# Singapore Actuarial Society

# SAS GN L03

# Guidance Note for

# Appointed Actuaries on Participating Fund Management for Life Insurance Business

**Effective date 1 November 2011**

## Contents

# 1 Background and Scope

1.1 This document has been prepared as a guidance note for Appointed Actuaries of direct life insurance companies advising on the management of participating fund business.

1.2 Adherence to the spirit and intent of this guidance note is mandatory. If a member has any concerns about the operation of this guidance note then the issue should be referred to the Council of the Singapore Actuarial Society.

1.3 This guidance note is meant to supplement Insurance (Valuation and Capital) Regulation 2004.

1.4 Members of the SAS who undertake activities covered in this guidance note should make reference to their compliance with this guidance note.

1.5 The areas of practice covered in this guidance note are:

a) Section 2 – Grouping of Model Points
b) Section 3 – Methodology and Assumptions
c) Section 4 – Fund Management
d) Section 5 – Reinsurance and Investment
e) Section 6 – Segregation and Merging
f) Section 7 – Report

## 2 Grouping of Model Points

2.1 The Appointed Actuary should consider whether it is appropriate to group policies for the purpose of bonus determination. In general, policies can be grouped according to their major product features, e.g. policies with similar bonus structure, date of issue, policyholder age, and the extent to which guarantees are in or out of the money, and type of plan.

2.2 The grouping of policies should not materially disadvantage one group of policyholders at the expense of another group of policyholders and should have due consideration to the need to treat customers fairly. The product grouping will also be influenced by the risk sharing rules that the insurer has set out in its internal participating fund governance policy. For example, if the risk sharing rules dictate that the investment experience will be shared differently between single premium and regular premium products, the asset share will be determined separately for single and regular premium products.

2.3 Asset share, where calculated, should be determined separately for each product grouping.

2.4 The more homogeneous the product groupings are, the lesser is the extent of cross subsidies between policyholders. The Appointed Actuary has to balance the need to ensure equitable treatment between classes of policyholders with the practical constraints of having too fine a grouping.

2.5 For old and/or small groups of policies, the Appointed Actuary should consider the actual experience as well as the future bonus outlook so that this can be reflected in their payouts.

2.6 Old and/or small groups of policies may be grouped together with other policies judged to have similar characteristics in order that a practical and equitable approach to the sharing of experience could be achieved.

# 3 Methodology and Assumptions

## 3.1 Asset share definition

3.1.1 Uses of asset share

3.1.1.1 Asset share is commonly used in the following ways by actuaries to guide them in the bonus determination:

a) Setting the bonus scale such that the ratio of the asset share to the gross premium reserve lies within a certain specified range, at each product grouping level;
b) Setting the bonus scale such that the ratio of the asset share to the surrender value or maturity value lies within a certain specified range, at each product grouping level; or
c) Similar derivations of the above methods. Please refer to Appendix 1 for an example.

3.1.2 Calculation of asset share

3.1.2.1 Asset share for a product grouping at a given point in time is the accumulation of the premiums received plus investment income from the inception of the policies, less deductions due to benefit payments, commission, expenses, tax and transfers to shareholders.

Please refer to Appendix 2 for a sample asset share rolling calculation.

3.1.2.2 The asset share formula should also allow for survivorship with the relevant decrements such as mortality, morbidity and surrender. Surrenders may generate profits or losses that have an effect of increasing or reducing the assets backing the policies. The Appointed Actuary may adopt different approaches for the effect of surrender. The Appointed Actuary should satisfy himself or herself that the approach adopted is fair and appropriate and that a consistent method is adopted from year to year.

Where the impact of surrender is not taken explicitly into account, meaning that surrender is ignored as a decrement in the determination of the asset share, any profits generated from surrender of other policies within the same product group should ultimately be allocated back to the remaining policies within the same product group. This may be implemented by “grossing up” of the asset share.

