

2016 Convention

23 - 24 November 2016

A stylized silhouette of a city skyline in dark red, set against a black background of mountains.

International Capital Standards and Solvency II

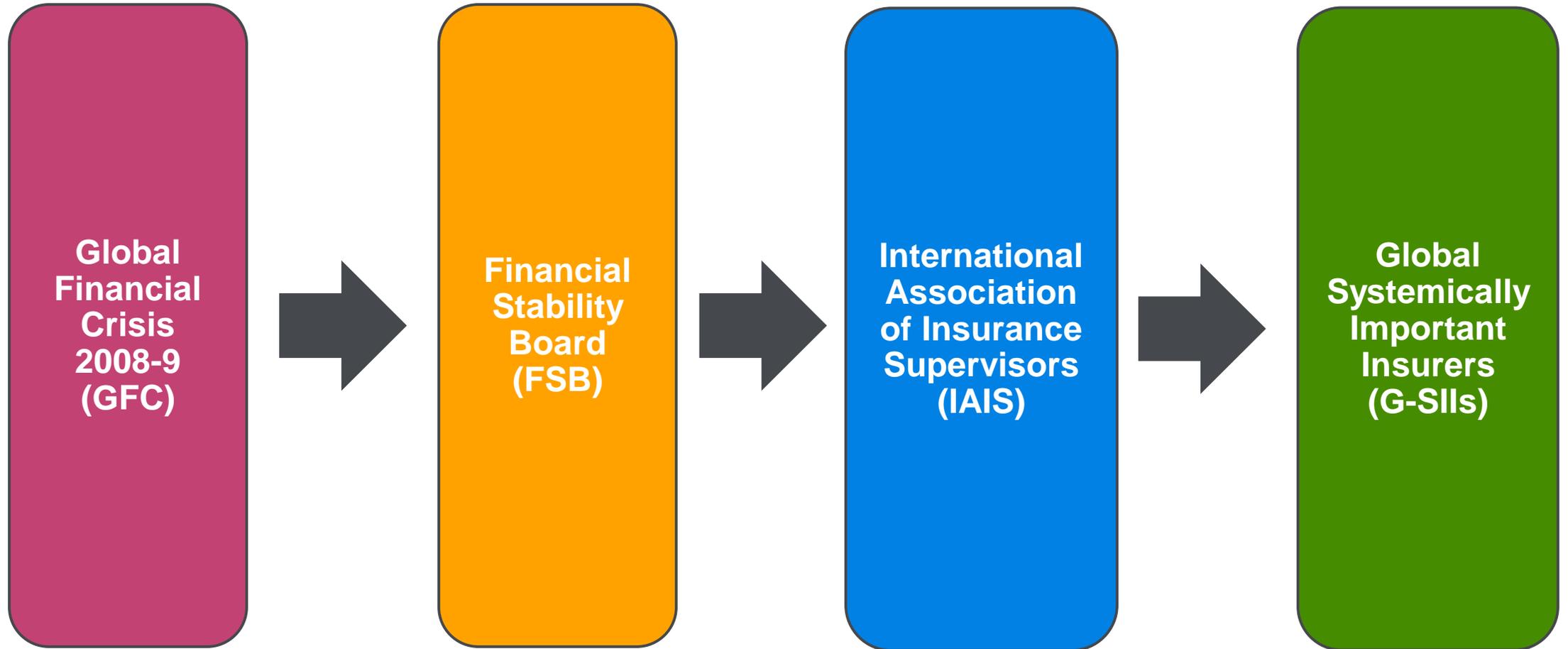
Marc Slutzky

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Agenda for this presentation

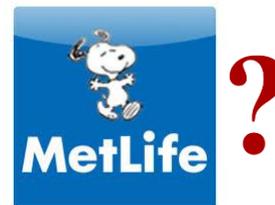
1. Background to International Capital Standards (ICS)
2. Global Systemically Important Insurers (G-SIIs), assessment methodology, policy measures
3. Capital requirements – BRC, HLA, ICS
4. ComFrame
5. Timeline and next steps
6. Field Testing and Consultation Document
7. U.S. developments
8. Comparison to Solvency II and SAM

Background...



Global Systemically Important Insurers (G-SIIs)

- Insurance-dominated conglomerates, insurance groups and any insurers whose distress or disorderly failure, because of their size, complexity and interconnectedness, would cause significant disruption to the global financial system and economic activity. The list may change this year.....



2016 G-SII Assessment Methodology

Category	Subcategory	Indicator	Weight
Size		Total Assets	2.5%
		Total Revenues	2.5%
Global activity		Revenues derived outside of home country	2.5%
		Number of Countries	2.5%
Interconnectedness	Counterparty exposure	Intra-financial assets	6.7%
		Intra-financial liabilities	6.7%
		Reinsurance	6.7%*
		Derivatives	6.7%
	Macroeconomic exposure	Derivatives Trading (CDS or similar derivatives instrument protection sold)	7.5%*
		Financial guarantees	7.5%*
		Minimum guarantees on variable products	7.5%
Asset liquidation		Non-policy holder liabilities and noninsurance revenues	7.5%
		Short term funding	7.5%
		Level 3 assets	6.7%
		Turnover	6.7%
		Liability liquidity	7.5%
Substitutability		Premiums for specific business lines	5%

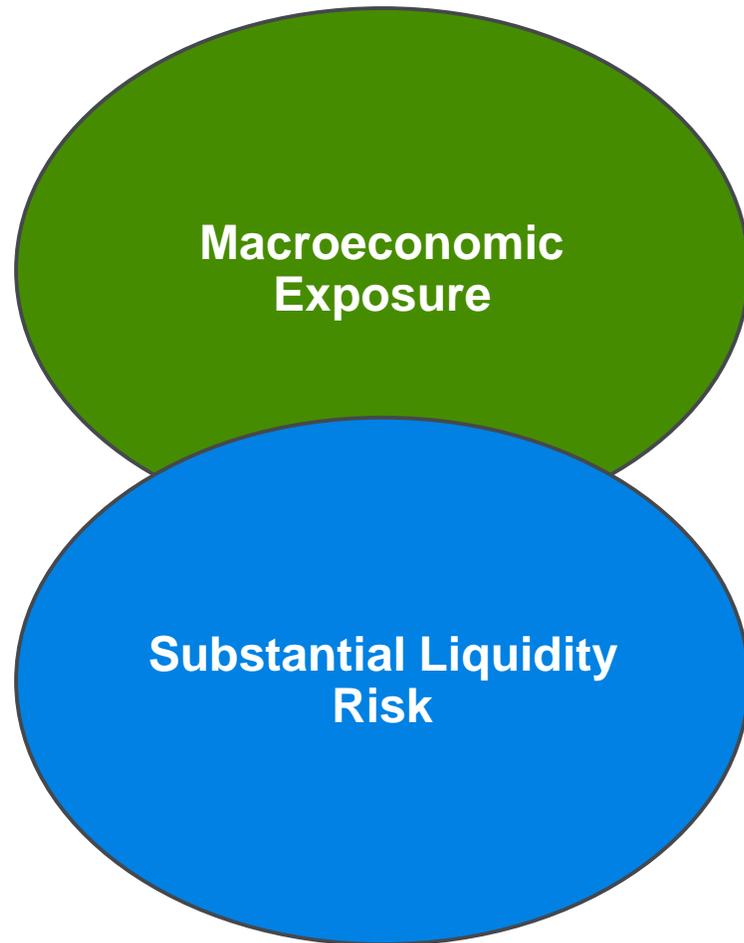
Main changes:

- 5 phase approach
- greater consideration of qualitative factors
- more consultation with proposed G-SIIs
- greater transparency
- change to some indicators
- removal of NTNI category

*Denotes the application of an absolute reference value

Systemic Risk from Insurance Product Features

(previously Non-traditional Non-insurance activities)

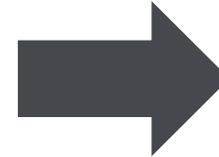


- Guaranteed benefits?
- Ability to cash-flow match?
- Products in the spotlight:
 - Variable annuity guarantees
 - Credit protection

