

Developing Next-Gen ASEAN Insurance Leadership Talent

Building Resilient Foundations Through Effective Corporate Governance

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The opinions expressed here are the personal opinions of the author and do not necessarily represent the views and opinions of MSIG.

Schedule for the day

Time	Programme
9:30am – 10:45am	Risks in Insurance ERM Framework
10:45am – 11:00am	Tea Break
11:00am – 12:45pm	Risk Appetite Business Risk Profile
12:45pm – 1:45pm	Lunch
1:45pm – 4:30pm	HIH Case Study: The \$5 billion Question
4:30pm – 4:45pm	Tea Break
4:45pm – 6:30pm	HIH Case Study – Discussions and Presentations

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Developing Next-Gen ASEAN Insurance Leadership Talent

Risks in Insurance

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Learning Objectives

Risks in Insurance

- This is an introduction on **risks in insurance**. This section will cover:
 - causes of past insolvencies in Asia and around the world; and
 - nature of risks faced by insurance companies.
- At the end of this section, students will be able to identify the risks that are associated with insurance companies and understand their significance.

Past Insolvencies

Poor Risk Management

Fraud



Under-reserving

Natural Catastrophe



Complex Investment Strategy

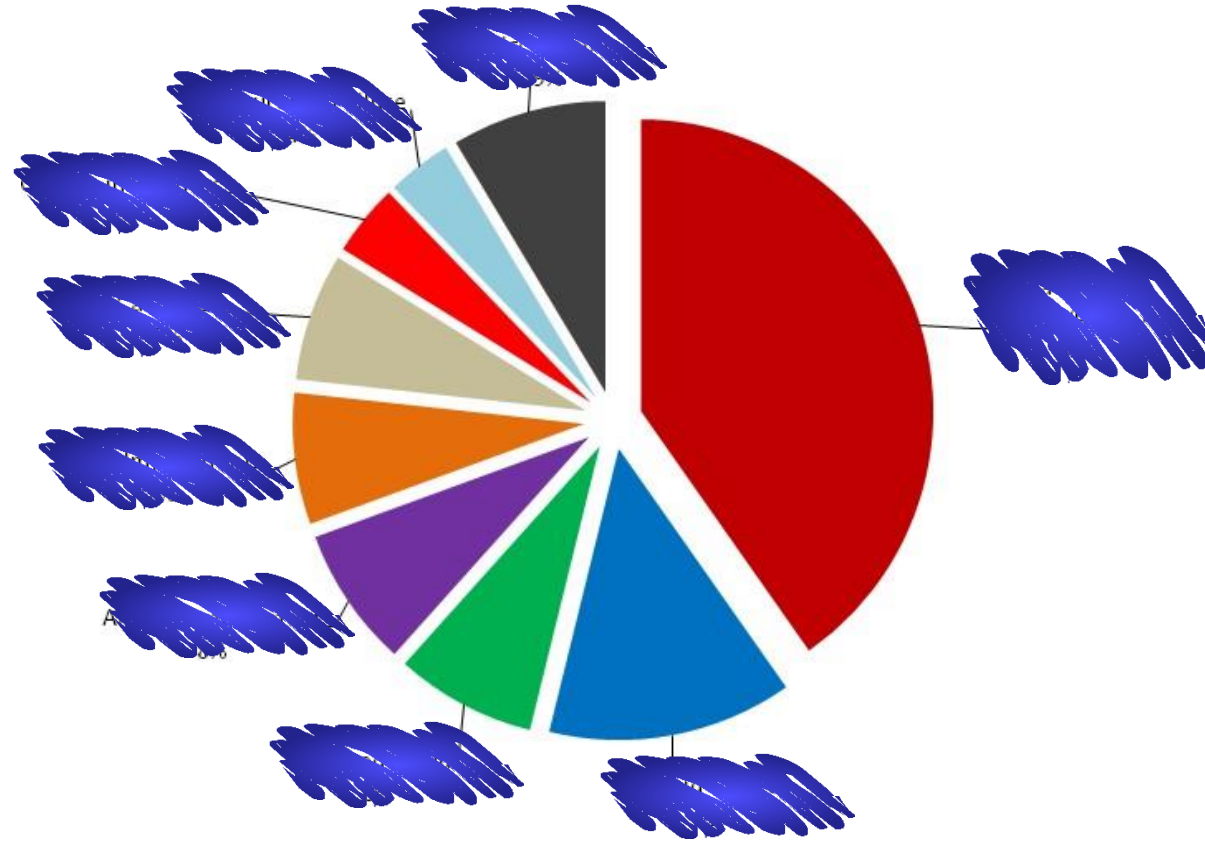


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Causes of Insolvency

Risks in Insurance

A.M. Best 1969-2010 US P&C Impairment Study

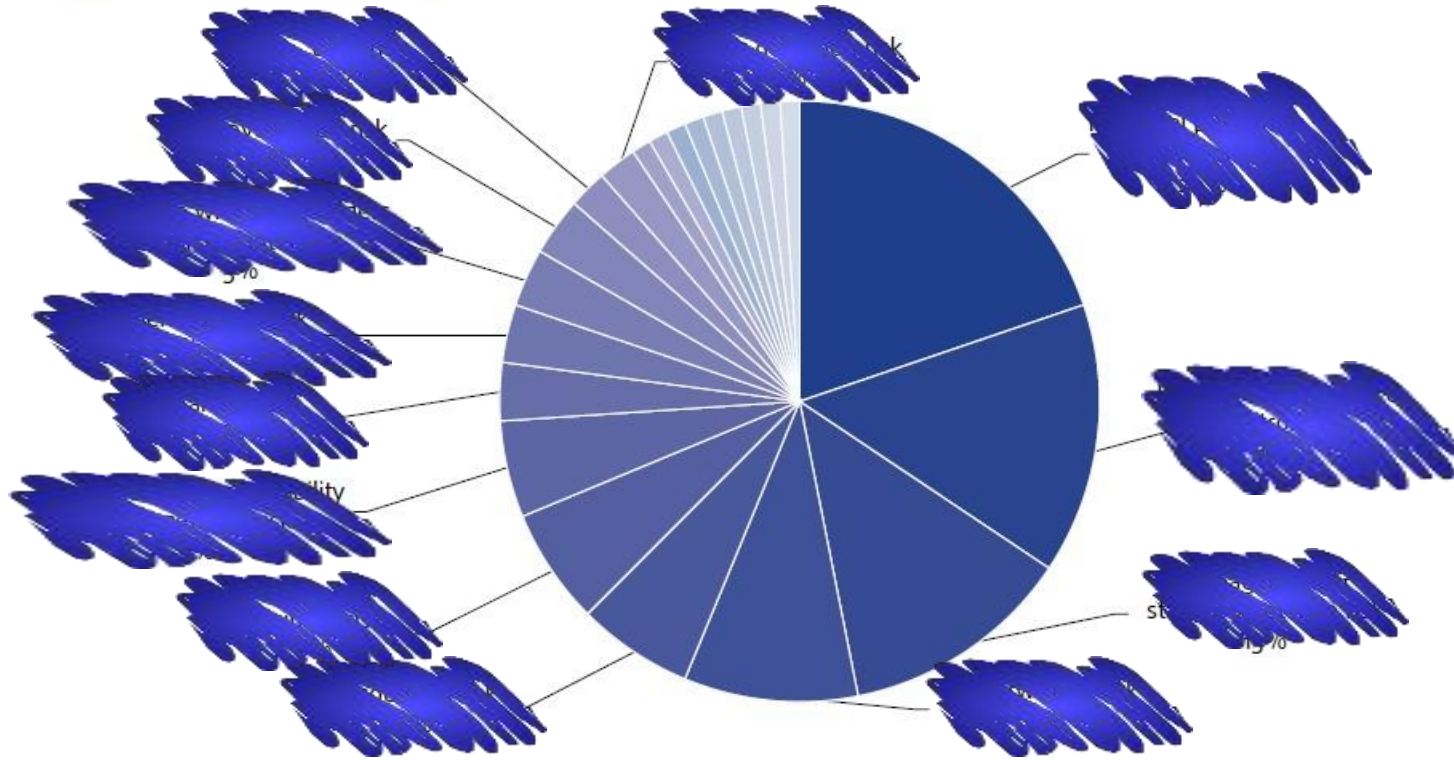


Causes of Insolvency

Risks in Insurance

European Insurance and Occupational Pensions Authority EU
non-life undertakings 1999-2016

Primary causes of failure and near miss - Non-life



EU non-life undertakings, 1999 - 2016

Reserving Risk

Risks in Insurance

- The risk associated with fluctuations from **unpaid insurance loss estimates** from prior accident periods.
- Why is reserve risk so important for insurance companies?
 - The largest component of the total liability
 - Typically the largest component of the capital requirement
 - Reserve strength represents the ability to pay future claims
 - Under-reserving leads to under-pricing!
 - Highly uncertain: Requires actuarial assessments
 - Significant impact on the overall financial condition



Reserving Risk

Risks in Insurance

- One of the important measures to assess the retrospective reserve strength, an indication of reserve risk, is **actual versus expected** analysis on reserve assumptions.
- It is important for the board of directors to review the reasonableness of the actuary's actual versus expected analysis and assess the reserving risk.