3.1.2.3 When deriving the asset share as at the end of the year, the Appointed Actuary will typically roll forward the asset share at the beginning of the year to the end of the year using actual cash flows that were extracted from the insurer's internal revenue accounts. Examples of these include actual payouts of benefit payments and management expenses incurred for the year. The cash flows are then attributed either directly (for example, the actual benefits paid out for each product grouping) or by means of some drivers or proxies, to each product grouping.

3.1.2.4 Wherever possible, the Appointed Actuary should make use of actual historical data such as historical investment yield and cash flows to derive the asset share. However, sometimes detailed historical records on actual experience may not be readily available (especially for policies which have been in-force for a very long time). In such cases, the Appointed Actuary may make use of proxies to the actual historical experience, such as best estimate assumptions, where it is reasonably prudent and equitable to do so.

3.1.2.5 It is important for the Appointed Actuary to continually look for ways to refine the way in which the asset share is being determined for each product grouping, to ensure equitability and fairness to policyholders and that the calculation method is robust.

3.1.2.6 The Appointed Actuary may adopt different approaches in allowing for the cost of guarantees in the derivation of the asset share. For example, the Appointed Actuary may either make an explicit deduction for the cost of guarantees in the asset share formula, or allow for the cost of guarantee implicitly by declaring bonuses such that the ratio of the asset share to gross premium reserve is more than 100%, say 105%In determining the approach to adopt, the Appointed Actuary should have regard to the reasonableness of the explicit deductions or target ratios, the impact on the policyholders of the product group over time, and the overall level of prudence.

3.1.2.7 The allowance for the cost of guarantees, be it implicit or explicit, arises from the view that it is prudent for the insurer to maintain some buffer to meet the cost of guarantees inherent in all its participating policies, taking into account the types of investment held, and that a charge should be imposed. The Appointed Actuary has to be careful that when either introducing the cost of guarantees in the asset share formula through having some target ratios of asset share to gross premium reserve of more than 100%, that the insurer does not end up building up an estate which is not distributed to any class of policyholders.

3.1.2.8 The Appointed Actuary should satisfy himself that the company has appropriate capability to compute the asset share for each product grouping. Any actuarial valuation software used should allow the Appointed Actuary to update the asset share from the previous period, based on the detailed cash flow projections of policies within the same product group over the year.

3.1.3 <u>Comparison of asset share with gross premium valuation</u>

3.1.3.1 It was earlier mentioned that companies will typically compare the asset share with the gross premium reserve for each product grouping to decide how much bonus to set. For the purpose of this comparison, the 'grossed-up' asset share, as defined in the following paragraph, should be used.

3.1.3.2 The excess of the policy assets of the participating fund over the sum of the calculated asset shares for all product groupings (as described in the earlier section) should be fully allocated back to the respective asset share for each product grouping. This is according to an objectively determined basis, such as the product grouping's share of the total policy liabilities or calculated asset share. This would give the 'grossed-up' asset share for each product grouping. If the Appointed Actuary is of the view that the calculated asset share of a particular product group is accurately tracked from inception, then discretion may be exercised not to allocate back any proportion of the excess to that particular product grouping.

## 3.2 Assumptions setting

3.2.1 The Appointed Actuary should refer to Section 4.2 of GN L01 (see Appendix 3 for an extract) in setting the best estimate assumptions for bonus investigation.

3.2.2 In determining the best estimate projected fund earning rates or discount rates, the Appointed Actuary should also consider:

– the asset and liability duration, taking into account reinvestment risk where appropriate;
– the current asset allocations and the strategic asset allocations;
– the current observable market implied rate of returns and long-term best estimate rate of returns of the individual asset classes;
– the likely future trends and how fast they would revert to the long-term best estimate rate of returns;
– the consistency among these asset classes, including but not limited to credit spread and equity risk premium; and
– the interactions of these asset classes and their impact over time.

3.2.3 For the purpose of the bonus investigation, the Appointed Actuary may consider using the best estimate assumptions without provision for adverse deviation to investigate the supportability of the bonus. However, the Appointed Actuary should ensure that the participating fund remains solvent under such bonuses, in accordance with MAS regulations.

