Actuaries Summit

Take the Lead
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Actuaries Institute

Global Insurance Capital Standards – can different valuation approaches be reconciled?

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Agenda

1. Context
2. IAIS Policy Measures
3. IAIS insurance capital standards
   - BCR/HLA/ICS
4. 2015 field testing exercise & ICS context
5. ICS example standard method - overview
6. GAAP with adjustments (GAAP+) valuation approach
7. Reconciliation

1. Context

- Global financial crisis in 2008/09
  - Banks most affected
  - Insurers impacted too: AIG, monolines, Fortis, ING, Hartford, …
  - Financial Stability Board (FSB) coordinated responses
  - Globally systemic important financial institutions (G-SIFIs) plus many other reforms to market regulation
- IAIS
  - Comprehensive review of existing standards, development of ComFrame, including insurance capital standards, additional G-SII policy measures and a macroprudential surveillance framework

IAIS role

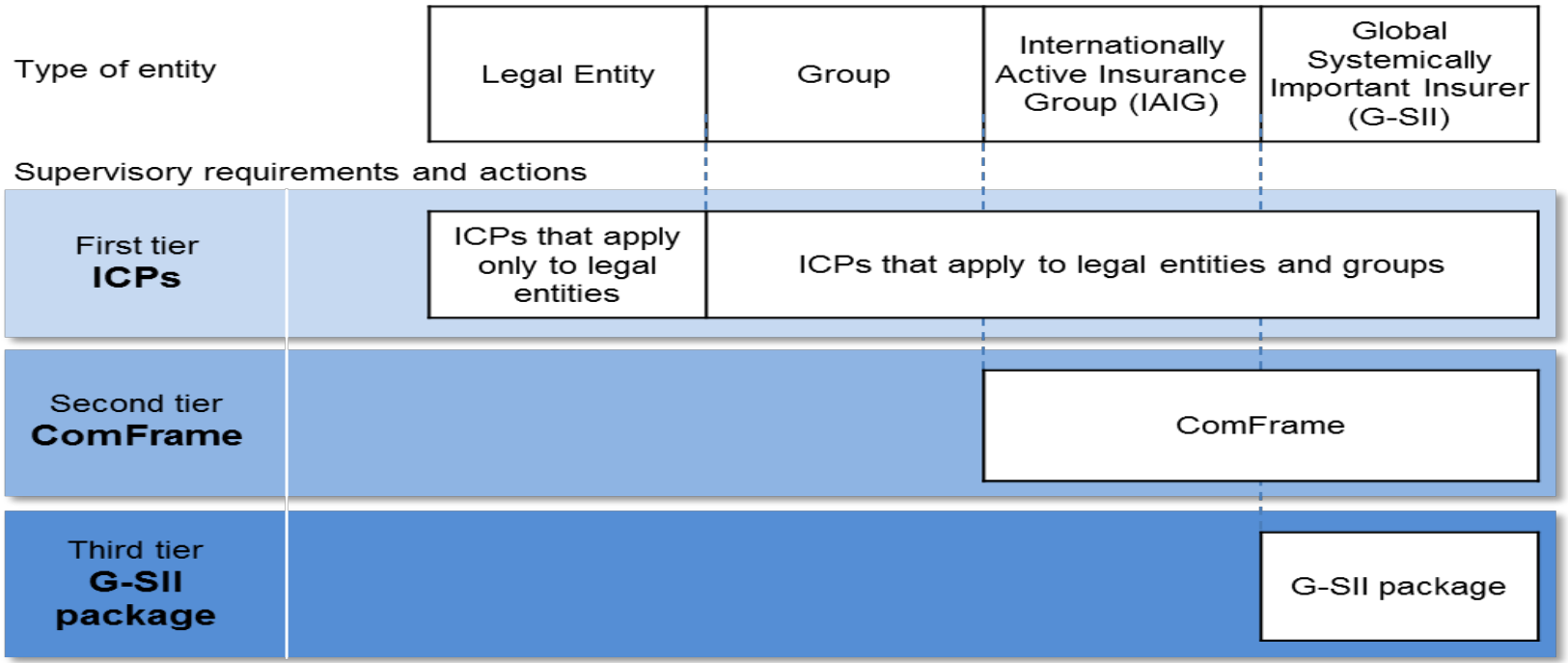
- Global insurance standard setter
- Contribute to global financial stability
- Implementation activities (with enforcement at jurisdictional level)
- Promotion of supervisory cooperation
- Monitoring role via self assessment and peer review of observance of IAIS standards (ICPs, ComFrame, ICS, etc)

Definitions

- Basic capital requirements (**BCR**) and higher loss absorbency (**HLA**) will apply to global systemically important insurers (**G-SIIs**)
- The Common Framework (**ComFrame**) for the supervision of internationally active insurance groups (**IAIGs**), including all G-SIIs, will apply from 2019
- The global insurance capital standard (**ICS**) will be part of ComFrame
- BCR/HLA/ICS & ComFrame will all be built on IAIS insurance core principles (**ICPs**)

