ORSA's Beneficial Impact on Capital Management

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Agenda

- ORSA Update
- Capital Analysis 101
- Multi-year vs. Prospective Analysis
- Forward Estimates & Scenario Analysis
- Accounting Regime

ORSA Update

ORSA

- Two main objectives:
  - Enhancement of ERM
  - Group solvency

- ORSA Summary Report
  - ERM framework
  - Risk measurement
  - **Solvency assessment**

We'll focus primarily on the solvency assessment

Source: NAIC.org

ORSA Pilots (2012 & 2013)

NAIC findings:

- Quality of ORSA Reports “significantly improved”
- First time reports generally met expectations
- Confidentiality remains a critical consideration

Recommendations:

- Focus on the ERM information provided to the Board
- Highlight/explain changes from year to year
- Readability in general

Source: NAIC.org

ORSA Guidance Manual (March 2014)

NAIC updated the ORSA Guidance Manual

1. ORSA Summary Report should be consistent with the insurer's reporting to its Board
2. Clarified how US operating entities are expected to report global ORSAs (if applicable)
3. Prospective solvency assessment should address changing exposures and emerging risks

Source: NAIC.org

ORSA Solvency Assessment

Required

- Group
- Prospective
- Business plan oriented
- Board oriented*

*Not strictly “required”, but implied and strongly recommended.

Not Specifically Mandated

- **Time horizon**
- **Accounting regime**
- Quantification method
- Risk capital metric
- Security standard
- Aggregation method

Source: NAIC.org

Session Objectives

We will focus on two key issues to show how they meet ORSA requirements

Time Horizon

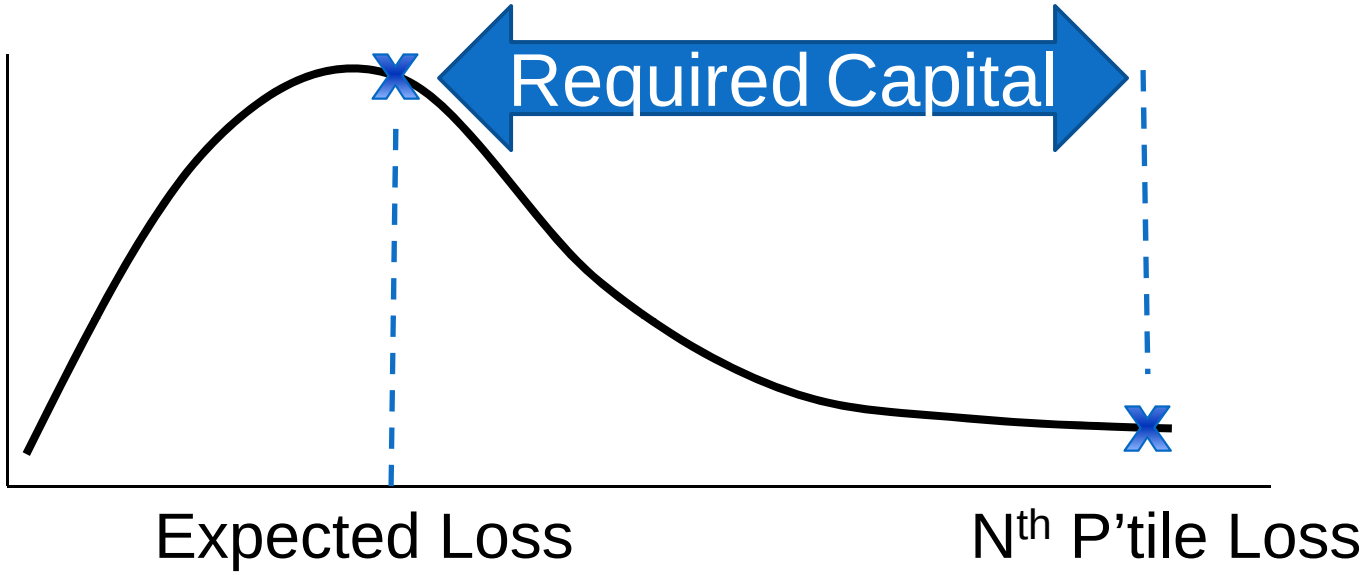
- One-year horizon
- Prospective solvency assessment including a focus on scenario analysis

Accounting Regime

- Pros/cons of economic, GAAP & statutory
- Tangible financial resources
- Reconciliation to published statements

