of Account

The level of diversification that could be allowed for in setting risk margins was a significant issue for the DP. With fulfilment value, it is clearly linked to the portfolio(s) that the insurer holds. It is less clear, whether diversification between portfolios held by the insurer will be able to be recognised in setting the risk margin

for a portfolio. In accounting terms, the issue is related to the unit of account. If it is the individual contract, then its measurement should not be affected by the existence or non-existence of other contracts.

For insurance, which is about the pooling of risks, the portfolio is a natural unit of account, which was accepted in the DP, but not beyond this level. This gave rise to the proposal from Insurers, that for setting risk margins, the allowance for diversification should be set commensurate with that of a purchaser having a large and well diversified portfolio. This had the advantage of allowing for diversification at a level beyond that of the individual portfolio, while retaining a single view of the appropriate risk margin.

This and the related issue of the unit of account has yet to be discussed by the Boards, and it is not clear if diversification can be based on the insurers overall position, or separately for each particular portfolio.

A related issue is reinsurance, which enables insurers to reduce risk, especially tail risk. However, as IFRS does not allow netting, insurance liabilities have to be established gross of reinsurance and the reduction in risk it brings to the net portfolio. This has implications for the determination of the risk margins in the reinsured liability if an appropriate net position is to be obtained.

2.5 DAC, Residual Margin and Day One Profits

Deferral of Acquisition Costs

All acquisition costs are required to be expensed as incurred and the question arises as to what, if any, offset will be allowed. In their discussions prior to FASB joining the project, the IASB had tentatively agreed, by a narrow vote, that incremental acquisition costs should effectively be allowed to be offset. It was recognised that this would exclude direct acquisition costs that are not incremental to the individual contract, such as costs of underwriting staff. However, it was felt more important to align the approach with that allowed for Financial Instruments under IAS 39 and the existing Revenue Standard IAS 18. The minority on the IASB supported no DAC or offset at all, in order to be consistent with the approach being developed under the Project lead by FASB to replace the Revenue Standard.

Under the Revenue Project approach:

- All acquisition costs are expensed as incurred;
- Revenue is recognised only as performance obligations are met; and
- Revenue can only be recognised at inception if there is a performance obligation that is satisfied at day one.

In applying this to Insurance, the boards are clearly of the view that no revenue can arise for an insurance contract at inception under this model. This would appear to reflect a view that for insurance, the key performance obligation is provision of insurance cover over the life of the contract, which is satisfied continuously over the life of the contract. They don't see provision of advice, underwriting or setting up the contracts as performance obligations from the customer perspective and hence see consistency with Revenue project as simply requiring for Insurance that no revenue be recognised at day one as an offset to acquisition costs.

When the topic was rediscussed jointly with FASB in Oct 2009, the boards both agreed to align with the Revenue approach and that effectively no DAC would be allowed. Following concern about the decision, being expressed to the Boards, by a wide range of interested parties including the IAIS, the issue was revisited at the Boards' March 2010 meetings.

This resulted in the IASB reverting to its earlier position that incremental acquisition costs should effectively be able to be deferred when calibrating the residual margin at day one either by:

- including them in contract cash flows at day one (similar to MoS, except that non-incremental acquisition costs are excluded); or
- deducting them from the premium to which the residual margin is calibrated.

FASB stuck with the original decision that there should be no DAC. Staff have been asked to consider if the recoverability of some acquisition costs from either policyholders or third parties, might provide the basis for the Boards to form a common view.

Residual Margin and Day One Profit

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The boards are of the view that no profit should emerge at day one and that this should be done by calibrating a residual margin to premium at day one. It can not be negative, so that losses have to be recognised at day one if premiums are insufficient to cover benefits, expenses and risk margins.

The residual margin is separate from the risk margin and will be released over the period of coverage. This is to be the passage of time or expected benefits and claims, if significantly different from the passage of time. As the risk margin provides for risk and is released as risk reduces, the residual margin does not need to be held back to cover risk and can be released as insurance coverage is provided. It is therefore released based on exposure arising from the provision of insurance coverage, and this is why expected benefits and claims are to be used, if the passage of time itself, is not an appropriate indication of the exposure.

The residual margin once determined at day one is locked and hence, unlike MoS, it will not be remeasured at the end of each period and will not absorb the impact of changes in future estimates. This means that changes in future estimates will be capitalised and reported as part of current period profit. It will make life insurance profit reporting far more volatile than it currently is and more about changes in future expectations than actual performance in the current period.

Also the locking of the residual margin would appear to require the tranching of the portfolio by year of issue, as residual margins would be very likely to vary significantly by year of issue. It is also not clear, if it is locked in present value terms or the \$ amount at inception, as the unwind of the discount in the examples presented to the Boards in March caused confusion and staff have been asked to come back to Boards on issue of whether the risk margin should unwind with interest at the discount rate.

We understand that one of the key reasons why the Boards took the decision not to allow current re-measurement of residual margins was that they felt it was important that current experience be highlighted as much as possible by being included in profit.

IAAust March Submission

The issue was raised with the Boards at their February meetings by the IAIS and the IASC drafted a submission to the IASB on the topic which was sent to the IASB (with a copy to AASB) at the end of March. The submission pointed out that:

- life insurance contracts typically have terms and cash flows covering decades;
- the present values of the future components of the life insurance liability (future premium, claim, expense, risk margin and residual margin) will normally be large relative to premium, claims, expenses, risk margins and residual margins reported and/or released in the current profit reporting period;
- this means that the reported profit for the current period can be dominated by changes in estimates of any of these items and that Australian experience suggests that this will often be the case.
- this would mean that the emergence of profit would be influenced more by the assumptions themselves, rather than more objectively following the actual experience.
- this would enhance the ability of preparers to substantially influence current period results by changing future period assumptions (and it is not only that uncertainty increases into the future, but also the range for reasonable assumptions).
- this would mean pressure on actuaries to be conservative in setting assumptions so that they can be unwound in future if necessary to offset adverse events.
- it means that a strengthening of future assumptions could create a loss now, simply so that a prescribed level of residual profit could be maintained in the future.
- it was not clear what makes the level of residual profit at inception so crucial, when there are a range of legitimate future assumptions at day one?; and
- it makes the residual margin act as an extra margin above the risk margin once set at inception.

We proposed that the residual margins should be re-measured at the end of the reporting when the current estimates, and/or current liability valuation assumptions, change (excluding changes in market economic assumptions);

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- Provided the residual margin remains positive (i.e. the insurance portfolio is expected to generate future profits beyond the level of the risk margin allowed in the liability assessment), then the reported profit for the current period should principally reflect the actual experience that arose over the period (i.e. reflect how the actual experience different from that expected from opening estimates).
- Nonetheless, the reported profit should also include any change in the liability estimate in respect of claims arising prior to and during the current period;
- Where the reassessed residual margin reduces to zero, then the relevant portfolio has effectively breached the boundary to become “onerous”, and it is appropriate that changes in the future liability estimates and impact of assumption changes be brought fully to account in the current period;
- Profit should be explained in terms of expected profit and impact of experience being different from expected, as this gives users a clear view of current experience against management’s original expectations (and helps place a disclosure discipline on the assumption setting process);
- An analysis of the impact of changes in future assumptions on the value of future residual margins should be separately disclosed, as should the impact of changes to the liability from change in assumptions when the residual margin becomes zero and the value of the change in future assumptions fully impacts current period profit.

An excellent worked example illustrating the issue was prepared by Greg Martin and attached to the IAAust proposal. It is also attached to this paper as Appendix C.

2.6 Participating Business

The IASB has expressed an initial preference for including all cash flows that arise from the participating contract in the expected present value for the contract, whereas FASB’s initial preference is to split it into guaranteed and participating components. The participating component is then further split between equity and liability, with the latter based on legal or constructive obligation. This is scheduled for further discussion at future meetings.

However, given the framework imposed on Australian participating business by the Australian Life Act, it should be possible to classify the entire participating component due to policyholders under the FASB approach as a liability and not equity. It is however, less clear for overseas participating business.

The Boards’ decisions with respect to insurance contracts can generally be expected to flow directly to the measurement of participating liabilities, e.g.:

- Use of unbiased probability weighted present values;
- Inclusion of a margin for risks;
- A locked residual margin calibrated to exclude profit at day one;
- Exclusion of non-incremental acquisition costs (or all acquisition costs full should the FASB approach prevail) in determining residual margins;
- Market consistent valuation of financial and embedded options;

2.7 Other

Unbundling

The IASB initially decided that an insurer should unbundle a component of an insurance contract if it is not interdependent with other components of the contract. The Boards have subsequently asked staff to clarify the notion of interdependence and to consider as well the notion of whether insurance risk is significant for multi-period contracts. It is not clear if unbundling will be allowed, where it is not mandated.

It is not clear at this stage, if the current Australian practise of unbundling Investment Linked Contracts from any insurance component will always continue to be possible. If not the contract would have to be accounted for as a whole as an Insurance Contract.

Unearned Premium

Insurance Accounting Developments

The IASB has tentatively decided that unearned premium is appropriate for pre-claims liabilities for short term insurance contracts and would be the required approach for such contracts. This prevents one consistent approach being taken to insurance accounting where an insurer has a mix of short and long term contracts. However, as life insurance contracts by their nature are long term contracts, this should not affect life insurers.

Unit Linked Assets

The boards have tentatively decided that the assets and liabilities of unit linked funds should be reported as the insurers assets and liabilities. This removes one suggested solution to the accounting mis-match issues that can arise from the inability to consistently value the assets and liabilities under IFRS.