IAIS approach to standard setting

Architecture of IAIS international supervisory requirements

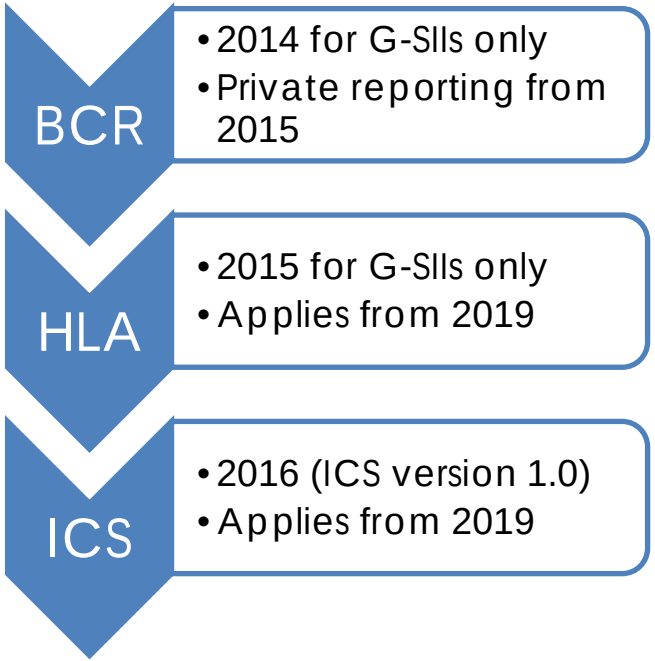


2. IAIS Policy Measures for G-SIIs

- G-SII Policy Measures paper 2013:
  - Enhanced supervision
  - More effective resolution
  - Higher loss absorbency (HLA)
- HLA is one leg of "supervisory stool"
- Consistency with banking and other sectoral regulation is desirable, where appropriate

3. IAIS Insurance capital standards

- 3 standards: BCR/HLA/ICS
- BCR Document Oct 2014
- ICS consultation doc Dec 2014
- HLA consultation doc June 2015
- Scope of standards
  - Global and group-wide
  - Comparable
  - Implementable



Development and testing timeframe

Date	Activity
Dec 2014	• First ICS consultation document
Jun 2015	• HLA consultation document
Nov 2015	• HLA to be finalised & endorsed by FSB and G20 summit
Dec 2015	• Second ICS consultation document (with ComFrame)
2015 - 2016	• Testing & refinement of ICS, BCR & HLA
End 2016	• Development of ICS completed by IAIS (version 1.0)
2017 - 2018	• Further testing and refinement of ICS, BCR & HLA
Dec 2017	• Final ComFrame (including ICS) consultation document
End 2018	• Adoption of ICS (version 2.0)
From 2019	• Implementation of ICS, BCR & HLA begins

IAIS Members most active on ICS

Global standards require global cooperation from all major jurisdictions – both supervisors & volunteer IAIGs!

BCR

- Required as global base to build from
  - PCRs are not comparable
- Endorsed by FSB & G20 in 2014
- Milestone: First global insurance capital measure
- Market adjusted valuation and factor based
- Simple to apply
- Risk reflective but not strongly risk sensitive
- Review and refine over time

