

AA Symposium – HK RBC

2018 November 5th

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Agenda

1. Introduction & Background

2. Policy Implications

3. Discounting Approaches

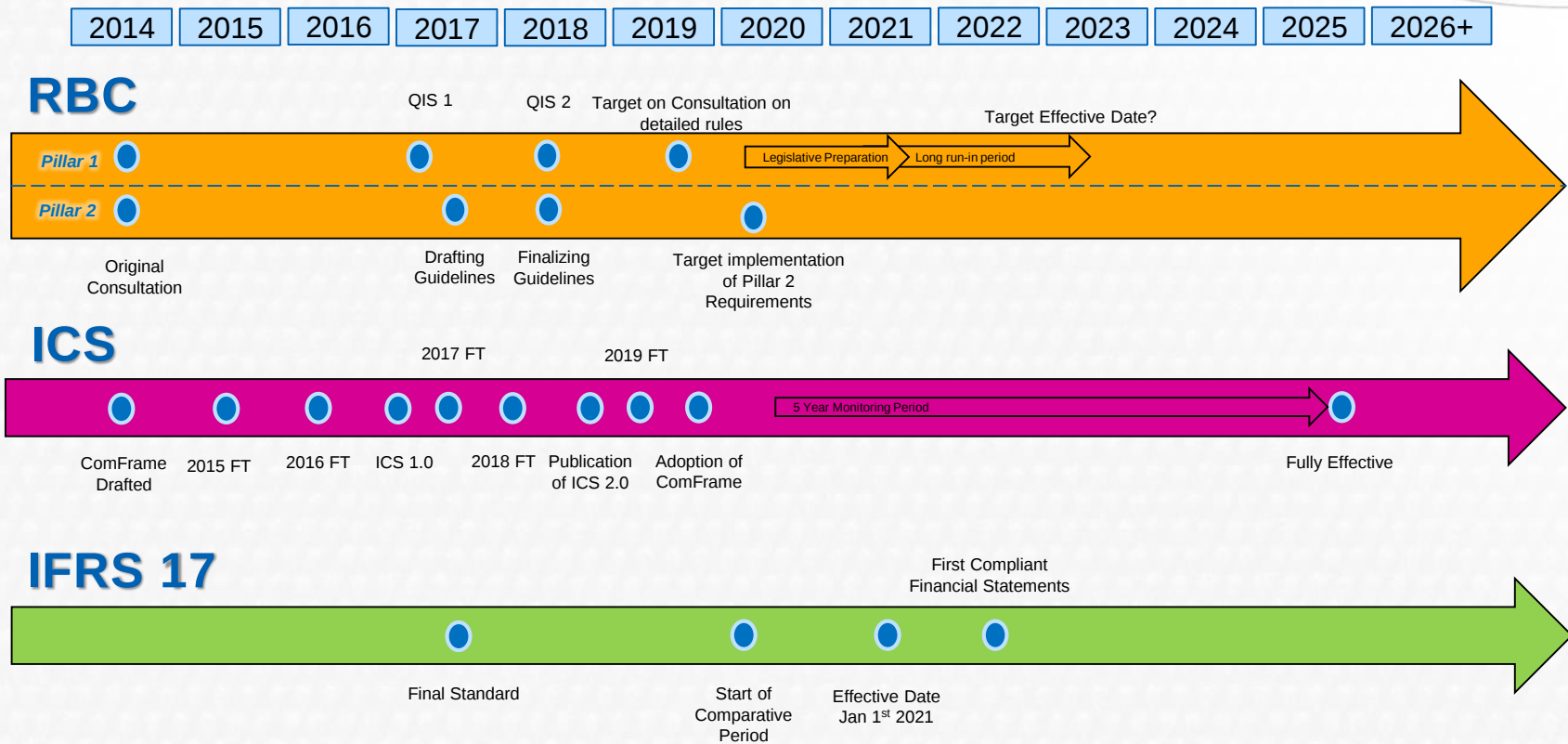
4. MOCE & Risk Charges

5. Closing Thoughts

Background

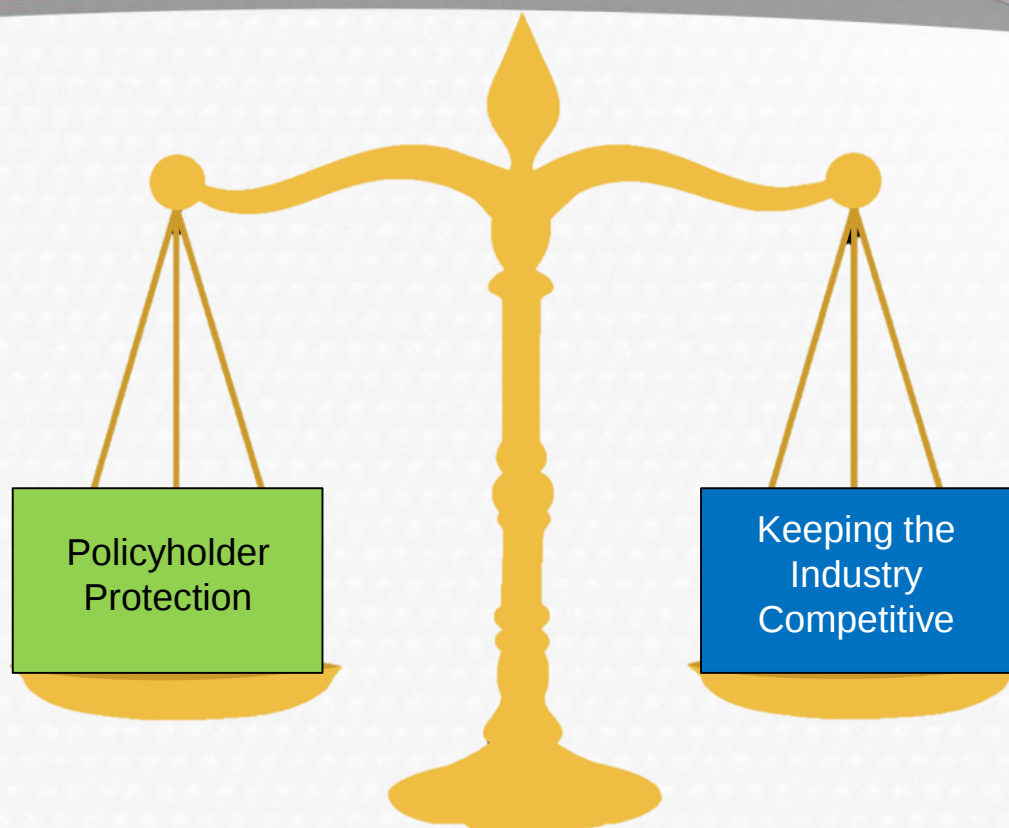
- IMF's Financial Sector Assessment Program (FSAP) rated HK's solvency regime below par.
 - The evaluation is based on a jurisdiction's compliance with the ICP's.
 - Endorsement of the ICP's by the IMF and the Financial Stability Board (FSB) means that jurisdictions are highly motivated to follow the ICP's
- A major goal of these new regulations is to bring the regime into compliance with the ICP's.

Timeline



A very busy time to be an Actuary!

IA Objectives



Goals of the RBC:

- Key statutory functions should be achieved in a balanced and holistic way when designing and implementing RBC

Solvency II & Insurance Capital Standards

- HK RBC is drawing heavily from risk based capital regimes in overseas jurisdictions – in particular Insurance Capital Standards (ICS) and Solvency II.
- Solvency II is widely considered by the European Insurance Industry to be overly conservative and this has had a major impact on the insurance market there.
- According to a survey conducted on 87 insurers across 17 EU markets:
 - Almost half of European insurers think Solvency II has restricted their ability to make long-term investments, with many worried the regulation has negatively impacted their product offerings.
 - 48% have invested less in equities, long term bonds and private placements because of Solvency II.
 - Insurers are looking to shift risk to customers at a time when the EU is trying to propel sustainable economic growth.

Source:

