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Introductory Regulatory Capital for Life Insurance

Ross Culley

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Scope

My perspective : Direct insurer with a large diversified portfolio

- Regulatory Capital Requirements
  - LPS 110-118
  - 99.5% PoS over 12 months (LPS 110, para. 30)
  - Not a specific scenario i.e. neither wind-up or ongoing

which means we are

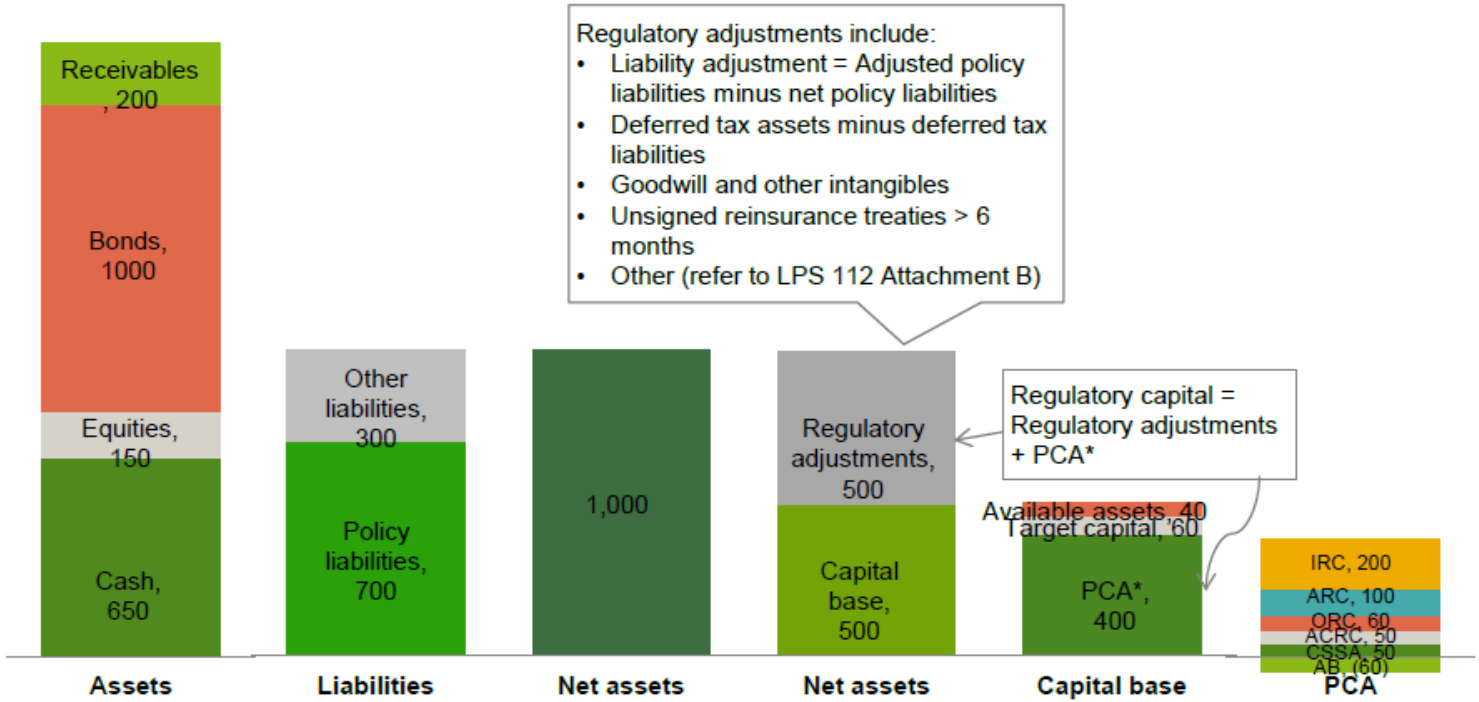
- Not directly considering target surplus or any other additional reserves
- Getting a particular perspective on risk

Terminology

ARC	Asset Risk Charge	LPS 114
IRC	Insurance Risk Charge	LPS 115
AB	Aggregation Benefit	LPS 110
ACRC	Asset Concentration Risk Charge	LPS 117
ORC	Operational Risk Charge	LPS 118
CSSA	Combined Stress Scenario Adjustment	LPS 110
PCA	Prudential Capital Amount ARC + IRC – AB + ACRC + ORC + CSSA	LPS 110
PCR	Prudential Capital Requirement PCA + Supervisory Adjustment	LPS 110
DF	Diversification Factor	