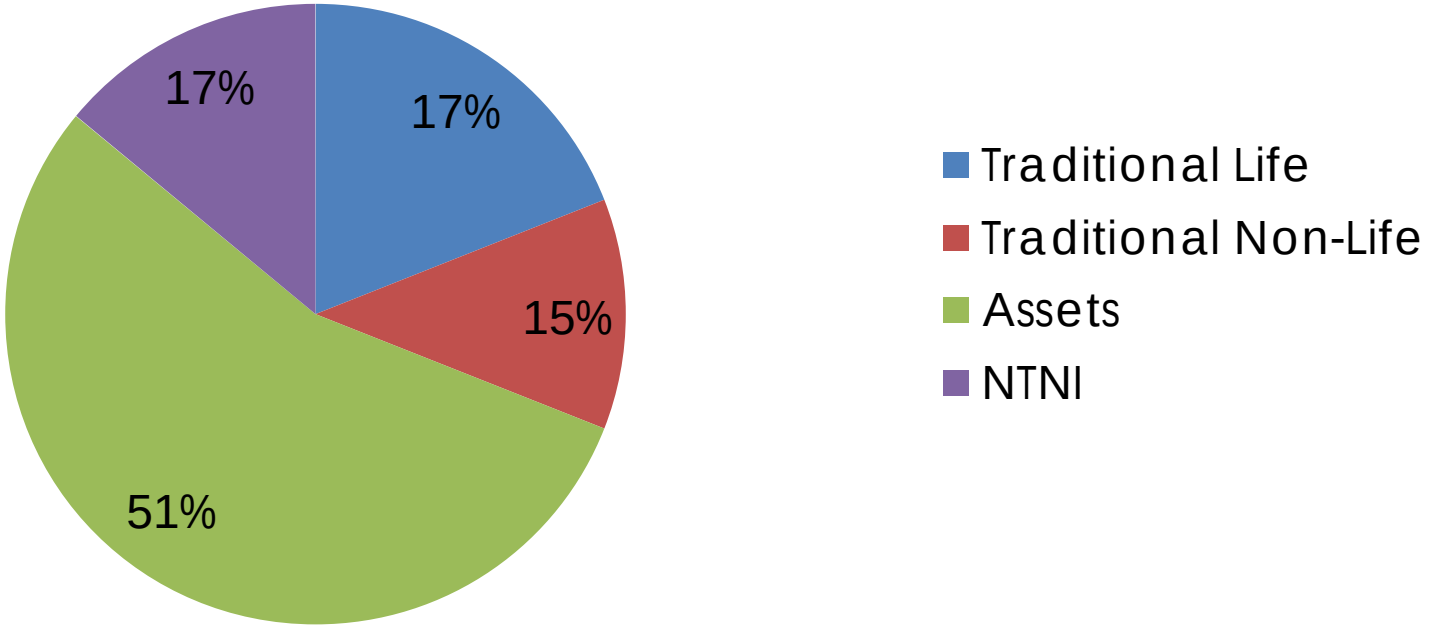
BCR capital requirements

- The determination of capital required for the BCR uses 15 factors applied to 15 exposures within the 4 main categories of insurance activity, plus a non-insurance category:
  - Traditional Life insurance,
  - Traditional Non-Life insurance,
  - Assets,
  - Non-Traditional (NT) insurance and
  - Non-Insurance (NI).

BCR exposures & factors

BCR segment	Exposure measure	Factor	Factor value
Traditional Life			
Protection life	Net Amount At Risk	a1	0.06%
Participating products	Net Current Estimate	a2	0.6%
Annuities	Net Current Estimate	a3	1.2%
Other life	Net Current Estimate	a4	0.6%
Traditional Non-life			
Property	Premium Measure	b1	6.3%
Motor	Net Current Estimate	b2	6.3%
Casualty	Net Current Estimate	b3	11.3%
Other non-life	Net Current Estimate	b4	7.5%
Non-Traditional			
Variable annuities	Notional Value	c1	1.2%
Mortgage insurance	Risk in Force	c2	4.0%
GICS & Synthetic GICS	Notional Value	c3	1.1%
Other non-traditional	Net Current Estimate	c4	1.3%
Assets			
Credit - investment grade	Fair Value	d1	0.7%
Credit - non investment grade	Fair Value	d2	1.8%
Equity, real estate & non-credit investment assets	Fair Value	d3	8.4%

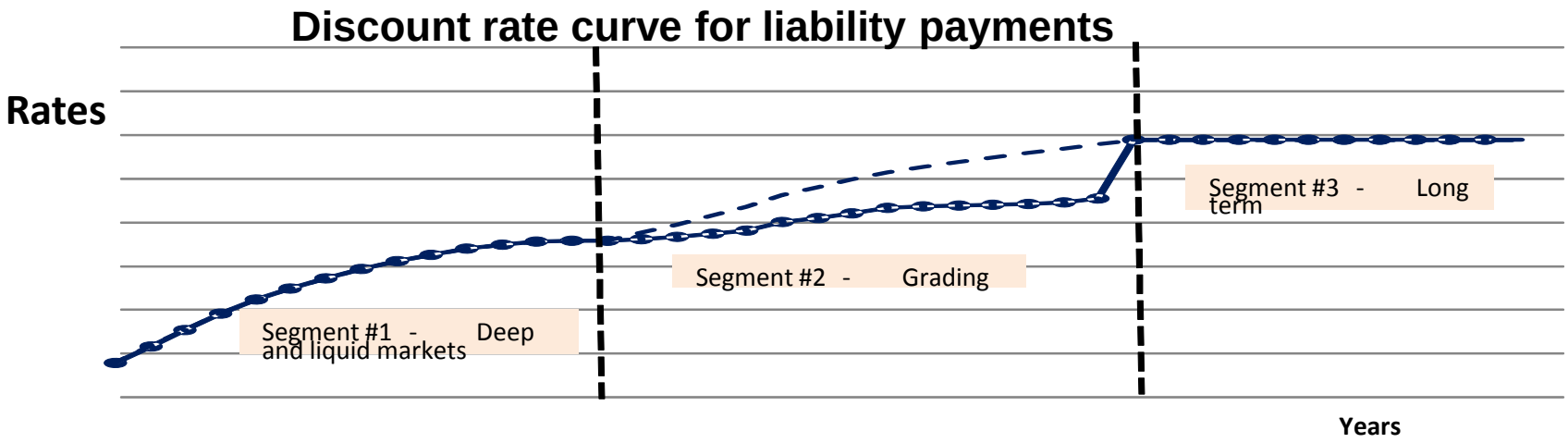
BCR Allocation of capital requirements



Market adjusted valuation approach

- For BCR, HLA and field testing of the ICS example standard method
- Some similarities to European, Australian, South African, Canadian, Chinese systems (not just Solvency II)
- Current (ie best) estimate of liabilities
- Fair value of invested assets
- Discount rate framework subject to revision during field testing 2015 to 2018

3 part base discount curve (for 2015 field testing)