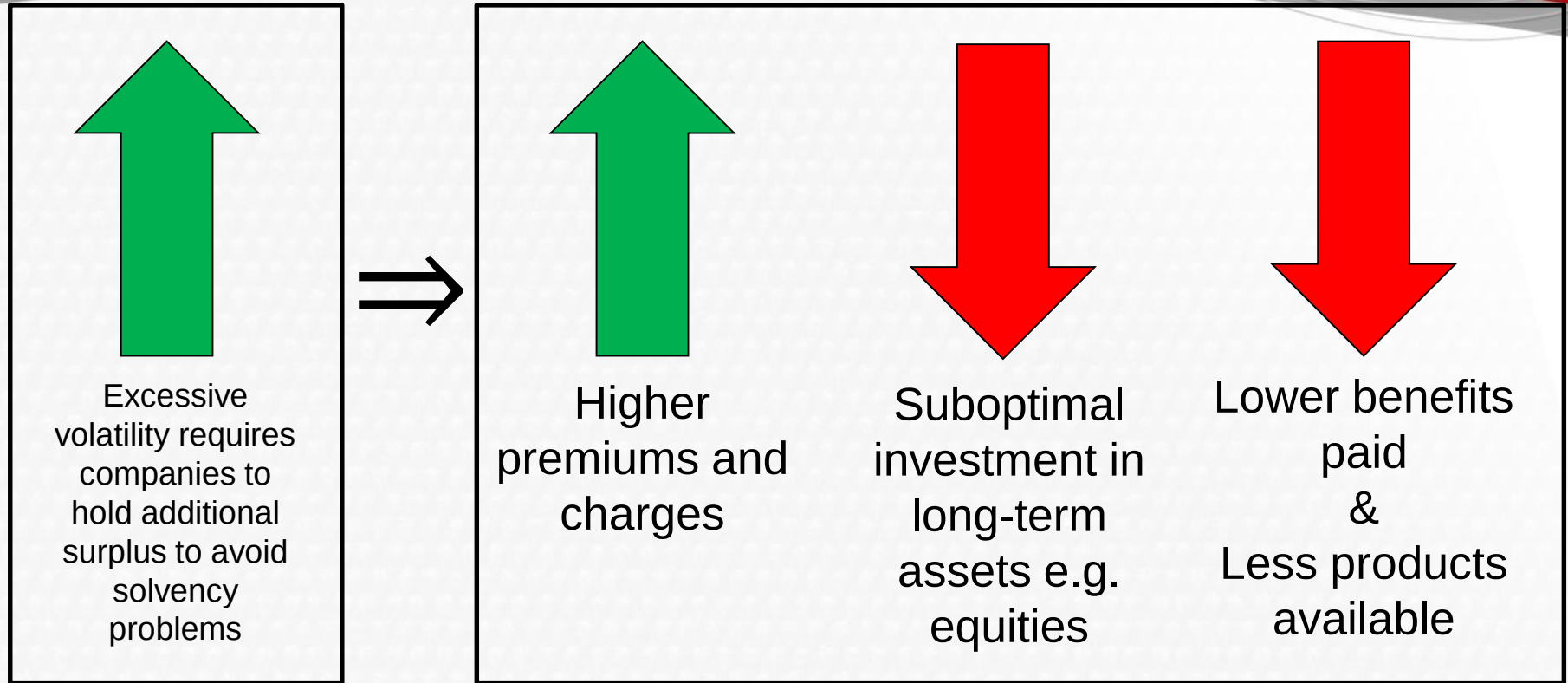
<http://www.theactuary.com/news/2018/06/solvency-ii-deterring-long-term-investments/>

2. Policy Implications



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Excessive volatility in capital requirements and its impact on policyholders



If these capital requirements are due to the emergence of real risks then the consequences are appropriate, but not when due to artificial volatility built into the solvency regime.

Implication to Availability of Long Term Insurance

- Equity is often used to back long-term insurance products. Many solvency regimes fail to recognise equities (as in the case with Europe under Solvency II).
- Insurers then do not invest in equities and are no longer able to support yields needed for long term business.
- However it should be noted that some Solvency regimes do recognise equities (Canada and Singapore).
- This can lead to long-term risk shifting from insurers to customers (or offshore). The burden of this risk put strain on the social welfare systems.

