Monetary Authority of Singapore

Singapore Experience on Implementation of Risk Based Capital (RBC) Framework

20 April 2009

Agenda

- Overview of Singapore Insurance Industry
- Objectives & Principles of RBC
- Comparison with Old Solvency Framework
- Pre-Implementation Work
- Implications of New RBC Framework
- Post-Implementation Experience

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Overview of Insurance Industry

For end 2007,

Total Insurance Assets: $ 128,777m*

PER CAPITA EXPENDITURE

- Life Insurance:	$ 4,486
- General Insurance:	$ 732

AS % OF GDP

- Domestic Life Premiums:	**6.6**
- Domestic General Premiums:	**1.1**
- Domestic Life Fund Assets:	**43.3**
- Domestic General Fund Assets:	**3.0**

* Comprise assets of Insurance Funds and Shareholders' funds.

Overview of Insurance Industry

For end 2007,

<u>LIFE INSURANCE FUND</u>

Total New Business

No. of Policies:	1,047,059
Annual Premiums:	$ 971m
Single Premiums:	$ 9,270m

Total Life Business in Force

No. of Policies:	9,992,274
Annual Premiums:	$ 7,550m

Total Assets:	$ 105,384m

Overview of Insurance Industry

<u>GENERAL INSURANCE FUND</u>

Net Premium:	**$ 4,620m**
Total Assets:	**$ 15,757m**

Overview of Insurance Industry

Number of Players as at end 2008:

	Local Companies	Foreign Companies
Composite Direct Insurers	5	1
Direct Life Insurers	8	6
Direct General insurers	87	21
Reinsurers	7	21

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Objectives & Principles

"Increasing volatility, diversity and competition in the financial services sector have resulted in the need for a more transparent and risk-focused capital framework that better reflects the true financial conditions of an insurance company."

- The Insurance (Amendment) Bill 2003 Second Reading Speech

Objective & Principles

Objective

- To develop a transparent and risk-focused framework that reflects all major financial risks of insurance business. The framework should encourage active risk management and serve as a good indicator of financial strength so as to facilitate progressive monitoring by insurers and the regulator.

Principles

- Risk-sensitive capital requirements
- Realistic asset & liability valuation
- Consistency between valuation and capital requirements
- Alignment with other financial institutions where applicable, e.g. banks
- Simple, transparent, comparable

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Old Solvency Framework

Asset Valuation

Lower of book & market value

Policy Liability Valuation

- **Life -** net premium valuation, with prescribed interest rates and mortality tables
- **General -** no prescribed basis for claims liabilities

Solvency Margin Requirement

- **Life -** % of policy liability + % insurance risk exposure
- **General -** highest of $5m, 50% of net premium income in preceding accounting period or 50% of loss reserves at the end of the preceding accounting period

Old Solvency Framework

Some key shortcomings:

- Net premium valuation – hidden margin approach with no explicit allowance for key parameters e.g. expenses, surrender & future bonuses. This makes it difficult to establish adequacy of reserves
- Solvency margins – no explicit allowance for assets & mismatching risks