3. Profit Patterns vs MoS

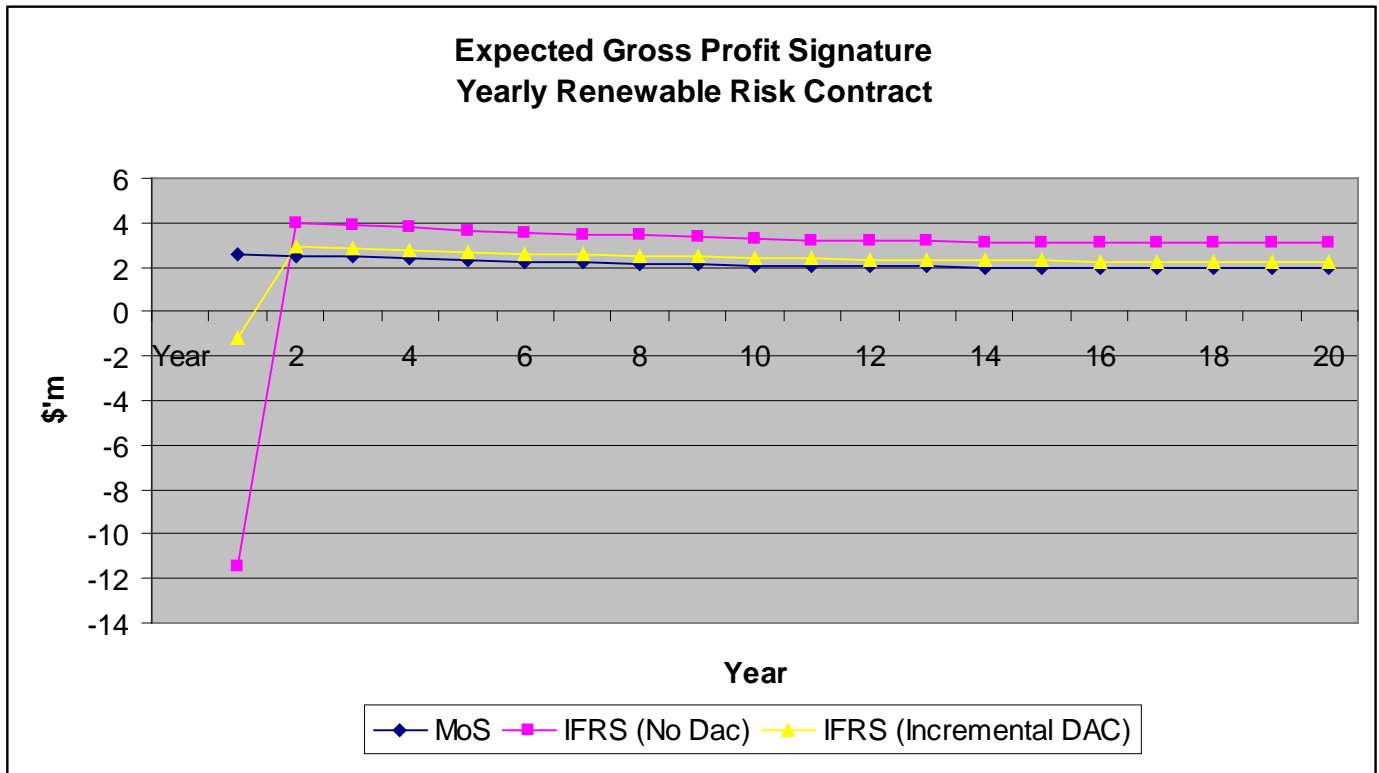
The following compares the resulting profit signature under MoS with proposed IFRS (assuming No DAC) and proposed IFRS (assuming incremental DAC). It also illustrates the impact of change in assumptions at end of year 5 on profit signatures for a range of assumptions.

3.1 Risk Business

The following shows the resulting profit signatures for 10,000 yearly renewable lump sum risk policies, all assumed to be written at start of year 1. Key assumptions¹ are:

Risk Free Discount Rate	6% p.a.	Claim Rate	50% of Premium	Risk Margin	15% of Expected Claims
Acquisition – Non Incremental	\$400 per policy	Incremental	\$50 per policy	Maintenance	\$150 per policy
Initial Commission	85% of Premium	Trail Commission	10% of Premium	Lapse Rate	7.5% p.a.

¹. Full details of the model are set out in Appendix A.

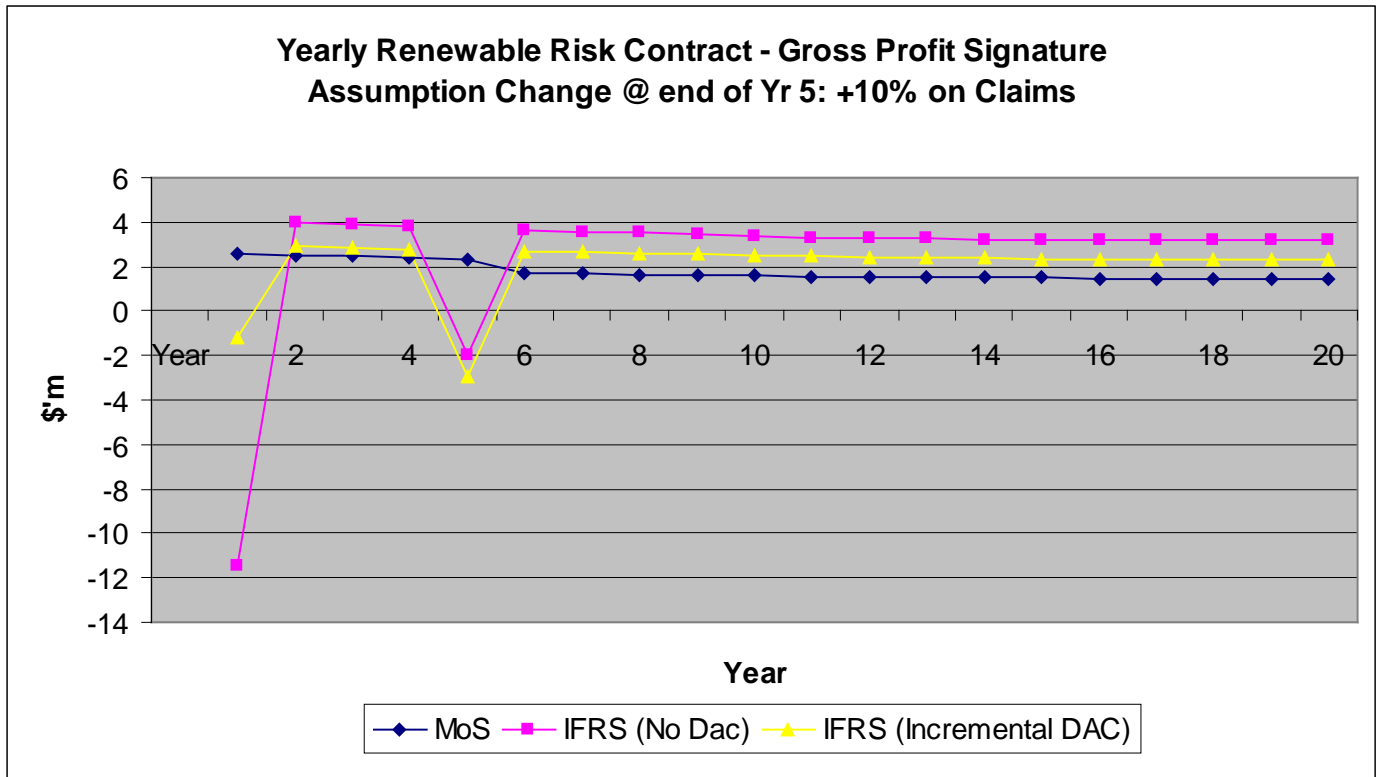


As expected, under MoS there is no initial loss and smooth emergence of profit over the life of the contracts, whereas under the IFRS proposals there is a loss in year one equal to the acquisition costs unable to be deferred at day one offset in part by the emergence of the expected profit over the year.

Insurance Accounting Developments

Again IFRS profit is smooth from year two onwards, but higher than MoS. The higher profit under IFRS reflects the lower charge for DAC recovery under Incremental DAC or no charge at all under No DAC.

There is a significant difference in how the IFRS proposals react to a change in assumptions at the end of year five as the following illustrates:



Here, the best estimate assumption for claims is assumed to increase by 10% (from 50% of premium to 55% of premium) at the end of year 5 and experience from year 6 onwards is assumed to change accordingly.

Under MoS, as the business is profitable, this has no impact on year five profit, the profit margin is re-equated at the end of year five and the profit margin (and expected profit) from year 6 onwards reduces accordingly. However, under proposed IFRS, the \$5.7m impact of the change in assumptions at the end of year five on best estimate liability and risk margin, is the same for both the No DAC and Incremental DAC versions and hits year five profit in full. Thereafter the IFRS profit continues as originally expected from year 6 onwards. In this simple model, it actually increases slightly by \$0.08m p.a. as the risk margin set at 15% of expected claims, increases with the increase in expected claims. Of itself, a reassessment of the expected value of claims should not lead to a mechanical increase in risk margins,. However, it can also be expected to require a reassessment of risk as well.

The impact on the profit signature of any particular change to future assumptions from the end of year five, is similar to the above, though the quantum of the impact in year five varies depending on the sensitivity of the liability to the assumption change. The table further below, shows for years 4, 5, 6, 10, 15 & 20, the original expected profit and the impact on profit arising from each assumption change.

Interestingly, there is a significant adverse impact on profit from increasing the risk free discount rate, even for the No DAC version IFRS. This is because the residual margin at the end of year five is locked in at its expected dollar value and does not change with the change in discount rate. Hence there is no offset to the impact of the change in discount rate on the best estimate liability and risk margin.

Insurance Accounting Developments

Gross Profit Signatures - Base Profit and Change Impacts (\$'m)							
Year		4	5	6	10	15	20
Base							
MoS		2.39	2.32	2.25	2.09	1.97	1.96
IFRS (No Dac)		3.77	3.66	3.56	3.30	3.12	3.09
IFRS (Incremental DAC)		2.76	2.68	2.61	2.42	2.29	2.26
+10% on Claims							
MoS		0.00	0.00	-0.55	-0.51	-0.48	-0.48
IFRS (No Dac)		0.00	-5.66	0.08	0.08	0.07	0.07
IFRS (Incremental DAC)		0.00	-5.66	0.08	0.08	0.07	0.07
+100bp Discount Rate							
MoS		0.00	0.00	-0.05	-0.05	-0.05	-0.05
IFRS (No Dac)		0.00	-1.27	0.18	0.17	0.16	0.16
IFRS (Incremental DAC)		0.00	-1.27	0.12	0.11	0.11	0.11
+10% on Lapses							
MoS		0.00	0.00	-0.06	-0.12	-0.19	-0.26
IFRS (No Dac)		0.00	-1.11	0.13	0.01	-0.12	-0.23
IFRS (Incremental DAC)		0.00	-1.11	0.08	0.00	-0.09	-0.18
+10% on Trail Commission							
MoS		0.00	0.00	-0.11	-0.10	-0.10	-0.10
IFRS (No Dac)		0.00	-0.98	0.00	0.00	0.00	0.00
IFRS (Incremental DAC)		0.00	-0.98	0.00	0.00	0.00	0.00
+10% on per policy maintenance expenses							
MoS		0.00	0.00	-0.09	-0.09	-0.08	-0.08
IFRS (No Dac)		0.00	-0.84	0.00	0.00	0.00	0.00
IFRS (Incremental DAC)		0.00	-0.84	0.00	0.00	0.00	0.00
+10% on risk margin							
MoS		0.00	0.00	0.00	0.00	0.00	0.00
IFRS (No Dac)		0.00	-0.74	0.08	0.08	0.07	0.07
IFRS (Incremental DAC)		0.00	-0.74	0.08	0.08	0.07	0.07