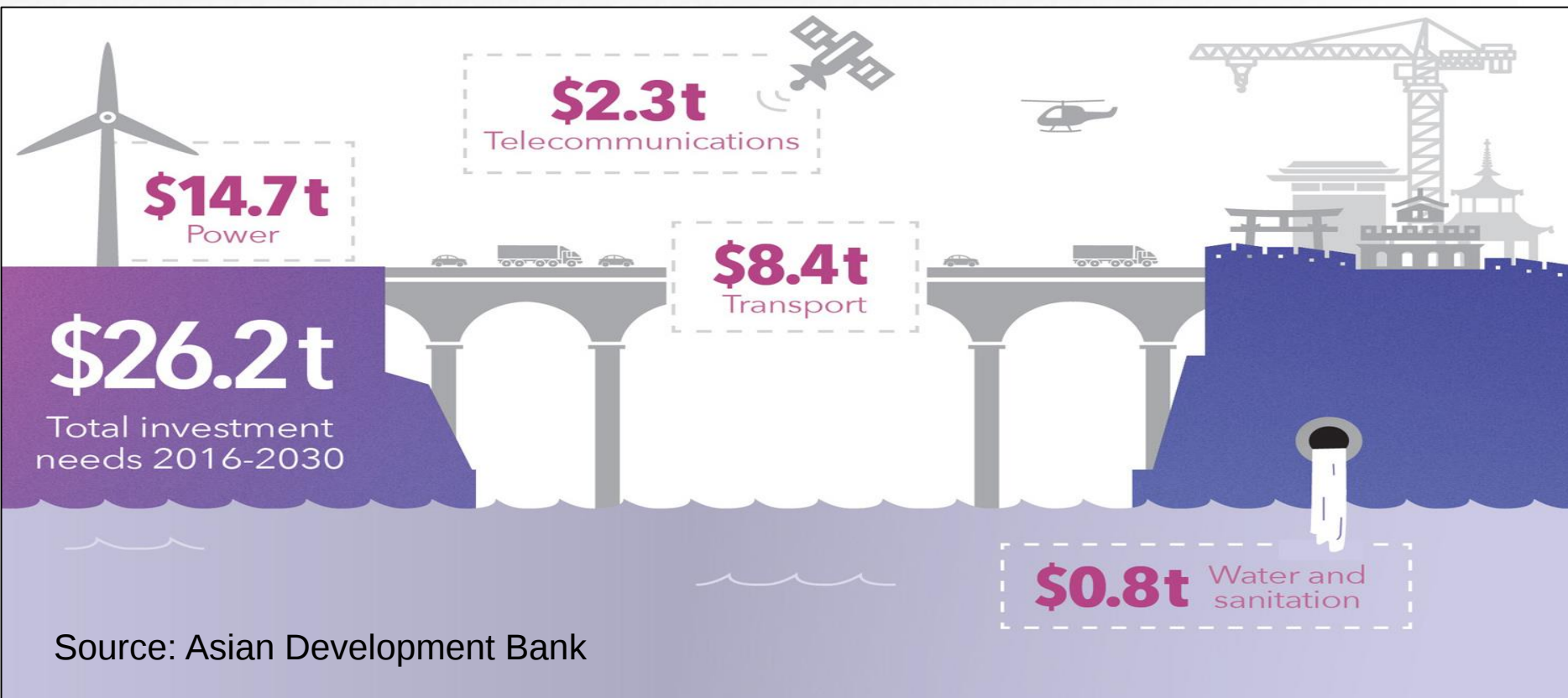


Implication to Local Economies

In many regimes, infrastructure investments are lumped in with equities and emerging markets are treated with excessive risk charges.

This discourages institutional investment into emerging markets where there is a growing demand for infrastructure and equity investment.

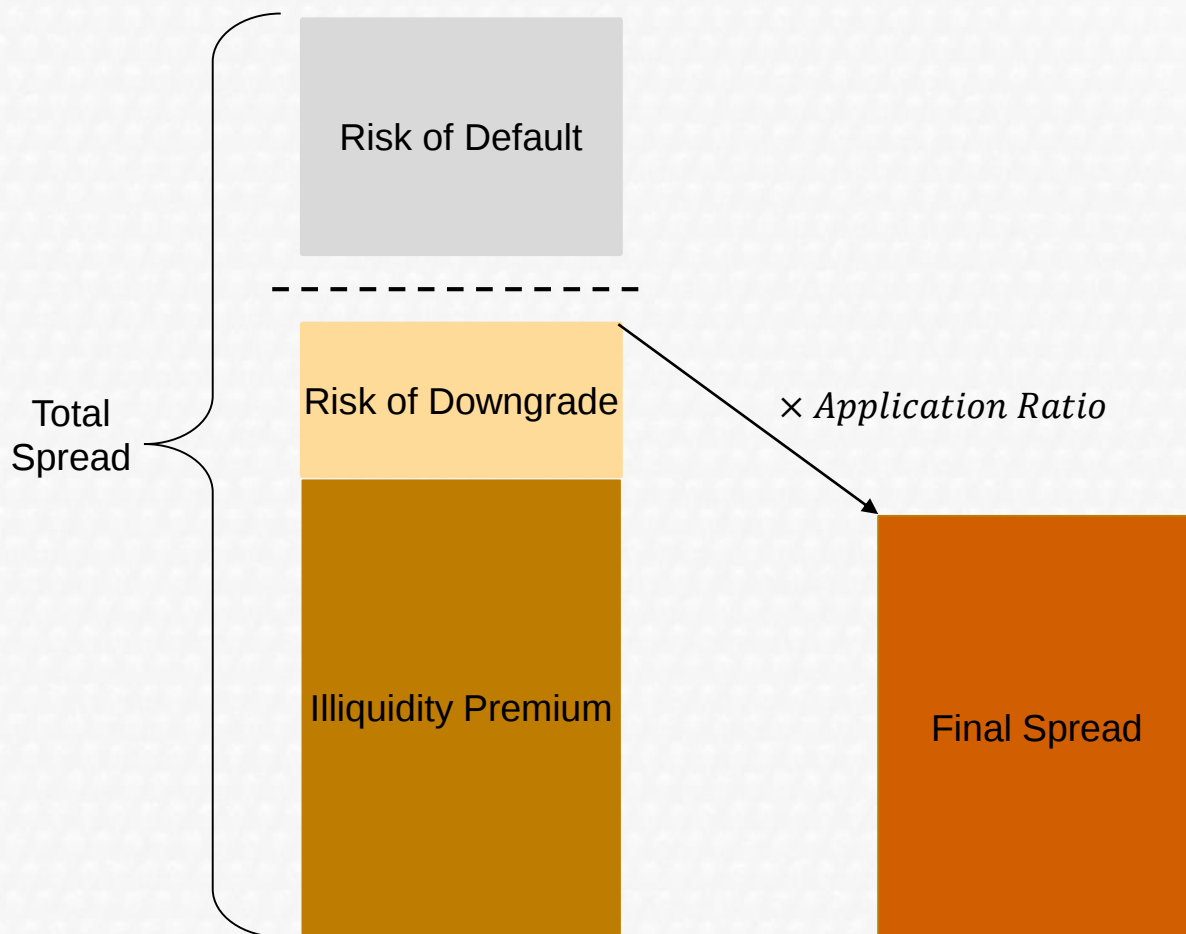
The picture below summarises Asia's forecasted infrastructure investment needs between 2016 – 2030.