Borrowed from "Life Insurance Reporting for Dummies" 22 August 2015

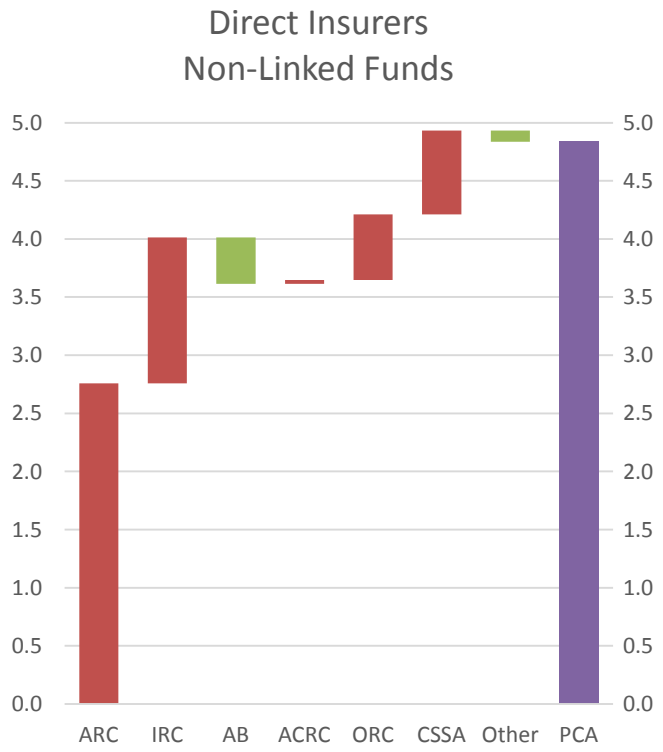
How is Capital calculated?

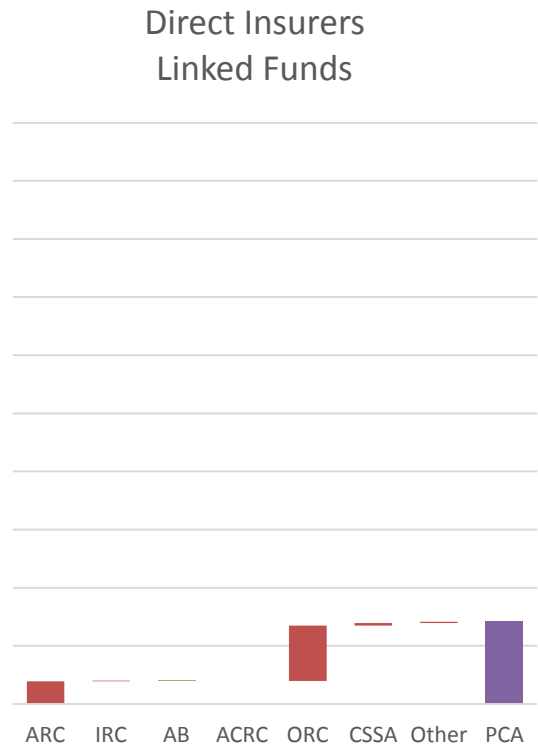


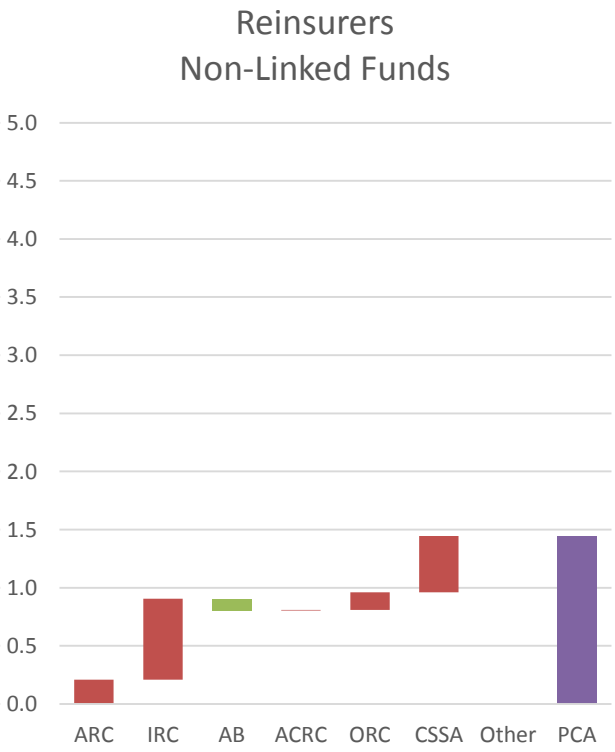
*: This assumes 0 supervisory adjustment. Supervisory adjustment is as determined by APRA under LPS 110 paragraph 44.