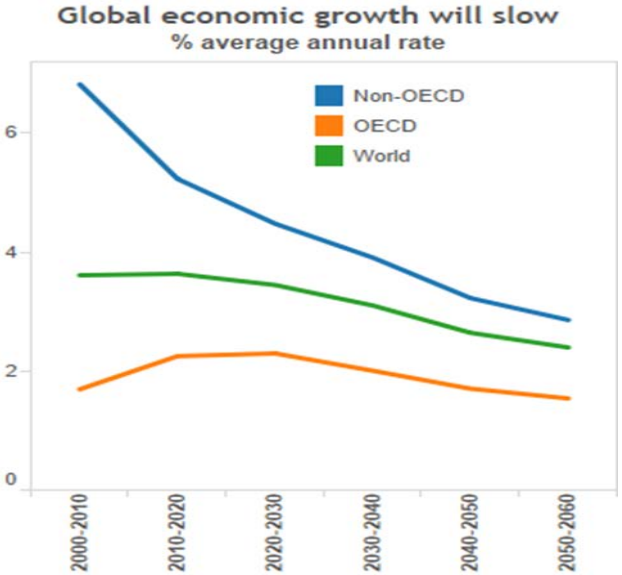


Segment # 1 – using market information adjusted for credit for 30 years at most
Segment # 2 – using an extrapolation technique
Segment # 3 – relying on a stable long term forward rate

Discounting

- Long term (50 years) economic growth forecast
  - Distinguishing OECD and non-OECD

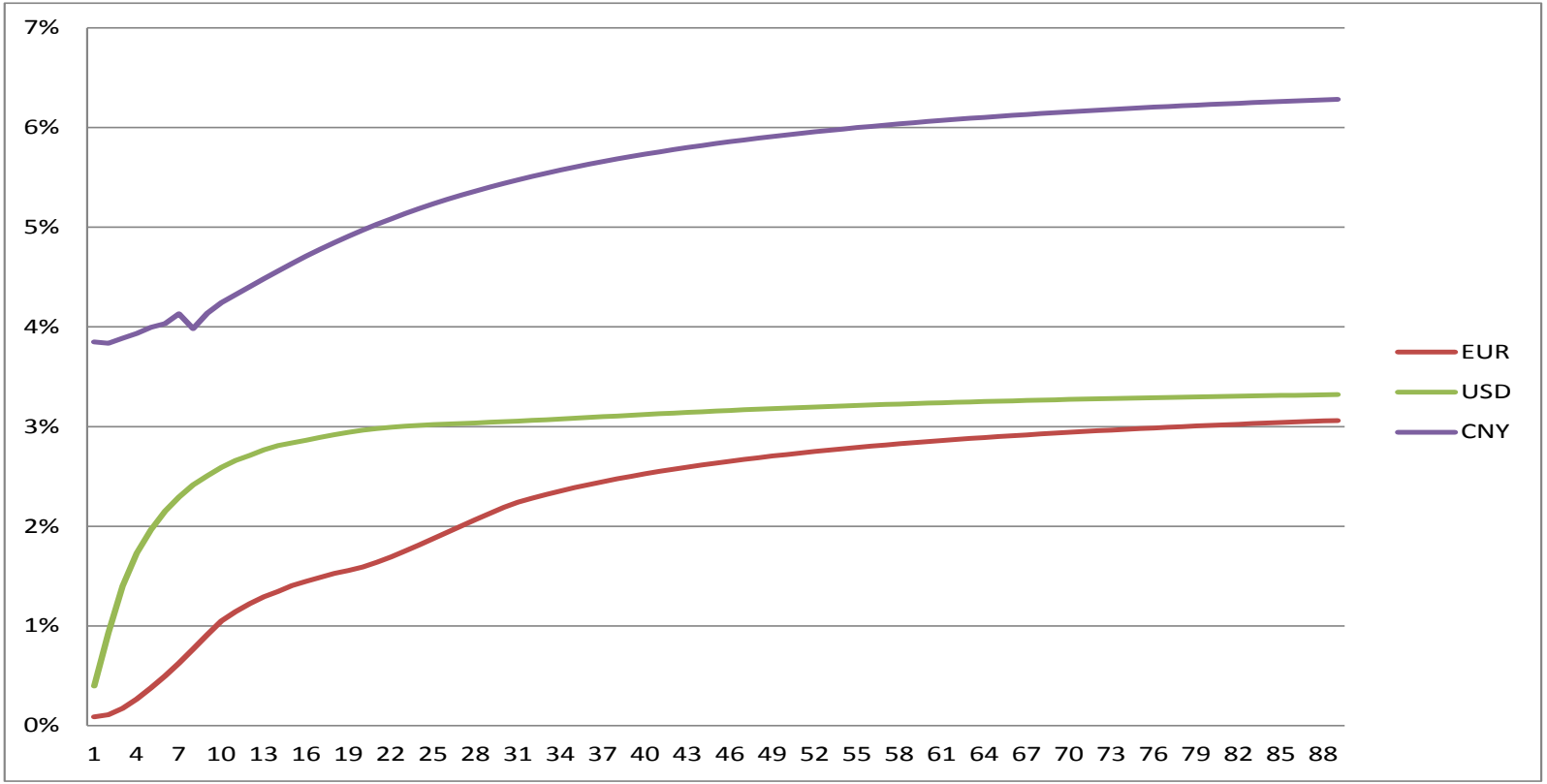
	Final, rounded
Non-OECD	2.75
OECD:	1.5
World	2.3



