

# Loss absorbency of future discretionary benefits in risk- based capital frameworks

**27 August 2024**

**Presenter:** Alex Bryant, Principal and Consulting Actuary, Milliman

Avoid filling this space with text, will not be seen by audience

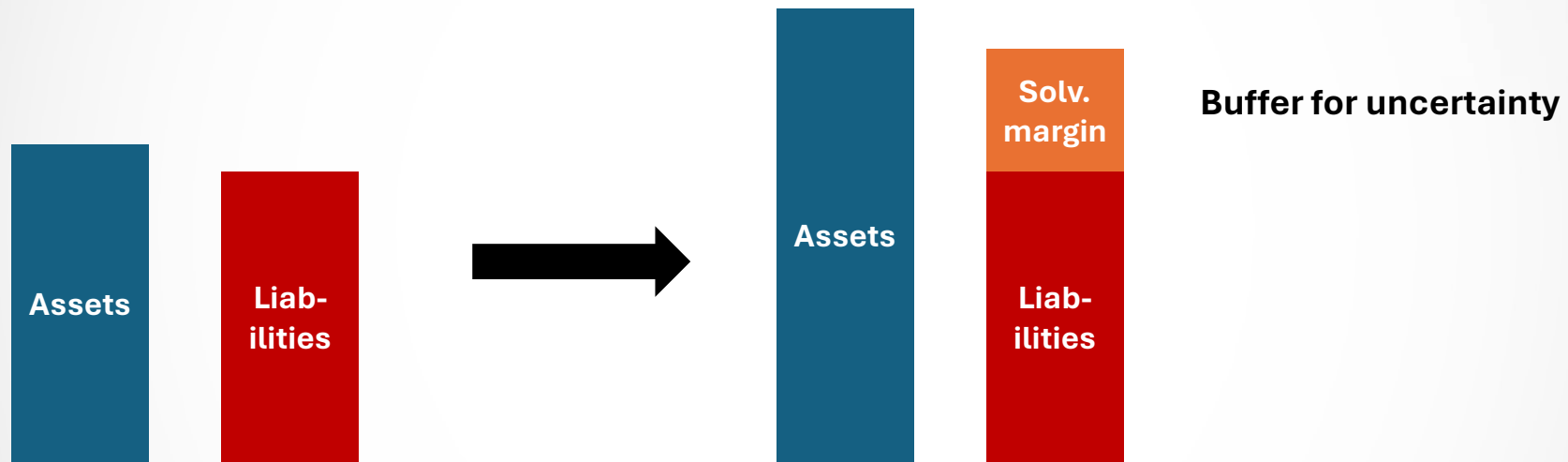
# Agenda

1. Risk-based capital (“RBC”) background
2. What is loss absorbency (focus on par business)?
3. Allowances under different RBC regimes
4. Impact of the approach used
5. Pros and cons of different approaches
6. Loss absorbency in universal life