3.2 Participating Business

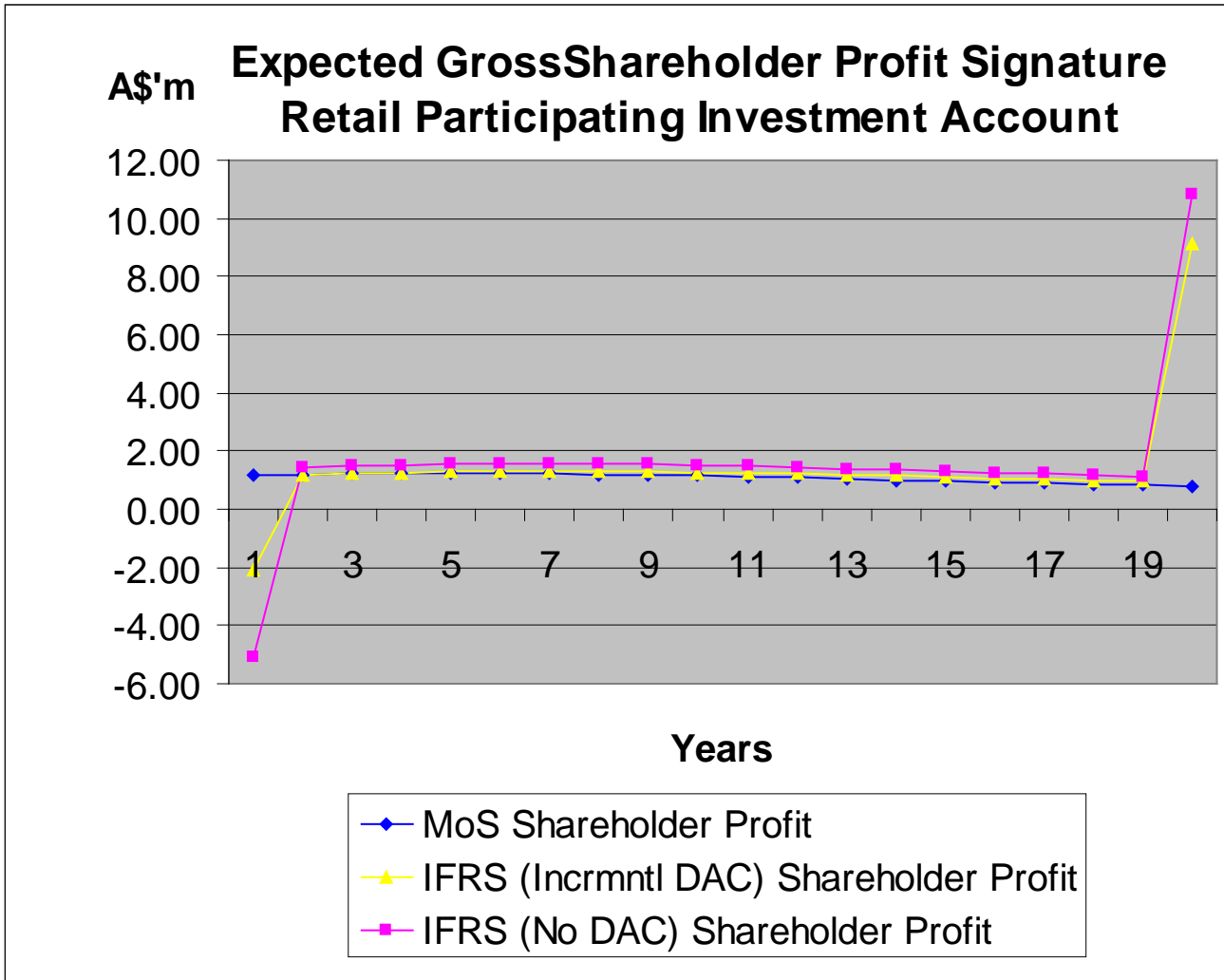
The following shows the resulting expected gross profit signatures for 10,000 retail participating investment account policies, all assumed to be written at start of year 1 and maturing at the end of year twenty. Again for simplicity, tax is assumed to be zero. Key assumptions¹ are:

Discount Rate (Government Bond Rate + Asset Risk Premium)	7% p.a. (= 5% + 2%)	Single Premium	\$10,000 per policy	Risk Margin	None ²
Acquisition – Non Incremental	\$300 per policy	Regular Premium	\$1,000 p.a.	Maintenance	\$100 per policy
Initial Fee	3% of AUM	Ongoing Fee	0.75% of AUM	Investment Expense	0.35% of AUM
Initial Commission	3% of Single Premium	Trail Commission	0.5% of AUM	Surrender Rate	10% p.a.

1. Fuller details of the model used are set out in Appendix B.

2. No risk margin is required as no insurance cover is provided under the policy, however a market consistent charge for guarantees needs to be included in the liability.

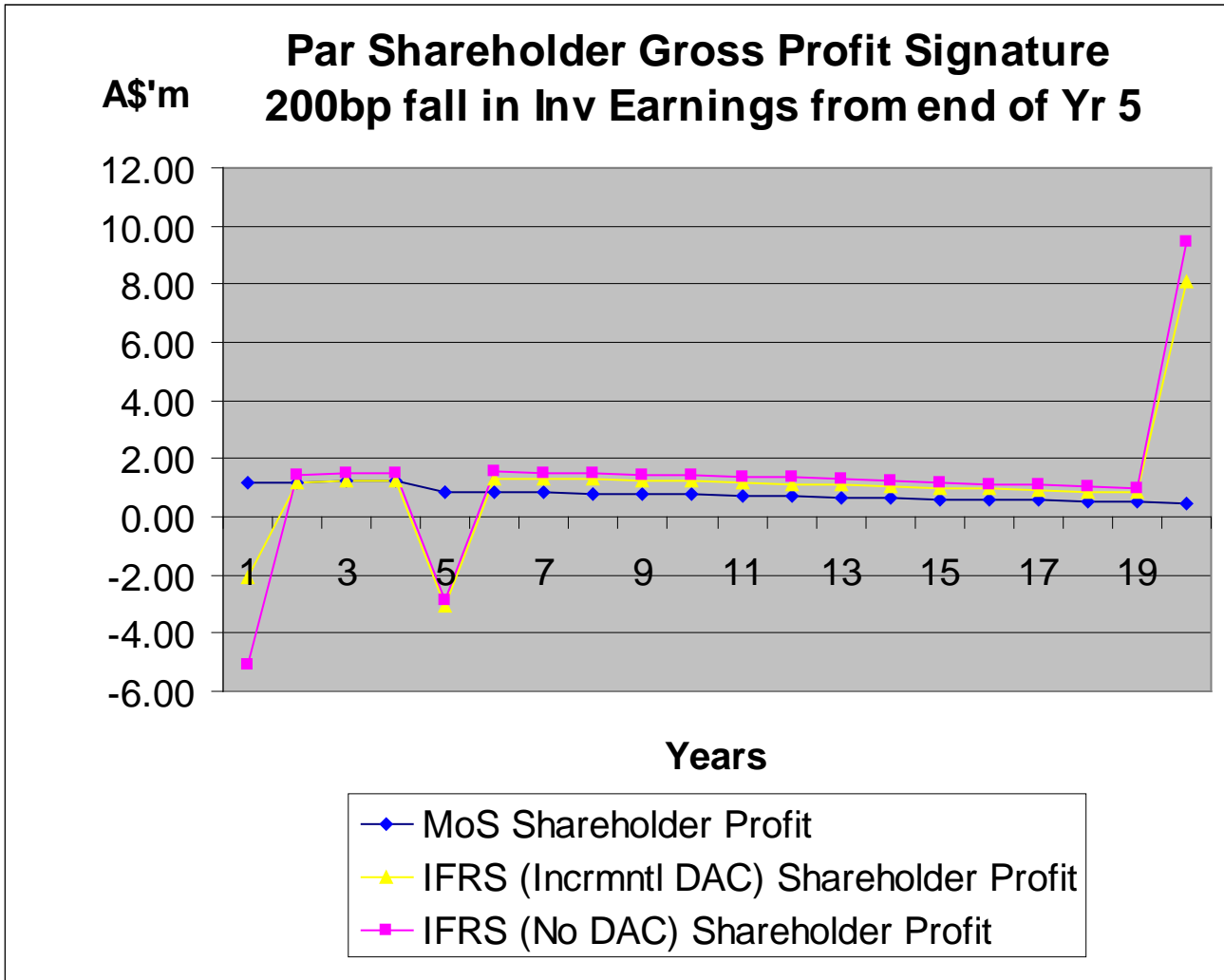
The picture for participating business under the IFRS proposals is somewhat similar to that for risk business, in that a loss emerges in year one equal to the full amount (not just the shareholders 20%) of the acquisition expenses unable to be deferred at day one partly offset by the emergence of expected profit over the year. However, it is very different at maturity, reflection of the residual margin being released based on expected claims, a significant part of which is in the form of maturity payments. This is different from MoS, which uses supportable bonuses.



As result, the profit emergence between years two and nineteen is also more dissimilar to MoS (and Risk business case) than the graph above suggests. For example, only for the No DAC approach, is the IFRS expected profit above that for MoS from year two onwards. Under the Incremental DAC approach, the increase in residual margin from the exclusion of non-incremental acquisition costs, is insufficient to offset the back end loading in the residual margin release due to relative size of maturity payments.

The following graph shows how the gross profit signature for participating business reacts to a change in the investment assumptions at the end of year five. In this case a 200bp fall in the assumed future earning rate on backing assets.

Participating business reacts in a similar way to risk business, with the impact of the change in assumptions, this case investment assumptions, being capitalised, with the shareholder's share impacting profit in the year in which the assumption change occurs. As well as sharing 25% of the capitalised impact on supportable crediting rates, the shareholder also wears fully in the year, the capitalised cost of changes in the market cost for the guarantees given to the policyholders. Thereafter, as for risk business, expected profit post year five resumes at levels originally expected.



4. Process

4.1 IASB Timetable

The publication of the ED in June 2010 remains very challenging, with a significant number of topics remaining to be covered in April and May, before the ED can be finalised. The latest timetable (as at mid April 2010) is set out below.

May 2010	<ul style="list-style-type: none"> • Discussion of Remaining items • Pre Balloting
June 2010	<ul style="list-style-type: none"> • Sweep • Ballot • Exposure Draft Published
October 2010	<ul style="list-style-type: none"> • Comment Letters Due
November 2010	<ul style="list-style-type: none"> • Summary of Comments prepared for Boards
November 2010 to March 2011	<ul style="list-style-type: none"> • Board Discussions of Issues from Comment Letters
April 2011	<ul style="list-style-type: none"> • Pre-Balloting
May 2011	<ul style="list-style-type: none"> • Sweep
June 2011	<ul style="list-style-type: none"> • Balloting of Final Standard

One of the challenges that the IASB has is that a number of existing Board members' terms expire at the end of June 2011, which means that if the Final Standard is not voted on by then, then there will be new members to be educated and the changed composition of the Board may lead to changes in approach to the standard.

4.2 IAAust Submission

The IASC will lead the development of the IAAust submission on the ED with input from the affected practise areas.

4.3 Risk Margins Taskforce

A cross practice taskforce, with members from Life, General and Health Insurance, convened by Anton Kapel has been established, with links to each of the practise committees as well as the IASC. Its brief is to provide advice on the implementation of risk margins under IFRS. Clearly there is a great deal of experience that the taskforce can draw on from our General Insurance experience, but even here it is likely the IFRS will require some changes to existing practise.