New Framework - RBC

Asset Valuation

Market/realistic value

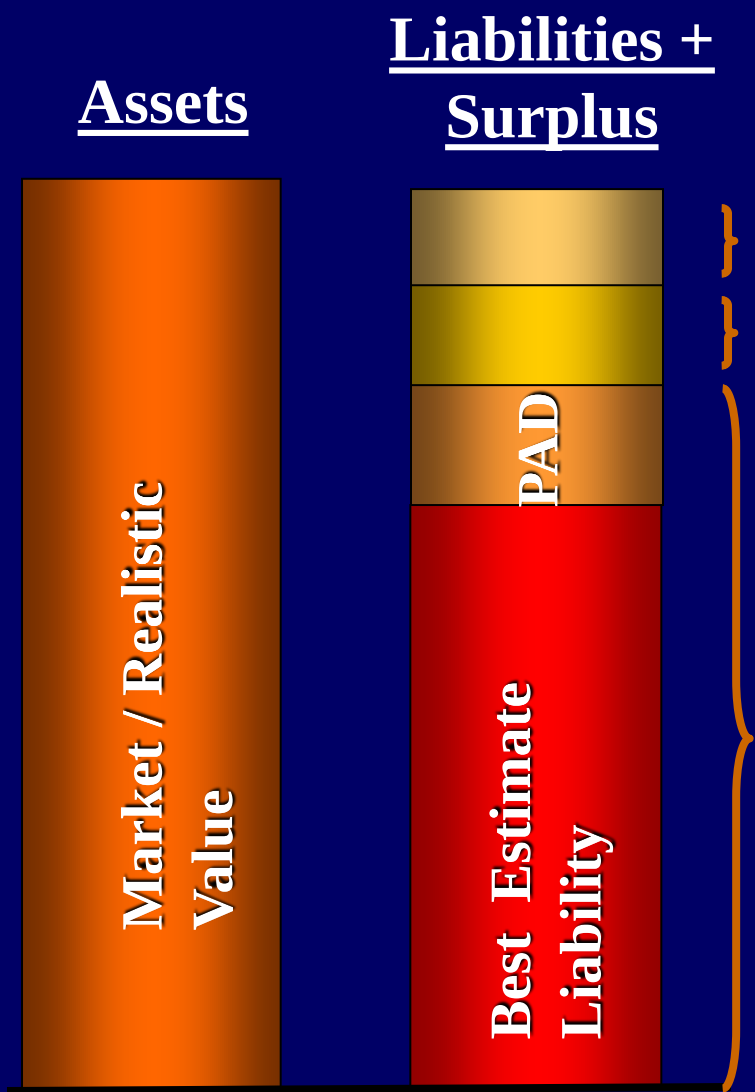
Policy Liability Valuation

- **Life -** realistic liability value based on expected future income and outgo (including future bonuses), plus provision for adverse deviation
- **General** – best estimate for premium and claims liabilities plus provision for adverse deviation at a minimum 75% level of sufficiency (this was implemented pre-RBC in 2002)

Solvency/capital requirement

- Explicit risk charges for liability, asset, mismatching & concentration risk
- Clearly defined forms of capital and regulatory control level

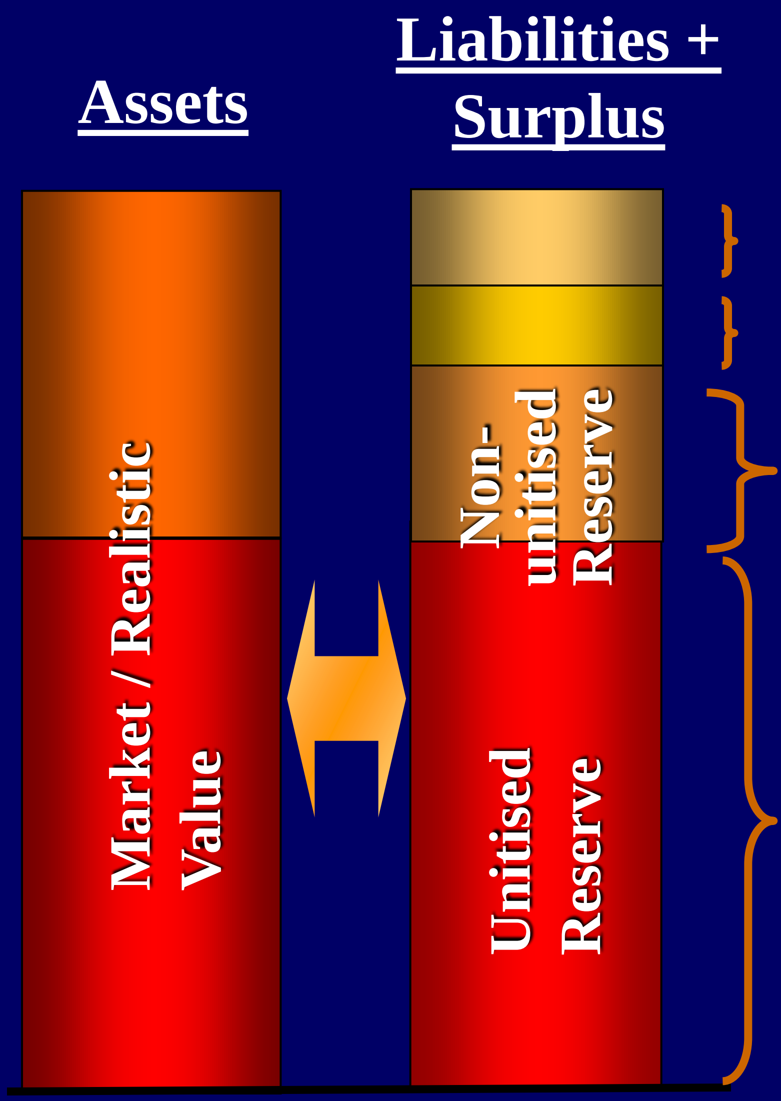
Valuation: Non-Participating



Policy Liabilities:

Value expected future income and outgo discounted using risk-free rates, plus provision for adverse deviation.