- Mitigating factors:
 - Economic penalties
 - Delay in access

IAIS Policy Framework for G-SIIs

Enhanced Supervision



- **Additional powers**
- **Systemic Risk Management Plan**

Effective resolution



- **Crisis Management Groups**
- **Recovery and Resolution Plans**

Higher loss absorption (HLA) capacity



- **Highest quality capital**

Traditional Life: factors applied to Current Estimates, Amount at Risk

Non Traditional Insurance

Non-insurance

$$BCR \text{ Required Capital} = \alpha \left[\sum_{i=1}^4 a_i TL_i + \sum_{i=1}^4 b_i TNL_i + \sum_{i=1}^4 c_i NT_i + \sum_{i=1}^3 d_i A_i \right] + \sum_{i=1}^n NI_i$$

- Valuation approach
 - Market Adjusted Valuation (MAV)
 - Current/Best Estimate
 - Discounted cash flow approach
 - Adjusted risk free rate
- No explicit diversification

Traditional Non-Life: Factors applied to Current Estimates, Premium

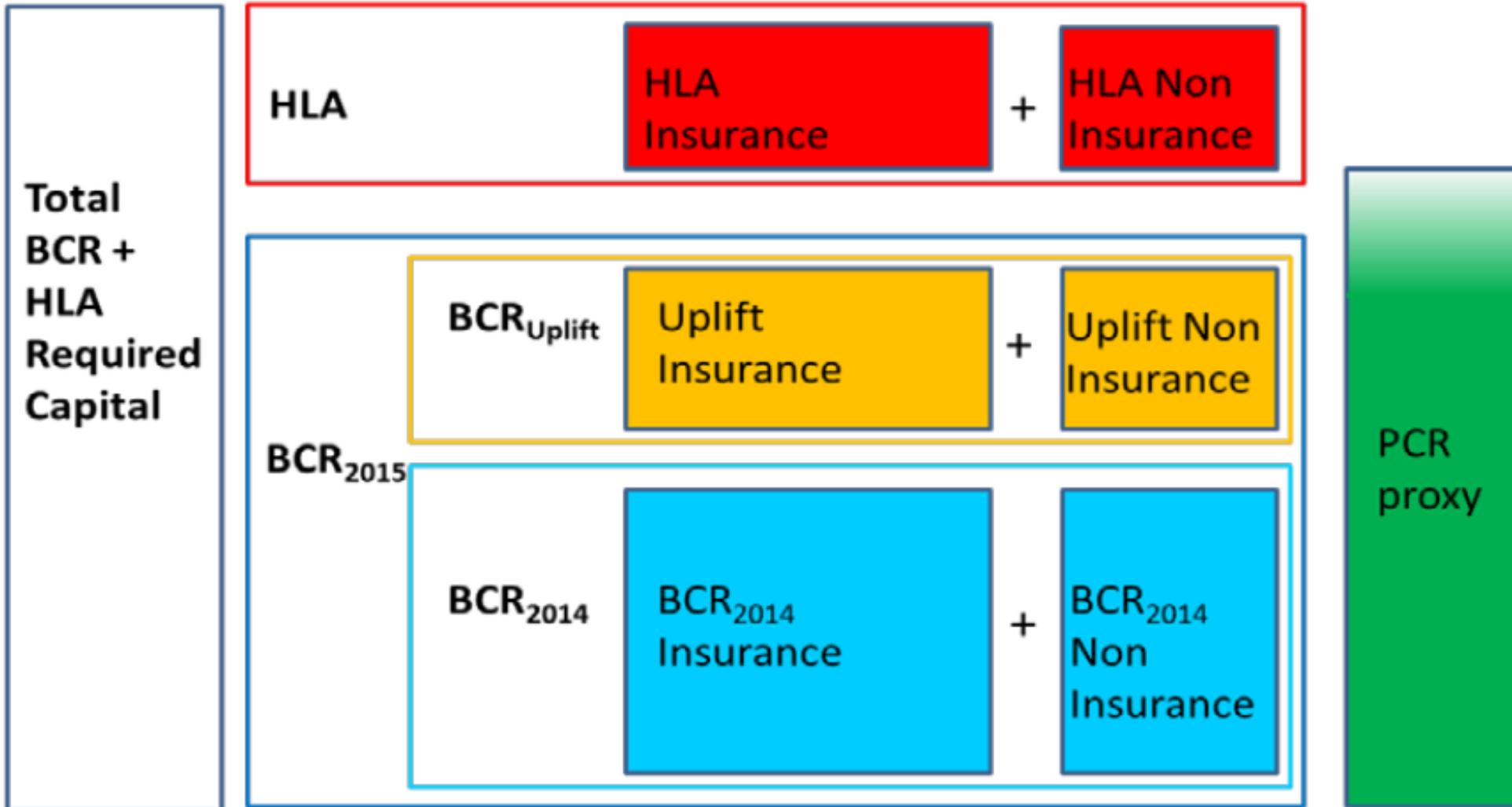
Assets: factors applied to Fair Value

HLA capital factors

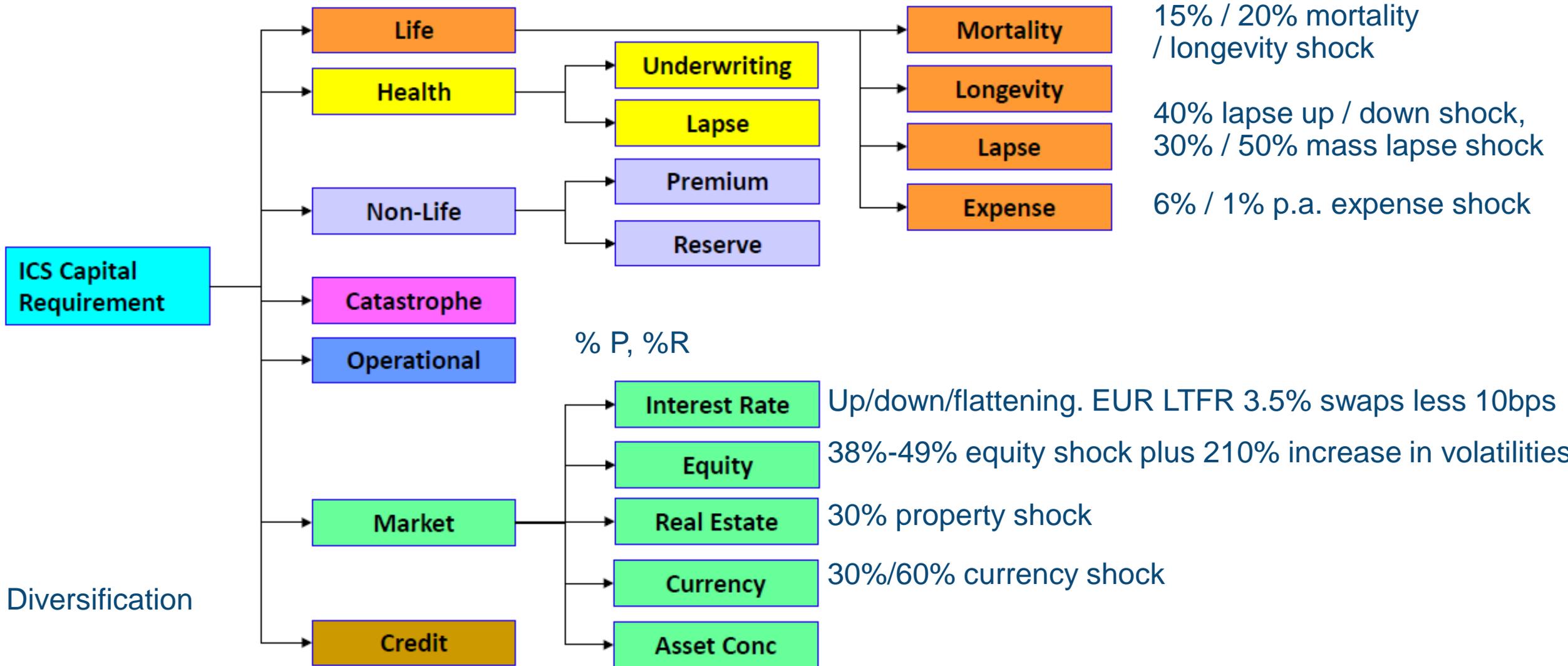
BCR required capital exposure	HLA Factors		
	Low Bucket	Mid Bucket	High Bucket
Traditional Life insurance	6%	9%	13.5%
Traditional Non-Life insurance			
Assets			
Non-Traditional insurance	12%	18%	27%
Non-Insurance – Assets Under Management			
Non-Insurance – Other			
Non-Insurance – Regulated Banking	8.5%	12.5%	18.75%
Non-Insurance – Unregulated Banking	12.5%	18.75%	25%