3. Discounting Approaches



Discounting Approaches in the HK RBC QIS 2



Discounting approaches in the HK RBC all attempt to recognise some level of spread over the risk-free discount rate with some adjustment for Default Risk.

1. **Volatility Adjustment** – reference portfolio with prescribed spread which is the same for all companies.
2. **Matching Adjustment** – own portfolio with prescribed spreads. Application Ratio is higher than the VA Application Ratio (90%)
3. **Own Assets with Guardrails** – own portfolio and own spreads, allowing for equities with guardrails. Application Ratio is 100%.

How do they compare – Volatility Adjustment

	USD	HKD	RMB	THB	GBP	JPY	TWD	SGD
HK RBC QIS 2	32/65 bps							N/A
SII	28	N/A	N/A	N/A	18	2	N/A	N/A
ICS	44.8	14.4	72.8	12.6	19.5	8.2	33.9	31.7
SG RBC 2	% of corporate bonds in the board approved SAA x 55bps							

- HK RBC approach is based heavily on the SII approach – but with some simplifications.
- QIS2 does not differentiate between different currencies.
- In the ICS the VA gradually reduces to a 10bps spread after the LLP. Under SII & HK RBC QIS 2 reduces gradually to a 0 bps spread.
- The current SG RBC 2 QIS VA is applied up to the LLP and then becomes 0 thereafter – but the MAS is collecting data on different grading approaches.
- The difference between the two volatility adjustments of 32bps and 65bps for the HK RBC is the flooring of risk corrections at 35%xLTAS (Long Term Average Spread).

How do they compare – Matching Adjustment

- In all regimes - to be eligible for the matching adjustment a number of criteria must be met to demonstrate sufficient degree of asset-liability matching. There are some differences in the assessment of this criteria.

ICS Middle Bucket

Cashflow mismatch test – a threshold of 10% over 3 year durations

Flexible premiums not permitted

Lapse materiality test – threshold of 5%

No unbundling of products

Portfolio must be separately identified & managed

Prescribed spreads vary by rating

HK RBC QIS 2

Very similar to ICS – There is a cashflow mismatch test and lapse test but the thresholds are not yet set to aid in data collection

Some level of flexibility in premiums allowed

Risk corrections are higher due to flooring them at $35\% \times \text{LTAS}$

Prescribed Spreads vary by maturity and rating category

SG RBC 2

Cashflow mismatch test done over 1 year duration bands and allow for premiums and asset cashflows to be reallocated

All insurance risk is considered – not just lapse

Spread is calculated as the difference between IRR of reallocated cashflows of Assets and Liabilities – with an adjustment for default risk and below investment grade bonds



OAG – Not reinventing the wheel

An OAG discounting approach was tested in ICS and the HK IA is testing a slightly different version in QIS 2.

In principle it is similar to the MA – It seeks to recognise a spread on the risk free rate because a portfolio has robust ALM practices and assets can be held for a long period of time – just like the MA.

There are a few key differences in the calculation approach & in application criteria (which are more broad).



Aspect	HK QIS 2 MA	OAG
Portfolio Calculation	Own Assets	Own Assets
Spread	$Spread_{prescribed} - RC$	$Spread_{own} - RC$
Reinvestment	Grade from LLP to UFR	Grade from Asset Duration to UFR. Makes an additional allowance for a reinvestment assumption.
Application Ratio	90%	100%
Recognition of Equities	No	Yes – Spread of 150 bps
Interpolation/extrapolation	Smith-Wilson	Smith-Wilson

4. MOCE + Risk Charges



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Margin on Current Estimate

- The IA has chosen to adopt Prudence MOCE for QIS 2 over the Cost of Capital (CoC) MOCE approach used in SII. ICS is testing both approaches.
- The Prudence MOCE has a few advantages over the CoC approach.