Source : APRA Life Insurance Institution-level Statistics

PCA Components – 2014/15 ($b)

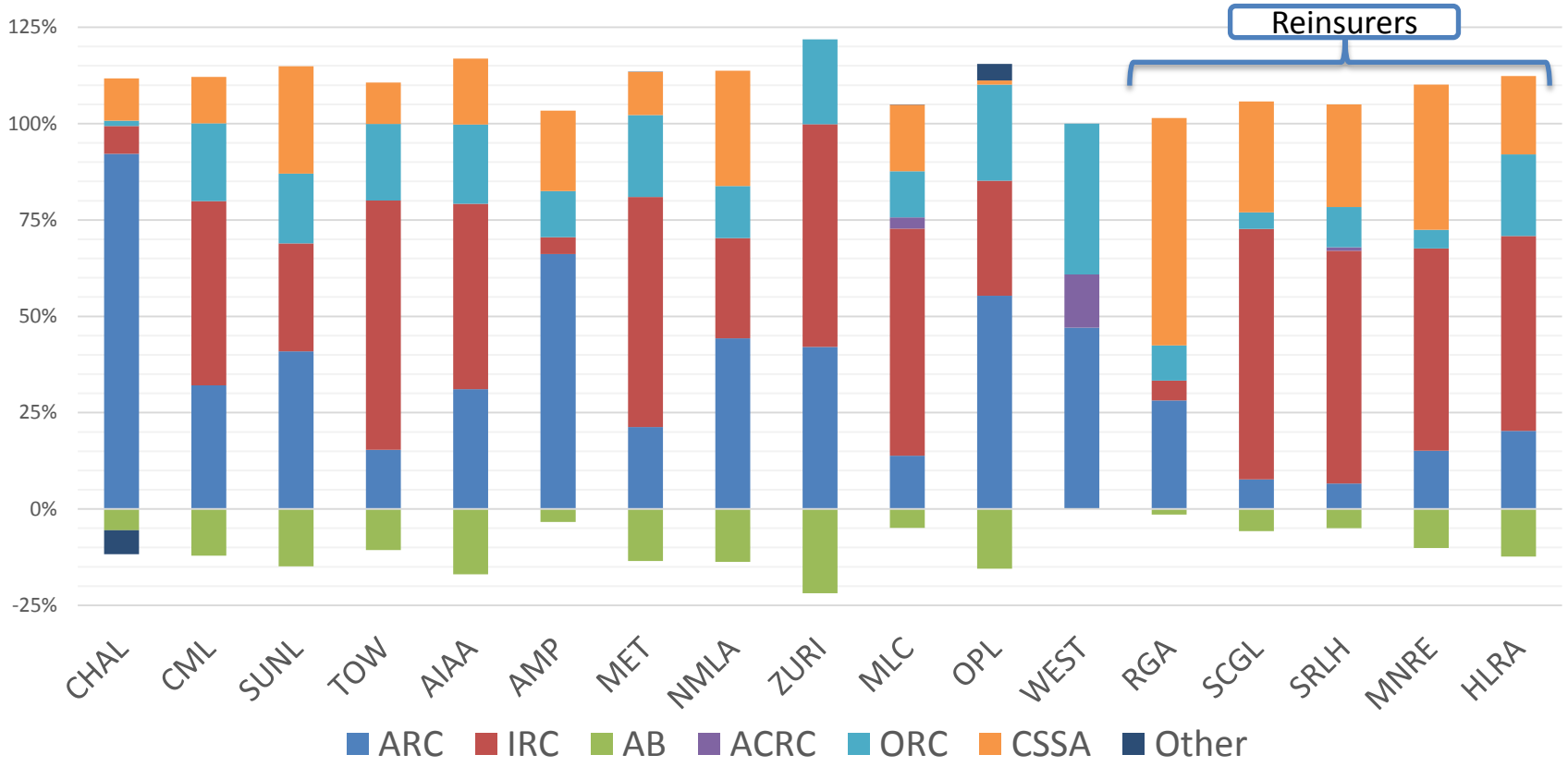






Source : APRA Life Insurance Institution-level Statistics

Non-Linked PCA : By Institution



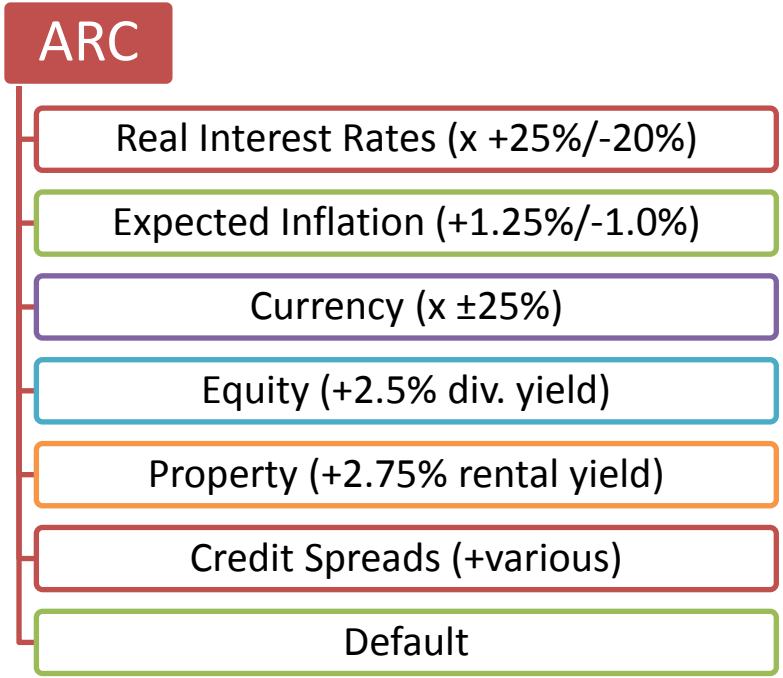
Capital Base

APL
Non-Par = max(RFBEL,TV)
Par = max(PPL,TV)

- Net Assets
  - If not 100% CET1, then monitor limits for AT1, Tier 2
- Liability Adjustments
  = Policy Liability – Adjusted Policy Liability (APL)
    - Risk : DAC
    - Annuities, Par : S/H profit margins, different valuation bases
    - Net of tax
- Deferred tax assets (DTAs)
  - Balance sheet position impacts adjustment
  - Include tax effect from liability adjustments
  - If capital base has inadmissible tax assets, capital position is more volatile
- Intangibles, etc