 **G-SII category**

G-SII Capital Requirements



ICS Standard Method



Diversification

ComFrame Q&A – What is it and why it matters

- Q1: What is ComFrame?
- It is the Common Framework for the Supervision of Internationally Active Insurance Groups (IAIGs)
- A set of international supervisory requirements focussing on the effective group-wide supervision of IAIGs
- It is built upon and expands the high level requirements and guidance set out in the IAIS Insurance Core Principals (ICPs) which generally apply both a legal entity and group-wide basis
- IAIGs need a more tailored and co-ordinated supervision across jurisdictions due to their complexity and international activity
- ComFrame will be more detailed than ICPs, but is not intended to be a highly prescriptive set of rules. ComFrame is intended to foster commonality as much existing regulation and supervision makes comparison difficult
- ComFrame sets out a comprehensive range of qualitative and quantitative requirements specific to IAIGs and the supervisory processes and prerequisites for supervisors to implement ComFrame

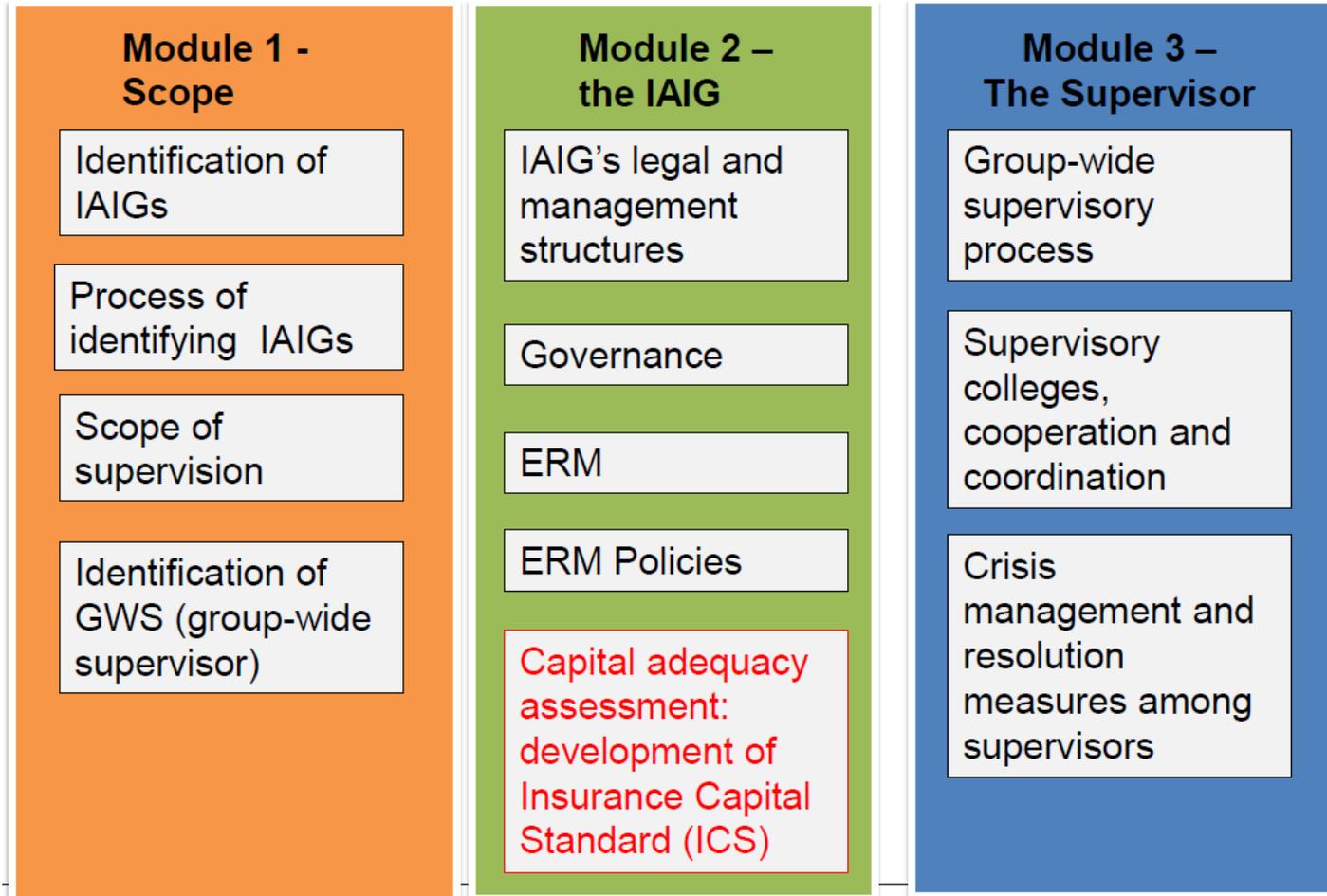
ComFrame – Q&A

- Q2: What is the rationale and objectives of ComFrame?
- The rationale is that increasing globalisation of insurance markets has driven the need for a global approach to supervision
- The objectives of ComFrame are to build a comprehensive framework for global supervision that builds upon the existing IAIS Insurance Core Principals (ICPs) including
 - Global capital standards for Internationally Active Global Insurers (IAIGs) the International Capital Standards (ICSs)
 - Qualitative requirements for IAIGs (risk management, governance etc.)
 - Requirements for supervisors
 - Crises Management and Resolution
 - To assist global convergence of regulatory and supervisory requirements for insurance groups

ComFrame – Q&A

- Q3: How is ComFrame structured?
- ComFrame is structured in three modules as shown on the next slide