Prudence MOCE

- An additional margin for uncertainty
- Easy to calculate and audit
- Results are not volatile year to year
- Theoretically sound and consistent with a fulfilment value approach
- Emerging practice in IFRS 17

$$CoC \cdot \sum_{t \geq 0} \frac{\text{Expected Capital required}_t}{(1 + \text{discount rate})^t}$$

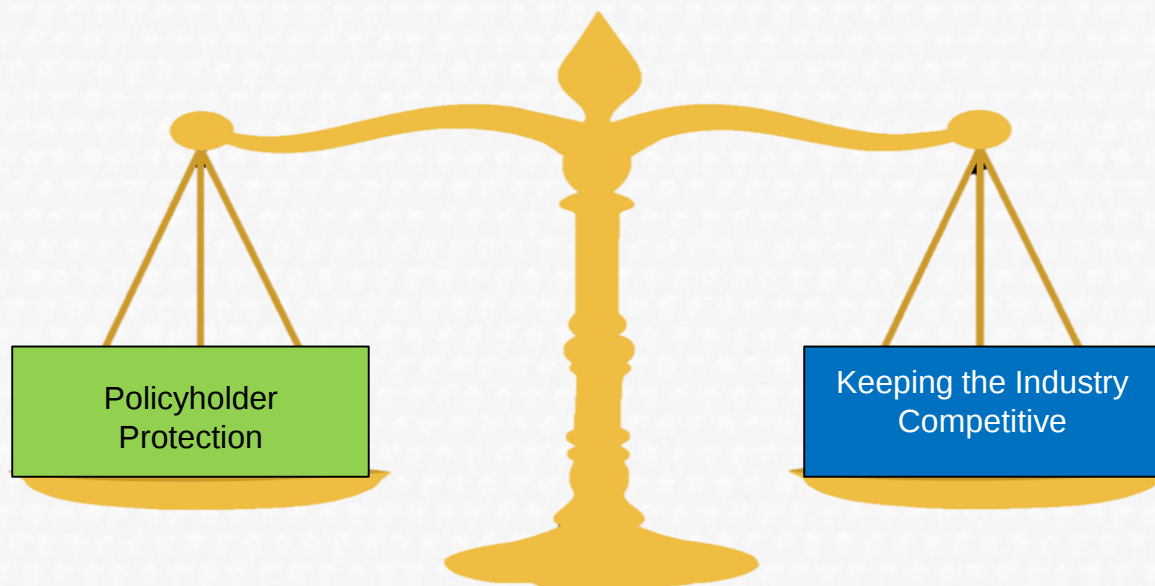
Cost of Capital MOCE

- When added to the BEL results in the transfer value
- Complex and volatile
- Typically much larger than P-MOCE
- Use in Solvency II has been the reason for serious pushback from the industry

Risk Charges - Balance

- **ICP 17.2.4** recognises that a balance must be struck policyholder protection and the cost to policyholders of increased premiums to cover the servicing of additional capital.
- This goes hand-in-hand with the balance between key statutory functions alluded to at the beginning.

Is this balance being achieved?



Risk Charges

- Some of the features that may affect this balance:
 - **Credit Spread Risk** – spread stresses seem to be excessive.
 - **Lapse Risk** charge being much larger as the mass lapse is determined at the product level. But mass lapses are triggered by a crisis of confidence – people want whatever money they can get.
 - **Property Risk** – is high due to the 44% stress applied to investment property being much higher than comparable regimes.
 - **Diversification Benefit** – This is driven partially by high lapse risk in the insurance risk aggregation component and high credit spread risk in the market risk aggregation step. Parts of the market risk correlation matrix (including credit spread, interest rate risk and equity risk) are highly correlated.
 - **Double Counting of the MOCE** – could potentially lead to Capital adequacy ratios of less than 100% for some insurers.

Double Counting of the MOCE

- The IA currently has adopted a position that the MOCE should not be removed from the capital requirement or added to capital resources.
- Insurance risk charges are calibrated to a 99.5th percentile and calculated by applying the shock to a best estimate liability (i.e. excluding MOCE).
- The charge is then the value of the fall in available capital – this is typical of most regimes.
- If there is no adjustment to the PCR or to available capital for the MOCE then there will likely be double counting.
- The overall regime will therefore be calibrated to a confidence level higher than 99.5%.



5. Closing Remarks



HK RBC – QIS 2

- Opportunity to work together with the IA and the wider industry to shape a solvency regime that:
 - Is ICP Compliant
 - Takes into account the market landscape and needs of the Hong Kong market and insurance industry
 - Ensure strong financial health without being overly burdensome or conservative
 - Maintain Hong Kong as a financial centre and a competitive marketplace
 - Meets the practical challenges associated with implementation alongside other changing regulations (ICS & IFRS 17)

Questions?