Underwriting Risk

Risks in Insurance

- The risk associated with volatilities in the timing, frequency and severity of insurance events, relative to the expectations of the insurer at the time of underwriting.
- Some companies may include natural catastrophe risks under underwriting.
- **Need to recognise the relationship between underwriting and reserving risk: Under-pricing may lead to under-reserving and vis-à-vis.**



Underwriting Risk

Risks in Insurance

- How to manage underwriting risk:
 - Adherence to underwriting authority
 - Break-even loss ratio or target premium rate
 - Walk-away price



Market Risk

Risks in Insurance

- Risk arising from **fluctuations in interest rates, foreign exchange rates, share prices and other relevant market prices.**
- Interest and currency mismatch risk is also categorised under market risk.
- The quantum of market risk depends on the insurer's asset allocation.



Credit Risk

Risks in Insurance

- The risk of financial loss as a result of **failure by another party to meet its contractual obligations** or failure to perform them in a timely fashion.
- Credit risk applies investment assets and reinsurance counterparties.
- Credit risks are often correlated:
 - Natural catastrophe and reinsurance default
 - Economic performance and bond default
- Credit risks are often assessed based on counterparties' credit rating:
 - Not always reliable
 - Unrated

CREDIT

Liquidity Risk

Risks in Insurance

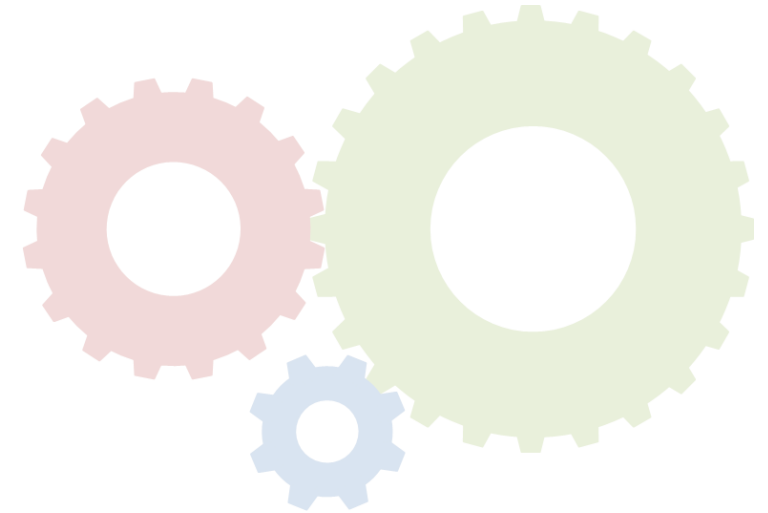
- The risk of not being able to meet short-term financial demands due to insufficient cash or cash equivalent and/or the **inability to convert illiquid assets into liquid assets in a timely manner.**
- Liquidity risk is not captured under Risk Based Capital (RBC) as this is a cashflow related risk.
- It is often difficult to properly assess the extent of liquidity risk for an insurance company.
- Quality of asset, compared with the size of insurance risks is a reasonable way to test the insurer's liquidity situation.



Operational Risk

Risks in Insurance

- The risk arising from **inadequate or failed internal control processes, people, system and other factors.**
 - System failure
 - Cyber-attack
 - Social media and reputational risk
 - Fraud and embezzlement
 - Key personnel risk
 - Strategic risk
- It is not possible to quantify the extent of operational risk and exposure for an insurance company.
- Regulators typically approximate the operational risk based on the size of an insurer.