- Long term target inflation

Long term target inflation	
2.0%	Default
2.5%	Australia, Poland, Iceland and Norway
3.0%	Chile, Hungary, Mexico and Korea
4.0%	Argentina, China, India and Russia
4.5%	Brazil, Indonesia and South Africa
5.0%	Turkey

Sample yield curves



HLA

- Apply to G-SIIs and build on BCR
- G-SII Policy Measure paper goal:
  "reduce the probability of distress or failure and thus the expected impact"
- Consultation from June to August 2015
- BCR to be replaced by ICS after 2019

10 HLA Principles

1. Comparability
2. G-SII risks
3. Internalise costs
4. Resilient
5. Going concern
6. Quality of capital
7. *Pragmatic*
8. *Consistent*
9. *Transparent*
10. *Refinement*

4. Field testing & ICS context

- Informs review and development of BCR, HLA and ICS
- Volunteers – over 35 IAIGs and all (current) G-SIIs
- Major ongoing exercise

ICS - Ultimate Goal

- The ultimate goal of a single ICS will include a common methodology by which one ICS achieves comparable, i.e. substantially the same, outcomes across jurisdictions.
- Ongoing work is intended to lead to improved convergence over time on the key elements of the ICS towards the ultimate goal.
- Not prejudging the substance, the key elements include valuation, capital resources and capital requirements.

Context of ICS

- *"Once finalised and agreed, the ICS will be a measure of capital adequacy for IAIGs and G-SIIs. It will constitute the minimum standard to be achieved and one which the supervisors represented in the IAIS will implement or propose to implement taking into account specific market circumstances in their respective jurisdictions."*
- *"Details of how the ICS will be implemented as a minimum standard will be set out in a subsequent consultation on the ICS after the IAIS has considered and deliberated on feedback from this current consultation."*

5. Overview of ICS example standard method

- 3 Main components of ICS:
  - Valuation
  - Qualifying capital resources
  - ICS capital requirement

> ICS Ratio = qualifying capital resources / ICS capital requirement

- ICS applies to all IAIGs including G-SIIs
  - Definition of 'IAIGs' and 'Group' to be taken from ComFrame

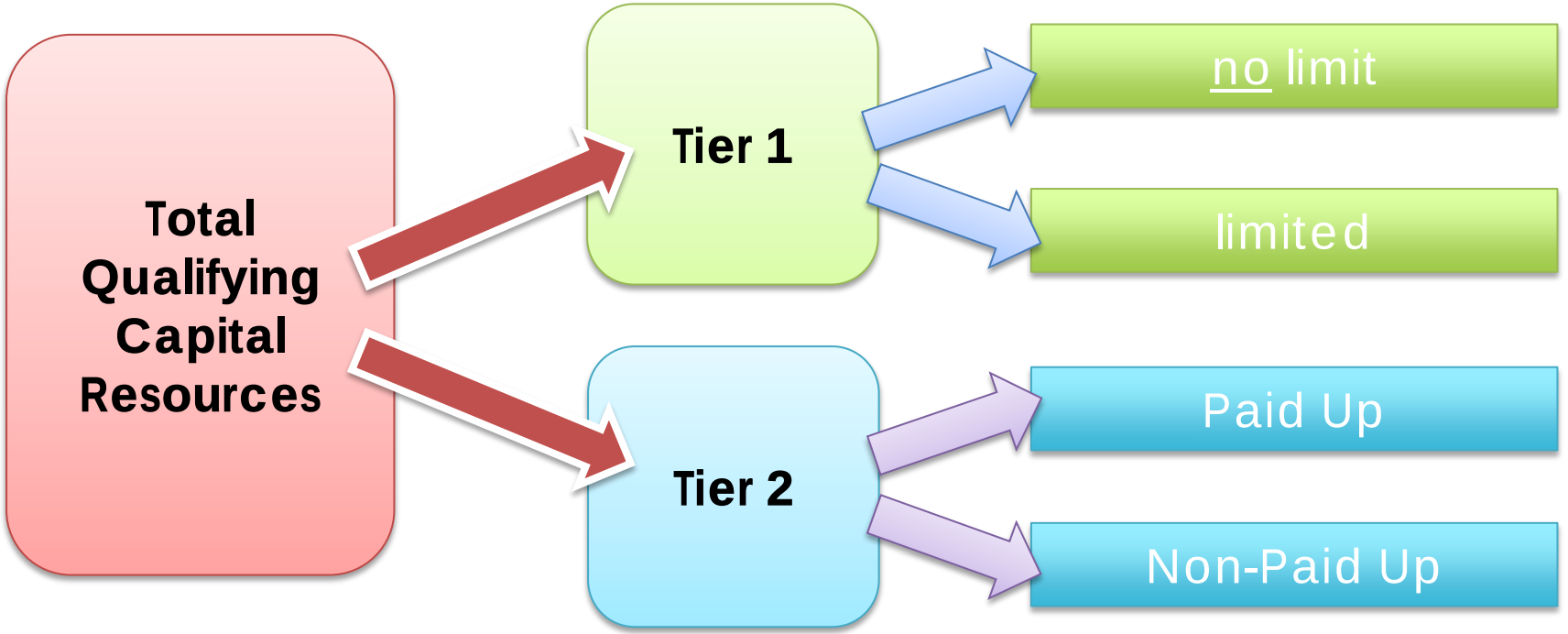
- Consultation Document focuses on Insurance activities
  - Treatment of Non-Insurance activities in ICS will be addressed in future consultation