Valuation: Investment-Linked



Surplus

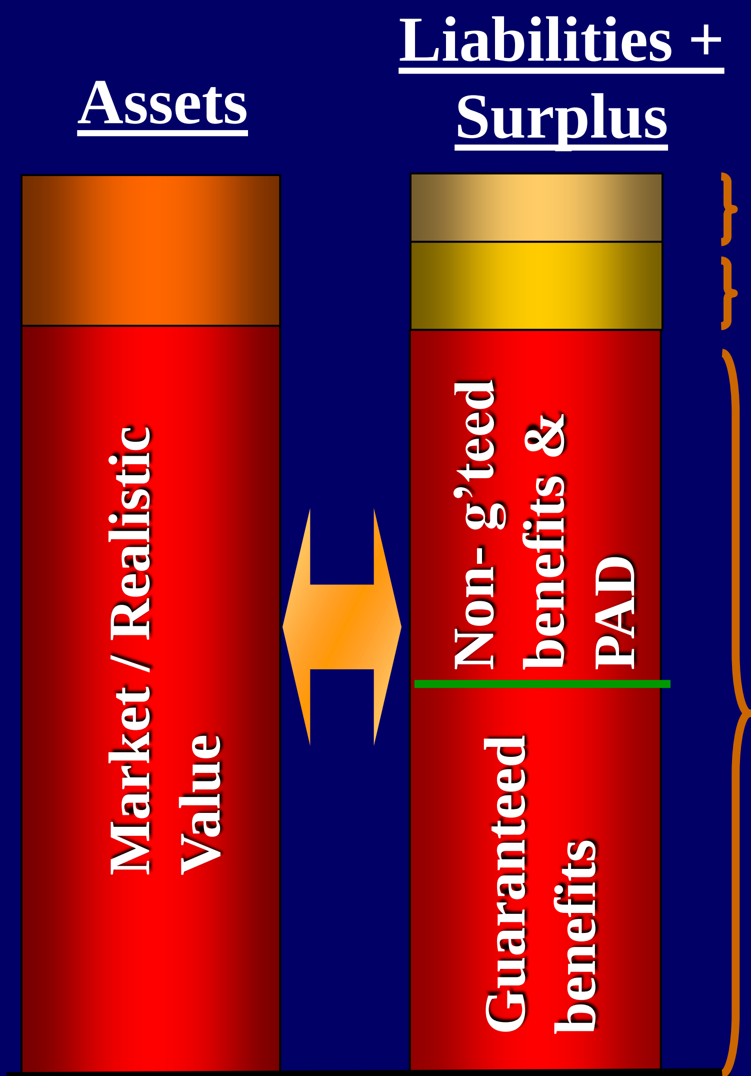
Other Liabilities

Non-unitised reserve determined in the same manner as for non-participating policies.

Unitised reserve determined based on value of assets backing units purchased by policyholders.

Policy Liabilities

Valuation: Participating



Surplus (Surplus Account)

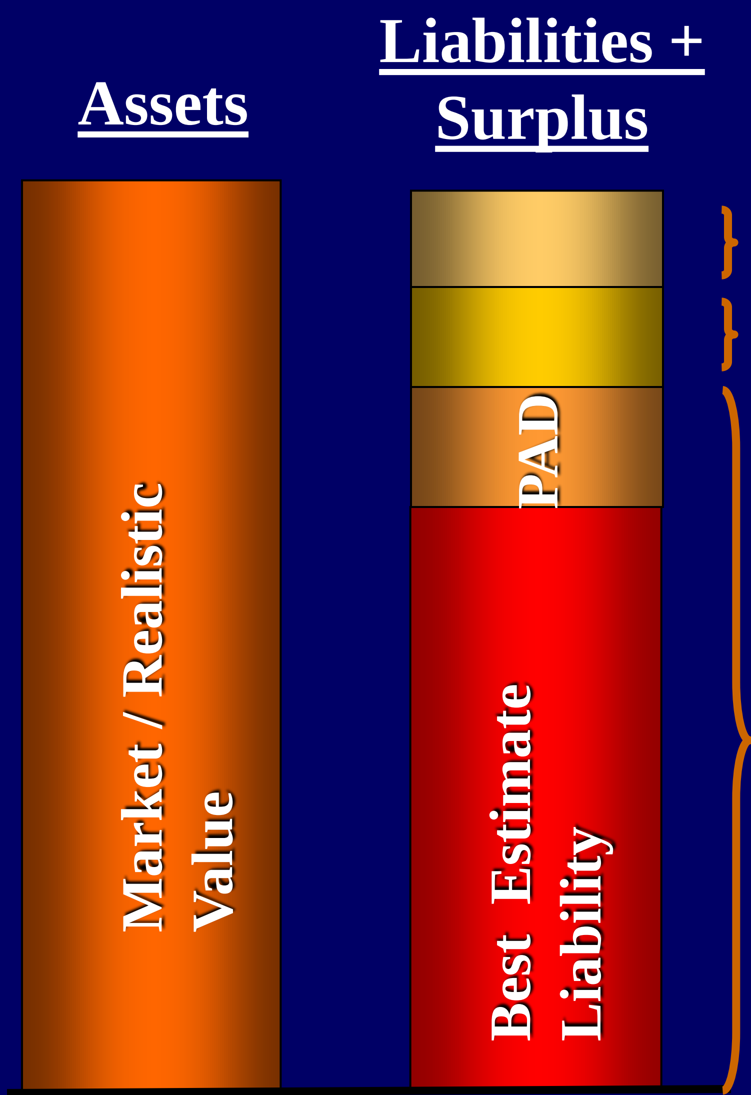
Other Liabilities

Policy Liabilities:

