



## IFRS for Insurance - Actuarial Issues

### Introduction

It has been decided that corporate Nigeria will adopt IFRS in 2012. That is, accounts for periods ending in 2012 onwards will be in accordance to IFRS. This in effect, means that 2011 figures stated in 2012 accounts will also need to be IFRS compliant.

We expect most insurance companies will adopt their current accounting practices in 2011 and restate these under IFRS in 2012. We also anticipate that a good number of companies will **internally** adopt IFRS in 2011 so as to see and manage its impact on profit trends and the balance sheet worth when fully adopted in 2012.

**This newsletter highlights how IFRS affects the calculation and reporting of the technical reserves together with relevant disclosures that will now need to be made in the accounts.**

The International Accounting Standard Board (IASB) released an Exposure Draft (ED) on 30<sup>th</sup> July 2010 proposing a **standard** to address how insurers recognize, measure, present and disclose Insurance contracts in their end period of accounts. Responses to the ED were allowed up until 30<sup>th</sup> November 2010. The release of the appropriate International Accounting Standard (IAS) is awaited.

The ED proposes that Company Insurance Balance Sheet liabilities – Technical Reserves – be arrived at from 4 building blocks that assess:

- the amounts
  - timing and
  - uncertainty
- } of the insurance business **future cashflows**

These cashflows will typically comprise:

- Premiums (single, annual, monthly)
- Commission
- Policy maintenance expenses
- Claims
- Etc
- Investment income
- Other acquisition expenses
- Renewal expenses
- End year reserves (or increases thereto)

**Thus the standard prescribes the valuation method to adopt for arriving at technical liabilities – the cashflow approach.** This is a major departure from current practice where Net or Gross Premium Valuation are typically used in Life Business and case estimates are adopted in general business.

The standard affects both Life and General (short term) Business. This article gives a high level insight and, mainly relates to life business, although general business is briefly discussed

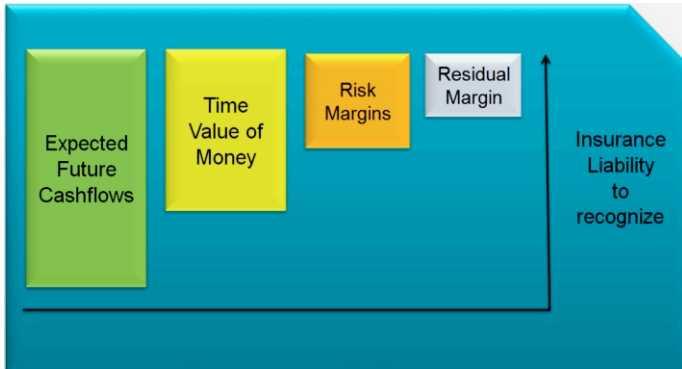
Actuarial Valuation  
Method of Technical  
Liabilities under IFRS

Cashflow  
Approach

## 2. IFRS Technical Liability Building Blocks

The four (4) building blocks to adopt when calculating the insurance liabilities are illustrated and described below.

Insurance Liability Building Blocks



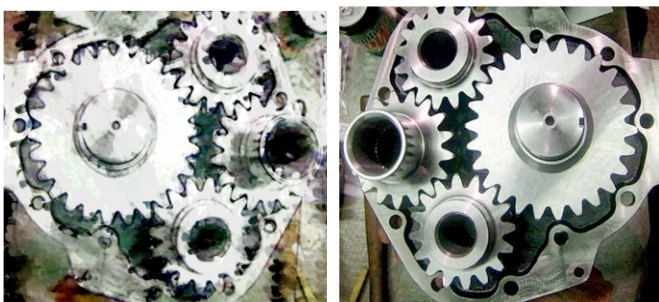
### 2.1 Expected Future Cashflows

Expected Future Cashflows represent the expected inflows and outflows from the contracts on the books. The CFs will typically be projected on a monthly basis spanning the contract duration.

The projection can be done on a cohort basis rather than by individual policies.