References and Recommended Reading Material

IASB Website www.iasb.org

Project Home Page

<http://www.iasb.org/Current+Projects/IASB+Projects/Insurance+Contracts/Insurance+Contracts.htm>

IASB Insurance Project

Overview of Topics Discussed by the Boards

- IASB/FASB Joint Meetings 15 & 22 March – Insurance Contracts – Paper 6 - Staff Cover Note and Appendix
- Insurance Accounting Updates issued by the Major Accounting Firms

Risk Margins

- IASB/FASB Joint Meetings 15 & 22 March Staff Paper – Paper 6D - Risk Margins
- IAA Paper "Measurement of Liabilities for Insurance Contracts: Current Estimates and Risk Margins" 15 April 2009
- PWC Paper for Society of Actuaries "Analysis of Methods for determining margins for Uncertainty under a Principle-based Framework for Life Insurance and Annuity Products" 31 March 2009

Insurance Contracts Discussion Paper

- IASB May 2007 Discussion Paper - Preliminary Views on Insurance Contracts:
 - Part 1: Invitation to Comment and main text
 - Part 2: Appendices
- IAAust Submission to the IASB on the Insurance Contracts Discussion Paper – November 2007

Appendix A

Details of Illustrative Risk Model Used

The results are from a simple spreadsheet model for 10,000 yearly renewable lump sum risk policies, all assumed to be written at start of year 1. All cash flows are assumed to occur at start of the year. Other assumptions are:

Risk Free Discount Rate	6% p.a.	CPI - expense & Sum Insured / premium inflation	2% p.a.	Risk Margin	15% of Claims
Acquisition – Non Incremental	\$400 per policy	Acquisition - Incremental	\$50 per policy	Initial Commission	85% of Premium
Maintenance	\$150 per policy	Trail Commission	10% of Premium		
Claim Rate	50% of Premium	Lapse Rate	7.5% p.a.		
Initial Number of Policies	10,000	Initial Annual Premium	\$1,200 per policy		
Initial Premium	\$1,200 per policy				
Annual Increase in Premium Rate (Age Related)	3% p.a. for years 1 to 5	4% p.a. for years 6 to 10	5% p.a. for years 11 to 15	6% p.a. for years 15 to 20	

The following tables (over page) show cash flows, present values and profit and loss for each of MoS, proposed IFRS (No DAC) and Proposed IFRS (Incremental DAC) on:

- the expected basis for years 1 to 5, 10, 15 & 20;
- .the expected with change in assumptions (and expected from end of year five) for years 4, 5, 6, 10, 15 & 20.

Appendix A Details of Illustrative Risk Model Used

Expected Basis

Year	0	1	2	3	4	5	10	15	20
Average Premium p.a.	1,200.00	1,260.72	1,324.51	1,391.53	1,461.94	1,535.92	2,063.17	2,907.26	4,295.50
No of Contracts inforce	10,000.00	9,250.00	8,556.25	7,914.53	7,320.94	6,771.87	4,585.82	3,105.46	2,102.98
Expected Cashflows									
Premium		12,000,000	11,661,660	11,332,859	11,013,330	10,702,809	9,642,238	9,113,347	9,032,339
Claims		(6,000,000)	(5,830,830)	(5,666,430)	(5,506,665)	(5,351,404)	(4,821,119)	(4,556,674)	(4,516,169)
Initial Commission		(10,200,000)							
Incremental Acq		(500,000)							
Non-Incremental Acq		(4,000,000)							
Trail Commission		0	(1,166,166)	(1,133,286)	(1,101,333)	(1,070,281)	(964,224)	(911,335)	(903,234)
Other Expenses		0	(1,415,250)	(1,335,288)	(1,259,845)	(1,188,663)	(888,727)	(664,474)	(496,807)
Net Cashflow		(8,700,000)	3,249,414	3,197,855	3,145,487	3,092,460	2,968,168	2,980,865	3,116,129
Risk Margin		(900,000)	(874,625)	(849,964)	(826,000)	(802,711)	(723,168)	(683,501)	(677,425)
PV Cashflows at end of Year									
Year	1	2	3	4	5	10	15	20	
Premium	124,315,980	119,054,939	113,836,875	108,654,257	103,499,383	98,364,369	71,640,732	40,320,959	0
Claims	(62,157,990)	(59,527,469)	(56,918,438)	(54,327,128)	(51,749,691)	(49,182,184)	(35,820,366)	(20,160,479)	0
Initial Commission	(10,200,000)	0	0	0	0	0	0	0	0
Incremental Acq	(500,000)	0	0	0	0	0	0	0	0
Non-Incremental Acq	(4,000,000)	0	0	0	0	0	0	0	0
Trail Commission	(11,231,598)	(11,905,494)	(11,383,688)	(10,865,426)	(10,349,938)	(9,836,437)	(7,164,073)	(4,032,096)	0
Other Expenses	(10,818,251)	(11,467,346)	(10,655,222)	(9,879,130)	(9,136,442)	(8,424,646)	(5,247,897)	(2,517,281)	0
Best Estimate Liability	(25,408,141)	(36,154,629)	(34,879,528)	(33,582,573)	(32,263,311)	(30,921,102)	(23,408,396)	(13,611,102)	0
Risk Margin	(9,323,698)	(8,929,120)	(8,537,766)	(8,149,069)	(7,762,454)	(7,377,328)	(5,373,055)	(3,024,072)	0
MoS Profit Margin	25,408,141	24,332,870	23,266,384	22,207,142	21,153,571	20,104,058	14,642,187	8,240,940	0
MoS Policy Liability	0	(11,821,759)	(11,613,144)	(11,375,431)	(11,109,740)	(10,817,043)	(8,766,209)	(5,370,162)	0
Residual Margin (No DAC)	30,784,442	29,481,647	28,189,495	26,906,120	25,629,615	24,358,029	17,740,438	9,984,704	0
Residual Margin (Incremental DAC)	20,084,442	19,234,470	18,391,442	17,554,140	16,721,321	15,891,710	11,574,249	6,514,239	0
IFRS (No DAC) Pol Liab	0	2,256,139	1,847,733	1,472,616	1,128,758	814,255	(294,902)	(602,327)	0
IFRS (Incrmtl DAC) Pol Liab	0	(7,991,038)	(7,950,320)	(7,879,363)	(7,779,536)	(7,652,064)	(6,461,092)	(4,072,792)	0
MoS P&L									
Year	1	2	3	4	5	10	15	20	
Premium	12,000,000	11,661,660	11,332,859	11,013,330	10,702,809	9,642,238	9,113,347	9,032,339	
Claims	(6,000,000)	(5,830,830)	(5,666,430)	(5,506,665)	(5,351,404)	(4,821,119)	(4,556,674)	(4,516,169)	
Initial Commission	(10,200,000)	0	0	0	0	0	0	0	
Incremental Acq	(500,000)	0	0	0	0	0	0	0	
Non-Incremental Acq	(4,000,000)	0	0	0	0	0	0	0	
Trail Commission	0	(1,166,166)	(1,133,286)	(1,101,333)	(1,070,281)	(964,224)	(911,335)	(903,234)	
Other Expenses	0	(1,415,250)	(1,335,288)	(1,259,845)	(1,188,663)	(888,727)	(664,474)	(496,807)	
Investment Income	(522,000)	(514,341)	(504,917)	(493,797)	(481,037)	(377,958)	(192,214)	110,764	
Change in MoS Pol Liab	(11,821,759)	208,615	237,713	265,691	292,697	501,253	814,275	1,270,067	
Gross Profit	2,599,759	2,526,458	2,455,225	2,386,000	2,318,727	2,088,958	1,974,375	1,956,825	
Check PM% * premium * (1+i)	0	0	(0)	0	(0)	0	0	0	
IFRS (No DAC) P&L									
Year	1	2	3	4	5	10	15	20	
Premium	12,000,000	11,661,660	11,332,859	11,013,330	10,702,809	9,642,238	9,113,347	9,032,339	
Claims	(6,000,000)	(5,830,830)	(5,666,430)	(5,506,665)	(5,351,404)	(4,821,119)	(4,556,674)	(4,516,169)	
Initial Commission	(10,200,000)	0	0	0	0	0	0	0	
Incremental Acq	(500,000)	0	0	0	0	0	0	0	
Non-Incremental Acq	(4,000,000)	0	0	0	0	0	0	0	
Trail Commission	0	(1,166,166)	(1,133,286)	(1,101,333)	(1,070,281)	(964,224)	(911,335)	(903,234)	
Other Expenses	0	(1,415,250)	(1,335,288)	(1,259,845)	(1,188,663)	(888,727)	(664,474)	(496,807)	
Investment Income	(522,000)	330,333	302,735	277,086	253,273	169,960	142,321	174,847	
Change in IFRS Pol Liab	2,256,139	(408,406)	(375,116)	(343,858)	(314,504)	(159,406)	6,526	202,020	
Gross Profit	(11,478,139)	3,988,153	3,875,707	3,766,431	3,660,237	3,297,534	3,116,660	3,088,955	
Margin View									
Risk Margin Release	900,000	874,625	849,964	826,000	802,711	723,168	683,501	677,425	
Residual Margin Release	2,971,567	2,887,784	2,806,363	2,727,238	2,650,343	2,387,713	2,256,744	2,236,684	
Acq Costs	(14,700,000)	0	0	0	0	0	0	0	
Interest on these	(649,706)	225,745	219,380	213,194	207,183	186,653	176,415	174,847	
	(11,478,139)	3,988,153	3,875,707	3,766,431	3,660,237	3,297,534	3,116,660	3,088,955	
IFRS (Incrmtl DAC) P&L									
Year	1	2	3	4	5	10	15	20	
Premium	12,000,000	11,661,660	11,332,859	11,013,330	10,702,809	9,642,238	9,113,347	9,032,339	
Claims	(6,000,000)	(5,830,830)	(5,666,430)	(5,506,665)	(5,351,404)	(4,821,119)	(4,556,674)	(4,516,169)	
Initial Commission	(10,200,000)	0	0	0	0	0	0	0	
Incremental Acq	(500,000)	0	0	0	0	0	0	0	
Non-Incremental Acq	(4,000,000)	0	0	0	0	0	0	0	
Trail Commission	0	(1,166,166)	(1,133,286)	(1,101,333)	(1,070,281)	(964,224)	(911,335)	(903,234)	
Other Expenses	0	(1,415,250)	(1,335,288)	(1,259,845)	(1,188,663)	(888,727)	(664,474)	(496,807)	
Investment Income	(522,000)	(284,497)	(285,148)	(284,033)	(281,225)	(228,864)	(101,184)	128,201	
Change in IFRS Pol Liab	(7,991,038)	40,718	70,957	99,827	127,472	321,482	594,480	979,442	
Gross Profit	(1,230,962)	2,924,198	2,841,751	2,761,628	2,683,763	2,417,822	2,285,201	2,264,888	
Margin View									
Risk Margin Release	900,000	874,625	849,964	826,000	802,711	723,168	683,501	677,425	
Residual Margin Release	1,938,715	1,884,053	1,830,932	1,779,309	1,729,142	1,557,796	1,472,349	1,459,261	
Non Incrmtl Acq Costs	(4,000,000)	0	0	0	0	0	0	0	
Interest on these	(69,677)	165,521	160,854	156,319	151,911	136,858	129,351	128,201	
	(1,230,962)	2,924,198	2,841,751	2,761,628	2,683,763	2,417,822	2,285,201	2,264,888	

Appendix A Details of Illustrative Risk Model Used

Expected Basis (with Change in Assumptions and expected form end of year five)

