Analysis Of Surplus
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Actuarial Control Cycle

**Surplus**
- What is it?
- How does it arise?
- Components
- Example

Regulatory Highlights

Uses & Application
Actuarial Control Cycle

Commercial and Economic Environment

Professionalism

Specifying the problem

Developing the solution

Monitoring the Experience
What is Surplus?

Surplus is

- Assets *less* Liabilities

- Same as *Surplus arising*

- *Surplus arising* is …
  the change in the value of assets
  over
  change in the value of liabilities
  for a particular period…
How does Surplus arise?

Surplus may be positive or negative

   Arises due to change in the value of Assets and Liabilities

Change in the value observed over a particular period usually (a year)

   Assets

   Liabilities

Focus of AOS is on Liabilities

Why?

Computation of Liabilities is based on the expectation of future experience

Actual experience may deviate from the expected...
Components...

- Model improvisations/ Corrections
- Non economic experience – Policyholder Behavior, Mortality, Morbidity, Expenses
- Economic experience – Investment Returns
- Change in Methodology and Assumptions
- Others – Example - New Business, any management decisions
**Maximum Insurance Plc**

- Incorporated in the year 2000
- Paid up capital LKR 500 million
- Mix of Participating and Non-Participating products
- Sizeable term portfolio along with savings portfolio
- Life Fund of LKR 2,000 million
- Valuation is as per NPV methodology

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**Example**

<table>
<thead>
<tr>
<th>Component</th>
<th>Amount (LKR '000s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life Fund</td>
<td>2,000,000</td>
</tr>
<tr>
<td>Par Liability</td>
<td>750,000</td>
</tr>
<tr>
<td>Non Par Liability</td>
<td>250,000</td>
</tr>
<tr>
<td>Surplus before transfers</td>
<td>1,000,000</td>
</tr>
<tr>
<td>Cost of Bonus</td>
<td>90,000</td>
</tr>
<tr>
<td>Transfer to S/H</td>
<td>10,000</td>
</tr>
<tr>
<td>Carried forward</td>
<td>900,000</td>
</tr>
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</table>

Analysis is based on the Surplus before transfers.
Example (cont..)

Analysis of Surplus – Component wise

- Carried Forward: 583,065 (58%)
- Investment: 438,217 (44%)
- Expenses: (180,627) (-18%)
- Mortality: 166,520 (17%)
- Withdrawals: 112,826 (11%)
- New Business: (120,000) (-12%)

A part of the surplus is carried forward from the previous years.

The balance can be attributed to the experience emerging during the year.
Example (cont..)

Method and Assumptions were the same as previous year

What happens…
  if the assumptions change?
  if the method of valuation change?

Do these changes contribute to the surplus/deficit arising over the valuation period?

How much?
Maximum Insurance Plc

- Incorporated in the year 2000
- Paid up capital LKR 500 million
- Mix of Participating and Non-Participating products
- Sizeable term portfolio along with savings portfolio
- Life Fund of LKR 2,000 million
- Valuation methodology changed to GPV

Liability has reduced by 3% on method change leading to an increase in surplus

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<tr>
<td>Non Par Liability</td>
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Method Change (cont..)

Analysis of Surplus – Including Change in Method

Change in Method and Change in basis will be additional items contributing to the Surplus/ Deficit

The order of the Analysis is important
Allocation

Key item of consideration is the **Distribution** of any such surplus arising…

Fundamental Questions:

1. What to distribute? *(what amount is available for transfer)*
2. How to distribute? *(depending on the underlying segment of business)*
3. How much to distribute? *(whether all of the surplus available for transfer or part of it)*
4. Can we distribute? *(external factors..)*
Regulatory Framework - Highlights

- Net Premium Valuation methodology was used for computing Statutory Reserves as at 31st December 2015
- From 1st January 2016 the Insurance industry has moved to a Risk Based Capital approach
- This change may lead to release in reserves held
- Release, if any, needs to be identified and locked
- Release may be closely monitored
- Allocation to respective stakeholders must be done in a fair and transparent manner
Giving due consideration to the regulatory developments, it may be expected to have a more exhaustive reporting framework.
Uses & Application

- Provide insight to management on performance of underlying business and potential improvements
- Financial impact of writing new business
- Provide a check on the valuation assumptions and ideas for product development
- Shows the financial effect of divergences between valuation assumptions and actual experience

Method change may just be one contributing factor... due attention needs to be given to the other

Analysis of Surplus may thus help identify the various components of surplus
Q&A

Do You Have Any Questions?
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<tr>
<th>HEAD OFFICE (MUMBAI)</th>
<th>BRANCH OFFICE (MUMBAI)</th>
<th>BRANCH OFFICE (AHMEDABAD)</th>
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</table>

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Thank You!