The projections should anticipate routine operational experiences: lapses, surrenders, claims expenses, investment earnings etc. Assumptions adopted should be entity specific, thus for instance, the expense assumptions should reflect the offices anticipated experiences.

The cashflows should anticipate future bonuses for both with profit and guaranteed bonus business. Expenses should be those that relate directly to the policies and should be recognised in the cashflow module as they are incurred. This implies that Deferred Acquisition Costs (DAC) will no longer be reflected in the accounts.



We illustrate below a simplified cashflow from an endowment policy.

(a) Data

| Policy Type: Endowment Assurance |            |             |                  |
|----------------------------------|------------|-------------|------------------|
| Policy Particulars               |            | Assumptions |                  |
| Age                              | 40         | Term        | 5 years          |
| Office Premium                   | 60,000 p.a | Mortality   | A67/70           |
| Sum Assured                      | 350,000    | Lapses      | 1% per month     |
|                                  |            | Expenses    | N1,200 per month |
|                                  |            | Commission  | Year 1 25%       |
|                                  |            |             | Year 2 15%       |
|                                  |            |             | Year 3 10%       |
|                                  |            |             | Year 4 5%        |

(b) Cashflows

| Month | Premium* | Expenses | Comm.  | Claims     | Net Cashflow** |
|-------|----------|----------|--------|------------|----------------|
| 1     | 5,000.00 | 100.00   | 104.17 | 42.08      | 4,753.75       |
| 2     | 4,949.40 | 98.99    | 103.11 | 41.65      | 4,705.65       |
| 3     | 4,899.32 | 97.99    | 102.07 | 41.23      | 4,658.03       |
| 4     | 4,849.75 | 96.99    | 101.07 | 40.81      | 4,610.90       |
| 5     | 4,800.67 | 96.01    | 100.01 | 40.40      | 4,564.24       |
| ..    |          |          |        |            |                |
| ..    |          |          |        |            |                |
| 60    | 2,738.36 | 54.77    | -      | 191,685.50 | (189,001.94)   |

Rather than have a point estimate for the Technical Liabilities, the ED proposes that CFs be a range of possible outcomes with probabilities assigned to each outcome. This can be achieved through;

- generating scenarios based on all the parameters – lapses, mortality, inflation, expense levels, etc and/or
- stochastic modelling

### 2.2 Time Value of Money

The ED proposes that each cashflow be adjusted for the time value of money, through discounting, leading to the Present Value of liabilities, at the calculation date.

The discount rate to use should be consistent with the characteristics of the insurance contract.

Unless the liability is directly matched to assets, the risk free yield will be appropriate to adopt for the discount rate.



Adopting risk free rates that relate to liability terms pose challenges in Nigeria because:

- we do not have sufficient bonds relating to the different liability tenures
- The bond secondary market is relatively inactive, making current yields difficult to determine

Hence, we do believe that in the early years of implementation, actuaries will adopt an element of subjectivity when choosing discount rates in liability calculations.

**Illustration of Impacting TVM**

| Month        | Discount Rate | Cashflow         | Discounted Cashflow      |
|--------------|---------------|------------------|--------------------------|
| 1            | 7.0%          | 4,753.75         | 4,727.03                 |
| 2            | 7.0%          | 4,705.65         | 4,652.89                 |
| 3            | 7.0%          | 4,658.03         | 4,579.91                 |
| 4            | 7.0%          | 4,610.90         | 4,508.07                 |
| 5            | 7.0%          | 4,564.24         | 4,437.37                 |
| ...          |               |                  |                          |
| ...          |               |                  |                          |
| 13           | 7.5%          | 4,239.78         | 3,920.28                 |
| ..           |               |                  |                          |
| ...          |               |                  |                          |
| 20           | 7.5%          | 3,948.01         | 3,499.70                 |
| ..           |               |                  |                          |
| ..           |               |                  |                          |
| 60           | 9.0%          | (189,001.94)     | (122,838.29)             |
| <b>Total</b> |               | <b>24,710.66</b> | <b>56,695.51 Reserve</b> |

**2.3 Risk Adjustment**

The ED requires a Risk Adjustment to be explicitly applied to the value of cashflows calculated.