Operational Risk

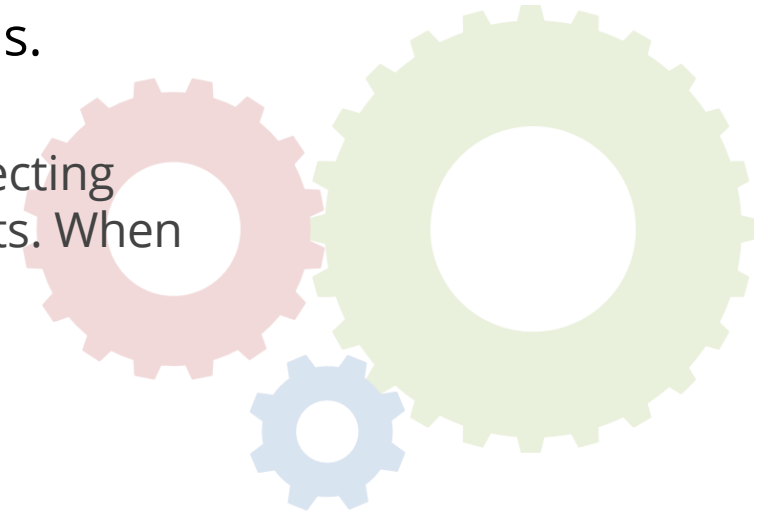
Risks in Insurance

- Typically, it is unlikely for an operational risk to threaten an insurer's solvency over a short-term horizon.
- It is common to manage operational risks on a qualitative basis.

“...Capital is not the answer to all economic problems potentially affecting insurers. Distress or failure of insurers have historically been rare events. When they occurred, they were primarily the result of:

- poor risk management and/or poor management decisions
- exposure to illiquid assets in times of financial distress, and
- activities outside the core insurance business.”

-The Nature and Role of Capital in Insurance, The Geneva Association, November 2016-



Correlations

Risks in Insurance

- “Degree and type of **relationship** between any two or more quantities (variables) in which they vary together over a period”
- Correlations in insurance:
 - Reserving and pricing risk: insurance cycle
 - Property value and CDO
 - Equity and bond performance
 - GDP growth and property claims
 - Motor damage and bodily injury experience
 - Property risk accumulations
 - Property investment and mortgage insurance
- Higher the correlation, higher the risk in aggregate.



Summary

Risks in Insurance

- There are **six** risks in insurance:
 - Reserving
 - Underwriting
 - Market
- It is important to recognise the correlation between different risks.