Capital Analysis 101

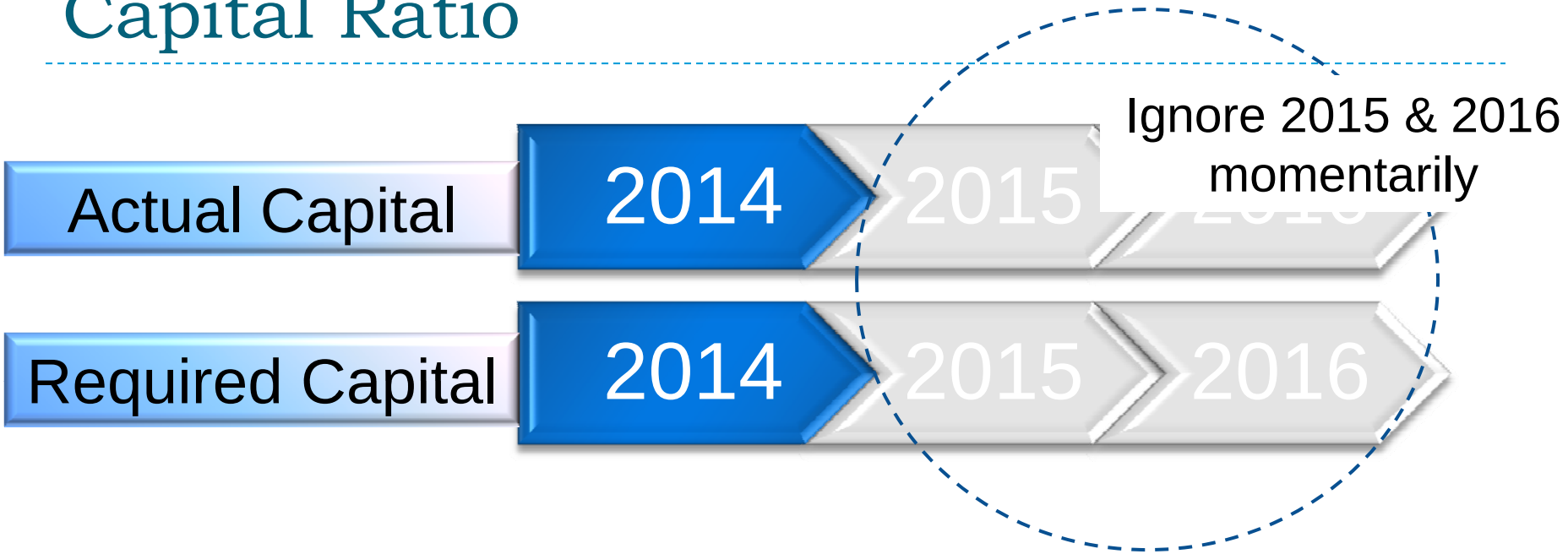
What is Required Capital?



- Required capital is derived from a model (or factors)
- Solvency assessment is the comparison of actual capital to required capital (often as a ratio)

(Note: Factor based methods solve for the Nth percentile, rather than the full curve.)