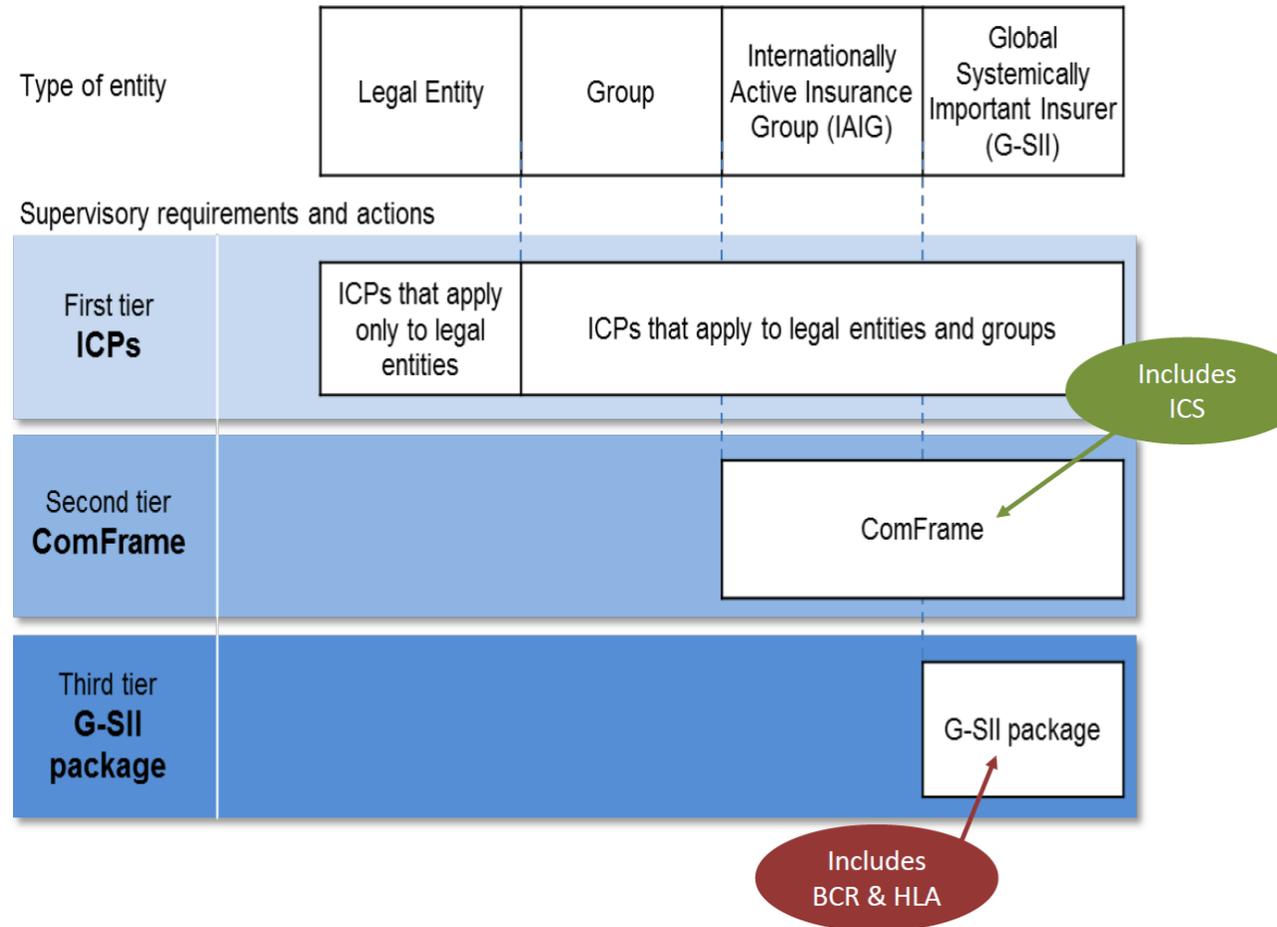
Structure of ComFrame



ComFrame – Q&A

- Q4: Does ComFrame include a global insurance capital standard?
- The IAIS has committed to develop a risk based global insurance capital standard (the ICS) and to include it within ComFrame
- Specifically the ICS will replace Module 2 Element 5 “Capital Adequacy Assessment” in the 2014 ComFrame Draft
- How the various pieces fit together is shown on the next slide

Architecture of IAIS International Supervisory Requirements



ComFrame – Q&A

- Q5: How are IAIGs defined?

ComFrame (including ICS) will apply to all IAIGs including G-SIIs ('Global Systemically Important Insurers')

IAIGs to be identified by supervisory colleges based on two criteria:

1. International activity

- Premiums written in three or more jurisdictions, and
- Percentage of gross premiums written outside the home jurisdiction is at least 10% of the group's total gross written premium

2. Size (average on 3 years)

- Total assets of at least USD 50 billion or
- Gross written premiums of at least USD 10 billion

Supervisors have discretion in applying the criteria

ComFrame – Q&A

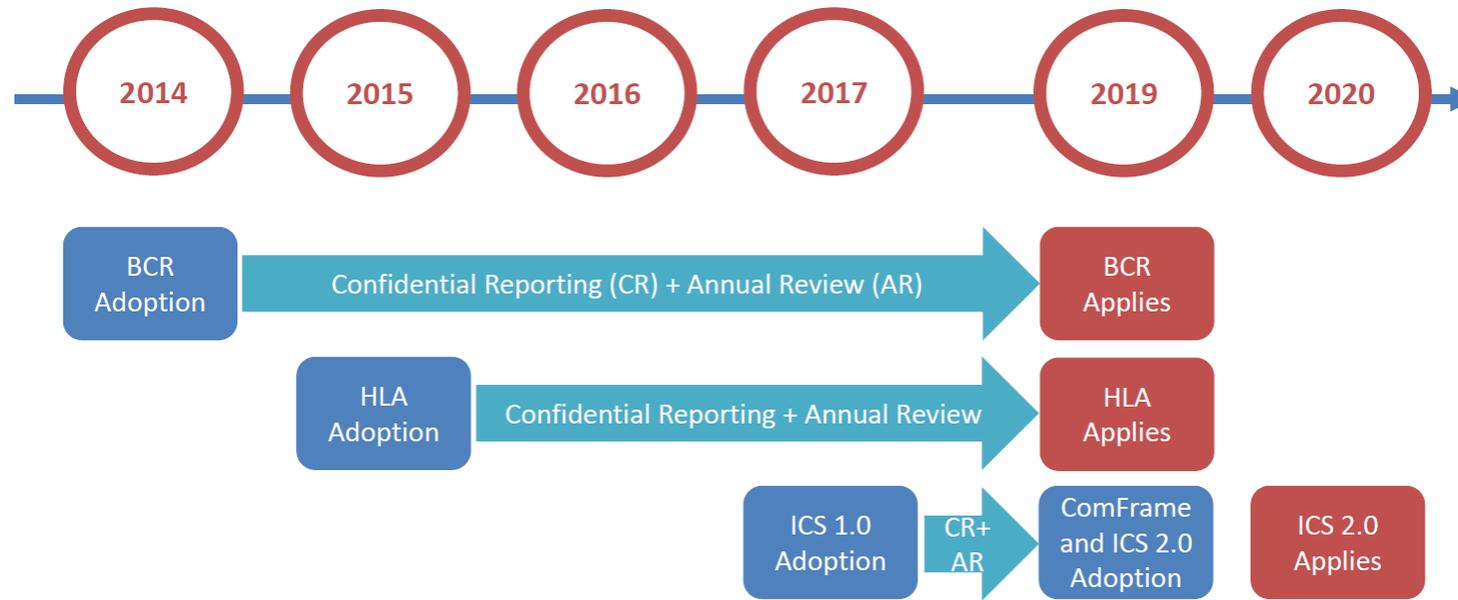
- Q6: Is ComFrame Mandatory?
- ComFrame is currently in development for adoption in 2019
- The aim (as with all IAIS material) is to promote effective and globally consistent insurance industry supervision in order to develop and maintain fair, safe and stable insurance markets for the protection and benefit of policyholders.
- Therefore the IAIS expects that ComFrame will ultimately (but sine die) be implemented by all IAIS members.
- IAIS consists of insurance regulators and supervisors from more than 200 jurisdictions in 140 countries