# Risk-based capital (“RBC”) background

Avoid filling this space with text, will not be seen by audience

# Regulatory solvency and capital



# Solvency margins to risk-based capital

## Old “solvency margin” approach

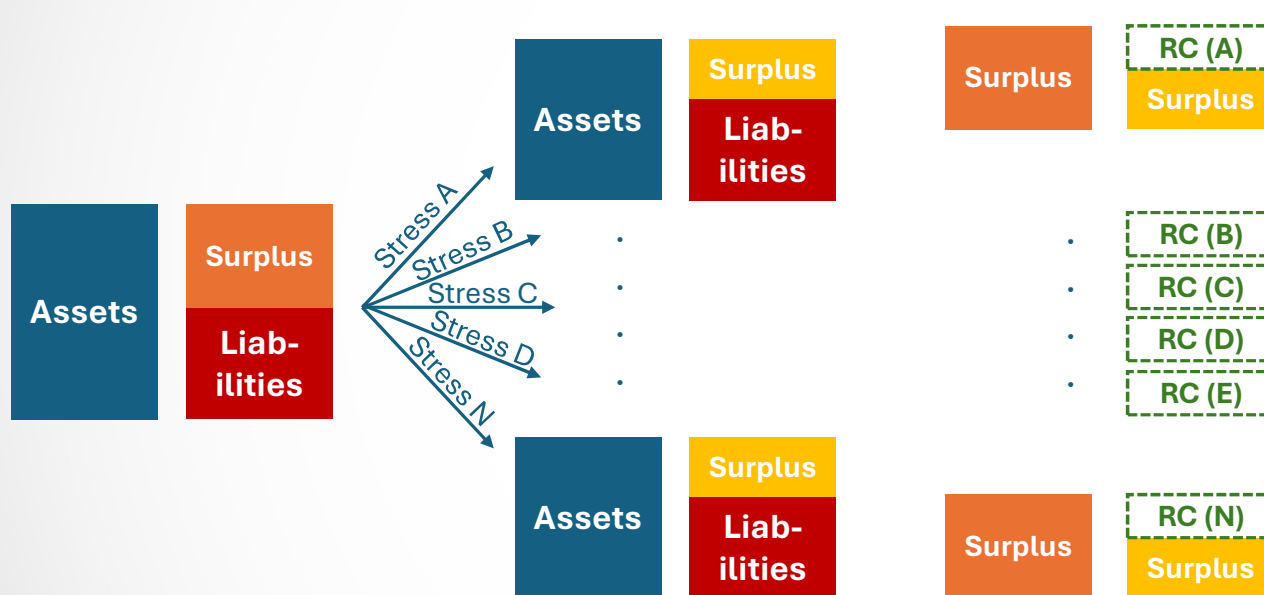
- X% reserves, Y% SAR, etc.
- Generic / blunt
- Does not reflect specific risk profile of individual insurer

Evolved over  
time

## RBC approach

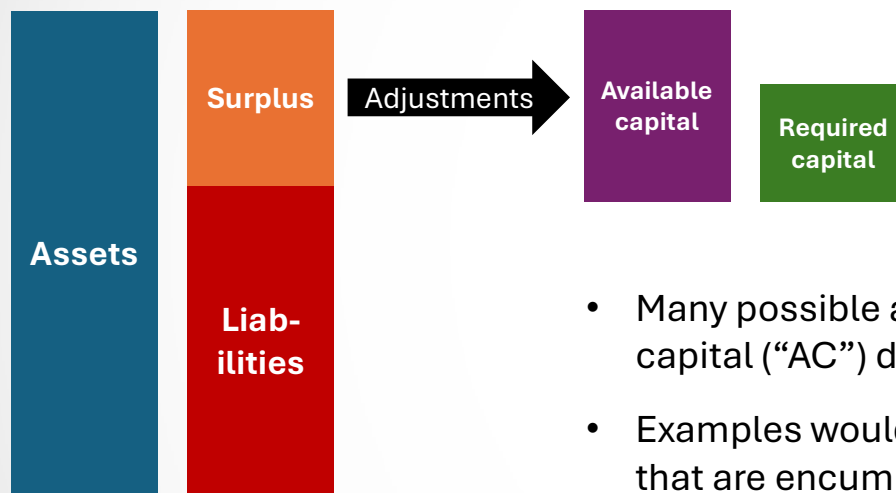
- Solvency margin based on risks specific to each insurer
- Supposed to reflect potential loss to insurer from each risk
- Perform stresses for each risk and measure the loss
- Stresses usually calibrated to a certain probability level (e.g. 1 in 200)

# RBC 101 – Required Capital



- Required capital (“RC”) for each risk is the loss of surplus from each stress
- RC from all risks are accumulated to give total required capital
- Aggregation typically allows for diversification effects

# RBC 101 – Available capital



$$\text{Capital adequacy ratio ("CAR")} = \frac{\text{Available capital}}{\text{Required capital}}$$

- Many possible adjustments to the surplus to get to the available capital ("AC") depending on RBC framework
- Examples would include removing certain types of assets or assets that are encumbered etc.
- In Singapore this includes adjustments for the recognition of negative reserves, amongst others