## 3.3 Shareholders' transfer computation and tax

3.3.1 Shareholders' transfers are calculated as a certain percentage (such percentage being not more than $1/9^{th}$ as currently stipulated under the Insurance Act) of the cost of bonus distribution to policyholders.

3.3.2 For the purpose of asset share calculations, shareholders' transfers refer to the actual transfers to shareholders during the year. This can be attributed to the relevant product grouping to determine the asset share for each product grouping. In the absence of the historical information, this can also be worked out based on the Minimum Condition Liability basis as under the Singapore risk-based valuation and capital framework.

3.3.3 For the purpose of gross premium reserve calculations, shareholders' transfers could be assumed at a certain percentage (such percentage being not more than $1/9^{th}$ as currently stipulated under the Insurance Act) of the cost of bonus distribution to policyholders as allowed for in the best estimate policy liability.

3.3.4 The Appointed Actuary should keep abreast of changes in tax rules, and ensure that the assumptions used in both asset share and gross premium valuation calculations are consistent with the appropriate tax rules prevailing.

# 4 Fund Management

## 4.1 Operation of smoothing

4.1.1 Smoothing of total benefits over time is characteristic of participating funds, which may pool business both within and between generations and classes of policyholders. The Appointed Actuary may exercise discretion but any smoothing methods adopted should meet the following criteria:

- a genuine reduction in volatility of payouts;
- no significant increase in the risk of statutory insolvency;
- cost neutral, i.e. overpayments should balance underpayments in the long term; and
- operate fairly for all policyholders.

## 4.2 Treatment of over or under distribution

4.2.1 The bonus distribution should reflect the performance of the participating fund and ensure that the payouts on policies are fair.

4.2.2 The Appointed Actuary should seek to ensure that the company does not systematically over or under distribute bonus to policyholders in the long term.

## 4.3 New business strain

4.3.1 Surpluses from the inforce products may be used to support new business strain. Alternatively, companies may choose to inject an amount equivalent to the estimated new business strain into the participating surplus account to support the strain. Under both approaches, the Appointed Actuary should ensure that the appropriate level of asset share for each product or product group is available for the bonus investigation and appropriately reflects the asset share of that product (or product group). This may result in negative asset share for products (or product groups) with new business strain in the initial years.

4.3.2 The Appointed Actuary should be satisfied that the resulting new business strain would not unduly impact the solvency of the participating fund or the company. If the Appointed Actuary has concerns that the level of new business strain is threatening the solvency position of the fund or company this should be raised with the Principal Officer and, if concerns remain, the Board.

## 4.4 Treatment of riders or any non-participating business written into the participating fund

4.4.1 It is acceptable to write riders or non-participating business into the participating fund. Where such products are written in the participating fund the following conditions should apply:

– pricing should be fair and follow actuarial principles;
– pricing of optional riders should be at least break even on a best estimate basis;
– benefits (and losses) from riders or any non-participating business written into the participating fund should be treated consistently;
– pricing of these products should not put undue strain on the fund.

4.4.2 The treatment of riders or any non-participating business written into the participating fund should be disclosed, where appropriate, to the policyholders and stated explicitly in the bonus report.

## 4.5 Surrender values

4.5.1 In making the recommendation of bonus rates to the Board, the Appointed Actuary should consider the impact of the bonus rates on surrenders. As well as bonus rates, consideration should also be given to any other factors (e.g. multiples of bonus rates or bonus rate factors which apply to surrenders) over which, under the policy terms and conditions, the company has discretion and which form part of the computation of the value which is paid to the policyholder upon surrender.

4.5.2 In making this consideration the Appointed Actuary should have regard to the progression of surrender values over the life of the policy. Consideration should be given to the consistency between surrender values and maturity values.

4.5.3 The Appointed Actuary should consider to what extent (if any) surrenders are being used to support the payouts to policyholders who hold their policies for longer. Where surrenders are being used to support payouts to policyholders who hold their policies for longer, the Appointed Actuary should consider if this is reasonable.

4.5.4 A summary of the considerations that the Appointed Actuary has made with regard to surrender value computation should be included in the Actuary's Report on bonus rates to the Board.