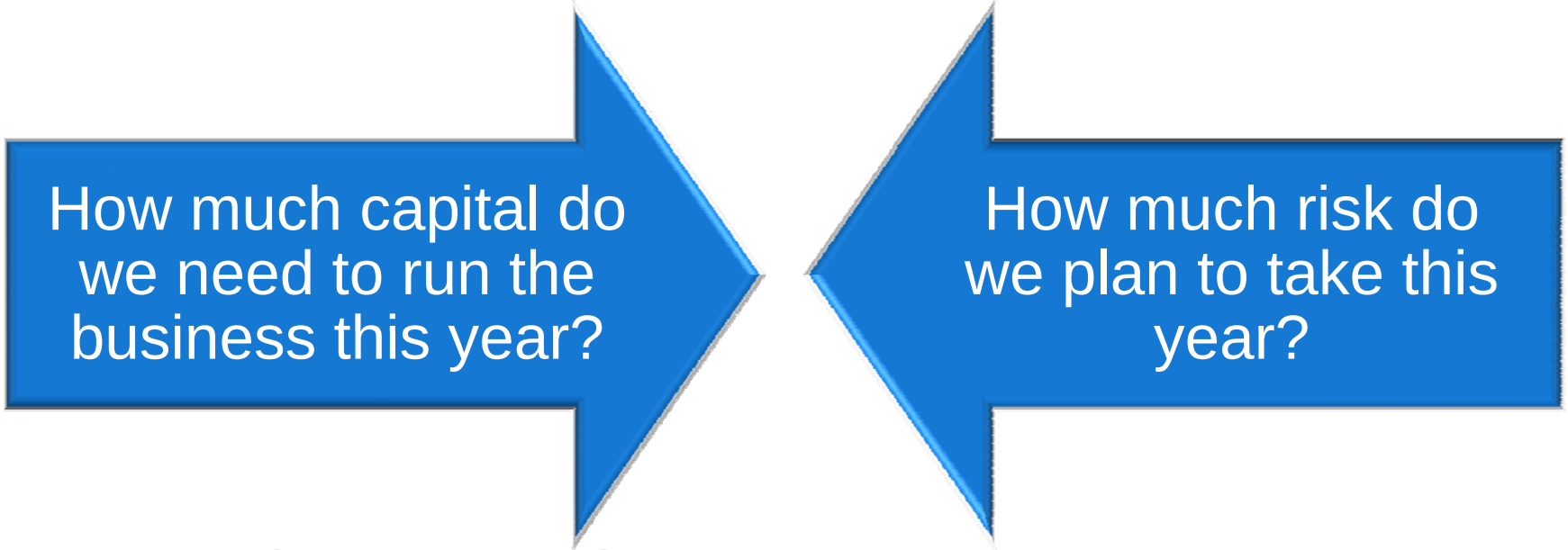
Capital Ratio



$$\text{Capital Ratio}_{14} = \text{Actual Capital}_{14} / \text{Required Capital}_{14}$$

- This of course is a simple case

What's the solvency assessment question?



- Do we have enough available capital to cover our risks?
- Are we taking too much risk in light of our available capital?

It's essentially the same question

How much risk do we plan to take?

- Planning is an *annual* event
  - Insurers develop and execute plans using a one-year at a time perspective
  - Even multi-year plans are typically developed and reported upon using one-year time steps
  - We tend to think about taking risks in one-year increments, but capital models often use multi-year horizons

- The case for a one-year modeling horizon:
  - Aligns with planning practices
  - Enables prospective analysis
  - Enables strong scenario testing

Multi-Year vs. Prospective Analysis

Common “mistake” with multi-year models

$$\text{Capital Ratio}_{??} = \text{Actual Capital}_{14} / \text{Required Capital}_{14\text{-}16}$$

- The question being answered is how much risk do we need in 2014 on average for risks through 2016?
- Changes in time horizon will change the estimates and allocation of capital.

Prospective analysis

- Start with a one year view
  - How much risk do we plan to take in 2014?

- ORSA requires a “prospective solvency assessment”
  - How much risk do we expect to take in 2015 and 2016?

We need a current solvency assessment and a ***forward estimate(s)*** of solvency.

Current and Forward Estimates of the Capital Ratio

$$\text{Capital Ratio}_{14} = \text{Actual Capital}_{14} / \text{Required Capital}_{14}$$

$$\text{Capital Ratio}_{15} = \text{Actual Capital}_{15} / \text{Required Capital}_{15}$$

$$\text{Capital Ratio}_{16} = \text{Actual Capital}_{16} / \text{Required Capital}_{16}$$

Multi-Year ≠ Prospective

Multi-Year

- Mixes time horizons and compares risks in future periods to capital in the current period
- Estimates solvency position relative to current capital only
- Can be affected by choice of time horizon
- Imprecise in later years

Prospective

- Aligns with customary business planning processes
- Estimates future capital position(s)
- May require assumptions for non-modeled factors
- Imprecise in later years

Forward Estimates & Scenario Analysis

Year one is easy!

$$\text{Capital Ratio}_{14} = \text{Actual Capital}_{14} / \text{Required Capital}_{14}$$

- Actual capital is read off of the balance sheet
  - Adjust for new business
  - Restate the balance sheet as needed (e.g., remove intangible assets)
- Required capital is based on the one-year model

Forward Estimate of the Capital Ratio

Year 2 is a prediction of next year's one-year ratio

$$\text{Capital Ratio}_{15} = \text{Actual Capital}_{15} / \text{Required Capital}_{15}$$

- Actual capital must be estimated
  - Year 1 business plan ➔ Year 2 starting capital
  - Adjust for new business in Year 2
  - Restate as needed (e.g., remove intangible assets)
- Required capital is based on the one-year model
  - Derive capital factors from Year 1 required capital over investments, loss reserves, premium, TIV, etc.
  - Apply company specific factors to derive Year 2 required capital

Insurers *might* tell an interesting story

Evaluation Year →	2012	2013	2014	
Ratio Year				
2012	1.60			
2013	1.76	1.80		
2014	1.65	1.75	1.78	Current Estimate
2015		1.90	1.95	1-Year Forward
2016			1.95	2-Years Forward