Appendix



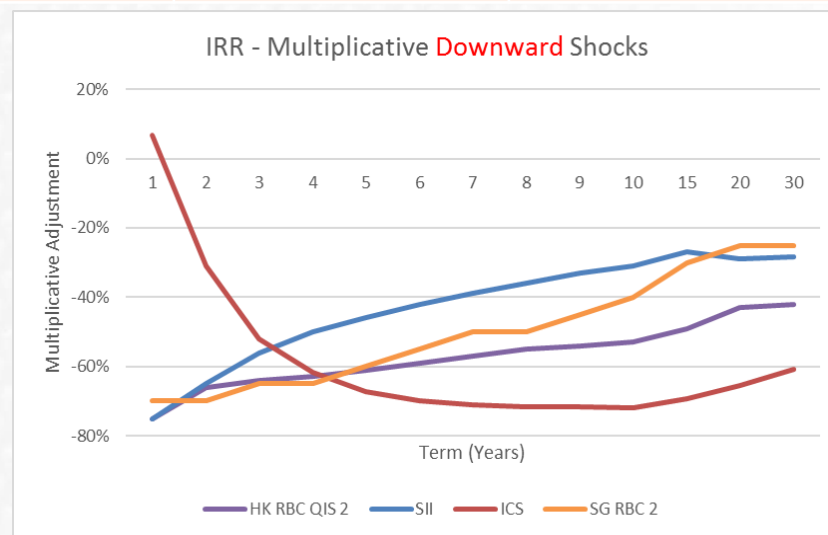
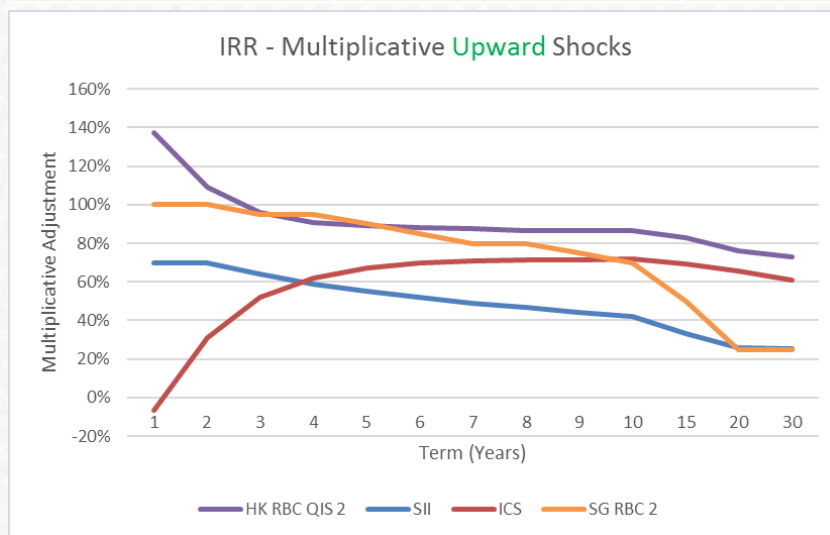
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Insurance Risk Stresses

