



**बीमा विनियामक और विकास प्राधिकरण**  
**INSURANCE REGULATORY AND  
DEVELOPMENT AUTHORITY**

Circular No. IRDA/ACTL/CIR/ALM/005/01/2012

3<sup>rd</sup> January 2012

To

**CEOs of all Life Insurers**

**Re: Asset-Liability management and Stress testing**

**Part I – Asset Liability Management**

1. Asset-liability management (ALM) is the practice of managing a business so that decisions and actions taken with respect to assets and liabilities are coordinated. ALM is relevant to, and critical for, the sound management of the finances of the insurers that invests to meet its future cash flow needs and capital requirements.
2. As Asset Liability Management plays a vital role in the sound management of the insurance business, the Authority has mandated all the life insurers to provide the details of Asset Liability Management activities undertaken by them in Chapter-5, Risk Management of Appointed Actuary's Annual Report. The framework of ALM has also been discussed in the Corporate Guidelines.
3. On thorough examination of the details of ALM activities submitted by the life insurers in the AAAR for the year ended March 31, 2010, it appeared that these details are incomplete and inconsistent. As the mandate by the Authority was very broad, each insurer had adopted their own measures in reporting such details in AAAR.
4. To bring consistency in ALM reporting and to strengthen the ALM framework, the following additional guidelines to the existing framework are prescribed. The guidelines shall be applicable to all life insurers and shall come into effect from 1st April 2012..
5. Insurers shall have an ALM policy approved by the Board of the insurer and shall be submitted to the Authority within 90 days from the date of this circular. The Board shall approve the insurer's ALM policy, considering the asset-liability relationships, the insurer's overall risk tolerance, risk and return requirements, solvency position and liquidity requirements. The Board shall regularly review such policy at the year end or at

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6. Insurers shall have in place effective procedures for monitoring and managing their asset-liability positions to ensure that their investment activities and asset positions are appropriate to their liability, risk profiles and their solvency positions. The insurers shall confirm compliance to this requirement within 90 days from the date of this circular.
7. The ALM policy should, at the minimum, enable the insurer to:
  - a. understand the risks they are exposed to;
  - b. develop ALM policies to manage them effectively;
  - c. apply techniques appropriate for the nature of their business, the risks they undertake and specific /local market conditions; and
  - d. measure the interest rate risk, in particular, faced by the insurers and thereby improving the assessment of the asset liability management strategies of the insurers.
8. The insurer shall examine all risks requiring the coordination of its assets and liabilities. The ALM framework shall cover all the areas significant in terms of their potential impact on economic value. The economic value of asset or liability cash flows, derived in such a way as to be consistent with current market prices where they are available, or using market-consistent principles, methodologies or parameters. These may include risks like:
  - a) Market Risk
    - i) interest rate risk (including variations in market credit spreads)
    - ii) equity, real estate and other asset value risks
    - iii) currency risk
    - iv) related credit risk
  - b) Underwriting Risk
  - c) Liquidity Risk
9. The insurer shall develop and implement controls and reporting procedures for its ALM policies that are appropriate for its business and the risks to which it is exposed. These shall be monitored closely and reviewed regularly.
10. All life insurers shall submit the data with respect to the assets and liabilities in the format, **(Table-ALM- Quarterly)** as per Annexure-1, on a quarterly basis within 45days from the end of each quarter, starting from the quarter ending March 2012 (as already we are in December) onwards and Table-ALM-Yearly on yearly basis along with AAAR.

11. 'Table-ALM- Quarterly' data shall be furnished for:

- base discount rate (as per yield curve available on the date of annual valuation) applicable and, with such base discount rate increased & decreased by 1% and 2%.

Further to the above table, the 'Table-ALM-Yearly' shall also contain the details about the Impact on duration due to changes in the following:.

- a) fall of 30% in Equity values, 100 basis points fall in yield available on various fixed interest securities, adverse deviation of 10% in mortality/morbidity, expenses, withdrawal/lapse rates and 25% (increase and decreasing) in new business volumes independently .
- b) fall of 30% p.a. in Equity values, 100 basis points p.a. fall in yield available on various fixed interest securities, annual adverse deviation of 10% p.a. in mortality/morbidity, expenses, withdrawal/lapse rates and 25% (increase and decreasing) in new business, during three years from the report date independently.

12. 'Table-ALM' data shall be furnished separately for 'Life, 'Pension', 'General Annuity' and 'Health' businesses. If mathematical reserves of any line of business as per latest annual valuation results is less than 5% of the mathematical reserves of the total business, such line of business need not be considered for ALM framework. Under all the classes of businesses non-linked and linked (non-unit part) business shall be furnished separately.

## **Part II- Stress testing**

13. Stress testing helps insurers to ascertain the potential level of vulnerability to different scenarios, to manage their risks and maintain enough financial resources to manage them. Stress tests enable insurers to study the quantitative impact of different scenarios and its affect on the solvency of an insurer. The stresses may be financial, operational, legal, liquidity based or be related to any other risk that might have an adverse economic impact on the insurer.

14. Stress Testing being critical in the management of risks and the financial soundness of the insurers, Authority vide Circular No: IRDA/ACTL/CIR/GEN/045/03/2011, March 7, 2011, mandated all the life insurers to conduct scenario and sensitivity testing as part of the Actuarial Report and Abstract (from the year ended March 31, 2011).