Q n A

Risks in Insurance





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ERM Framework

Learning Objectives

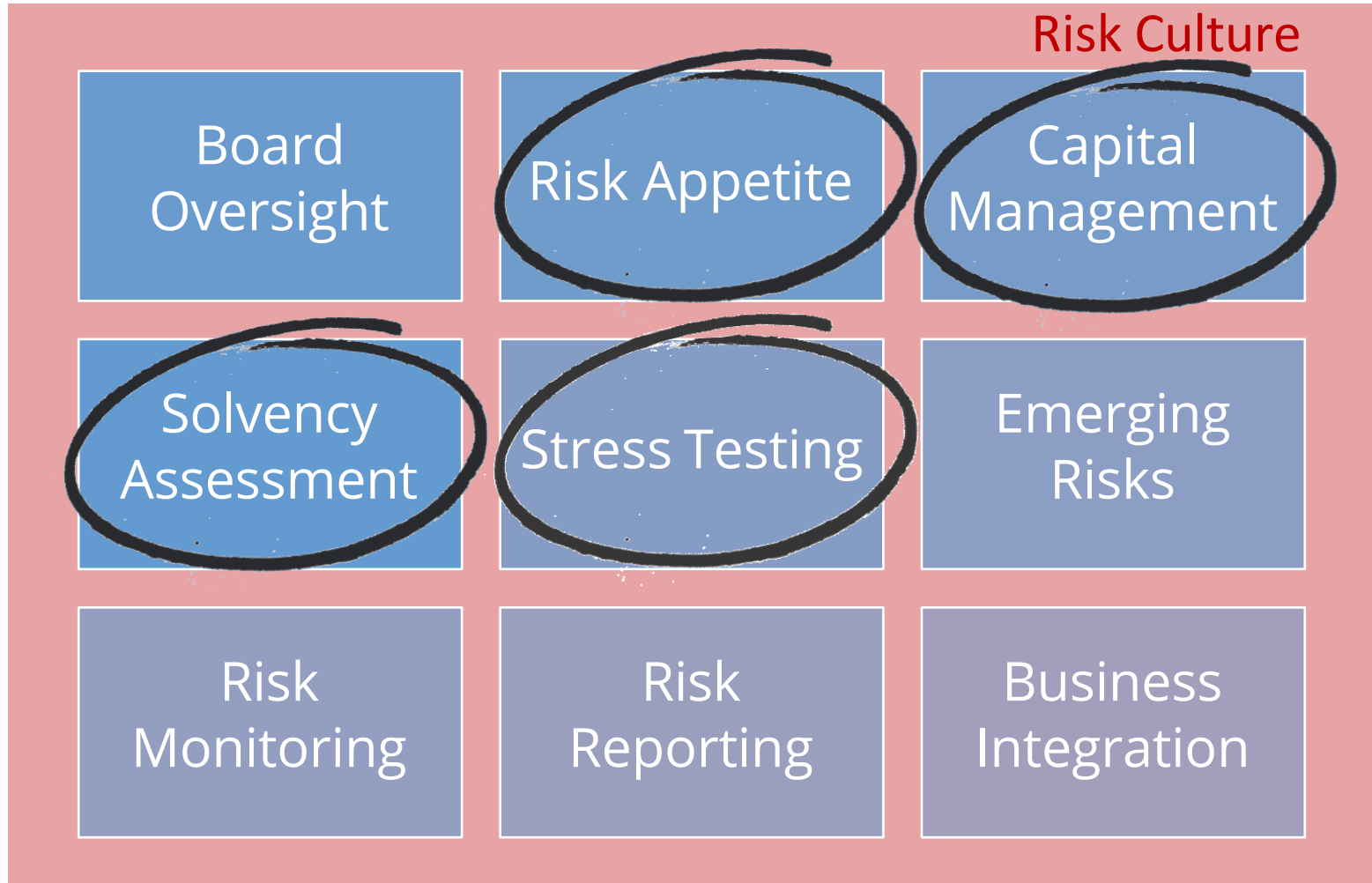
ERM Framework

- This section introduces the **9** fundamental components of Enterprise Risk Management (ERM).