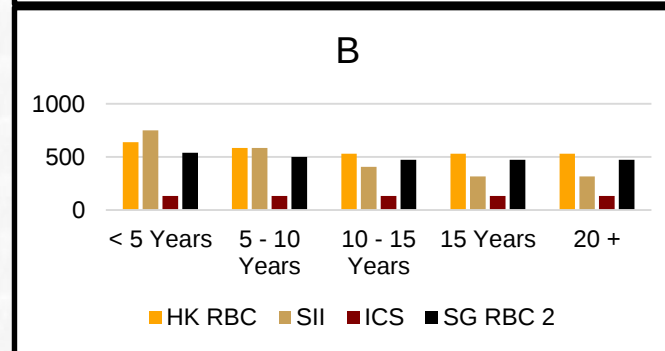
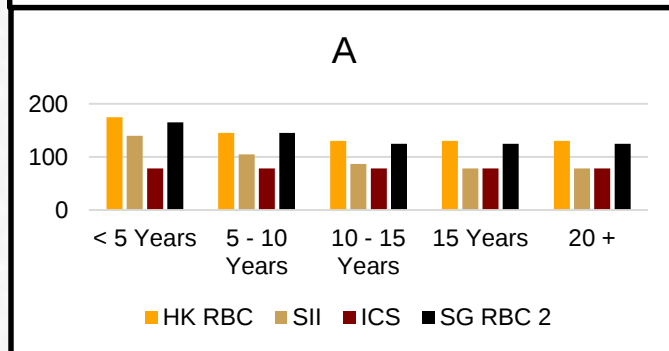
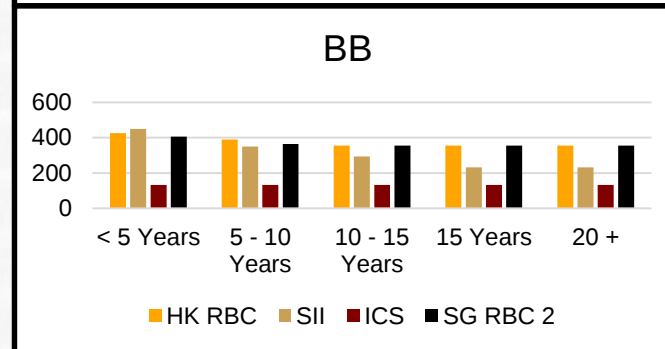
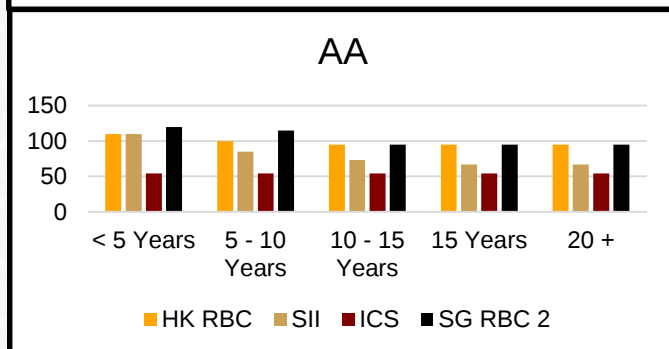
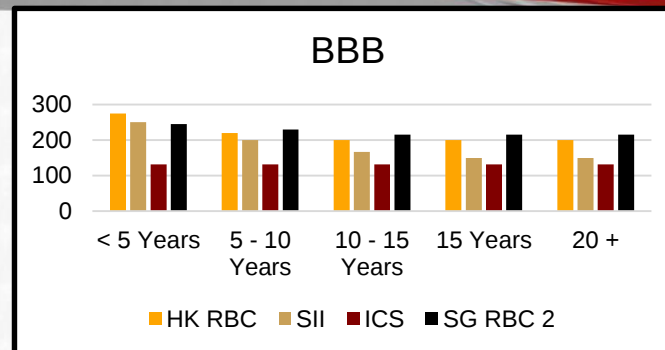
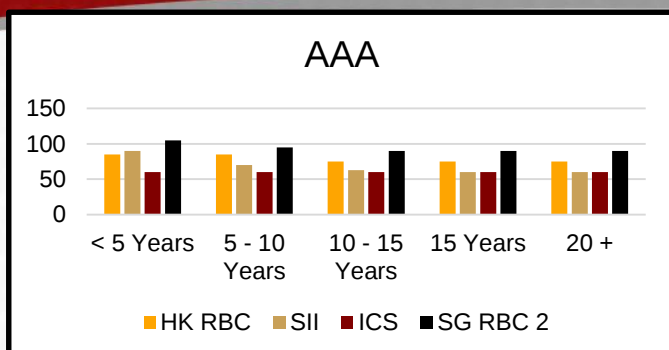
	HK RBC QIS 2	SII	ICS	SG RBC 2
Mortality Stress	15%	15%	12.5%	20%
Longevity Stress	(25%)	(20%)	(17.5%)	(25%)
Catastrophe Risk	1.5 per mille	1.5 per mille	1 per mille	1 per mille
Morbidity				
Accidental & Health	35% (Year 1) 25% (>Year 1)	35% (Year 1) 25% (>Year 1)	20% (Short Term) 8% (Long Term)	40% Guaranteed Prem. 30% Non-Guaranteed Prem.
Critical Illness	35% (Year 1) 25% (>Year 1)	35% (Year 1) 25% (>Year 1)	25% (Short Term) 20% (Long Term)	40% Guaranteed Prem. 30% Non-Guaranteed Prem.
Medical Claims	35% (Year 1) 25% (>Year 1)	Medical Claim payment -5% (multiplicative) Medical claim inflation - 1% (additive)	20% (Short Term) 8% (Long Term)	40% Guaranteed Prem. 30% Non-Guaranteed Prem.
Disability	35% (Year 1) 25% (>Year 1)	35% (Year 1) 25% (>Year 1)	20% - 25% (Short Term) 12% - 20% (Long Term)	20%
Recovery	(20%)	(20%)	(20%)*	-
Lapse				
Level Lapse	±40%	±50%	±40%	±40%
Mass Lapse	30% (Individual) 50% (non-individual)	40% (Individual) 70% (non-individual)	30% (Individual) 50% (non-individual)	30% (Individual) 50% (non-individual)
Expense Risk	10% (multiplicative) on expenses 1% (additive) increase on Inflation	10% (multiplicative) on expenses 1% (additive) increase on Inflation	10% (multiplicative) on expenses 1%-2% (additive) increase on Inflation	20% in first year and 10% thereafter (multiplicative) increase on expenses and inflation

Market Risk Stresses

	HK RBC QIS 2	SII	ICS	SG RBC 2
Property Stress	44% - Investments 22% - Owner Occupied	25%	25%	30%
Equity				
Developed	40%	39%	38%	35%
Private	50%	49%	48%	50%
Other	50%	49%	49%	50%
Strategic	20%	22%	-	-



Credit Spread Risk – Gross Spreads



Management Actions

HK RBC QIS 2

Broad definition beyond changes in future discretionary benefits (FDB) are provided but some justification is needed if the management action is not:

- Change in asset allocation
- Change in FDB
- Change in market value adjustment

SII

Broad definition of management actions is provided subject to criteria.

ICS

Management actions are confined to changes in future discretionary benefits

SG RBC 2

No allowance for management actions but future discretionary benefits are incorporated into capital resources