Year	0	1	4	5	6	10	15	20
Average Premium p.a.	1,200.00	1,260.72	1,461.94	1,535.92	1,629.30	2,063.17	2,907.26	4,295.50
No of Contracts inforce	10,000.00	9,250.00	7,320.94	6,771.87	6,263.98	4,585.82	3,105.46	2,102.98
Expected Cashflows								
Premium		12,000,000	11,013,330	10,702,809	10,401,043	9,642,238	9,113,347	9,032,339
Claims		(6,000,000)	(5,506,665)	(5,351,404)	(5,200,522)	(4,821,119)	(4,556,674)	(4,516,169)
Initial Commission		(10,200,000)	0	0	0	0	0	0
Incremental Acq		(500,000)	0	0	0	0	0	0
Non-Incremental Acq		(4,000,000)	0	0	0	0	0	0
Trail Commission		0	(1,101,333)	(1,070,281)	(1,040,104)	(964,224)	(911,335)	(903,234)
Other Expenses		0	(1,259,845)	(1,188,663)	(1,121,504)	(888,727)	(664,474)	(496,807)
Net Cashflow		(8,700,000)	3,145,487	3,092,460	3,038,913	2,968,168	2,980,865	3,116,129
Risk Margin		(900,000)	(826,000)	(802,711)	(858,086)	(795,485)	(751,851)	(745,168)
PV Cashflows	Year	1	4	5	6	10	15	20
Premium	124,315,980	119,054,939	103,499,383	98,364,369	93,241,125	71,640,732	40,320,959	0
Claims	(62,157,990)	(59,527,469)	(51,749,691)	(49,182,184)	(46,620,563)	(35,820,366)	(20,160,479)	0
Initial Commission	(10,200,000)	0	0	0	0	0	0	0
Incremental Acq	(500,000)	0	0	0	0	0	0	0
Non-Incremental Acq	(4,000,000)	0	0	0	0	0	0	0
Trail Commission	(11,231,598)	(11,905,494)	(10,349,938)	(9,836,437)	(9,324,113)	(7,164,073)	(4,032,096)	0
Other Expenses	(10,818,251)	(11,467,346)	(9,136,442)	(8,424,646)	(7,741,330)	(5,247,897)	(2,517,281)	0
Best Estimate Liability	(25,408,141)	(36,154,629)	(32,263,311)	(30,921,102)	(29,555,120)	(23,408,396)	(13,611,102)	0
Risk Margin	(9,323,698)	(8,929,120)	(7,762,454)	(8,115,060)	(7,692,393)	(5,910,360)	(3,326,479)	0
MoS Profit Margin	25,408,141	24,332,870	21,153,571	20,104,058	19,056,952	14,642,187	8,240,940	0
MoS Policy Liability	0	(11,821,759)	(11,109,740)	(10,817,043)	(10,498,168)	(8,766,209)	(5,370,162)	0
Residual Margin (No DAC)	30,784,442	29,481,647	25,629,615	24,358,029	23,089,357	17,740,438	9,984,704	0
Residual Margin (Incremental DAC)	20,084,442	19,234,470	16,721,321	15,891,710	15,064,000	11,574,249	6,514,239	0
IFRS (No DAC) Pol Liab	0	2,256,139	1,128,758	1,551,987	1,226,630	242,403	(299,919)	0
IFRS (Incrmtl DAC) Pol Liab	0	(7,991,038)	(7,779,536)	(6,914,332)	(6,798,726)	(5,923,786)	(3,770,384)	0
MoS P&L	Year	1	4	5	6	10	15	20
Premium		12,000,000	11,013,330	10,702,809	10,401,043	9,642,238	9,113,347	9,032,339
Claims		(6,000,000)	(5,506,665)	(5,351,404)	(5,200,522)	(4,821,119)	(4,556,674)	(4,516,169)
Initial Commission		(10,200,000)	0	0	0	0	0	0
Incremental Acq		(500,000)	0	0	0	0	0	0
Non-Incremental Acq		(4,000,000)	0	0	0	0	0	0
Trail Commission		0	(1,101,333)	(1,070,281)	(1,040,104)	(964,224)	(911,335)	(903,234)
Other Expenses		0	(1,259,845)	(1,188,663)	(1,121,504)	(888,727)	(664,474)	(496,807)
Investment Income		(522,000)	(493,797)	(481,037)	(466,688)	(377,958)	(192,214)	110,764
Change in MoS Pol Liab		(11,821,759)	265,691	292,697	318,875	501,253	814,275	1,270,067
Gross Profit		2,599,759	2,386,000	2,318,727	2,253,350	2,088,958	1,974,375	1,956,825
Check PM% * premium * (1+i)		0	0	(0)	(0)	0	0	0
IFRS (No DAC) P&L	Year	1	4	5	6	10	15	20
Premium		12,000,000	11,013,330	10,702,809	10,401,043	9,642,238	9,113,347	9,032,339
Claims		(6,000,000)	(5,506,665)	(5,351,404)	(5,200,522)	(4,821,119)	(4,556,674)	(4,516,169)
Initial Commission		(10,200,000)	0	0	0	0	0	0
Incremental Acq		(500,000)	0	0	0	0	0	0
Non-Incremental Acq		(4,000,000)	0	0	0	0	0	0
Trail Commission		0	(1,101,333)	(1,070,281)	(1,040,104)	(964,224)	(911,335)	(903,234)
Other Expenses		0	(1,259,845)	(1,188,663)	(1,121,504)	(888,727)	(664,474)	(496,807)
Investment Income		(522,000)	277,086	253,273	275,454	204,713	163,539	178,911
Change in IFRS Pol Liab		2,256,139	(343,858)	423,229	(325,357)	(201,309)	(44,706)	134,277
Gross Profit		(11,478,139)	3,766,431	2,922,504	3,639,725	3,374,190	3,189,111	3,160,763
Margin View								
Risk Margin Release		900,000	826,000	802,711	858,086	795,485	751,851	745,168
Residual Margin Release		2,971,567	2,727,238	2,650,343	2,575,617	2,387,713	2,256,744	2,236,684
Acq Costs		(14,700,000)	0	0	0	0	0	0
Interest on these		(649,706)	213,194	207,183	206,022	190,992	180,516	178,911
Change in Future Assumptions			(737,733)					
		(11,478,139)	3,766,431	2,922,504	3,639,725	3,374,190	3,189,111	3,160,763
IFRS (Incrmtl DAC) P&L	Year	1	4	5	6	10	15	20
Premium		12,000,000	11,013,330	10,702,809	10,401,043	9,642,238	9,113,347	9,032,339
Claims		(6,000,000)	(5,506,665)	(5,351,404)	(5,200,522)	(4,821,119)	(4,556,674)	(4,516,169)
Initial Commission		(10,200,000)	0	0	0	0	0	0
Incremental Acq		(500,000)	0	0	0	0	0	0
Non-Incremental Acq		(4,000,000)	0	0	0	0	0	0
Trail Commission		0	(1,101,333)	(1,070,281)	(1,040,104)	(964,224)	(911,335)	(903,234)
Other Expenses		0	(1,259,845)	(1,188,663)	(1,121,504)	(888,727)	(664,474)	(496,807)
Investment Income		(522,000)	(284,033)	(281,225)	(232,525)	(194,112)	(79,966)	132,266
Change in IFRS Pol Liab		(7,991,038)	99,827	865,205	115,605	279,579	543,247	911,700
Gross Profit		(1,230,962)	2,761,628	1,946,031	2,690,783	2,494,478	2,357,652	2,336,695
Margin View								
Risk Margin Release		900,000	826,000	802,711	858,086	795,485	751,851	745,168
Residual Margin Release		1,938,715	1,779,309	1,729,142	1,680,389	1,557,796	1,472,349	1,459,261
Non Incrmtl Acq Costs		(4,000,000)	0	0	0	0	0	0
Interest on these		(69,677)	156,319	151,911	152,308	141,197	133,452	132,266
Change in Future Assumptions			(737,733)					
		(1,230,962)	2,761,628	1,946,031	2,690,783	2,494,478	2,357,652	2,336,695

Appendix B

Details of Illustrative Par Investment Account Model Used

The following shows the resulting expected gross profit signatures for 10,000 retail participating investment account policies, all assumed to be written at start of year 1 and maturing at the end of year twenty. Again for simplicity, tax is assumed to be zero. Key assumptions are:

Discount Rate (Government Bond Rate + Asset Risk Premium)	7% p.a. (= 5% + 2%)	Single Premium	\$10,000 per policy	Risk Margin	None ¹
Acquisition – Non Incremental	\$300 per policy	Regular Premium	\$1,000 p.a.	Maintenance	\$100 per policy
Initial Fee	3% of AUM	Ongoing Fee	0.75% of AUM	Investment Expense	0.35% of AUM
Profit Share	80:20	Inflation (CPI & Expense)	zero		
Initial Commission	3% of Single Premium	Trail Commission	0.5% of AUM	Surrender Rate	10% p.a.

1. No risk margin is required as no insurance cover is provided under the policy, however a market consistent charge for guarantees needs to be included in the liability.

Supportable crediting rates in the model are found by goal seeking for the supportable crediting rate at inception that results in the difference between projected MoS policy liability and supporting assets at inception falling to zero. These supportable crediting rates are then used to determine account balances and benefits payable to policyholders in the projection as well as the margin flowing to the shareholder (25% of amounts credited on the supportable basis). As MoS is used as the basis for determining flows to policyholder and shareholder under the Life Act, these are then used as basis for benefit due to policyholders and margins to shareholders both under MoS and IFRS approaches.

Although the model includes a market cost for guarantees, it is not accurately calculated, instead for simplicity, illustrative figures are included for this item.

The following tables (over page) show account balances, cash flows, present values, liabilities, profit and loss for each of MoS, proposed IFRS (No DAC) and Proposed IFRS (Incremental DAC), supporting assets on:

- the expected basis for years 1 to 5, 10, 15 & 20;
- the expected with change in assumptions (and expected from end of year five) for years 1 to 6, 10, 15 & 20.