Timeline and Next Steps

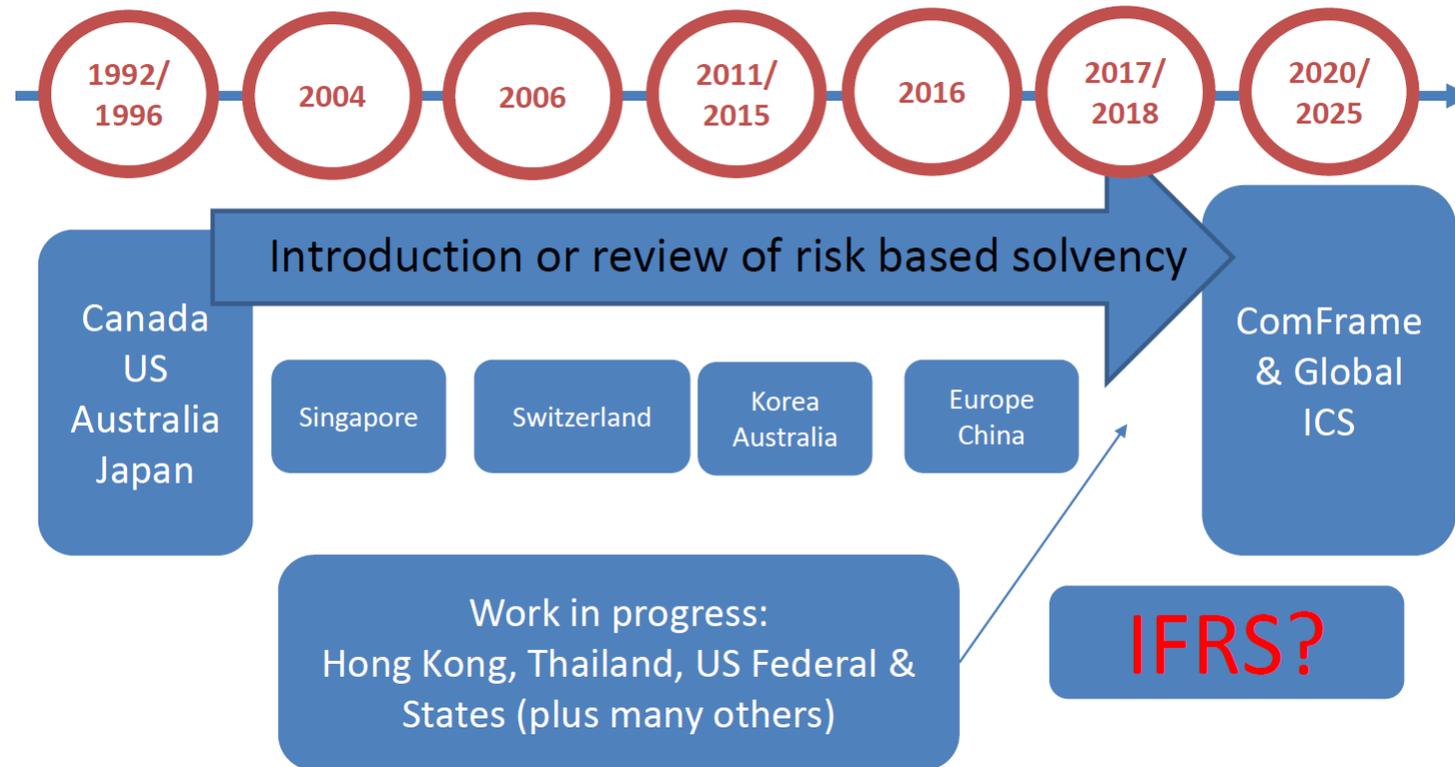
Timeline for Field Testing, ICS and ComFrame Development

DATE	MILESTONE
May 2016	Launch of 2016 Quantitative Field Testing
July 2016	Publication of second ICS CD
August 2016	Phase 1 Field Testing submissions due
September/October 2016	Phase 2 Field Testing submissions due
October 2016	Comments due on second ICS CD
Mid-2017	Adoption of ICS Version 1.0 for confidential reporting Launch of 2017 confidential reporting process
September/October 2017	Data due for 2017 confidential reporting process
May/June 2018	Launch of 2018 confidential reporting process
Mid-2018	Publication of comprehensive ComFrame consultation including ICS Version 2.0
September/October 2018	Data due for 2018 confidential reporting process Comments due on ICS Version 2.0 and ComFrame consultation
April/May 2019	Launch of 2019 confidential reporting process
August/September 2019	Data due for 2019 confidential reporting process
IAIS 2019 General Meeting	Adoption of ComFrame, including ICS Version 2.0

Making sense of the differing standards



Prospects for worldwide convergence



Ongoing IAIS Work

- The G-SII Assessment Methodology has become more transparent and granular
- The NTNI definition has been eliminated, being replaced by measures of liquidity
- The ICS will replace the BCR as the foundation for the HLA, after the ICS version 2.0 is adopted in 2019
- The HLA will be revised accordingly

ICS - Key Points

- The ICS is a **group-wide, consolidated insurance capital standard** applicable to IAIGs
- The ICS is part of ComFrame, which addresses qualitative AND quantitative requirements for IAIGs
- The ICS is not intended as a legal entity requirement
- Once finalised and agreed, the ICS will be a measure of capital adequacy for IAIGs
- The ICS will constitute the **minimum standard** to be achieved and one which the supervisors represented in the IAIS are expected to implement in their respective jurisdictions (implementation issues are still under discussion)
- Supervisors will be free to adopt additional arrangements that set higher standards or higher levels of minimum capital.
- Moreover, they are free to put in place supplementary measures of capital adequacy for the IAIGs in their jurisdiction

Global Engagement with Volunteers and Stakeholders

- **2015 Field Testing – 34 Volunteer IAIGs** and their supervisors
 - US\$ 1.0 trillion of equity (GAAP)
 - US\$ 1.3 trillion of premiums (36% non-life / 64% life)
 - US\$ 10.8 trillion of insurance assets
 - US\$ 8.3 trillion of insurance liabilities
 - *Underlying liabilities expressed in ~ 70 different currencies*
- **2016 Field Testing – 42 Volunteer IAIGs** and their supervisors
 - Headquartered in a wide range of countries and territories across North America, Europe, Africa and Asia
 - Regular engagement with Field Testing Volunteers via numerous Field Testing workshops around the world
 - Multiple capital-related stakeholder meetings every year around the world
- **More Transparency**

ICS – Improvements From 2015

- Other issues the IAIS is trying to improve with respect to last year include:
 - **Valuation** – identifying an approach to deal with inappropriate volatility in capital resources – part 1 of the 2016 field testing will focus mainly on this including an assessment under a stress scenario
 - **Capital resources** – The IAIS has a better understanding of what is causing financial instruments not to qualify, including materiality – The IAIS made a few changes and is collecting further data this year to identify appropriate solutions
 - **Management actions** - Interpretation and application needs more work – potentially broader scope, but need to avoid double counting
 - **Tax** – aim is for a consistent approach across all jurisdictions
 - **Interest rate risk** – calibration methodology that also works in a negative and low interest rate environment
 - **Currency risk** – more appropriate granularity of calibration, consideration of requirements to hold capital locally
 - **Equity risk** – more appropriate calibration of equity volatility
 - **Credit risk** – more granular risk-based approach to commercial mortgages

ICS Consultation Document - topics not covered

- Longer-term strategic issues are not part of the CD. Difficult to answer many questions on these issues until the technical nature of the ICS is more settled.
- For example:
 - **Internal models** - This matter will be considered in the progression from ICS
 - Version 1.0 to ICS Version 2.0 – see ICS Goals
 - The manner in which **comparability** of the ICS will be assessed in practice
 - The possibility of the ICS being part of the International Monetary Fund's (IMF) Financial Sector Assessment Program (**FSAP**).
 - The manner in which ICS Version 2.0 will be communicated to the public including consumer and investor education.
 - **Transitional arrangements** from existing supervisory regimes to the implementation of the ICS.
 - Interaction between local legal entity capital requirements and the ICS as a consolidated group-wide capital requirement
 - Issues related to **fungibility** of capital

Responses to ICS Consultation Document

- On Friday November 4, 2016, the IAIS posted a compilation of the responses to the ICS Consultation Document that was issued on July 19, 2016. The IAIS received 76 submissions in response to the Consultation Document of which 18 were requested by the respondents to be kept confidential.
- The IAIS will hold a teleconference on November 30, 2016 to provide an overview of general feedback from the ICS Consultation Document.

Similarities and Differences: GAAP+ and MAV

■ Similarities:

1. Both start with jurisdictional GAAPs and make adjustments thereto
2. Both adjust technical provisions to current estimates
3. Both aim for a reasonable approach that would limit undue volatility and pro-cyclicality - (the approach to do so may differ between the two valuation bases)
4. Both utilize the same definition/specifications for capital resources

■ Differences:

1. For all amounts and adjustments, GAAP+ relies on amounts, processes and/or systems that are subject to audit by independent auditors. That can also occur for MAV, but for MAV such reliance on audit is not an explicit principle.
2. Unlike MAV, GAAP+ adjustments to reported GAAPs may differ by jurisdiction (and in some cases, by firm) in order to maximize the use of balances or processes subjected to audit and to produce symmetrical valuation of assets and liabilities.
3. For some jurisdictions, certain GAAP+ figures are not market-based, and will react differently to stress, compared with stresses applied to MAV data.

AOCI Adjustment – US GAAP Reporters

- Currently the AOCl Adjustment is only being proposed for Volunteers reporting US GAAP to address asymmetry in the valuation of assets and liabilities, where liabilities are valued using a book value approach and assets are measured at fair value through AOCl
- The AOCl adjustment would be applied to capital resources such that assets and liabilities would both be measured on a more consistent basis, thus reducing unintended volatility in capital.
- The AOCl adjustment deducts from capital resources any unrealized gains/losses related to debt securities backing long term liabilities, where the gain/loss is unlikely to be realized.
- For 2016 field testing, simplifying assumptions were used to identify the portion of AOCl related to the above. These criteria are expected to be refined over time.
- For 2016 field testing, an AOCl adjustment would also be incorporated into GAAP+ options being considered for the interest rate stress capital requirement.