Determined based on higher of:

- value of assets backing policy liabilities (policy assets)
- liabilities of guaranteed benefits and PAD discounted using risk-free interest rates
- liabilities of both guaranteed and non-guaranteed benefits & PAD discounted using best estimate interest rates

Valuation: General Insurance



Surplus

Other Liabilities

Policy Liabilities:

[Sub-divided into premium liabilities & claims liabilities]

Value expected future income and outgo discounted using risk-free rates, plus provision for adverse deviation at 75% percentile

Capital Adequacy Requirements

Two levels of requirements :

<u>Fund Solvency Requirement (FSR)</u>

For each insurance fund,

$$\boxed{\text{Financial Resources (FR)} \geq \text{Risk Requirement (RR)}}$$

<u>Capital Adequacy Requirement (CAR)</u>

For each insurer,

$$\frac{\text{Financial Resources (FR)}}{\text{Risk Requirement (RR)}} \geq$$ 100% at all times, with 120% as regulatory control level

where, FR = Σ FRs of all funds, including shareholders' fund

RR = Σ RRs of all funds, including shareholders' fund

and FR >= S$5m

Financial Resources & Risk Requirement

Financial Resources includes:

- Surplus of insurance funds
- Paid-up capital
- Retained profits

Risk requirement consists of three components:

- C1 - Liability risk component
- C2 - Asset and Mismatching risk component
- C3 - Concentration risk component

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Pre-Implementation Work

- RBC Life workgroup was formed in Sep 2000, chaired by the MAS, comprising industry practitioners and including representatives from the actuarial and accounting professions. RBC General workgroup was formed in April 2002.
- 4 consultation papers on the proposed framework, 3 for Life and 1 for General, were issued between Feb 2001 and Dec 2002.
- Public consultation paper on proposed RBC regulations was issued in Nov 2003.

Pre-Implementation Work

- 3 rounds of testing conducted by life insurers based on year-end 2001, 2002 & 2003 positions; 2 rounds of testing conducted by general insurers based on year-end 2002 & 2003 positions.
  - Enables insurers to be better acquainted with new framework
  - Iron out teething issues under the new framework

Pre-Implementation Work

- Final regulations and guidelines issued on 23 Aug 2004; insurers to adopt RBC framework no later than 1 Jan 2005.
- Thematic inspections on policy liabilities valuation models used by life insurers.

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Implications of New RBC Framework

- More complex regime
  - Greater reliance on actuaries & auditors
  - Need to have more sophisticated policy liability valuation model
  - Learning curve for practitioners and regulator
- Impact on capital requirement varies
  - Insurers that provide high guaranteed benefits, with high asset and mismatching risks, are likely to need more capital
  - Vice versa for insurers that provide low guaranteed benefits, with low asset and mismatching risks

Implications of New RBC Framework

- Profit emergence
  - Potentially more volatile, depending on extent of mismatching
- Impact on participating fund
  - Consistent asset and liability valuation enables more robust par fund management
  - Explicit allowance for future bonuses encourages more active review of supportable bonuses and facilitates greater disclosure on bonuses
  - Greater clarity on shareholders' interest with introduction of surplus account

Implications of New RBC Framework

- Pricing
  - Need to have greater regard to prevailing market conditions (i.e. yields) and investment strategy
  - Impact of mis-pricing (or aggressive pricing), i.e. loss recognition & capital strain, likely to be more transparent & emerge sooner
- Asset liability management (ALM)
  - Greater incentive for active ALM

Implications of New RBC Framework

- Capital management
  - Greater room to manage required capital e.g. reduce asset risk charges by switching to lower risk assets, ALM to reduce mismatching risk charges
  - Wide choices of capital forms under new Tier 1 & Tier 2 structure
- Taxation
  - Change in taxation basis for the participating fund
  - Need to engage the tax authorities

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Post Implementation Experience

Industry Behavior

- More active ALM to manage mismatching risk
- Withdrawal/reduction of certain capital intensive products
- Greater interest by investment banks to offer innovative investment instruments to insurers

Post Implementation Experience

Issues moving forward

- Clarifications on existing requirements under the RBC framework
- Use of Long Term Risk Free Discount Rate for liability valuation
  - artificial stability at longer durations
- Calibration of valuation and capital requirements
- Use of Internal Models

Thank You

For more information on the RBC framework, please refer to MAS website at http://www.mas.gov.sg