## 4.6 Treating customers fairly

4.6.1 Consideration of fairness to customers should include expectations that may have been formed by point of sale disclosures e.g. marketing literature, benefit illustrations, post-sale disclosures, the company's past practice, as well as treatment by competitors or industry practices.

4.6.2 Consideration should also be given to the impact of writing new business on existing policyholders to ensure that they would not be unduly disadvantaged.

# 5 Reinsurance and Investment

## 5.1 Reinsurance

5.1.1 Reinsurance is an important lever for managing risk. The Appointed Actuary has the responsibility to ensure that reinsurance programmes in place are sufficiently robust and protect the balance sheet vis a vis the company's risk appetite and capital strength.

5.1.2 A company may put in place a reinsurance programme with the following objectives (not exhaustive or mutually exclusive):

– reduce the impact of adverse claims experience; thereby stabilizing claim fluctuations and profits and aids in the smoothing of profit distributions;
– reduce the concentration risk by limiting the maximum risk retained on any one life;
– tap into the expertise of reinsurers in areas like underwriting, product design, etc, where the reinsurers have broader experience;
– provides capital benefits to the extent that the insurer is able to take credit for the reserves held by the reinsurers.

5.1.3 In designing and putting in place a reinsurance programme, the following are important considerations:

– objective of reinsurance;
– risk appetite of the insurer;
– the type of risk to be ceded and the effectiveness of cession;
– cost of reinsurance;
– the counterparty risk arising from the financial strength of the reinsurer;
– type of reinsurance arrangement;
– optimal retention limit;
– control cycle to review effectiveness and appropriateness of programmes in place.

## 5.2 Investment

5.2.1 The financial condition of the participating fund depends fundamentally on the relationship between the assets and liabilities of the fund. The responsibility of the Appointed Actuary is to ensure that this relationship is effectively managed.

5.2.2 The ultimate responsibility for investment policy lies with the Board of Directors. Under MAS Insurance (Actuaries) Regulations 2004 (amended 2005), the Appointed Actuary is required to assist the company in formulating a suitable investment policy for the participating fund.

5.2.3 In providing advice, the Appointed Actuary should evaluate the appropriateness of the investment policy with regard to the nature and term of the liabilities as well as the investment environment.

5.2.4 In formulating his advice, the Appointed Actuary may take into account the following factors:

- available and authorised asset classes;
- accounting and other reporting considerations;
- degree of asset/liability mismatch;
- policy terms and conditions, including any embedded options or guarantees;
- liquidity and credit quality of assets to meet policy claims, particularly in stressed scenarios;
- credit or counterparty exposure risk;
- company solvency and financial resources (capital);
- required returns and discretionary actions available to the company.

5.2.5 The Appointed Actuary should take into consideration the interests of policyholders and seek advice on any constraints or limits if necessary. Regular review of these limits is recommended, ensuring appropriateness in the level of risk taking against the solvency strength of the fund.

5.2.6 The Appointed Actuary should be satisfied that appropriate systems of control, monitoring, approval and valuation of assets and liabilities have been established.

5.2.7 The Appointed Actuary should be satisfied that the investment strategy is compliant with all relevant regulations, and consistent with disclosures made to policyholders.

5.2.8 Where investments are made in physical properties and specifically company occupied properties, the Appointed Actuary should be satisfied that such investments are made with sound investment evaluation and financial transactions such as leases are made on an arm’s length basis.

# 6 Segregation and Merging

## 6.1 Fund segregation

6.1.1 The participating fund may be segregated into sub funds formally (i.e. reported separately in the MAS forms) or notionally to manage different risks. For example, a reason for segregating the participating portfolio into sub funds would be differing investment strategies.

6.1.2 The Appointed Actuary should document the risks that are shared within the same sub fund for experience pooling in the internal participating fund governance policy and the rules should be consistent from year to year and not subject to arbitrary changes. Any changes should be clearly justified and documented.

6.1.3 If the participating funds are segregated, whether formally or notionally, there should be a clear allocation of expenses and investment income to each of the sub funds.