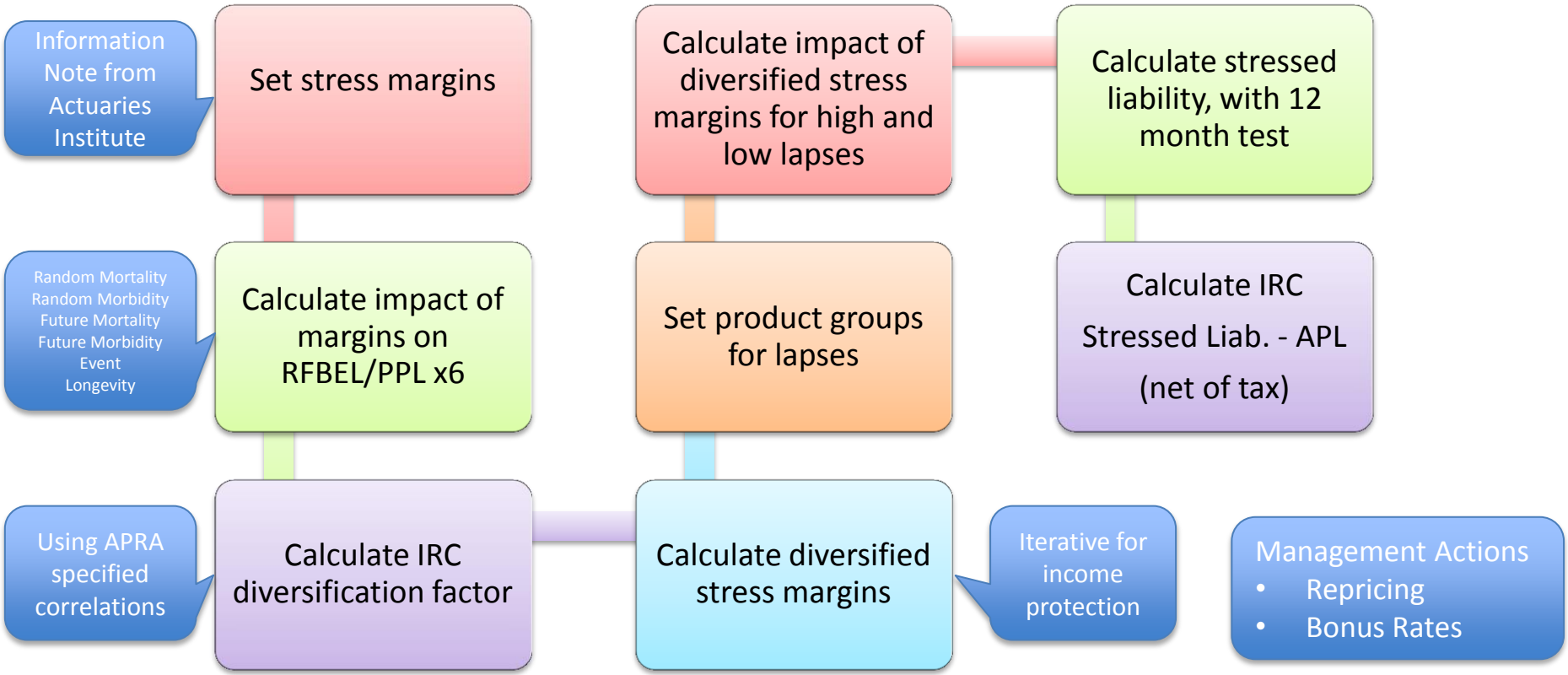
Discount Rate : CGS curve (with illiquidity premium for annuities)

Asset Risk Charge (ARC)



- Measuring Asset Liability Mismatch risk
- Applied to all relevant assets and liabilities (APL)
- Allowance for management actions
- Net of tax
- Combined using APRA specified correlation matrix.
- ARC is highest of the 8 possible scenarios.

Insurance Risk Charge (IRC)



Aggregation Benefit (AB)

- $AB = ARC + IRC - \sqrt{(ARC^2 + IRC^2 + 2 \times correlation \times ARC \times IRC)}$
- Correlation = 20%
- AB Diversification Factor
  - Minimum = 77.5%

Asset Concentration Risk Charge

- Limits on concentration
  - Investment assets
  - Exposure to reinsurers
- Limits depend on quality of exposures
- 100% charge beyond limit
- APRA "strongly discourage"

Operational Risk Charge

- Simple formula
- Risk
  - Direct : 3% of max(gross premium, APL)
  - Reinsurer : 2% of max(gross premium, APL)
- Non-Risk : 0.25% of APL
- Extra if significant increase/decrease (±20%)

Combined Stress Scenario Adjustment (CSSA)

- Prescriptive
- Purpose (LPS110) : To address exhausting margins on participating business and inadmissible tax assets
- Diversified stresses
  - Insurance : DF^{AB} x DF^{IRC} x Stress
  - Lapse, Expense, Other : DF^{AB} x Stress
  - Asset : DF^{AB} x DF^{ARC} x Stress
- High/low lapse from IRC
- Asset scenario
  - Ups/Downs
  - Down/Down for participating business
- RFBEL/PPL v12 month test

CSSA (2)

- Tax
  - DTAs (net of DTLs)are inadmissible
  - Must "include all additional tax assets and liabilities accruing over the 12 months following the reporting date." (LPS 110 Attachment B para. 8)
  - Points to a full revenue account for the entire statutory fund for the existing business, including :
    - Asset shock
    - Stressed cashflows and reserves
    - Stressed investment earnings
    - Closing liability
    - Tax
- CSSA = Change in Capital Base – IRC – ARC - AB