ICS Capital Resources (1)

- Tier 1 – Going Concern + Winding Up
- Tier 2 – Winding Up

- Tier 1 vs Tier 2 based on differences in
  - Subordination
  - Availability
  - Loss-absorbing capacity
  - Permanence and
  - Absence of encumbrances & mandatory servicing costs

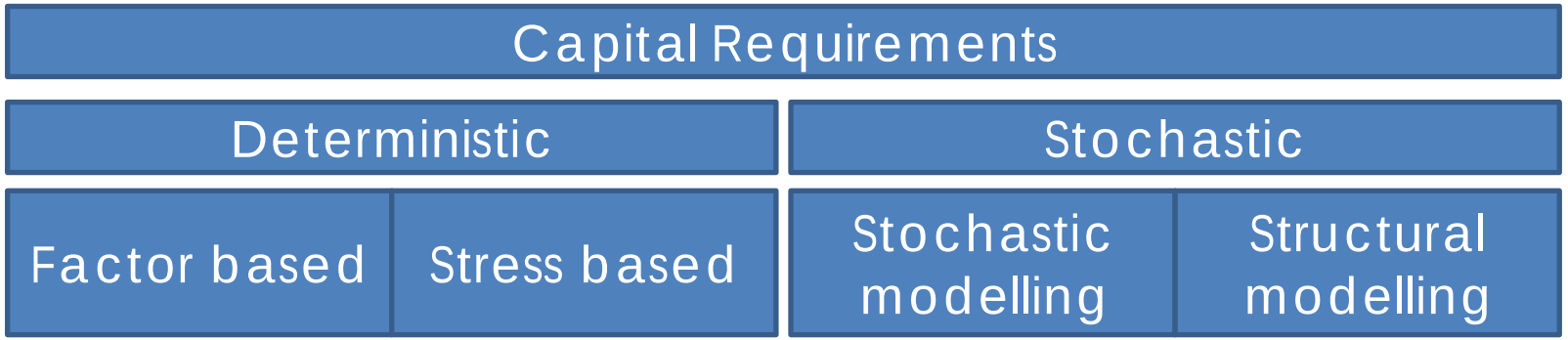
ICS Capital Resources (2)



ICS Capital Requirement

Purpose	• Should it be implemented as a Prescribed Capital Requirement (PCR)? • Should it be complemented by a (less risk-sensitive) backstop?
Risk coverage	Insurance, market, credit and operational risk
Risks not covered explicitly	Group risks, liquidity risk (but addressed in other risks)
Risk Measure (target criteria)	• At least 99.5% VaR over one year • At least 90% Tail-VaR over one year
Diversification / Concentration	• How to deal with risk dependencies (and subsequently level of diversification)
Risk mitigation	• General principles for recognition of risk mitigation • Treatment of profit sharing and adjustable products

Risk Measurement



- **Factor Based approach**: factors are applied to specific exposure measures (cf. BCR)
- **Stress Based approach:** Capital requirement is determined as decrease between the amount of capital resources on the unstressed balance sheet and the amount of capital resources on the stressed balance sheet.

- The ICS Capital Requirement may be built from a combination of approaches

Measuring risk (standard method)

Risk/Sub-risk Potential Approach	Factor-based	Stress	Other
Insurance risks			
• Mortality		✓	
• Longevity		✓	
• Morbidity/disability		✓	
• Lapse		✓	
• Expense Risk		✓	
• Premium	✓		
• Claim reserve/revision	✓		
• Catastrophe			✓
Market risks			
• Interest rate		✓	
• Equity		✓	
• Real estate		✓	
• Currency/FX		✓	
• Asset concentration	✓		
Credit risk	✓		
Operational Risk	✓		

Premium risk calibration

- 8 buckets with jurisdictional segments mapped to the 8 buckets
- Factors applied to greater of net earned premium and premium to be earned