Current status of MAV

- Methodology for the calculation of current estimate
 - No significant changes with respect to last year
- Contract boundaries
 - 2016 ICS CD sought feedback on this issue, including potential impact/revision of other elements of the ICS framework (i.e. capital requirements, Margin Over Current Estimate (MOCE), capital resources, etc.)
- • Discounting
 - Determining base yield curves per currency
 - No significant change with respect to last year
 - Applying an adjustment to the base yield curve
 - Focus of the 2016 Field Testing exercise for MAV

Capital Resources – Overview

- Capital resources comprise both financial instruments and other capital elements (e.g. retained earnings, regulatory reserves, etc.)
- Qualifying capital resources are determined through an assessment of the nature, quality and suitability of all potential capital resources
- The assessment considers the absolute or relative degree of:
 - Subordination
 - Availability to absorb losses
 - Loss absorbing capacity
 - Permanence
 - Absence of encumbrances and mandatory servicing costs

MOCE – Refinements for 2016

- Transfer (or CC) MOCE: proposed refinements for the 2016 FT
 - Cost of capital
 - Projected capital requirement: selection and projection
 - Projections patterns (life & health)
 - Projections patterns (non-life)
- Prudence MOCE: proposed refinements for the 2016 FT
 - Reporting of non-life unearned premium
 - Health will follow similar approach to Life
- Other issues relevant for the 2016 FT
 - Tax treatment
 - MOCE for Morbidity/disability liabilities

Other Items in Field testing and Consultation Document

- Mortality, Longevity and Morbidity and Risks
 - No netting of mortality and longevity risks
 - More differentiation of health risks
- Credit Risk
 - Recognition of Management Actions
 - Agency Ratings, impact of NAIC Ratings
 - Refinements/granularity of Commercial and Residential Mortgage factors
- Interest Rate Risk
 - Revision of Minima and Maxima
 - Recognition of Negative rates
- Diversification Benefits
 - Fungibility across legal entities and jurisdictions
- Tax Issues

U.S. SIFI and G-SII Developments

- In the US under the Dodd-Frank Act the Financial Stability Oversight Council (part of the US Treasury) has designated 4 insurers as Systemically Important Financial Institutions
 - American International Group Inc.
 - General Electrical Capital Corporation Inc.
 - Prudential Financial Inc.
 - MetLife Inc.
- The US firms appear to have acted differently
 - AIG and Prudential Financial appeared have accepted the designation
 - GE has sold much of GE Capital its SIFI designation has been removed
 - MetLife has both successfully challenged the SIFI designation in court and has sold and spun off its companies writing non-traditional insurance products such as VAs and its domestic insurance businesses.
- MetLife's successful challenge of its SIFI designation has been appealed by the Fed and hearings on the appeal were held in October 2016.
 - It also led to speculation that AIG and Pru Financial may also challenge
- The US SIFI and IAIS G-SII designations are independent of each other and Met Life remains a G-SII

U.S. Developments in Group Capital Standards

- The IAIS recognizes that despite efforts by reporting standards setters major differences exist in the valuation of assets and liabilities. It has characterised the two major methodologies as Market-Adjusted Valuation (MAV) and GAAP Plus
- The IAIS accepts these differences will continue while developing ICS v1.0 and 2.0 but has convergence over time as its goal
- The US Federal Reserve Board has other ideas
- In May 2016 at the National Association of Insurance Commissioners 10th International Insurance Forum a member of the Board of Governors of the FRB stated that:
 - The FRB was not going to follow a Solvency II type approach as it was too different from US GAAP, may introduce excessive volatility and is likely to be “quite pro-cyclical”
 - Also the FRB is unwilling to wait until the completion of ICS which it views as developing slowly and is hampered by the global heterogeneity of products, accounting standards and valuation standards
 - The FRB is also disinclined to adopt the BCR and HLA for G-SIIs as it views them as provisional in character and they rely on methods of valuation not in use by US companies and regulators
- The FRB has proposed a “building block approach” for US group capital standards that is based on state regulatory capital standards
- So deja vu for anyone who has been following IFRS developments over the last decade

Developments in U.S. Group and Entity Risk Based Capital

- Group Capital Calculation Working Group to study issue of group capital requirements
 - Study the development of a calculation not a standard
 - Coordinated with the IAIS and FRB standards under development
- The NAIC Operational Risk Subgroup – likely to recommend a new C-5 RBC Charge for Operational Risk
 - Quantitative field testing now going on – different factors than the 2015 field testing factors
 - Factors for Life companies will differ from those for health or P&C companies
 - May be credit for current C-4 RBC component covering operational risk
 - Additional analysis remains to be done
- A joint NAIC Life Actuarial Task Force and RBC groups was formed to make recommendations for recognizing longevity risk in statutory reserves and/or RBC, as appropriate.
 - Work is ongoing
- Stress Testing
 - Stress Testing Subgroup of the Life RBC Working Group is studying approaches to including stress testing in RBC

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Agenda

- **Context**

- Economic Balance Sheet
- ICS final calculation
- Calculation of underwriting risks
- Calculation of market risks and credit risks
- First impact assessment

Context

- FFA (French Insurer Association) asked us to provide a first analysis of technical specification of ICS and to identify main differences with Solvency II framework
- Our analysis covered the ICS requirements linked to insurance activity (not the other financial sectors)

Summary

- Context
- **Economic Balance Sheet**

- ICS final calculation
- Calculation of underwriting risks
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Economic Balance Sheet

Framework

- For the field testing, the calculation date is December the 31st 2015
- Starting point is the Group consolidated balance sheet
- 2 valuation approaches are considered in the general framework:
 - “Market Adjusted Valuation” consisting in directly building the balance sheet with an economic valuation principle (very similar to Solvency II and SAM)
- The main three differences compared to SAM balance sheet are:
 - The yield curve (see next slides)
 - The risk margin (see next slides)
 - The contract boundaries may be different
 - The rules are the same for the individual repricings and for the group ones that can be revised globally
 - The only criteria is the ability to decline the risk or reprice to reflect it adequately

Group reporting

Consolidation versus aggregation and deduction

■ ICS

- Consolidation method used for the insurance components
- Aggregation is used to combine with other sectors (particularly banking)

■ SII

- Consolidation method is considered the default method
- Deduction and aggregation can be used under certain conditions

■ SAM

- CPR requires group submissions to be done on a deduction and aggregation basis

Balance sheet valuation

Yield curve

- The yield curve is built similarly to the Solvency II one with:
 - A yield curve derived as a basis from a swap rates one
 - A long-term adjustment (long term forward rate) per currency via extrapolation beyond the last liquid point; however this point remains lower than the 2016 UFR, e.g. 3.5% for the Euro vs a 4.2% UFR
- A volatility adjustment
- Finally, to test the resiliency of the system, these options are duplicated to take into account temporary high spreads (stressed environment)

Balance sheet valuation

Risk margin

- Two approaches are proposed for the risk margin:
 - A Cost of Capital one, similar to the Solvency II but with:
 - A 5% CoC rate
 - An ICS release pattern predefined in Non-Life depending on the business considered
 - A free pattern in Life/Health
 - The automatic taking into account of the diversification
 - The « Prudence – Margin Over Current Estimate » approach for which:
 - In Non-Life, the claims reserve risk margin is computed as the discounting gap
 - In Non-Life, the premium reserve risk margin is computed as the expected profit
 - In Life/Health, a quantile (66.7%) approach is used, calibrated on the ICS underwriting

- These two approaches embed significant differences between the Life and Non-Life. E.g., the second one is equivalent to a neutralization of the margins created by the move from the IFRS to the ICS in Non-Life but, in Life, a quantile approach (similar to the QIS 2 one) is used