Basic Components of ERM

ERM Framework





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Solvency Assessments

Solvency Position

ERM Framework

- Also known as **Capital Adequacy Ratio (CAR)**

$$\text{CAR (\%)} = \frac{\text{Capital Available}}{\text{Capital Required}}$$

More than **100%** CAR - **Solvent**

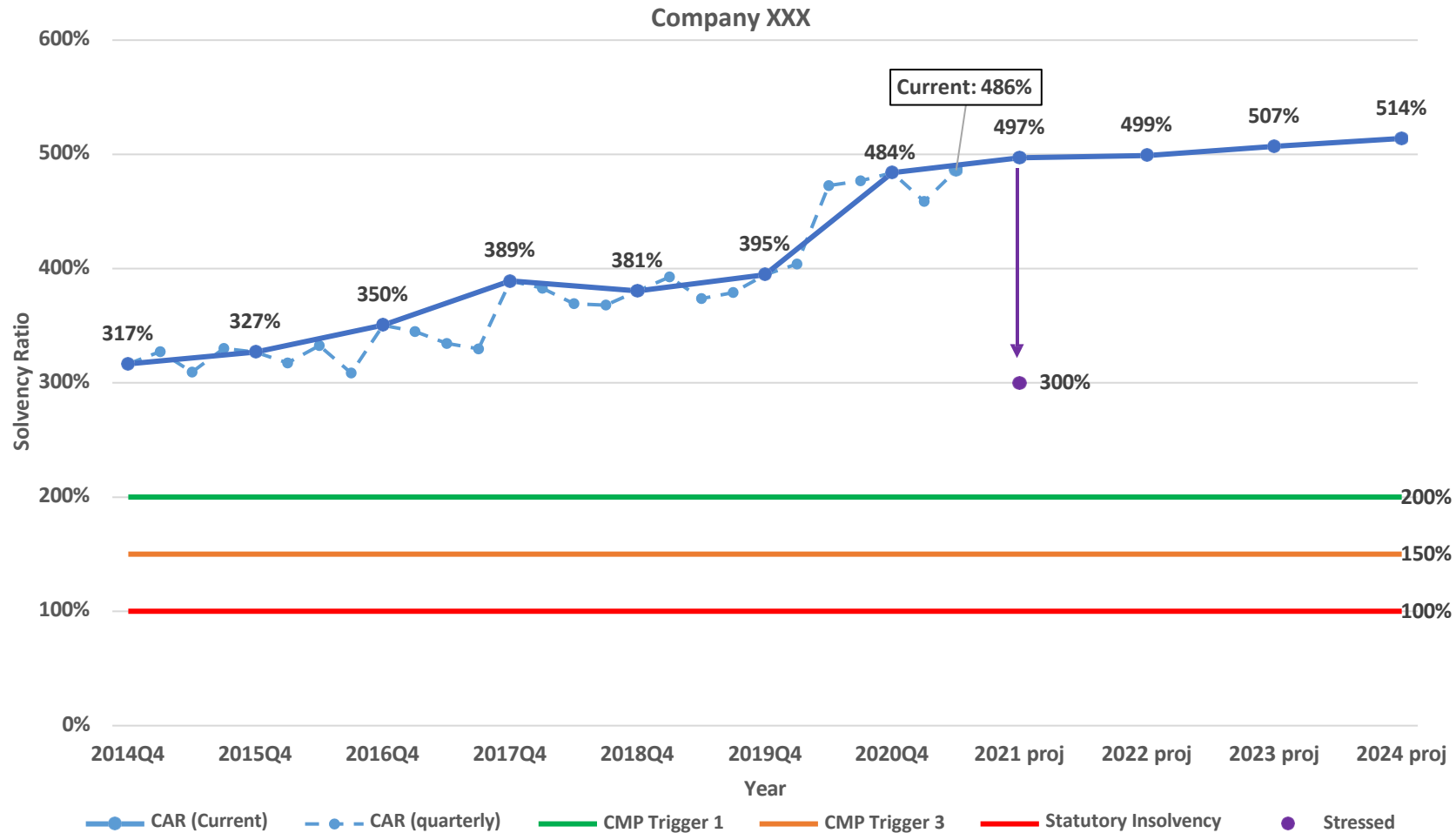


Less than **100%** CAR - **Insolvent**



Solvency Assessments

ERM Framework



Solvency Position

ERM Framework

What should we consider?