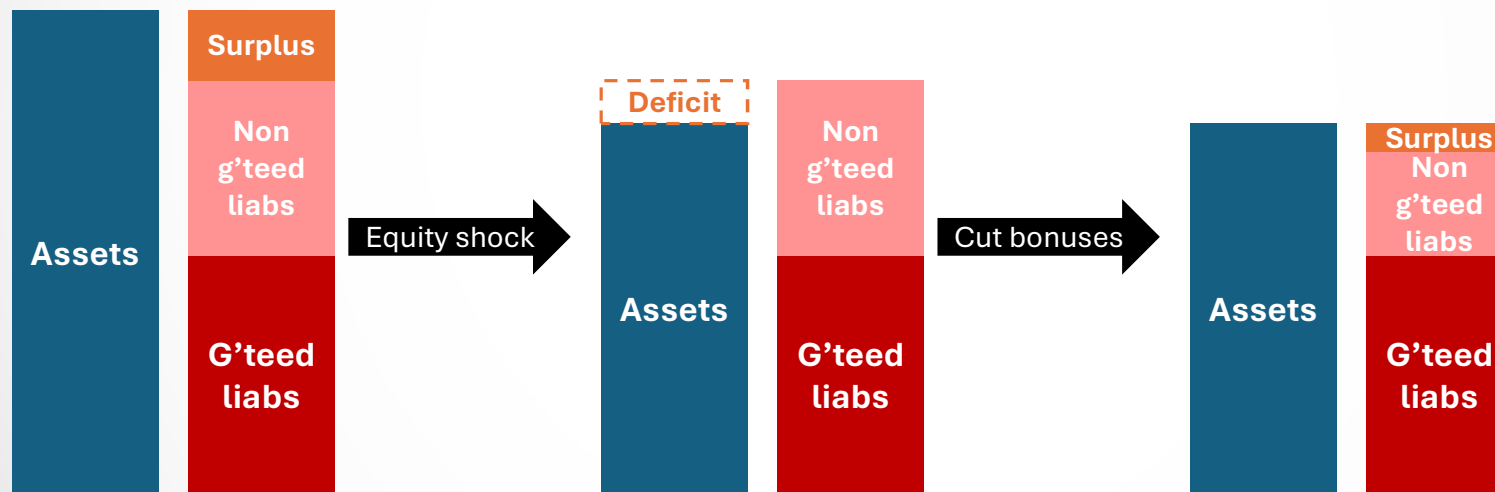
# What is loss absorbency?

Avoid filling this space with text, will not be seen by audience



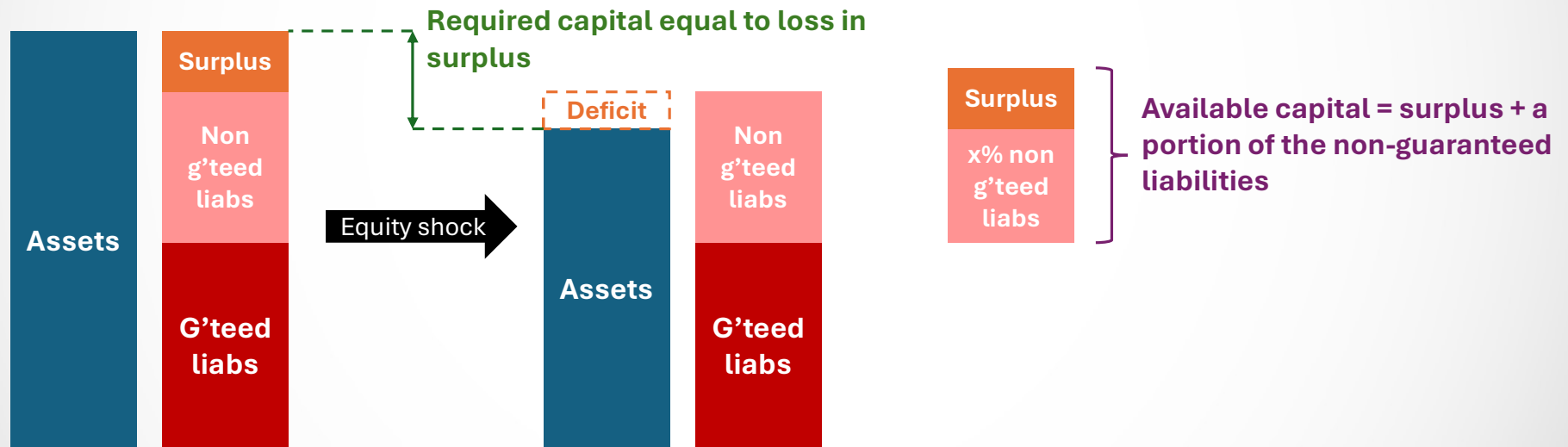
# Loss absorbency

- Term can be used in several different situations
- We are using it in the context of future non-guaranteed benefits



