Actuarial Society of Malaysia (ASM)

Draft
Practice Note: Asset Share Study

Classification

Practice Note

Application

Bank Negara Malaysia has issued **"Surat Pekeliling JPI: 29 / 2004"** dated 13 October 2004. The subject of the circular is "**Appointed Actuary's Report to the Board on Recommendation for a Reduction in Bonus Rates for Participating Life Products".**

JPI 29 stipulates that **Asset Share Study** should form the basis for bonus management of Participating Policies. It should also be used as a guide to determining cash surrender value on all Participating Policies. ASM's Professional Sub-Committee (PSC) feels that there is a need to issue this Practice Guide to serve as a source of reference and technical guidance to all Practicing Actuaries in Malaysia.

This Practice Note is intended to act as a source of reference, and is not mandatory nor is it the sole guide to carrying out Asset Share Studies. ASM recognises that every life insurer has its unique business practices, product profiles, business and marketing distribution etc. and hence accepts that there is no one standard Asset Share Methodology that can be applied to all companies.

It is the responsibility of the Appointed Actuary to ensure that the method and assumptions adopted are suitable to his/her company circumstance

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1 Introduction

1.1 JPI 29 effectively recognises Asset Share Study as the methodology that should be used in the bonus recommendation. However, JPI 29 further stipulates that a life insurer may use an Equivalent Method Study provided this method is approved by Bank Negara Malaysia.

1.2 Given that JPI 29 is issued by the Jabatan Pengawalan Insurans of Bank Negara Malaysia, ASM is of the view that the Asset Share Study should generally be regarded as the accepted method by Bank Negara Malaysia when carrying out a Bonus Investigation Study.

1.3 The objective of this Practice Note is therefore to provide a source of reference to actuaries practicing in Malaysia in forming their Asset Share Study methodology.

2 Asset Share Study

2.1 General Theory

Definition

Retrospective Earned Asset Shares (REAS) effectively mean the notional accumulation for all cash flows underlying a particular group/cohort of policies. It is the closest representation to the true underlying assets for that group/cohort of policies. An individual policy asset share at a given point in time is simply the amount that the premiums have accumulated to with investment returns allowing for deductions due to expenses, benefit charges and other outgo. The following sets out an example of a generic formula that is an appropriate representation of REAS, as follows:

REAS(t) = REAS(t-1) + GP(t) + IR(t) – EXP(t) – CM(t) – DB(t) – SU(t) – MA(t)-TX(t) – CC(t) – SR(t) – CD(t) – CDTr(t) – TDDM(t) – TDS(t) – TDTr(t) – COB_SU(t) – RB_DTH(t) – COBTr(t) – TBS(t) – TBDM(t) – TBTr(t) – Misc(t)

Where,

GP(t)	=	Gross Premium Received in time t
IR(t)	=	Investment Return Earned over time t (inc. Capital Gains-Realised and Unrealised)
EXP(t)	=	Acquisition & Maintenance Exp incurred in time t
CM(t)	=	Commissions paid in time t
DB(t)	=	Cost of Death and other Risk Benefits incurred in time t
SU(t)	=	Cash Surrender Value(t-1) per policy x No. of Surrenders
MA(t)	=	Maturity Benefit per policy x No. of Maturities at time t
TX(t)	=	Tax adjustment based on rules applicable
CC(t)	=	Cost of Capital/Guarantee in duration t
∆SR(t)	=	Smoothing Reserve

For Cash Dividend type Par Plans:

CD(t)	=	Cash Dividends declared in time t
CDTr(t)	=	Shareholder transfer in relation to CD declared in time t
TDDM(t)	=	Terminal Dividend on Death/Maturity in time t
TDS(t)	=	Terminal Dividend on Surrender in time t
TDTr(t)	=	Shareholder Transfer in relation to TD paid in time t

For Reversionary Bonus type Par Plans:

COB_SU(t)	=	Cost of Reversionary Bonus paid on Surrender in time t
RB_DTH(t)	=	Reversionary Bonus paid on Death in time t
COBTr(t)	=	Shareholders Share of Cost of Bonus declared in time t
TBS(t)	=	Terminal Bonus paid on Surrender in time t
TBDM(t)	=	Terminal Bonus paid on Death/Maturity in time t

TBTr(t)	=	Shareholder Transfer in relation to TB paid in time t
Misc(t)	=	Other Miscellaneous adjustments, e.g. Reinsurance, Profit/Loss from Par Riders (see notes below)

The above formula is an example of a generic formula and individual companies would apply different sections to suit its business circumstance.