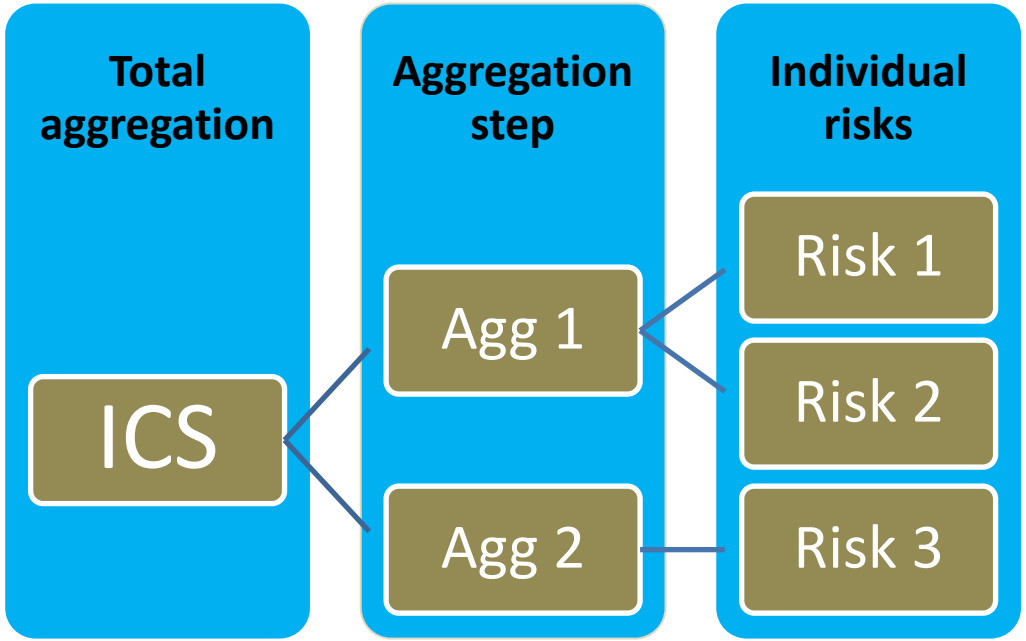
Bucket	Factor %
1	15
2	25
3	30
4	35
5	45
6	50
7	55
8	70

Claim reserve risk calibration

- 8 buckets with jurisdictional segments mapped to the 8 buckets
- Factors applied to net current estimate

Bucket	Factor %
1	10
2	20
3	25
4	30
5	35
6	40
7	45
8	50

Variance/Covariance matrix approach



Aggregation of premium and reserve risk

- 3 steps – aggregate premium and reserve risk, aggregate across classes (property like, liability like and other), aggregate at regional level
- Premium and reserve risk to be correlated on the following basis - (property - 25%, other - 50%, liability - 75%)
- Correlation across classes per following table

	Recommended correlation
Property & liability	50%
Property & other	50%
Liability & other	50%

- The non-traditional mortgage will be aggregated with real estate (in market risk)
- Non-traditional credit will be aggregated with credit risk
- Remaining non-traditional will be added to the non-life risk charge
- Regional correlations – 25%

Catastrophe risk

- Aggregation of scenarios assuming mutual independence

$$ICS_{Cat} = \sqrt{ICS_{NatCat}^2 + ICS_{NaTerror}^2 + ICS_{Liab}^2 + ICS_{Pand}^2 + ICS_{Marine}^2 + ICS_{Aviation}^2 + ICS_{Credit}^2}$$

- Catastrophe risk scenario tested:
  - some covered non-life: e.g. natural catastrophe, marine, aviation, liability catastrophe, credit and surety
  - Some covered life: e.g. pandemic
  - Some covered both: e.g. terrorism

- Explicit recognition of external protection e.g. reinsurance
  - Subject to recognition of the associated credit risk

Catastrophe risk – data collection

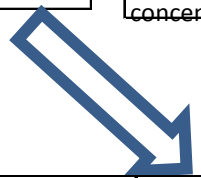
- Natural Catastrophe
  - Annual aggregate loss amounts (gross/net) split into for 4 main perils and 4 main regions
  - Use of catastrophe models allowed
  - Several confidence level points requested, e.g. 99% Var, 99.5% Var as well as few tail Var points

- Other than natural catastrophe
  - Loss amounts (gross/net) split into high level categories, e.g. 6 geographical areas or few relevant business lines

Aggregation illustration

Life risk	Mortality	Longevity	Morbidity/ disability	Lapse	Expenses
Mortality	1	-25%	25%	0%	25%
Longevity		1	0%	25%	25%
Morbidity/ disability			1	0%	50%
Lapse				1	50%
Expenses					1

Market risks	Interest rate	Equity	Real estate	currency	Asset concentration
Interest rate	1	25%	25%	100%	25%
Equity		1	0%	0%	0%
Real estate			1	0%	0%
Currency				1	0%
Asset concentration					1



ICS Global	Non-life	Catastrophe	Life	Market	Credit
Non-life	1	25%	0%	25%	25%
Catastrophe		1	25%	25%	25%
Life			1	25%	25%
Market				1	25%
Credit					1

6. IAIS decision on valuation bases

(22 October 2014)

IAIS ExCo agreed …(which direction does not prejudge any aspect of the ICS).