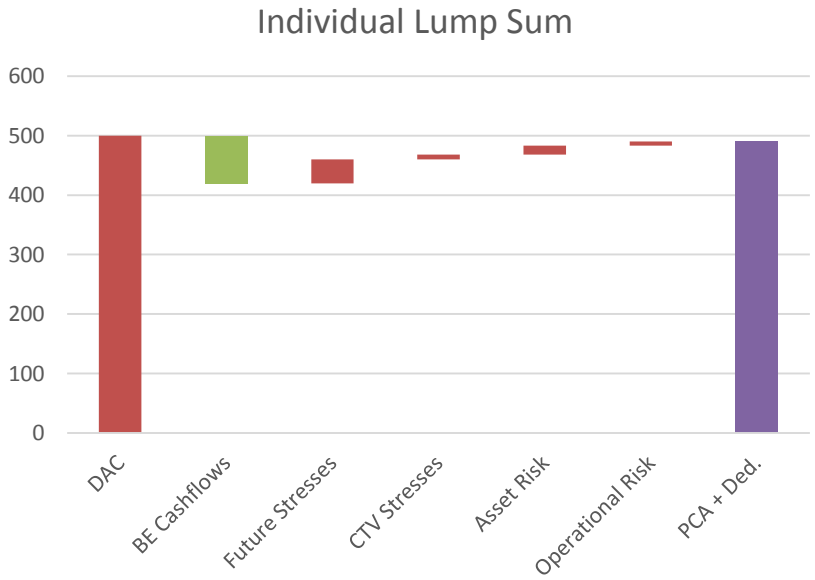
CSSA – Other Effects

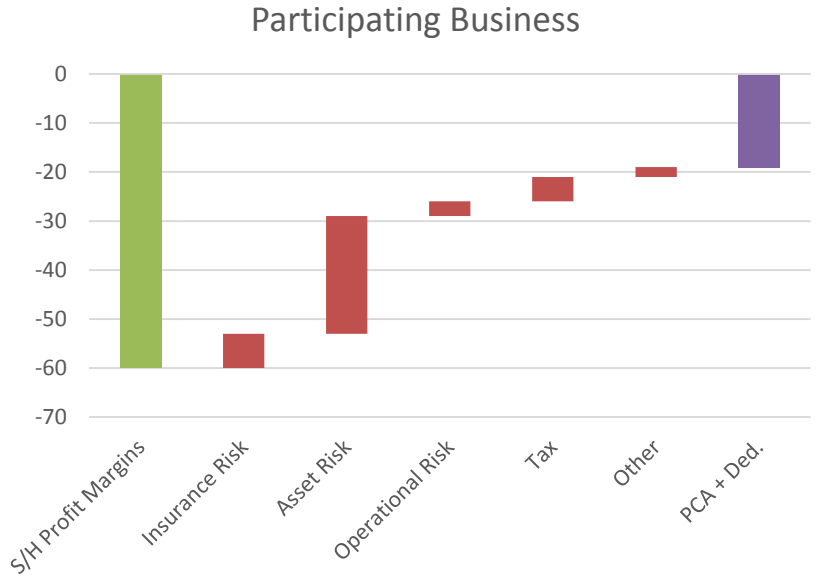
- If IRC = 0, then CSSA will include negative IRC
- IP profitability : Real interest up, inflation down will improve profitability
- IP termination rates : non-linear
- IP termination stress : Real interest up, inflation down will reduce impact
- Change in DTA/DTLs from asset shock
- Par : Second order effects of lapse stress and yield stresses
- Tax liabilities from post-asset shock investment income
- Monitor the thresholds and their trends
  - IRC
  - Aggregation Benefit
  - ARC scenario
  - Participating margins
  - Tax position
  - Down/Down in CSSA
  - Other asset scenarios in CSSA

Alternative View

Purpose of IRC and ARC is to derive an entity specific scenario where the stresses reflect product mix, volumes, profitability, statutory fund structure, asset mix, ALM position, tax position, risk management and business processes.

PCA + Deductions





Liability Calculations – x 23

- Base
- Asset Risk
  - Real Interest Up
  - Real Interest Down
  - Expected Inflation Up
  - Expected Inflation Down
  - Currency Up
  - Currency Down
  - Equities
  - Property
  - Credit Spreads
  - Default

- Insurance Risk
  - Random Mortality
  - Random Morbidity
  - Future Mortality
  - Future Morbidity
  - Event
  - Longevity

Calculations (IRC DF)

  - Iterations for Diversified IP stresses

Calculations

  - Diversified High Lapse
  - Diversified Low Lapse

Calculations (ARC scenario, ARC DF, AB DF, lapse scenario)

- Combined Scenario
  - Asset Scenario
  - Down/Down for Par
  - Other scenarios are useful

Calculations (Final capital position)

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Questions