15. On thorough examination of the requirements, it has been felt necessary to prescribe minimum requirements for the stress testing. In this regard, the insurer shall submit

Annexure-ST (as prescribed in the said circular) as per the risk factors described in Annexure-2. The amount of deviation in the risk factors may be considered as per the risk profile of the insurer. However, the insurer shall submit the results of stress testing with respect to the scenarios based on the following specific risk factors as stated below in addition to the insurer specific risk factors.

i. Fall of 30% in Equity values, 100 basis points fall in yield available on various fixed interest securities, adverse deviation of 10% in mortality/morbidity, expenses, withdrawal/lapse rates and 25% (increase and decrease) in new business volumes independently.

ii. Fall of 30% p.a. in Equity values, 100 basis points p.a. fall in yield available on various fixed interest securities Annual adverse deviation of 10% p.a. in mortality/morbidity, expenses, withdrawal/lapse rates and 25% (increase and decrease) in new business, during three years from the report date independently.

16. Insurer's Board shall ensure timely review of the issues emanating from 'Table-ALM' data and Annexure-ST and take such corrective action as may be necessary under intimation to the Authority.

17. The Appointed Actuaries may follow Actuarial Practice Standards issued by Institute of Actuaries of India in this regard if any.

The circular is issued under Section 14 of IRDA Act, 1999.

  
(J. HARI NARAYAN)  
Chairman

**Annexure-1**

The amount of assets and liabilities in each of the duration buckets as indicated below should be furnished. Macaulay duration should be used in this regard.

Class of business:

Unit Linked/Non-Linked Business:

As on:

**Table-ALM – Yearly**

<b>Macaulay Duration</b>				
<b>Base Scenario (1/2/3/4/5)</b>	<b>Assets in Rs. (000)</b>	<b>Liabilities in Rs. (000)</b>	<b>Net</b>	<b>Net, Hedged</b>
Under 1 year				
1-2 years				
2-3 years				
3-5 years				
5-7 years				
7-10 years				
10-15 years				
15-20 years				
20-25 years				
Above 25 years				
<b>Total</b>				

**ALM-Table-Quarterly**

<b>Base Scenario</b>	<b>Assets in Rs. (000)</b>	<b>Liabilities in Rs. (000)</b>	<b>Net Cashflows (column 2 – column3)</b>
Under 1 year			
1-2 years			
2-3 years			
3-5 years			
5-7 years			
7-10 years			
10-15 years			
15-20 years			
20-25 years			
Above 25 years			

Total			
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Notes:

1. Discount rate used in arriving at 'Macaulay duration' of various classes of assets and liabilities shall be furnished separately. (Effective duration can be used instead of Macaulay duration) (For liability duration, whether the duration is to be calculated on policy by policy basis or at portfolio level)
2. Macaulay duration shall be computed as below:  
For cash flows of C1, C2, ....., Cn at times t1, t2,....., tn respectively and with 'd' being discount rate, Macaulay duration is:

$$\frac{\sum_{i=1}^n C_i (1+d)^{-t_i} t_i}{\sum_{i=1}^n C_i (1+d)^{-t_i}}$$

3. 'Table-ALM' data shall be signed by , Chief Executive Officer, Chief Financial Officer and Appointed Actuary

**List of 'Risk Factors' to be considered in projecting financial and capital adequacy positions over the one-year period immediately following recent March 31.**

1. Mortality/ Morbidity: adverse deviation in experience
  
2. Investment returns
  - (a) Yield curve
    - (i) Parallel yield curve shift
    - (ii) No change for duration less than 5 years, parallel shift for duration more than 5 years, linear interpolation
    - (iii) Parallel shift for duration less than 5 years, no change for duration more than 5 years, linear interpolation
    - (iv) Change in credit spreads
  - (b) Equity market
    - (i) Equity crash – fall in all market, by market
    - (ii) Stock specific event risk - move in each individual stock, by stock
  
3. Expenses: increase in expenses
  
4. Termination rates: adverse deviation in experience
  
  
5. New business: fall in new business
  
  
6. The appointed actuary shall also include shock scenarios to company's experience in the next projection year arising from changes in:
  - (a) reinsurance ceded;
  - (b) reserving basis;
  - (c) exercise rate of policy options;
  - (d) distribution to shareholders; and
  - (e) taxation.
  
  
7. The appointed actuary may also consider any other factors that have significant relevance to the insurer's business.

**List of 'Risk Factors' to be considered in projecting financial and capital adequacy positions over the three-year period immediately following recent March 31.**

1. Mortality/ Morbidity: yearly deterioration in experience over the projection period
2. Investment returns
  - (a) Yield curve:
    - (i) Parallel yearly yield curve shift
    - (ii) No change for duration less than 5 years, yearly parallel shift for duration more than 5 years, linear interpolation
    - (iii) Yearly parallel shift for duration less than 5 years, no change for duration more than 5 years, linear interpolation
    - (iv) Change in credit spreads
  - (b) Equity market
    - (i) Equity dividend yield fall over the projection period
    - (ii) Equity total returns deteriorate over the projection period
3. Expenses: Yearly deterioration in experience over the projection period
4. Termination rates: Yearly deterioration in experience over the projection period
5. New business: Yearly fall in new business income over the projection period
6. Where material, the appointed actuary shall also include scenarios on deterioration of company's experience over the projection period arising from changes in:
  - (a) bonus scales;
  - (b) reinsurance ceded; (c) reserving basis;
  - (d) exercise rate of policy options;
  - (e) distribution to shareholders; and
  - (f) taxation;
7. The appointed actuary may also consider any other factors that have significant relevance to the insurer's business.