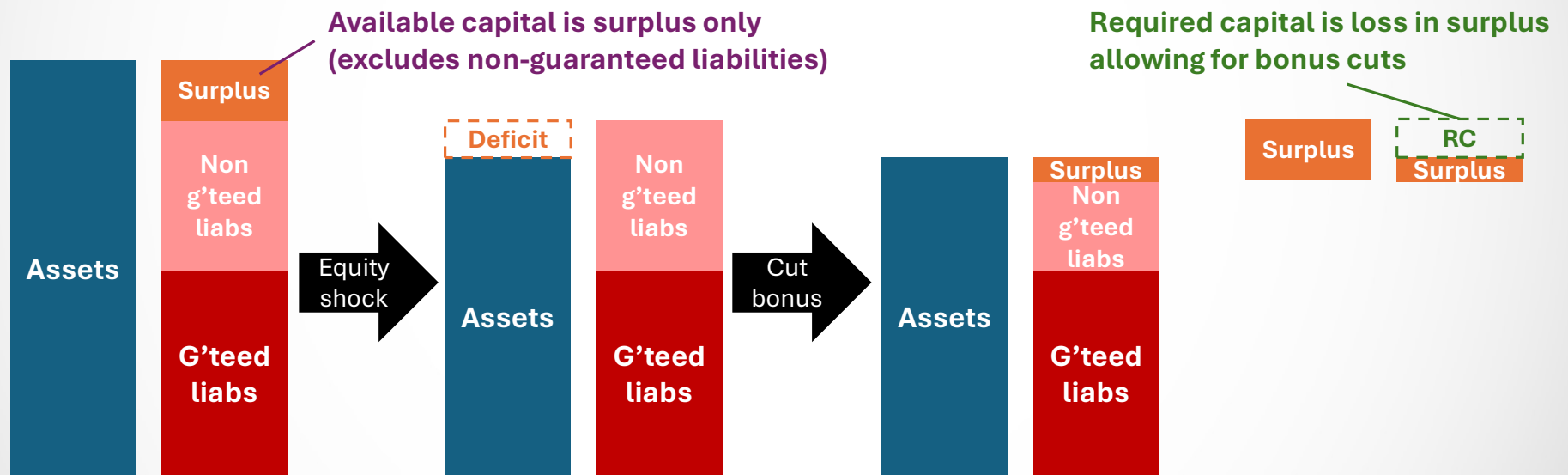
# Recognition under RBC framework (1)

- Two broad approaches
- First approach: via available capital



# Recognition under RBC framework (2)

- Two broad approaches
- Second approach: via required capital



# **Allowances under different regimes**

Avoid filling this space with text, will not be seen by audience

# Par valuation and capital in different markets

	Singapore – RBC2	Malaysia – RBC	UK – Solvency II	Hong Kong – RBC	China – CROSS (Phase II)	ICS
<b>How liabilities are calculated</b>	Deterministic, higher of risk-free value of guaranteed liabilities and “best-estimate” value with allowance for future bonuses.	Deterministic, higher of risk-free value of guaranteed liabilities and “best-estimate” value with allowance for future bonuses	Market consistent stochastic valuation with dynamic management actions	Market consistent stochastic valuation with dynamic management actions	Deterministic, with pricing bonus levels and risk-free discount rate (with IP and averaging). Pricing interest rate is similar to valuation rates.	Market consistent stochastic valuation with dynamic management actions
<b>Where loss absorbency is recognised</b>	<b>Increase to available capital</b>	<b>Increase to available capital</b>	<b>Reduction to required capital</b>	<b>Reduction to required capital</b>	<b>Reduction to required capital</b>	<b>Reduction to required capital</b>
<b>Loss absorbency calculation</b>	100% of allowance for non-guaranteed benefits	50% of future bonuses	Recalculation of liabilities for each stress allowing for effect of dynamic management actions.	Recalculation of liabilities for each stress allowing for effect of dynamic management actions.	Difference between best estimate liabilities and liabilities assuming a minimum level of future non-guaranteed benefits, subject to certain limits. Applied to the total required capital.	Recalculation of liabilities for each stress allowing for effect of dynamic management actions.