## 6.2 Merging of participating fund

6.2.1 Prior to the merger of two or more participating funds, the Appointed Actuary should consider:

- the pre merger internal participating fund governance policy;
- the pre and post merger bonus outlook for all affected policyholders;
- the pre and post merger solvency strength of the participating funds, including but not limited to the security of benefits for all affected policyholders; and
- the pre and post merger economies of scale.

The Appointed Actuary should be satisfied that these factors remain reasonable and are not significantly weakened as a result of the merger.

6.2.2 The Appointed Actuary should be satisfied that the investment strategy remains suitable for all affected policies post merger.

6.2.3 The Appointed Actuary should be satisfied that affected policyholders' interests are not compromised with the intended merger of the participating funds or sub-funds.

6.2.4 The Appointed Actuary should ensure that disclosure on the merger of the participating funds is done adequately to the prospective and existing participating policyholders.

6.2.5 Where there are significant weakening of these factors listed above or deviation from pre merger investment strategy, the Appointed Actuary should inform the Board and document the reasons to proceed or not proceed with the merger.

6.2.6 The Appointed Actuary should be aware that the factors listed above are not exhaustive, if there are any other factors that will significantly impact the affected policyholders, the Appointed Actuary should inform the Board and document these factors.

# 7 Report

7.1 The Appointed Actuary should comment on compliance with this guidance note. Any deviations should be justified, and where appropriate, brought to the Board's attention.

7.2 The annual bonus investigation report should cover:

– exceptional items and/or one-off events, including any changes in practice or approach against past practice;
– consideration of the impact of bonus recommendations on policyholder benefits e.g. surrender values, and maturity values to groups of policyholders;
– specifics of calculations, including (but not limited to) asset share determination, charges for guarantees and/or smoothing, smoothing mechanism, expense allocations, allowances made for tax, shareholder transfers etc should be disclosed;
– comment on suitability and achievability of long-term investment return assumptions;
– consideration of sustainability of proposed bonus rates, including impact on on-going solvency of the participating fund, and the fund's ability to meet its guarantees to policyholders should be included.

# Appendix

## Appendix 1

Example where asset share may be indirectly used as a guide on bonus determination
The accumulated asset shares of each product grouping is equated with the present value of expected future cash flows (assuming the proposed bonus rates) to obtain a rate of return to discount the future cash flows. This rate of return, which may be referred to as the Bonus Earning Power ("BEP") yield, is required to support future bonuses.

The BEP yield for each product grouping is then compared to their respective expected investment returns. If the BEP yield is lower than the expected investment return, this implies that the proposed bonus rates are sustainable. If the BEP yield is higher, this would mean that the proposed bonus rates are not sustainable.

## Appendix 2

Calculation of asset share

Let:

AS[t] = asset share at time t

$i_t$ = actual investment return earned on the participating fund or sub-fund, where relevant, during year t

AS[end of year] = AS[beginning of year] * (1 + $i_t$) +
{ Premiums received during the year
- Benefit payments paid during the year
- Commission paid during the year
- Expenses (incl. management expenses) incurred during the year
- Tax payable during the year
- Shareholders' transfers during the year } * (1+ 0.5* $i_t$)

The above formula assumes that the cash flows happen in the middle of the year.

**Appendix 3**

Section 4.2 of GN L01

4.2.1 Best estimate assumptions should neither overestimate nor underestimate expected future experience. In determining best estimate assumptions the Appointed Actuary should consider:
- the results of any experience investigation;
- pricing assumptions for new business;
- relevant industry experience;
- the comparison of previous best estimate assumptions with actual results;
- the credibility of data;
- the expected future distribution of outcomes;
- likely future trends;
- the interaction of assumptions e.g. mortality and lapses, asset mix and investment returns;
- the impact of reinsurance arrangements.

4.2.2 For the purpose of the valuation of the policy liabilities, an additional margin is provided through the provision for adverse deviation (PAD) as described in the regulations. The PAD represents an additional component of the liability value aimed at deriving an adequate level of the value of insurance liabilities.