Appendix B

Details of Illustrative Par Investment Account Model Used

Year	0	1	2	3	4	5	10	15	20
Number of Policies inforce	10,000	9,000	8,100	7,290	6,561	5,905	3,487	2,059	1,216
Account Balance									
Single Premiums Received	100,000,000								
Initial Fee	(3,000,000)								
Opening Account Balance	97,000,000	100,518,595	102,843,781	104,148,474	104,584,891	97,889,870	83,808,708	68,204,816	
Regular Premiums Received	9,500,000	8,550,000	7,695,000	6,925,500	6,232,950	3,680,495	2,173,295	1,283,309	
Surrender Payments	(9,934,472)	(10,294,837)	(10,532,976)	(10,666,599)	(10,711,296)	(10,025,610)	(8,583,456)	(6,985,349)	
Ongoing Fee	(725,871)	(747,346)	(760,686)	(767,084)	(767,593)	(710,380)	(604,527)	(490,153)	
Maturity Payments									(65,172,136)
Amounts Credited to Accounts	4,678,938	4,817,369	4,903,355	4,944,600	4,947,877	4,579,084	3,896,762	3,159,512	
Closing Account Balance	100,518,595	102,843,781	104,148,474	104,584,891	104,286,830	95,413,459	80,690,782	\$ -	
Timing Participating Cashflows									
Year	1	2	3	4	5	10	15	20	
Start	100,000,000								
Start	(3,000,000)								
Start	(3,000,000)								
Mid	9,500,000	8,550,000	7,695,000	6,925,500	6,232,950	3,680,495	2,173,295	1,283,309	
Mid	(9,934,472)	(10,294,837)	(10,532,976)	(10,666,599)	(10,711,296)	(10,025,610)	(8,583,456)	(6,985,349)	
end	-	-	-	-	-	-	-	-	(65,172,136)
End	(502,593)	(514,219)	(520,742)	(522,924)	(521,434)	(477,067)	(403,454)	-	
mid	(950,000)	(855,000)	(769,500)	(692,550)	(623,295)	(368,049)	(217,330)	(128,331)	
end	(1,169,734)	(1,204,342)	(1,225,839)	(1,236,150)	(1,236,969)	(1,144,771)	(974,190)	(789,878)	
Timing MoS PV Cashflows									
Year	1	2	3	4	5	10	15	20	
Start	(100,000,000)								
Start	3,000,000								
Start	3,000,000								
Mid	(56,976,562)	(50,949,628)	(45,503,491)	(40,578,614)	(36,121,319)	(32,083,191)	(16,791,135)	(6,943,445)	\$ -
Mid	109,987,439	107,036,810	103,517,618	99,518,342	95,115,049	90,372,753	63,220,411	32,774,795	\$ -
end	17,982,280	19,178,102	20,453,445	21,813,600	23,264,204	24,811,274	34,233,662	47,234,319	\$ -
End	5,057,370	4,891,092	4,702,130	4,494,080	4,270,012	4,032,533	2,708,668	1,248,099	\$ -
mid	5,697,656	5,094,963	4,550,349	4,057,861	3,612,132	3,208,319	1,679,113	694,345	\$ -
end	(12,251,817)	85,251,338	87,720,052	89,305,269	90,140,077	90,341,688	85,050,720	75,008,112	\$ -
Shareholder Profit Share	12,251,817	11,896,828	11,483,625	11,021,448	10,518,224	9,980,716	6,948,966	3,592,189	\$ -
MoS Policy Liability	0	97,148,167	99,203,678	100,326,716	100,658,301	100,322,404	91,999,686	78,600,300	\$ -
IFRS (No DAC)									
Year	1	2	3	4	5	10	15	20	
MoS Best Estimate	(12,251,817)	85,251,338	87,720,052	89,305,269	90,140,077	90,341,688	85,050,720	75,008,112	\$ -
Exclude Acquisition Costs	(6,000,000)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Risk Margin	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Market Cost of Guarantees	2,629,065	2,723,655	2,784,651	2,817,267	2,826,032	2,814,887	2,566,172	2,181,549	\$ -
Current Liability	(15,622,752)	87,974,994	90,504,704	92,122,536	92,966,109	93,156,575	87,616,892	77,189,661	\$ -
Residual Margin	15,622,752	15,408,522	15,134,589	14,812,401	14,451,932	14,061,854	11,897,352	9,767,643	\$ -
IFRS (No DAC) Liability	\$ -	103,383,516	105,639,293	106,934,937	107,418,041	107,218,429	99,514,244	86,957,304	\$ -
IFRS (Incremental DAC)									
Year	1	2	3	4	5	10	15	20	
MoS Best Estimate	(12,251,817)	85,251,338	87,720,052	89,305,269	90,140,077	90,341,688	85,050,720	75,008,112	\$ -
Exclude Acquisition Costs	(3,000,000)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Risk Margin	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Market Cost of Guarantees	2,629,065	2,723,655	2,784,651	2,817,267	2,826,032	2,814,887	2,566,172	2,181,549	\$ -
Current Liability	(12,622,752)	87,974,994	90,504,704	92,122,536	92,966,109	93,156,575	87,616,892	77,189,661	\$ -
Residual Margin	12,622,752	12,449,660	12,228,330	11,968,011	11,676,762	11,361,589	9,612,732	7,891,986	\$ -
IFRS (Incmntl DAC) Liability	\$ -	100,424,654	102,733,034	104,090,547	104,642,871	104,518,164	97,229,624	85,081,646	\$ -
MoS P&L									
Year	1	2	3	4	5	10	15	20	
Premiums	109,500,000	8,550,000	7,695,000	6,925,500	6,232,950	3,680,495	2,173,295	1,283,309	
Expenses	(7,779,170)	(1,704,688)	(1,631,142)	(1,558,859)	(1,488,105)	(1,163,376)	(894,127)	(354,370)	
Claims	(9,934,472)	(10,294,837)	(10,532,976)	(10,666,599)	(10,711,296)	(10,025,610)	(8,583,456)	(72,157,485)	
Interest	6,531,543	6,709,377	6,817,996	6,867,692	6,867,524	6,365,183	5,466,871	4,520,773	
Less change in MoS Policy Liability	(97,148,167)	(2,055,511)	(1,123,039)	(331,584)	335,897	2,288,079	2,811,607	67,497,650	
MoS Shareholder Profit	1,169,734	1,204,342	1,225,839	1,236,150	1,236,969	1,144,771	974,190	789,878	
IFRS (No DAC) P&L									
Year	1	2	3	4	5	10	15	20	
Premiums	109,500,000	8,550,000	7,695,000	6,925,500	6,232,950	3,680,495	2,173,295	1,283,309	
Expenses	(7,779,170)	(1,704,688)	(1,631,142)	(1,558,859)	(1,488,105)	(1,163,376)	(894,127)	(354,370)	
Claims	(9,934,472)	(10,294,837)	(10,532,976)	(10,666,599)	(10,711,296)	(10,025,610)	(8,583,456)	(72,157,485)	
Interest	6,531,543	7,124,028	7,052,698	7,117,987	7,132,498	6,856,333	6,009,051	5,147,343	
Less change in IFRS (no DAC) Liability	(103,383,516)	(2,255,777)	(1,295,644)	(483,104)	199,612	2,159,242	2,607,676	76,919,761	
IFRS (No DAC) Shareholder Profit	(5,065,614)	1,418,726	1,481,202	1,524,077	1,550,208	1,507,083	1,312,439	10,838,559	
IFRS (Incremental DAC) P&L									
Year	1	2	3	4	5	10	15	20	
Premiums	109,500,000	8,550,000	7,695,000	6,925,500	6,232,950	3,680,495	2,173,295	1,283,309	
Expenses	(7,779,170)	(1,704,688)	(1,631,142)	(1,558,859)	(1,488,105)	(1,163,376)	(894,127)	(354,370)	
Claims	(9,934,472)	(10,294,837)	(10,532,976)	(10,666,599)	(10,711,296)	(10,025,610)	(8,583,456)	(72,157,485)	
Interest	6,531,543	7,124,028	7,052,698	7,117,987	7,132,498	6,856,333	6,009,051	5,147,343	
Less change in IFRS (no DAC) Liability	(100,424,654)	(2,308,380)	(1,357,513)	(552,324)	124,707	2,073,992	2,529,681	75,328,541	
IFRS (Incmntl DAC) Shareholder Profit	(2,106,753)	1,169,359	1,226,067	1,265,705	1,290,753	1,264,238	1,104,526	9,141,523	
Supporting Assets									
Year	1	2	3	4	5	10	15	20	
Single Premiums Received	100,000,000								
Acquisition Commission	(3,000,000)								
Acquisition Expense	(3,000,000)								
Opening Supporting Assets	94,000,000	97,148,167	99,203,678	100,326,716	100,658,301	94,287,766	81,411,908	67,497,650	
Mid	9,500,000	8,550,000	7,695,000	6,925,500	6,232,950	3,680,495	2,173,295	1,283,309	
Mid	(9,934,472)	(10,294,837)	(10,532,976)	(10,666,599)	(10,711,296)	(10,025,610)	(8,583,456)	(6,985,349)	
end	-	-	-	-	-	-	-	-	(65,172,136)
end	(502,593)	(514,219)	(520,742)	(522,924)	(521,434)	(477,067)	(403,454)	-	
mid	(950,000)	(855,000)	(769,500)	(692,550)	(623,295)	(368,049)	(217,330)	(128,331)	
end	(1,169,734)	(1,204,342)	(1,225,839)	(1,236,150)	(1,236,969)	(1,144,771)	(974,190)	(789,878)	
Investment Income	6,531,543	6,709,377	6,817,996	6,867,692	6,867,524	6,365,183	5,466,871	4,520,773	
Investment Expense	(326,577)	(335,469)	(340,900)	(343,385)	(343,376)	(318,259)	(273,344)	(226,039)	
Tax	-	-	-	-	-	-	-	-	
Closing Supporting Assets	97,148,167	99,203,678	100,326,716	100,658,301	100,322,404	91,999,686	78,600,300	(0)	