Components of Solvency Assessment

ERM Framework

1. Current conditions



Current Solvency Position

ERM Framework



Components of Solvency Assessment

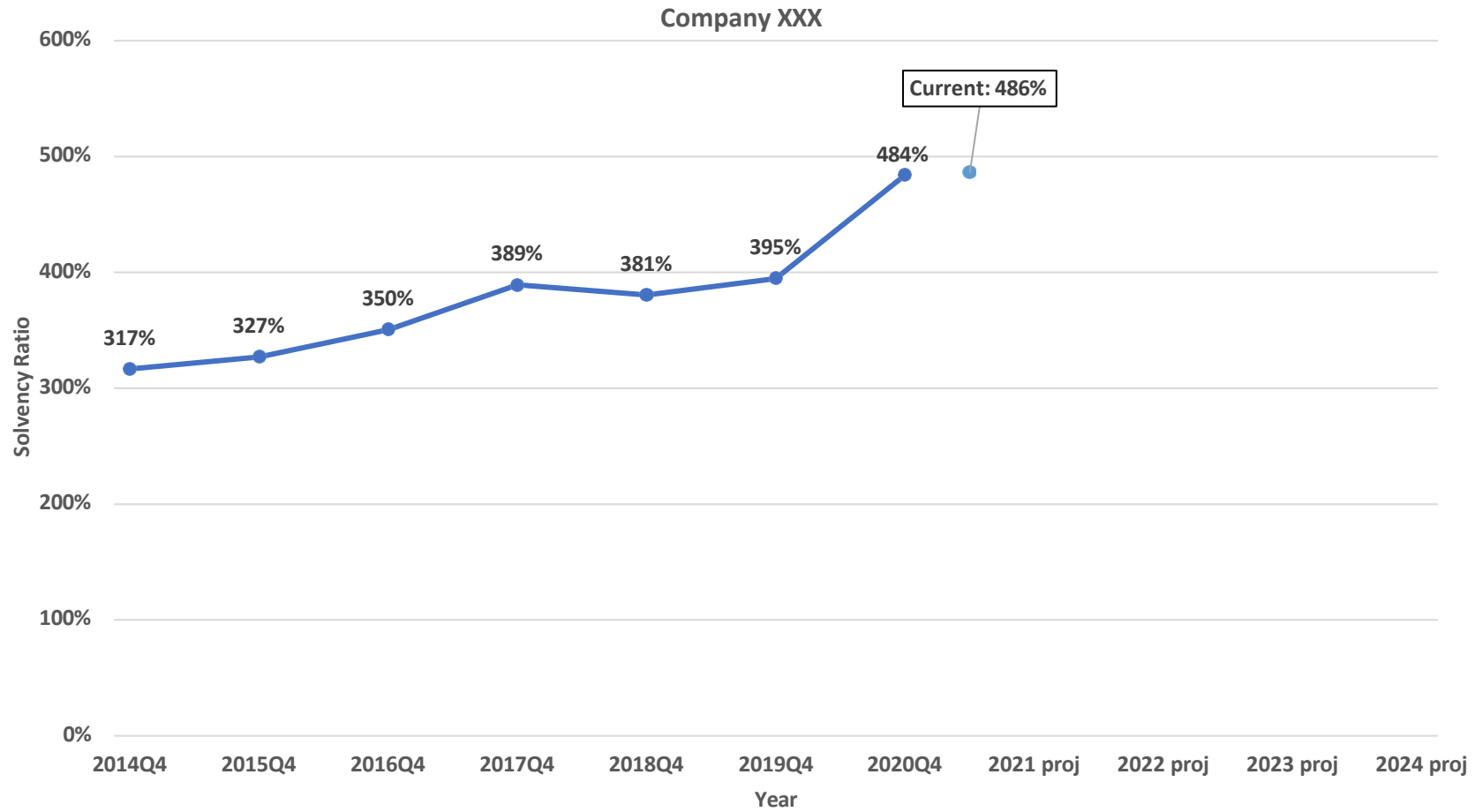
ERM Framework

2. Past Trend



Past Trend

ERM Framework



Components of Solvency Assessment