2.2 Assumptions

In computing the Asset Share, actual experiences should be used wherever possible. However, in the event that some insurers may not have experience studies in the past, and hence suitable assumptions may be adopted as suggested below.

The Appointed Actuary taking into consideration the circumstances appropriate to each individual Company's Par Fund must appropriately justify any assumption adopted.

2.2.1 Investment Return

Possibly the most important assumption in the Asset Share accumulation is the Investment Return Assumption.

The most **simplistic approach** would be to calculate the Aggregate Yield using a Market Value Basis by adopting the following formula on the total Par Portfolio:

IR = $2I / (A + B - I)$ where

I = Investment Income (Net of Investment Expenses and Gross of Tax)
+ Gain on Sale
- Loss on Sale of Assets
+ Change in URCG/L over the year

A = Market Value of Beginning Assets

B = Market Value of Ending Assets

Where, URCG/L means Unrealised Capital Gain/Loss. This item may include any Property Revaluation Reserve the Appointed Actuary deems appropriate to distribute to the current generation of policyholders.

In the absence of actual Historical Returns, other sources of information may be used as a guide, for example (though this list is not exhaustive):

1. Historic Insurance Reports
2. Benchmark returns on 10 year Malaysia Government Securities
3. Any other basis adopted and suitably justified by the Appointed Actuary

In the event that any of the above is used as a guide to setting the Investment Return Assumption, the Appointed Actuary must satisfy himself/herself that this is appropriate to his/her Company's business.

Companies may also choose to hypothecate assets within the Par Fund to specific groups of policies and calculate the yield of these assets to be adopted in accumulating the Asset Shares for this specific group of policies. Assets may be hypothecated taking into consideration the nature of the Policy's benefits, outstanding duration etc.

2.2.2 Mortality/Morbidity

This is one of the Assumptions that is critical in the accumulation of the Asset Shares and any variations here can result in material variations to the Asset Share. Important considerations when estimating historic Mortality experience include the following:

1. Consideration of Actual Experience as indicated from the individual Company's "Continuous Mortality Investigations"
2. Pricing Assumptions used.
3. Industry studies and Industry Tables (e.g. MAL8388).
4. Reinsurer's Experience to the extent that it is appropriate.

The Appointed Actuary must satisfy himself/herself that any assumption adopted is appropriate to his/her Company's business.

For example –

Many companies in the early 70's priced their products using the UK Standard Tables, i.e. A4952. During this period, there was no representative experience in the Malaysian Insurance Industry. One possible approach is to grade this experience into the current experience/table over time by using a suitable graduation method.

2.2.3 Lapse/Withdrawal Rates

Asset Share accumulation over the long term is not necessarily sensitive to the assumptions adopted here. However, individual companies need to be particularly sensitive to any special pricing feature in the products. An important example would be lapse-supported products.

For lapse supported products, it is important to have the actual lapse experience of the products and not just apply the pricing assumptions when accumulating the Asset Shares for that particular cohort of policies. This is because, if the lapse experience were not as high as was projected in the pricing, then the REAS would emerge lower than expected.

In general, in the absence of actual experience, the Pricing Assumptions may be adopted, adjusted appropriately for any known issues.

Again, the Appointed Actuary must satisfy himself/herself that any assumption adopted is appropriate to his/her Company's business/product line.

2.2.4 Expenses

This should reflect the Companies actual historic experience taking into consideration the following:

1. Historic expense analysis
2. Pricing Assumptions

An appropriate allowance for inflation/deflation should be made if the experience is applied to a different period compared to the period of study.