Appendix B

Details of Illustrative Par Investment Account Model Used

Year	0	1	2	3	4	5	6	10	15	20
Number of Policies inforce	10,000	9,000	8,100	7,290	6,561	5,905	5,314	3,487	2,059	1,216
Account Balance										
Single Premiums Received	100,000,000	-	-	-	-	-	-	-	-	-
Initial Fee	(3,000,000)	-	-	-	-	-	-	-	-	-
Opening Account Balance	97,000,000	100,518,595	102,843,781	104,148,474	104,584,891	102,901,285	92,085,331	74,748,946	57,824,453	
Regular Premiums Received	9,500,000	8,550,000	7,695,000	6,925,500	6,232,950	5,609,655	3,680,495	2,173,295	1,283,309	
Surrender Payments	(9,934,472)	(10,294,837)	(10,532,976)	(10,666,599)	(10,636,622)	(10,465,394)	(9,365,377)	(7,602,210)	(5,880,934)	
Ongoing Fee	(725,871)	(747,346)	(760,686)	(767,084)	(767,593)	(753,551)	(669,322)	(540,259)	(416,442)	
Maturity Payments	-	-	-	-	-	-	-	-	-	(54,701,856)
Amounts Credited to Accounts	4,678,938	4,817,369	4,903,355	4,944,600	3,487,660	3,422,608	3,040,042	2,453,841	1,891,471	
Closing Account Balance	100,518,595	102,843,781	104,148,474	104,584,891	102,901,285	100,714,604	88,771,170	71,233,614	0	
Timing Participating Cashflows										
Year		1	2	3	4	5	6	10	15	20
Start	Single Premium	100,000,000	-	-	-	-	-	-	-	-
Start	Acquisition Commission	(3,000,000)	-	-	-	-	-	-	-	-
Start	Acquisition Expense	(3,000,000)	-	-	-	-	-	-	-	-
Mid	Regular Premiums	9,500,000	8,550,000	7,695,000	6,925,500	6,232,950	5,609,655	3,680,495	2,173,295	1,283,309
Mid	Surrenders Paid	(9,934,472)	(10,294,837)	(10,532,976)	(10,666,599)	(10,711,296)	(10,465,394)	(9,365,377)	(7,602,210)	(5,880,934)
end	Maturities Paid	-	-	-	-	-	-	-	-	(54,701,856)
End	Maintenance Commission	(502,593)	(514,219)	(520,742)	(522,924)	(521,434)	(503,573)	(443,856)	(356,168)	(0)
mid	Maintenance Expense	(950,000)	(855,000)	(769,500)	(692,550)	(623,295)	(560,966)	(368,049)	(217,330)	(128,331)
end	Shareholder Profit Share	(1,169,734)	(1,204,342)	(1,225,839)	(1,236,150)	(871,915)	(855,652)	(760,011)	(613,460)	(472,868)
Timing MoS PV Cashflows										
Year		1	2	3	4	5	6	10	15	20
Start	Single Premium	(100,000,000)	-	-	-	-	-	-	-	-
Start	Acquisition Commission	3,000,000	-	-	-	-	-	-	-	-
Start	Acquisition Expense	3,000,000	-	-	-	-	-	-	-	-
Mid	Regular Premiums	(56,976,562)	(50,949,628)	(45,503,491)	(40,578,614)	(36,121,319)	(35,101,719)	(30,993,869)	(18,015,587)	(7,234,521) \$
Mid	Surrenders Paid	109,987,439	107,036,810	103,517,618	99,518,342	95,115,049	93,074,504	86,693,754	60,829,027	29,459,508 \$
end	Maturities Paid	17,982,280	19,178,102	20,453,445	21,813,600	23,264,204	27,663,911	28,950,282	34,722,400	43,581,874 \$
End	Maintenance Commission	5,057,370	4,891,092	4,702,130	4,494,080	4,270,012	4,165,252	3,855,363	2,614,610	1,125,047 \$
mid	Maintenance Expense	5,697,656	5,094,963	4,550,349	4,057,861	3,612,132	3,510,172	3,099,387	1,801,559	723,452 \$
end	Best Estimate Liability	(12,251,817)	85,251,338	87,720,052	89,305,269	90,140,077	93,312,120	91,604,918	81,952,009	67,655,360 \$
	Shareholder Profit Share	12,251,817	11,896,828	11,483,625	11,021,448	10,518,224	7,375,339	6,862,640	4,799,672	2,318,280 \$
	MoS Policy Liability	0	97,148,167	99,203,678	100,326,716	100,658,301	100,687,459	98,467,557	86,751,681	69,973,640 \$
IFRS (No DAC)										
Year		1	2	3	4	5	6	10	15	20
	MoS Best Estimate	(12,251,817)	85,251,338	87,720,052	89,305,269	90,140,077	93,312,120	91,604,918	81,952,009	67,655,360 \$
	Exclude Acquisition Costs	(6,000,000)	-	-	-	-	\$ -	\$ -	\$ -	\$ -
	Risk Margin	-	-	-	-	-	\$ -	\$ -	\$ -	\$ -
	Market Cost of Guarantees	2,629,065	2,723,655	2,784,651	2,817,267	2,826,032	4,147,346	4,044,545	3,520,036	2,796,383 \$
	Current Liability	(15,622,752)	87,974,994	90,504,704	92,122,536	92,966,109	97,459,466	95,649,463	85,472,044	70,451,743 \$
11.65%	Residual Margin	15,622,752	15,408,522	15,134,589	14,812,401	14,451,932	14,061,854	13,468,535	11,128,440	8,506,797 \$
	IFRS (No DAC) Liability	-	103,383,516	105,639,293	106,934,937	107,418,041	111,521,320	109,117,997	96,600,484	78,958,541 \$
IFRS (Incremental DAC)										
Year		1	2	3	4	5	6	10	15	20
	MoS Best Estimate	(12,251,817)	85,251,338	87,720,052	89,305,269	90,140,077	93,312,120	91,604,918	81,952,009	67,655,360 \$
	Exclude Acquisition Costs	(3,000,000)	-	-	-	-	\$ -	\$ -	\$ -	\$ -
	Risk Margin	-	-	-	-	-	\$ -	\$ -	\$ -	\$ -
	Market Cost of Guarantees	2,629,065	2,723,655	2,784,651	2,817,267	2,826,032	4,147,346	4,044,545	3,520,036	2,796,383 \$
	Current Liability	(12,622,752)	87,974,994	90,504,704	92,122,536	92,966,109	97,459,466	95,649,463	85,472,044	70,451,743 \$
9.41%	Residual Margin	12,622,752	12,449,660	12,228,330	11,968,011	11,676,762	11,361,589	10,882,204	8,991,472	6,873,257 \$
	IFRS (Incmtl DAC) Liability	-	100,424,654	102,733,034	104,090,547	104,642,871	108,821,055	106,531,666	94,463,516	77,325,001 \$
MoS P&L										
Year		1	2	3	4	5	6	10	15	20
	Premiums	109,500,000	8,550,000	7,695,000	6,925,500	6,232,950	5,609,655	3,680,495	2,173,295	1,283,309
	Expenses	(7,779,170)	(1,704,688)	(1,631,142)	(1,558,859)	(1,488,105)	(1,407,465)	(1,116,193)	(820,208)	(320,765)
	Claims	(9,934,472)	(10,294,837)	(10,532,976)	(10,666,599)	(10,711,296)	(10,465,394)	(9,365,377)	(7,602,210)	(60,582,790)
	Interest	6,531,543	6,709,377	6,817,996	6,867,692	6,867,524	4,898,955	4,346,967	3,524,433	2,749,054
	Less change in MoS Policy Liability	(97,148,167)	(2,055,511)	(1,123,039)	(331,584)	(29,158)	2,219,901	3,214,119	3,338,150	57,344,059
	MoS Shareholder Profit	1,169,734	1,204,342	1,225,839	1,236,150	871,915	855,652	760,011	613,460	472,868
IFRS (No DAC) P&L										
Year		1	2	3	4	5	6	10	15	20
	Premiums	109,500,000	8,550,000	7,695,000	6,925,500	6,232,950	5,609,655	3,680,495	2,173,295	1,283,309
	Expenses	(7,779,170)	(1,704,688)	(1,631,142)	(1,558,859)	(1,488,105)	(1,407,465)	(1,116,193)	(820,208)	(320,765)
	Claims	(9,934,472)	(10,294,837)	(10,532,976)	(10,666,599)	(10,711,296)	(10,465,394)	(9,365,377)	(7,602,210)	(60,582,790)
	Interest	6,531,543	6,724,028	6,817,996	6,867,692	6,867,524	4,898,955	4,346,967	3,524,433	2,749,054
	Less change in IFRS (no DAC) Liability	(103,383,516)	(2,255,777)	(1,295,644)	(483,104)	(4,103,279)	2,403,323	3,415,077	3,484,512	65,919,914
	IFRS (No DAC) Shareholder Profit	(5,065,614)	1,418,726	1,481,202	1,524,077	(2,887,878)	1,542,848	1,428,283	1,184,426	9,447,500
IFRS (Incremental DAC) P&L										
Year		1	2	3	4	5	6	10	15	20
	Premiums	109,500,000	8,550,000	7,695,000	6,925,500	6,232,950	5,609,655	3,680,495	2,173,295	1,283,309
	Expenses	(7,779,170)	(1,704,688)	(1,631,142)	(1,558,859)	(1,488,105)	(1,407,465)	(1,116,193)	(820,208)	(320,765)
	Claims	(9,934,472)	(10,294,837)	(10,532,976)	(10,666,599)	(10,711,296)	(10,465,394)	(9,365,377)	(7,602,210)	(60,582,790)
	Interest	6,531,543	6,927,264	7,052,698	7,117,987	7,052,806	5,277,168	4,709,804	3,868,722	3,087,492
	Less change in IFRS (no DAC) Liability	(100,424,654)	(2,308,380)	(1,357,513)	(552,324)	(4,178,184)	2,289,389	3,305,231	3,390,853	64,622,287
	IFRS (Incmtl DAC) Shareholder Profit	(2,106,753)	1,169,359	1,226,067	1,265,705	(3,091,829)	1,303,352	1,213,960	1,010,453	8,089,533
Supporting Assets										
Year		1	2	3	4	5	6	10	15	20
	Single Premiums Received	100,000,000	-	-	-	-	-	-	-	-
	Acquisition Commission	(3,000,000)	-	-	-	-	-	-	-	-
	Acquisition Expense	(3,000,000)	-	-	-	-	-	-	-	-
Open	Opening Supporting Assets	94,000,000	97,148,167	99,203,678	100,326,716	100,658,301	100,687,459	89,965,799	73,311,789	57,344,059
Mid	Regular Premiums	9,500,000	8,550,000	7,695,000	6,925,500	6,232,950	5,609,655	3,680,495	2,173,295	1,283,309
Mid	Surrenders Paid	(9,934,472)	(10,294,837)	(10,532,976)	(10,666,599)	(10,711,296)	(10,465,394)	(9,365,377)	(7,602,210)	(5,880,934)
end	Maturities Paid	-	-	-	-	-	-	-	-	(54,701,856)
end	Maintenance Commission	(502,593)	(514,219)	(520,742)	(522,924)	(521,434)	(503,573)	(443,856)	(356,168)	(0)
mid	Maintenance Expense	(950,000)	(855,000)	(769,500)	(692,550)	(623,295)	(560,966)	(368,049)	(217,330)	(128,331)
end	Shareholder Profit Share	(1,169,734)	(1,204,342)	(1,225,839)	(1,236,150)	(871,915)	(855,652)	(760,011)	(613,460)	(472,868)
	Investment Income	6,531,543	6,709,377	6,817,996	6,867,692	6,867,524	4,898,955	4,346,967	3,524,433	2,749,054
	Investment Expense	(326,577)	(335,469)	(340,900)	(343,385)	(343,376)	(342,927)	(304,288)	(246,710)	(192,434)
	Tax	-	-	-	-	-	-	-	-	-
	Closing Supporting Assets	97,148,167	99,203,678	100,326,716	100,658,301	100,687,459	98,467,557	86,751,681	69,973,640	(0)

Appendix B
Details of Illustrative Par Investment Account Model Used

Appendix C IAAust Residual Margin Submission Worked Example

[Note – the model used for the worked example below is different from that used for risk business in the main body of the paper and deliberately kept simple to make it easier for non- actuaries to follow]

Residual Margin Example

This example relates to a typical step-rated term life insurance product in Australia, and considers two identical Insurers A and B, issuing an identical product to identical lives. However, the two insurers have differing initial estimates of future experience.

The following table shows the key assumptions the two insurers adopted, compared with the actual underlying (but unknown) experience that will emerge. It also shows the derived residual margins at policy inception.

Day 1 Assumptions	Insurer A			Insurer B			Actual		
	Year 1	Year 2+	Average	Year 1	Year 2+	Average	Year 1	Year 2+	Average
Claims (% Premium)	32.4%	63.6%	62.0%	37.6%	73.8%	72.0%	35.0%	68.7%	67.0%
Maintenance Expenses	9.0%	9.0%	9.0%	11.0%	11.0%	11.0%	10.0%	10.0%	10.0%
Acquisition Costs (Year 1 Only)	20.0%		1.0%	20.0%		1.0%	20.0%		1.0%
Risk Margin	6.0%	6.0%	6.0%	8.0%	8.0%	8.0%	7.0%	7.0%	7.0%
Residual Margin	22.0%	22.0%	22.0%	8.0%	8.0%	8.0%	15.0%	15.0%	15.0%

Other assumptions such as lapse rates (12.5% p.a.), general inflation (2.5% p.a.) and premium increases for age (10% p.a.) are the same for A and B and are as per "actual". For this example, discounting is ignored (and is not material) and the term of the policies is assumed to be 20 years.