- *The market-adjusted valuation approach will be used as the initial basis to develop an example of a standard method in the ICS.*
- *The GAAP valuation approach data will be collected. Reconciliation between the market-adjusted valuation approach and GAAP valuation approach will be requested of the participating insurers. This will be used to explore and, if possible, develop a GAAP with adjustments valuation approach.*

Why GAAP+

- Concerns of some members of the IAIS
  - Precedence in basing capital requirements on audited data, systems and processes
  - Deterministic v. stochastic reserving
  - Transparent and verifiable to supervisors
  - Roles of accounting and of auditing standard setters
    - Independent expertise; discipline; enforcement
    - IASB final standard no sooner than the end of 2015 and effective no sooner than three years after publication
    - If (more) convergence would result, could lead to lower maintenance costs/efforts in the long run for the ICS

Basic characteristics (GAAP+)

- Focus only on the key items, i.e., invested assets and insurance liabilities, which should be adjusted from GAAP to a best estimate/consistent basis (like market-adjusted valuation)
- Other prudential adjustments in the ICS guidance on capital resources should be consistent between the market-adjusted valuation and GAAP+ unless there is a compelling reason related to the differentiated treatment of invested assets and/or insurance liabilities
- Adjustments based on amounts, disclosures, systems and processes that are subject to independent audit and thus practicable and reliable given each firm's existing audited GAAP basis of reporting

Jurisdictional GAAP+ Examples

1. IFRS (Europe)
2. IFRS (Canada)
3. Japanese GAAP
4. U.S. GAAP
5. U.S. Statutory Accounting

- Volunteer IAIGs that report under another jurisdictional GAAP should follow the following procedures:
  - Review the GAAP + Guidelines – Section 10.1 of the IAIS Field Testing Technical Specifications (expected to be published in June 2015)
  - Can any of the GAAP + examples provided be adapted?
  - Consult with supervisor representing the jurisdiction on the IAIS on proposed adjustments

Examples of Adjustments

- Insurance Liabilities – adjust to current estimate, using constructs from jurisdictional GAAP:
  - Life contracts – use of loss recognition testing (US), cash flow testing (Japan), Canadian asset valuation model (Canada), Solvency II valuation (Europe)
  - Options/Guarantees – existing stochastic approaches with adjustment to remove exit value components
  - Non-life contracts – no adjustment or simplified discounting approaches
- Investment Assets – adjust all assets to fair value (Japan, Europe)
- Other Adjustments – reverse DAC, VOBA capitalized expenses, reverse shadow accounting (US)

2015 Field testing of GAAP+

- 2015 Field Testing Technical Specifications includes jurisdiction-specific examples with guidance
- Templates for detailed balance sheet, and reconciliation of insurance liabilities from GAAP to GAAP+ to the market-adjusted valuation approach
- Decision to test ICS capital charges on: Mortality risk, NL Claim Reserve Risk, Interest Rate Risk and Equity Risk using same methodology and calibration as for the market-adjusted valuation approach

U.S. Example for GAAP+

- Insurance Liabilities – adjust to current estimate as in MAV, using constructs from U.S. GAAP:
  - Life contracts – use of gross premium valuation component of loss recognition testing (GPV)
  - Options/Guarantees – existing stochastic approaches under U.S. GAAP with adjustment to remove exit value components
  - Non-life contracts – simplified discounting approach
- Investment Assets – no adjustment of GAAP reported values (e.g., mostly at fair value)
- Will collect data to consider a potential adjustment for unrealized gains/losses on debt securities in AOCI to address the GAAP+ guidance as to consistency of valuation between assets and liabilities.

Reconciliation

- Data Collection Template
  - General balance sheet comparison and reconciliation between GAAP, GAAP+ and MAV
  - More detailed reconciliation of the differences for insurance liabilities and collection of supplemental data
    - Updating assumptions, rates
    - Elimination of additional margins
    - Contract boundaries, other
    - Evaluating proposed reconciliation approach with volunteers regarding feasibility/available data
  - Supplemental data requests in support of GAAP+

7. The big question: reconciliation?

- As we develop global insurance capital standards – can different valuation approaches be reconciled?
- The answer will be found via the field testing process over the next few years
- Essentially it is an empirical question
- Convergence and comparability are lofty goals
- Achieving them will require the joint efforts of many policymakers, supervisors and industry participants

Thank you

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News Release

February 19, 2015

IAA approves the development of a model International Standards of Actuarial Practice relating to IAIS Global Insurance Capital Standards

The International Actuarial Association (IAA) is pleased to announce that its Council has approved a Statement of Intent (SOI) to develop an International Standard of Actuarial Practice (ISAP) on "Current estimates" and other matters in relation to the IAIS capital standards (ISAP 7).

An ISAP is a model standard of actuarial practice for member associations and/or their actuarial standard-setting bodies to consider. The intention of a model standard is to promote a greater consistency of approach to actuarial practice in a given situation. This will increase the confidence of clients and the public in the actuarial work product, while not constraining the exercise of actuarial judgment unnecessarily.

The proposed model ISAP is expected to:

- Facilitate convergence in actuarial practice in relation to the IAIS Global Insurance Capital Standards within and across jurisdictions;
- Increase public confidence in actuaries' services;
- Increase reporting entities' and regulators' confidence in actuarial services;
- Promote the development of the Actuarial Profession, as greater confidence amongst stakeholders leads them to expand the use of actuaries; and
- Demonstrate the IAA's commitment to support the work of the International Association of Insurance Supervisors (IAIS) towards achieving global financial stability through effective and globally consistent supervision of the insurance industry. In particular, ISAP 7 is developed in response to a request made by the IAIS.