Balance sheet valuation

Eligible own funds

- Two tier of eligible own funds are defined in the Field test:
- The reconciliation reserve is not explicitly mentioned among the eligible own funds. However, this elements is defined in the “Equity” adjustments between the current and ICS framework
- Intangibles are deducted from the eligible own funds
- Subordinated debt, which include a step-up, are always defined as Tier 2. To be classified as limited Tier 1, the debt must embed neither step-up nor repaying capacity (except in case of liquidation). If the debt embeds a step-up and can be repaid only after an agreement with the supervisors, it cannot be viewed as limited Tier 1
- Some regulatory reserves are explicitly linked to Tiers
- No transitory measure is planned in the Field test on the existing debts

Agenda

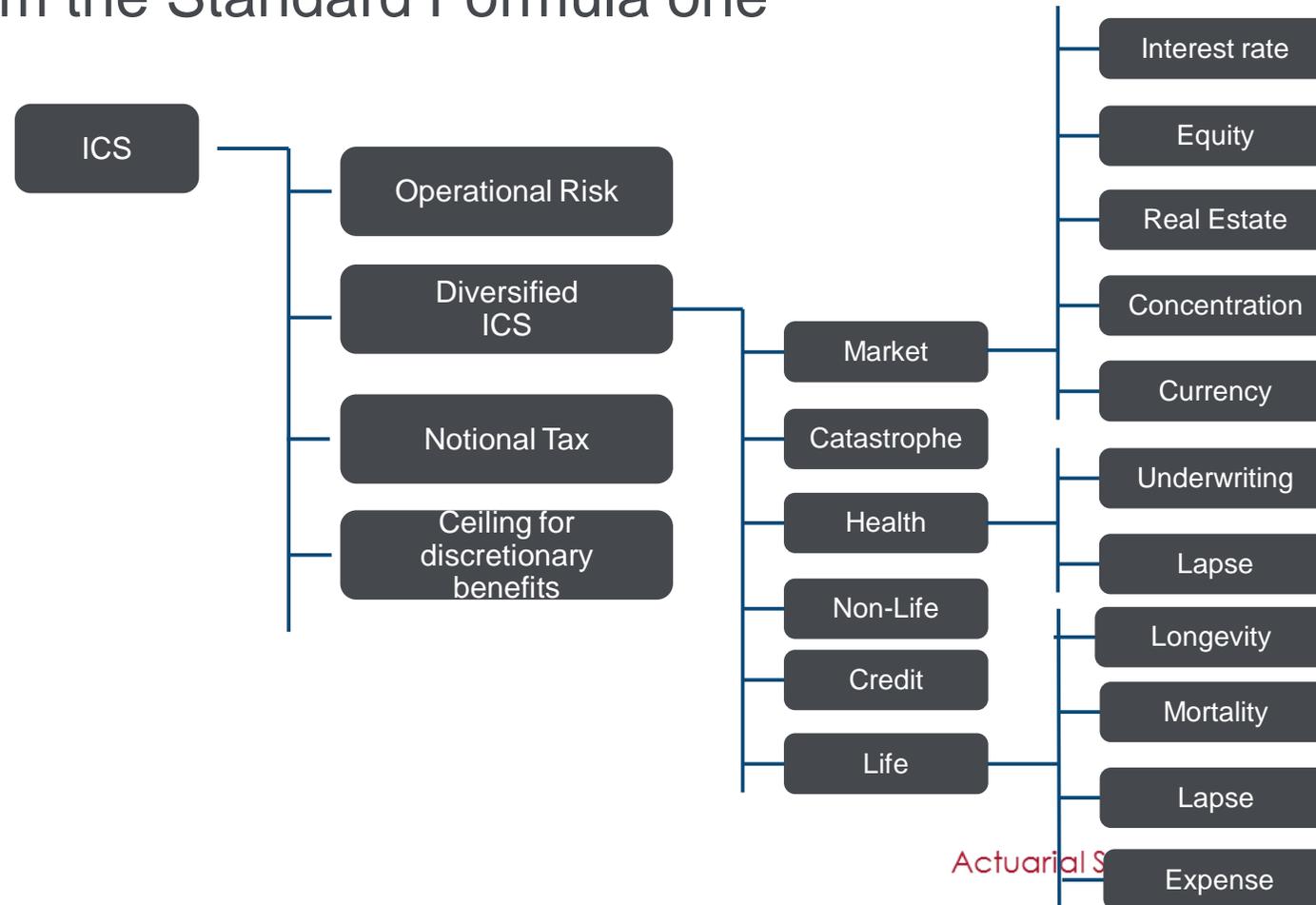
- Context
- Economic Balance Sheet
- **ICS final calculation**

- Calculation of underwriting risks
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Aggregation

Model structure

- The aggregation between the modules follows the approach below, slightly different from the Standard Formula one



Aggregation

Correlation matrices

- The ICS, Solvency II and SAM matrices (resp. left & right) cannot be really compared;

Diversification calculation - ICS						
	Non-life	Catastrophe	Life	Health	Market	Credit
Non-life	100.0%	25.0%	0.0%	0.0%	25.0%	25.0%
Catastrophe	25.0%	100.0%	25.0%	25.0%	25.0%	25.0%
Life	0.0%	25.0%	100.0%	25.0%	25.0%	25.0%
Health	0.0%	25.0%	25.0%	100.0%	25.0%	25.0%
Market	25.0%	25.0%	25.0%	25.0%	100.0%	25.0%
Credit	25.0%	25.0%	25.0%	25.0%	25.0%	100.0%

i \ j	Market	Default	Life	Health	Non-life
Market	1	0,25	0,25	0,25	0,25
Default	0,25	1	0,25	0,25	0,5
Life	0,25	0,25	1	0,25	0
Health	0,25	0,25	0,25	1	0
Non-life	0,25	0,5	0	0	1

i \ j	Market	Life	Non-life
Market	1		
Life	0,25	1	
Non-life	0,25	0	1

- The Credit risk is for example divided in the counterparty and spread risks in the ICS and the CAT module is a full-fledged one
- However, overall, they are similar

Operational risk

- The Operational risk follows an approach similar to the Solvency II Standard formula one, with the exception of the fact that the risks linked to the unit-linked business are taken into account by using a factor applied on the reserves rather than on the expense
- Similar to SAM’s allowance of decreasing factors applied to AUM

	Premium	Liabilities	Growth
Non-life operational risk			
Exposure	Gross written premium most recent financial year	Gross current estimate	Gross written premium most recent financial year exceeding the growth threshold compared to the previous year
Factor	3% [direct] 2.5% [assumed]	3% [direct] 2.5% [assumed]	3% [direct] 2.5% [assumed]
Health Operational risk			
Exposure	Gross written premium most recent financial year	Gross current estimate	Gross written premium most recent financial year exceeding the growth threshold compared to the previous year
Factor	4% [direct] 3.5% [assumed]	0.4% [direct] 0.35% [assumed]	4% [direct] 3.5% [assumed]
Life (risk) Operational risk			
Exposure	Gross written premium most recent financial year	Gross current estimate	Gross written premium most recent financial year exceeding the growth threshold compared to the previous year
Factor	4% [direct] 3.5% [assumed]	0.4% [direct] 0.35% [assumed]	4% [direct] 3.5% [assumed]
Life (non-risk) Operational risk			
Exposure		Gross current estimate	
Factor		0.45%	

Aggregation

ICS adjustments

- As in the Solvency II / SAM Standard formula, two ICS adjustments related to the profit sharing loss absorption capacity and deferred taxes
- For the profit sharing, the approach is strictly the same: limited to a maximum of the total value of future discretionary bonuses (planned in the answer file, not explicitly in the specifications)
- For the deferred taxes, the absorption capacity is simpler than in the Standard formula: valuated only by applying a notional tax rate on the pre-tax ICS
- This last point might change, since the IAIS has already mentioned recoverability tests for the future exercises

Agenda

- Context
- Economic Balance Sheet
- ICS final calculation
- **Calculation of underwriting risks**

- Calculation of market risks and credit risks
- First impact assessment

Catastrophe risk

- Catastrophe risk embeds risks related to natural and made-made events. All the risks are deemed independent
- Natural catastrophe risks have to be computed for several quantiles (for information), without any pre-defined rule. So the use of external models is recommended. The capital requirement is equal to the difference between the 99.5% quantile and the mean
- Practical answer given the range of countries to which the ICS model will need to apply – expect SAM calibrations to be used for South Africa even if many have reservations relating to the calibration

Life underwriting risk

Longevity/Mortality risks

- For the Field tests, data are collected per geography but, at this stage, there is no geographical diversification
- For the mortality risk, the shock is a 10% increase in the mortality rate only (15% under SAM)
- The longevity risk embeds both Mortality trend and level shocks, with a 1% trend shocks and a 10% level one
- In both cases, the calculations apply only to those policies that are subject to related risks

Life underwriting risk

Expense

- The Expense risk structure is similar to the Standard formula under both SII and SAM but the calibration is different
- The calibration varies by the geographies where the expenses are paid, e.g. for the EEA under ICS:
 - the unit expense shock is 6% vs 10% under both SII and SAM; and
 - the expense inflation shock is similar to SII, ie a 1% addition per year, whereas SAM prescribes the greater of an absolute addition of 2% and a 20% proportional increase in expense inflation.