# Developments in Malaysia

- Bank Negara Malaysia has issued exposure draft on updates to the RBC framework on 28 June 2024
- Highlights for the proposals on par business:
  - Risk-free valuation allowing for non-guaranteed benefits
  - Valuation can allow for management actions
  - Should include allowance for TVOG calculated using stochastic approach
  - Market and credit risk requirements to allow for management actions
  - No recognition for loss absorbency in the available capital
- Brings Malaysia RBC closer to ICS (and HK RBC and Solvency II)

# Impacts of the approach used

Avoid filling this space with text, will not be seen by audience

# Hypothetical example (1)

- Comparison of HK RBC and Singapore RBC2 approaches
- For simplicity, assume same stress factors and that it only applies to asset values
- Also, assuming there is only a single risk factor to consider
- Completely hypothetical example – not a true comparison of the two RBC regimes

	HK RBC	SG RBC2
Assets (1)	1,000	1,000
G'anteed Liabs (2)	700	700
BEL (3)	900	n/a
Stressed Assets (4)	800	800
Stressed BEL (5)	750	n/a
Available Capital (6)	$(1) - (3) = 100$	$(1) - (2) = 300$
Required Capital (7)	$((1) - (3)) - ((4) - (5)) = 50$	$(1) - (4) = 200$
CAR $(= (6) / (7))$	200%	150%



## Hypothetical example (2)

- Sensitivity of CAR from adding/subtracting 50 of cash from the assets

	Remove 50 of cash		Base		Add 50 of cash	
	HK RBC	SG RBC2	HK RBC	SG RBC2	HK RBC	SG RBC2
Assets (1)	950	950	1,000	1,000	1,050	1,050
G'teed Liabs (2)	700	700	700	700	700	700
BEL (3)	900	n/a	900	n/a	900	n/a
Stressed Assets (4)	750	750	800	800	850	850
Stressed BEL (5)	750	n/a	750	n/a	750	n/a
Available Capital (6)	50	250	100	300	150	350
Required Capital (7)	50	200	50	200	50	200
CAR (= (6) / (7))	100%	125%	200%	150%	300%	175%

- CAR much more sensitive under HK RBC approach
- Will affect target capital buffers – same shock would lead to higher target buffer under HK approach

# Pros and cons of different approaches

Avoid filling this space with text, will not be seen by audience

# Pros and cons of different approaches

## Singapore RBC2 approach

- ✓ Simpler
- ✓ Less open to judgement
- ✓ Quicker
- ✗ % of non-guaranteed benefits to include is arbitrary
- ✗ Conceptionally less correct?

## HK RBC / S2 / ICS approach

- ✓ Reflects actual bonus management and cost of PRE
- ✓ Can promote better governance
- ✓ More realistic reflection of how loss absorbency works in practice
- ✗ Operationally more onerous (multiple liability calcs, TVOG etc.)
- ✗ Can be difficult to envisage management actions under risk-free

# **Loss absorbency in universal life ("UL")**

Avoid filling this space with text, will not be seen by audience

# UL vs par (in Singapore)

	Par	Universal life
<b>Non-guaranteed benefits</b>	Yes – future bonuses/dividends	Yes – future crediting rates
<b>Allowance for loss absorbency</b>	Yes – 100% of liability in respect of non-guaranteed benefits	No – none
<b>Segregated fund</b>	Yes - restricted SH access	No – written in non-par fund
<b>Effect of risks on non-guaranteed benefits</b>	Policies participate in experience of fund, so all risks could impact bonuses	Not clearly defined – would crediting rates be adjusted as a result of lapse experience?

# UL treatment in other RBC regimes

## Allow for loss absorbency

- HK RBC
- Solvency II
- ICS
- C-ROSS

Allowance through reduction in risk requirements, similar to par

## No allowance for loss absorbency

- Singapore RBC2
- Malaysia RBC
- Malaysia RBC2 (latest proposals)

Note that the nature of universal life in Malaysia is quite different to Singapore and Hong Kong, however.



**SINGAPORE ACTUARIAL CONFERENCE 2024**  
26 - 29 August 2024

# Questions / comments?

Avoid filling this space with text, will not be seen by audience



**SINGAPORE ACTUARIAL CONFERENCE 2024**  
26 - 29 August 2024

# Thank you

**Alex Bryant**

[Alex.Bryant@milliman.com](mailto:Alex.Bryant@milliman.com)

*This presentation is intended solely for information purposes and presents information of a general nature. It is not intended to guide or determine any specific individual situation and persons should consult qualified professionals before taking specific actions. Neither the presenters, nor the presenters' employer, shall have any responsibility or liability to any person or entity with respect to damages alleged to have been caused directly or indirectly by the content of this presentation*

**Avoid filling this space with text, will not be seen by audience**