The Risk Adjustment is defined as: *The maximum amount the insurer will rationally pay to be relieved of the risk that the ultimate fulfilment cashflows exceed those expected.*

3 methodologies are allowed:

- confidence level approach (VAR)
- conditional tail expectation (TVAR)
- cost of capital

We describe two of the methods below.

**(a) Cost of Capital**

Insurance companies have a minimum Capital Requirement. Hence, capital is 'locked-up' within the entity, irrespective of the capital really needed to support the risk underwritten

Informed shareholders will require to be compensated for the tied-up capital, as they could have invested the money elsewhere.

Decisions need to be made of the target compensation level e.g. Risk free + 10%. This becomes the Shareholders Discount Rate (SDR).

The cashflows will be discounted at the SDR and the Risk Adjustment will then be

$$\sum CF_{RF} - \sum CF_{SDR}$$

**(b) VaR**

The VaR approach estimates the value that could be lost over the reporting period at a stated level of confidence. It assumes the parameter being measured (e.g. Cashflows) is normally distributed with a mean and standard deviation.

The calculation will lead to statements similar to;

- the cashflow value is N250m and there is a 99% confidence that the amount at risk (or less) over the next year is N30m
- the risk adjustment will then be N30m

**2.4 Residual Margin**

This is a margin to eliminate any profit the insurer anticipates at the inception of an insurance contract. Margin arises if;

$$PV \text{ future cash inflows} > PV \text{ future cash outflow} + \text{Risk Adjustment}$$

RM is calculated at policy inception and is required to be earned over the policy term.

If the sign above is <, the loss has to be recognised immediately.



## 2.5 Reassurance

Outward reinsurance should be separately recognized as an asset using the same building block approach above for inward business. It is possible to recognize day one reinsurance profits.

## 3. Unbundling

The ED requires an insurance contract not “closely related” to be “unbundled”. “Closely related” is not defined in the ED, however, the interpretation widely adopted is that contracts with explicit investment and risk components (e.g. investment linked products) should have both components accounted/reserved for separately. Endowment products where investment and risk components are implicit will not be affected.

## 4. Short Term Business

The discussions above relate to long term business. For short term business technical reserves (liability) will be demonstrated as being adequate through:

- establishing the carrying liability for the expired period, adopting objective statistical methods and allowing for IBNR claims.
- calculating UPR with an appropriate/adequate expense deduction level
- calculating additional reserves (URR) if calculations reveal the UPR is inadequate for claims likely to arise during the unexpired period.

## 5. The actuary is required to reconcile end period values of:

- Insurance Contract Liabilities
- Insurance Contract Assets
- Risk Adjustments (RA), Residual Margins (RM)
- Reassurance Assets and separately their RA and RM

These will form part of the disclosure data. In essence the reconciliation will lead to insight on how inter-period surplus/deficits arose.

## 6. The above at a fairly high level, discusses the impact of IFRS on liability reporting.

A key point to note, is that the standard introduces a specific calculation methodology – cashflow projections.

We recommend insurers engage their actuaries with a view of understanding the impact on their reported 2010 liabilities, especially for non-life business. This will, informatively impact accrual decisions in 2011, if it is intended that the full implementation in 2012, should not unduly affect profit trends.

Ideally, all non-financial assumptions adopted in calculating the technical reserves should be entity specific rather than market specific e.g. lapse rates, mortality experience, expense of administering a policy etc. We thus advice companies embark on in-house experience analysis - your actuary should be able to assist in undertaking this exercise.

In our view, adopting IFRS significantly impacts the methodology of both general and life business technical reserves. A high level of rigour is introduced together with the transparency emerging from disclosed reconciliation of end period amounts.

We advice companies urgently engage their actuaries soonest if implementation is to be timely. Indeed these are interesting times!!



**Should you need further information please**

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