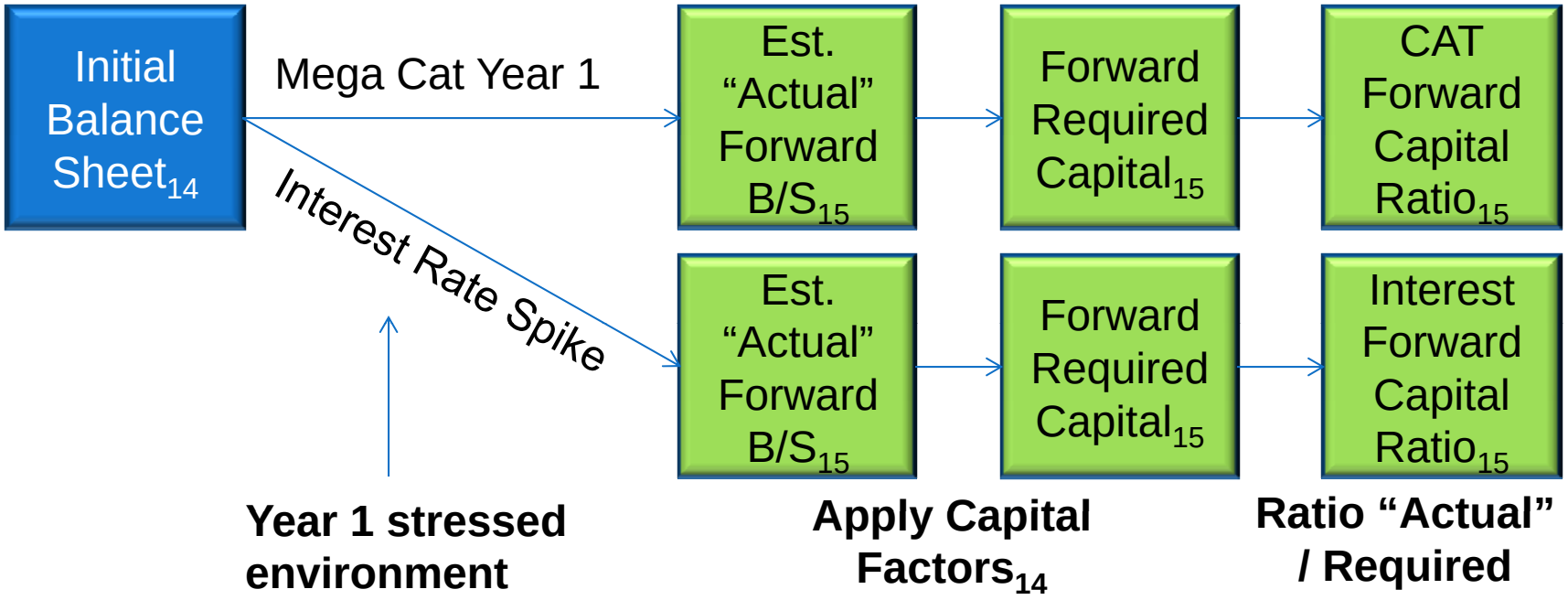
- Ambitious modelers might consider tracking:
  - Trends within an evaluation
  - Accuracy of forward estimates
- You might consider that someone will track your numbers

Scenario Analysis

"It (prospective solvency assessment) should also consider the prospect of operating in both normal and stressed environments."
– March 2014 NAIC ORSA Guidance Manual Page 10.

- Interpretations of this requirement vary considerably
- The forward estimates outlined above cover the "normal environment" requirement.
- Scenario testing with alternative business plan outcomes covers the "stressed environment" requirement.

Scenario analysis with forward estimates



- Note that the scenarios are potential outcomes for the business plan ***under stressed conditions***

Benefits of Forward Estimate

- Easy to follow and well suited for the Board
- Enables strong scenario analysis
- Can leverage complex stochastic but in an easy to deliver manner
- Build a forecasting track record
- Better back testing

Forward estimates are aligned with how we think about risk.

Accounting Regime

Valuation framework - Economic

- Economic
  - Many flavors in the US
  - Most intellectually pure
  - Needed in some cases where vastly different businesses are combined
  - Hard to follow - market value margins
  - Easy to manipulate - illiquidity premium
  - Impact of taxes is a complication
  - Hard to reconcile to published results

Valuation framework - GAAP

- US GAAP
  - Familiar to audience
  - Easy to exclude intangibles (w/o losing audience)
  - AFS investments are most common and at MV
  - Adjustment to discount loss reserves is not a huge complication
  - Easy to reconcile to published results (for GAAP filers of course)

Valuation framework - Statutory

- US Statutory
  - Familiar to audience
  - Already excludes intangibles
  - Restating investments at MV and discounting loss reserves is not a huge complication
  - Easy to reconcile to published results

Thank you

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