For Companies with no information on historic expense experience, the pricing assumptions may be used.

Some Companies may encounter expense overrun issues. This issue should be addressed taking into consideration the individual Company's business.

The Appointed Actuary must satisfy himself/herself that any approach/assumption adopted is appropriate to his/her Company's circumstance.

2.2.5 Commission

Model the exact Commissions paid.

2.2.6 Taxation

Taxation should be modeled taking into consideration the Tax Laws applicable during the duration/period concerned.

The current applicable rule for Years of Assessment 1995 and onwards, where the Tax applicable is as follows:

Tax = Life Fund Tax Rate x [Net Investment Income + Realised Capital Gains – Realised Capital Losses], where the current applicable Tax Rate is 8%.

Prior to Year of Assessment 1995, the Tax laws were different and the appropriate basis should be adopted.

2.2.7 Cost of Capital/Guarantee

Due to the nature of Traditional Par business, in most cases, there will exist some element of New Business Strain in the early years as a result of the high Statutory Reserve and Solvency Margin requirements. As a consequence of this, there will/may be an element of capital support required from the Shareholders when writing this block of policies.

Hence it is appropriate to assume that the Shareholders are able to impose a charge on the capital tied up in supporting the business written. One approach would be to impose a charge on the Capital support required, for as long as support is necessary (e.g. in the early years).

Example:

Charge = - { % x (min [0,REAS – Statutory Reserve - Required Solvency margin]) }, where x% can be the Required Shareholder Return or Par Fund Yield

This charge can be set and tested at a macro level to ensure that the estate is not more that the Required Solvency Margin.

2.2.8 Shareholder Transfer

The allowance should be consistent with the provisions under the Insurance Act and not more than the Actual Transfer made by each Company if this information is available historically.

2.2.9 Smoothing Reserve

In order to protect policyholders from volatile asset shares, the capital gain component can be smoothed over certain duration, representing the market cycle, e.g. 5 years. This can be managed by setting up a Smoothing Reserve and releasing it over time (e.g. if it is smoothed over 5 years, then 20% is released each year).

2.2.10 Miscellaneous Items

The Appointed Actuary should justify any item included here.

For example, reinsurance cost may be built in to the extent that it includes a Profit Commission to the Reinsurer and to the extent that it is sizeable.

Companies with Par Riders may include the profits from Par Riders as an additional income in the Asset Share calculation. Possible approaches to allowing for Par Riders include the following:

- Deducting the Statutory Reserves for these Riders from the Par Assets and hence allowing the surplus to flow into the Asset Shares as a whole. This can then be allocated across products in proportion to the size of the respective policies Asset Share.
- Only allocate the profit from Par Riders to Post 1996 policies (when separation of the Par and Non Par fund was done).
- Completely exclude Par Riders and their profits from the Asset Share study by deducting the Asset Share of the Par Riders from the Par Market Value of Assets.

Other examples under this section include Shareholder Transfers into the Par Fund.

3 Equivalent Method Study

3.1 Profit Test Approach

This is **one example** of an alternative method that can be used for Bonus Management. This method must however be used carefully to ensure that sufficient model points are analysed when recommending any Bonus/Dividend Adjustments.

Assumptions used when adopting this method may be set using Section 2.2 as a reference.

The Appointed Actuary must be satisfied that the Method and Assumptions adopted here are equitable to the par policyholders and suitable to his/her Company's business.

4 Reasonableness checks on the REAS

Once we have calculated the Asset Share as at the end of Financial Year t, the following checks should be carried to ensure appropriateness of the Asset Share numbers so accumulated:

1. Comparison with the Market Value of Par Assets. The Par Asset should be adjusted down to be consistent with the Asset Shares calculated. Sample adjustments include the following:
   - Deduction for any Par Riders not included in the Asset Share
   - Outstanding Claim Reserves etc

2. Reconciliation with at least the prior years Revenue Account cash flows. An attempt should be made to reconcile further back if the information is available in the correct format.

   Examples of items that should reconcile closely:
   - Premiums
   - Expenses
   - Commissions
   - Death Benefit
   - etc