Life underwriting risk

Lapse risks

- The Lapse risk embeds, as for the Standard formula, three scenarios (increase, decrease and mass lapse). However, the final risk capital requirements is calculated differently between the regimes:
 - under ICS the maximum of level increase, level decrease and the mass lapse shock is computed
 - under SII the lapse risk is computed as the sum of the impact of the mass lapse and maximum between the up and down shocks
 - SAM involves calculating the maximum of the lapse up shock, lapse down shock and a combination of the level and mass lapse shocks
- The calibrations are different as well for ICS (vs SAM and SII):
 - +/- 40% (vs +/- 50%) for the up and down shocks
 - 30% (vs 40%) for the individual mass lapse, 50% (70%) for group

Non-life underwriting risk

Non-life insurance risk

- Overlap with health and life risks avoided by segmentation definition
 - Similar to SAM and SII
- No lapse risk for non-life (implicitly accounted for in risk charge)
 - SAM and SII have lapse risk sub-module as part of NLUR
- Premium risk and Claim Reserve risk are captured by a factor-based approach, with a factor applied to segments within defined regions
- Catastrophe risk captured in a separate catastrophe module
 - Natural
 - Man-made
- Calibration
 - IAIS collecting non-life data for calibrations
- Aggregation
 - Diversification between line of business and geographic regions

Summary

- Context
- Economic Balance Sheet
- ICS final calculation
- Calculation of underwriting risks
- **Calculation of market risks and credit risks**
- First impact assessment

Market risks

Interest rate risk

- Unlike under SAM, the ICS interest rate risk module does not take into account an implied volatility shock, but embeds 3 shock scenarios: Up, Down and Flattening. Flattening is also not a component in SAM or SII.
- An important difference to SAM and SII is the definitions of the stress scenarios which are not defined in relation with the spot yield curves but are based on a statistical study by currency. IAIS provides a stressed yield curve for each currency.
- There is no correlation between the level risk (the most adverse between Up and Down is retained) and the interest rate slope.

Market risks

Equity risk

- The equity classification is much more detailed than in SII (type 1 and type 2) and SAM (global, local and other) (see table below)
- The equity shock embeds a rise in the implied volatility (see table below). This shock was tested for QIS 4, but finally not retained in SII standard formula. SAM allows for volatility shocks by maturity, but are less severe than under ICS.

Equity classification	Detail	Level shock
Listed equity	Developed markets	35%
	Emerging markets	48%
Other equity		49%
Hybrid debt/ preference shares	AAA/AA	4%
	A	6%
	BBB	11%
	BB	21%
	B or less	35%

Maturity (month)	Volatility shock
1	210%
3	137%
6	112%
12	92%
24	80%
36	74%
48	72%

Market risks

Property risk

- The property shock is very similar to the property risk in SII and SAM Standard Formula.
- Nevertheless, the calibration is different: 30% (vs. 25%)

Market risks

Currency risk

- The currency risk follows a slightly different approach than the one retained for SII and SAM:
 - The shock is different for each pair of currencies (see table below)
 - There is no correlation between the Up and Down scenarios; the retained stress is the maximum of:
 - Up shock (only currencies for which insurer is short)
 - Down shock (only currencies for which insurer is long)
 - There is 50% correlation between all the currency pairs among the Up and Down shocks

Currency	Shock for a € reporting Group
CHF	20%
GBP	25%
DKK	5%
USD	30%
JPY	40%

Market risks

Concentration risk

- The concentration risk follows a similar approach to the one retained for SAM and SII Standard Formula :
 - Exceeding volume above a specific threshold (depending on the rating) from the same issuer
 - Sovereign exposures does not have any capital requirement
 - Unit linked assets are excluded from the asset base.
- The minimum threshold is higher for issuers rated BBB when compared to SII but similar under SAM, and the risk factor is generally lower at 25% whereas both SII and SAM specifies a factor of 27%.
- Nevertheless, as per SAM, there is no correlation between the different exposures under ICS

Market risks

Concentration risk

Rating	ICS threshold	ICS Factor	S2 threshold	S2 Factor	SAM threshold	SAM Factor
AAA	3%	15%	3%	12%	3%	12%
AA	3%	15%	3%	12%	3%	12%
A	3%	25%	3%	21%	3%	12%
BBB	3%	25%	1,5%	27%	3%	27%
BB and lower	1,5%	50%	1,5%	73%	1.5%	53%-73%
Immovable	3%	25%	10%	12%	5%	12%

- ICS credit risk module covers both Spread risk and Counterparty default risk. SII specifies a Spread and Default risk module. Under SAM assets are covered either under the Spread or Credit default risk sub modules.
- ICS treats all the counterparties (financial or reinsurers) in the same module with a unique approach. Ratings are based on external agencies. The risk factors used are generally much lower than in SII (see next slides), which are in turn much lower than under SAM.
- For reinsurer, exposure takes into account 100% of the capital gain obtained through the reinsurance (only 50% under SII)

Summary

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-

First impact assessment

« France Life »

- « France Life » is based on a fictional insurer embedding all the life French market. This insurance company represents the average characteristics of the French market
- Those characteristics are based on public information when available or our experience of the French market

First impact assessment

- Shocks analysis and comparison with SII

	Market value shock SII	Market value shock ICS
Interest Rate Up	-5,05%	-4,83%
Interest Rate Down	1,20%	9,99%
Flattening	-	3,39%
Equity Type1 (%eq tot)	-18,48%	-21,49%
Equity Type2 (%eq tot)	-3,30%	-
Property	-25,00%	-30,00%
Credit	-4,96%	-1,35%

First impact assessment

Gap analysis between SII SCR and ICS

% of MR		SCR / ICS	Impact
SII SCR		4,52%	-
Risks sub module	Life underwriting	4,47%	-5 bps
	Equity	6,17%	170 bps
	Spread	4,72%	-145 bps
	Other markets	4,73%	1 bps
	Operational	4,67%	-6bps
Credit	From sub module to specific risk module	4,46%	-21 bps
Correlation	Life	4,46%	0 bps
	Market	4,42%	-5 bps
	Other	4,42%	0 bps
ICS final		4,42%	

First impact assessment

Risk Margin

- The comparison between both risk margins (SII and ICS) strongly depends on the retained approach for SII. The only approach available under ICS is the projection of the capital requirement based on a pattern.
- Main differences are:
 - Diversification between activities (allowed under ICS and not under SII)
 - Cost of capital of 5% (vs. 6% under SII)

Entity	ICS	Solvency 2
France Life (stand-alone)	15	14
France Non Life (stand-alone)	5	10
Group	15	24

Overall view on ICS vs SAM

- SAM has developed alongside Solvency II and ICS
- ICS has significant overlap with Solvency II and SAM
- SAM possibly closer to ICS than Solvency II
- Implementation of ICS for a SAM-compliant insurer fairly straightforward
- But:
 - Health Underwriting Risk
 - Percentile-based MOCE
 - Extensive differences in calibration
 - Catastrophe allowance
- *What should ASSA involvement be ongoing development of ICS?*

2016 Convention

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International Capital Standards and Solvency II

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