It is also noted that:

- For the purposes of this example, acquisition and servicing commissions have been ignored. These can be significant for retail term insurance, but do not impact the key aspects of the example as discussed below.
- The non-commission acquisition costs assumed for the example are reasonably modest relative to some situations in Australia, but again their exact dimension is not critical to this example and given current uncertainty over the amount of acquisitions costs that will be recognised, and their treatment, under Phase II, a lower value has been adopted for the example.
- The "residual margins" may appear relatively high. In practice, true profit margins higher than the adopted "risk margins" above are common in Australia and to the extent that acquisition cost recognition and/or deferral under Phase II is significantly lower than the full absorption costs typically actually incurred, this will materialise as increased apparent "residual margins".

Liability and P&L and Inception

For a \$1,000 portfolio of new business, immediately after first premium receipt, the following policy liabilities and P&L results would emerge. Note that as the acquisition costs assumed are identical for the two insurers (and the underlying actual), the net policy liability and P&L results are identical (albeit that the components of the policy liabilities vary reflecting the different assumptions).

Appendix C IAAust Residual Margin Submission Worked Example

Day 1 Policy Liability	Insurer A	Insurer B	Actual
PV Claims	12,400	14,400	13,400
PV Expenses	1,800	2,200	2,000
PV Risk Margin	1,200	1,600	1,400
PV Residual Margin	4,400	1,600	3,000
PV Premium	-19,000	-19,000	-19,000
Net Liability	800	800	800
Day 1 P&L			
Premium Income	1,000	1,000	1,000
Acquisition Costs	-200	-200	-200
Policy Liability	-800	-800	-800
Reported Profit	0	0	0

The Next 3 Years – No Change in Assumptions or Margins

The following results show the emerging results if neither Insurer changes their assumptions over the next three years, notwithstanding the emerging experience:

3 Year Results No Changes in Assumptions									
Policy Liability at t=1, 2 and 3	Insurer A			Insurer B			Actual		
	EOY 1	EOY 2	EOY 3	EOY 1	EOY 2	EOY 3	EOY 1	EOY 2	EOY 3
PV Claims	12,076	11,441	10,805	14,024	13,286	12,548	13,050	12,363	11,676
PV Expenses	1,710	1,620	1,530	2,090	1,980	1,870	1,900	1,800	1,700
PV Risk Margin	1,140	1,080	1,020	1,520	1,440	1,360	1,330	1,260	1,190
PV Residual Margin	4,180	3,960	3,740	1,520	1,440	1,360	2,850	2,700	2,550
PV Premium	-19,000	-18,000	-17,000	-19,000	-18,000	-17,000	-19,000	-18,000	-17,000
Net Liability	106	101	95	154	146	138	130	123	116
P&L for Year 1, 2 and 3									
	Insurer A			Insurer B			Actual		
	FY 1	FY 2	FY 3	FY 1	FY 2	FY 3	FY 1	FY 2	FY 3
Premium Income	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Expenses	-300	-100	-100	-300	-100	-100	-300	-100	-100
Claims	-350	-687	-687	-350	-687	-687	-350	-687	-687
Change Policy Liability	-106	5	6	-154	8	8	-130	7	7
Profit Arising	244	218	219	196	221	221	220	220	220
Analysis of Profit									
Expected Risk Margin	60	60	60	80	80	80	70	70	70
Expected Residual Margin	220	220	220	80	80	80	150	150	150
Claims Profit	-26	-51	-51	26	51	51	0	0	0
Expenses Profit	-10	-10	-10	10	10	10	0	0	0
Profit Arising	244	219	219	196	221	221	220	220	220

It is noted that in this case, notwithstanding the policy liability assumptions vary from the actual underlying emerging experience, broadly equivalent policy liability and P&L results are reported by both Insurers (and compare closely with the underlying actual results).

The variation in the first year profit arises due to the first year claims being significantly different to subsequent years (reflecting underwriting selection effects). This impacts the emergence (averaging) of the residual margin a little which results in the emergence of the residual margin being leverage to the underlying pattern of claims emergence (and therefore claims assumptions).

This second order effect is magnified in the above example and in practice for a whole portfolio of policies with a range of durations in-force the effect would be diluted to be not material in practice.

The Next 3 Years – Assumption changes and Residual Margins Unlocked

Given the difference between the Insurers' assumptions and emerging experience, in practice one would expect some progressive change in the assumptions overtime toward to the "actuals".

Appendix C IAAust Residual Margin Submission Worked Example

For the example below, it is assumed that after the first year the insurers make some limited change in claims assumptions reflecting the first year claims results. After two years, they obtain more experience and make further adjustments including changing the expense assumptions in the second year to the actual experience. By year three, the claims and expense assumptions are aligned with the actual underlying experience.

Nonetheless, it is noted that the original risk margins adopted are not changed.

As the assumptions are changed, the residual margins are unlocked and rest to be consistent with that implied by the changed assumptions. The following assumption changes and residual margins are adopted:

Assumptions Next 3 Years	Insurer A			Insurer B			Actual		
	EOY 1	EOY 2	EOY 3	EOY 1	EOY 2	EOY 3	EOY 1	EOY 2	EOY 3
Claims (% Premium)	65.7%	67.7%	68.7%	71.7%	69.7%	68.7%	68.7%	68.7%	68.7%
Maintenance Expenses	9.0%	10.0%	10.0%	11.0%	10.0%	10.0%	10.0%	10.0%	10.0%
Residual Margin	19.9%	16.9%	15.9%	10.1%	12.4%	13.3%	15.0%	15.0%	15.0%

The following shows the emerging policy liabilities and P&L results:

Policy Liability at t=1, 2 and 3	Insurer A			Insurer B			Actual		
	EOY 1	EOY 2	EOY 3	EOY 1	EOY 2	EOY 3	EOY 1	EOY 2	EOY 3
PV Claims	12,480	12,183	11,676	13,620	12,543	11,676	13,050	12,363	11,676
PV Expenses	1,710	1,800	1,700	2,090	1,800	1,700	1,900	1,800	1,700
PV Risk Margin	1,140	1,080	1,020	1,520	1,440	1,360	1,330	1,260	1,190
PV Residual Margin	3,776	3,038	2,699	1,924	2,363	2,402	2,850	2,700	2,550
PV Premium	-19,000	-18,000	-17,000	-19,000	-18,000	-17,000	-19,000	-18,000	-17,000
Net Liability	106	101	95	154	146	138	130	123	116

P&L for Year 1, 2 and 3	Insurer A			Insurer B			Actual		
	FY 1	FY 2	FY 3	FY 1	FY 2	FY 3	FY 1	FY 2	FY 3
Premium Income	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Expenses	-300	-100	-100	-300	-100	-100	-300	-100	-100
Claims	-350	-687	-687	-350	-687	-687	-350	-687	-687
Change Policy Liability	-106	5	6	-154	8	8	-130	7	7
Profit Arising	244	218	219	196	221	221	220	220	220

Analysis of Profit									
Expected Risk Margin	60	60	60	80	80	80	70	70	70
Expected Residual Margin	220	199	169	80	101	124	150	150	150
Claims Profit	-26	-31	-10	26	30	10	0	0	0
Expenses Profit	-10	-10	0	10	10	0	0	0	0
Profit Arising	244	218	219	196	221	214	220	220	220

The key observation from the above is that under this model the policy liability and emerging P&L results are robust in the face of the alternative assumptions the Insurers may adopt at inception and/or vary thereafter, and closely align with the true underlying results that should arise.

Importantly, profit emerge cannot easily or materially be manipulated via either the initial assumptions adopted or subsequent variation.

The analysis of profit clearly shows the effect of the optimism or conservativeness in the assumptions and provides users with useful information to help form a view on the maintainable profit for the portfolio.

Next 3 Years – Residual Margins Locked

The following simply repeats the above projection, but assumes the residual margins are not unlocked, but are fixed at the levels originally set.

The following assumption changes and residual margins are adopted:

Appendix C IAAust Residual Margin Submission Worked Example

3 Year Results With Changes in Assumptions & Locked Residual Margins									
Assumptions Next 3 Years	Insurer A			Insurer B			Actual		
	EOY 1	EOY 2	EOY 3	EOY 1	EOY 2	EOY 3	EOY 1	EOY 2	EOY 3
Claims (% Premium)	65.7%	67.7%	68.7%	71.7%	69.7%	68.7%	68.7%	68.7%	68.7%
Maintenance Expenses	9.0%	10.0%	10.0%	11.0%	10.0%	10.0%	10.0%	10.0%	10.0%
Residual Margin	22.0%	22.0%	22.0%	8.0%	8.0%	8.0%	15.0%	15.0%	15.0%

The following shows the emerging policy liabilities and P&L results:

Policy Liability at t=1, 2 and 3	Insurer A			Insurer B			Actual		
	EOY 1	EOY 2	EOY 3	EOY 1	EOY 2	EOY 3	EOY 1	EOY 2	EOY 3
PV Claims	12,480	12,183	11,676	13,620	12,543	11,676	13,050	12,363	11,676
PV Expenses	1,710	1,800	1,700	2,090	1,800	1,700	1,900	1,800	1,700
PV Risk Margin	1,140	1,080	1,020	1,520	1,440	1,360	1,330	1,260	1,190
PV Residual Margin	4,180	3,960	3,740	1,520	1,440	1,360	2,850	2,700	2,550
PV Premium	-19,000	-18,000	-17,000	-19,000	-18,000	-17,000	-19,000	-18,000	-17,000
Net Liability	510	1,023	1,136	-250	-777	-904	130	123	116

P&L for Year 1, 2 and 3	Insurer A			Insurer B			Actual		
	FY 1	FY 2	FY 3	FY 1	FY 2	FY 3	FY 1	FY 2	FY 3
Premium Income	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Expenses	-300	-100	-100	-300	-100	-100	-300	-100	-100
Claims	-350	-687	-687	-350	-687	-687	-350	-687	-687
Change Policy Liability	-510	-513	-113	250	527	127	-130	7	7
Profit Arising	-160	-300	100	600	740	340	220	220	220

Analysis of Profit									
Expected Risk Margin	60	60	60	80	80	80	70	70	70
Expected Residual Margin	220	220	220	80	80	80	150	150	150
Claims Profit	-26	-31	-10	26	30	10	0	0	0
Expenses Profit	-10	-10	0	10	10	0	0	0	0
Change in Assumptions	-404	-539	-170	404	540	170	0	0	0
Profit Arising	-160	-300	100	600	740	340	220	220	220

The key observations on the above are that:

- Notwithstanding that the two portfolios are actually identical, the emerging policy liabilities and P&L results bear no resemblance to one another or to the true underlying results.
- The results are dominated by the effects of the initial assumptions adopted and the subsequent way they are changed.
- The results are directly exposed to the effect of assumption changes and therefore manipulation. By setting conservative initial assumptions, Insurer B has been able to significantly front end profit thereafter.
- Insurer A reports significant early year losses for no reason other than the demand for it to report excessive profits (\$280 p.a.) after year 3.
- The analysis of profit, while "balancing" to the actual profit, is difficult to understand and will be difficult for users to form a view of about the underlying maintainable profit. It is less helpful and useful than the "unlocked" version.
- To the extent that acquisition costs are excluded in determining the "residual margin", a significant component of the residual margin will represent the pricing margins for their recovery. Locking this margin essentially locks in the acquisition cost recovery component, which means that the insurer, incurs a loss at day one for acquisition expenses and then potentially can incur a further loss in order to maintain the recovery of DAC he has not been allowed to establish. This seems like double counting.