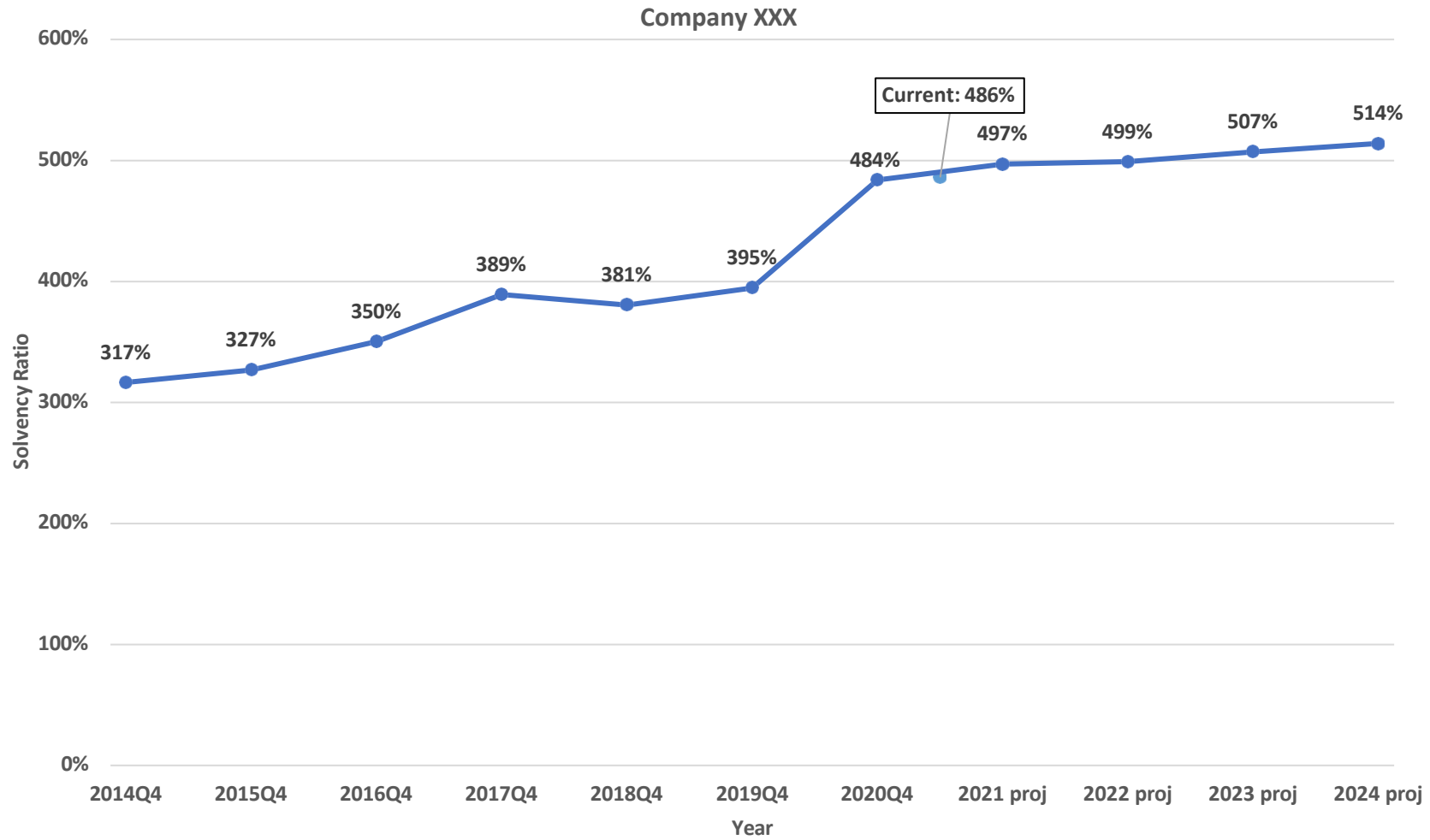
ERM Framework

3. Projection



Projection

ERM Framework



Components of Solvency Assessment

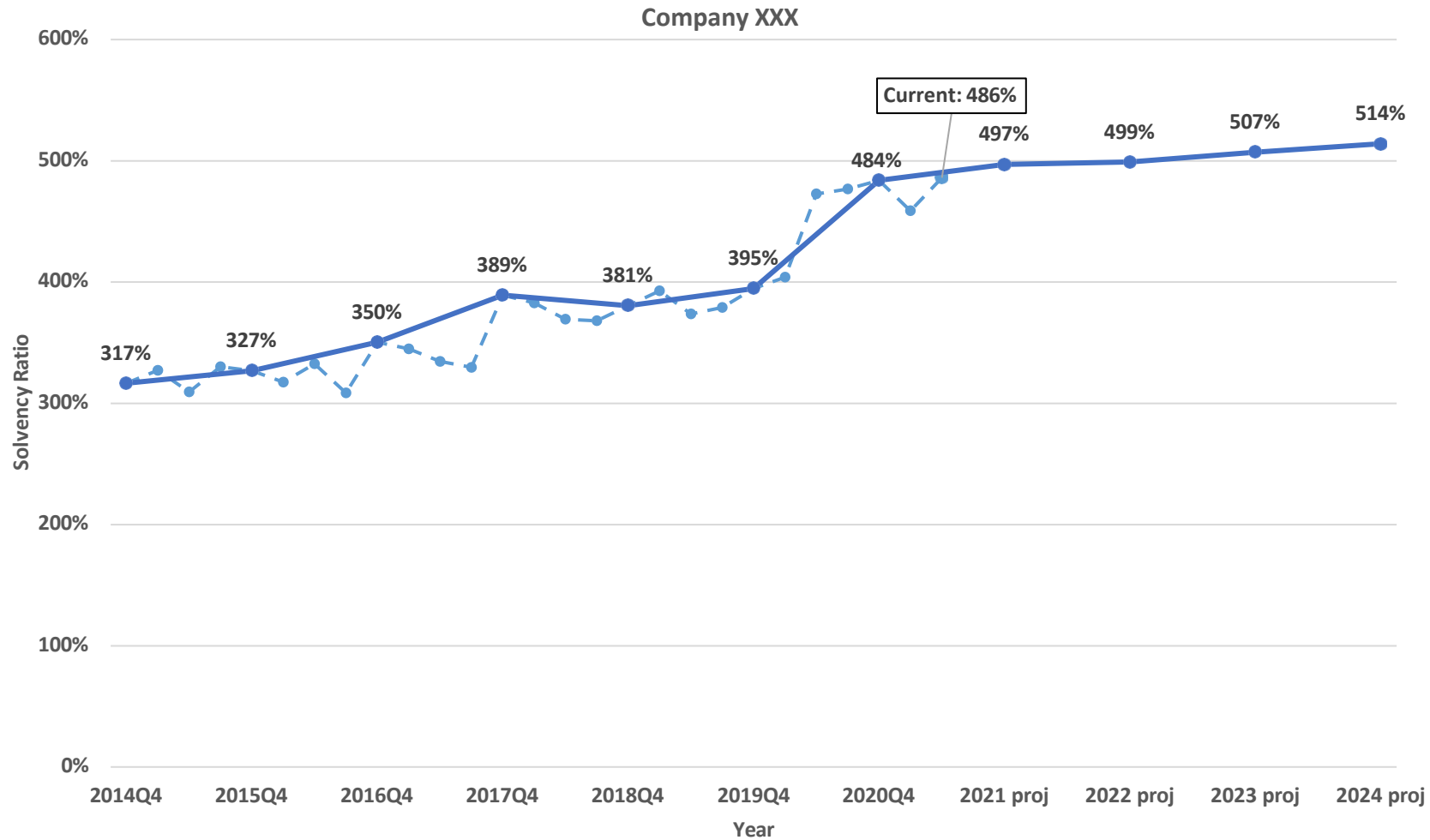
ERM Framework

4. Seasonality



Seasonality

ERM Framework



Components of Solvency Assessment

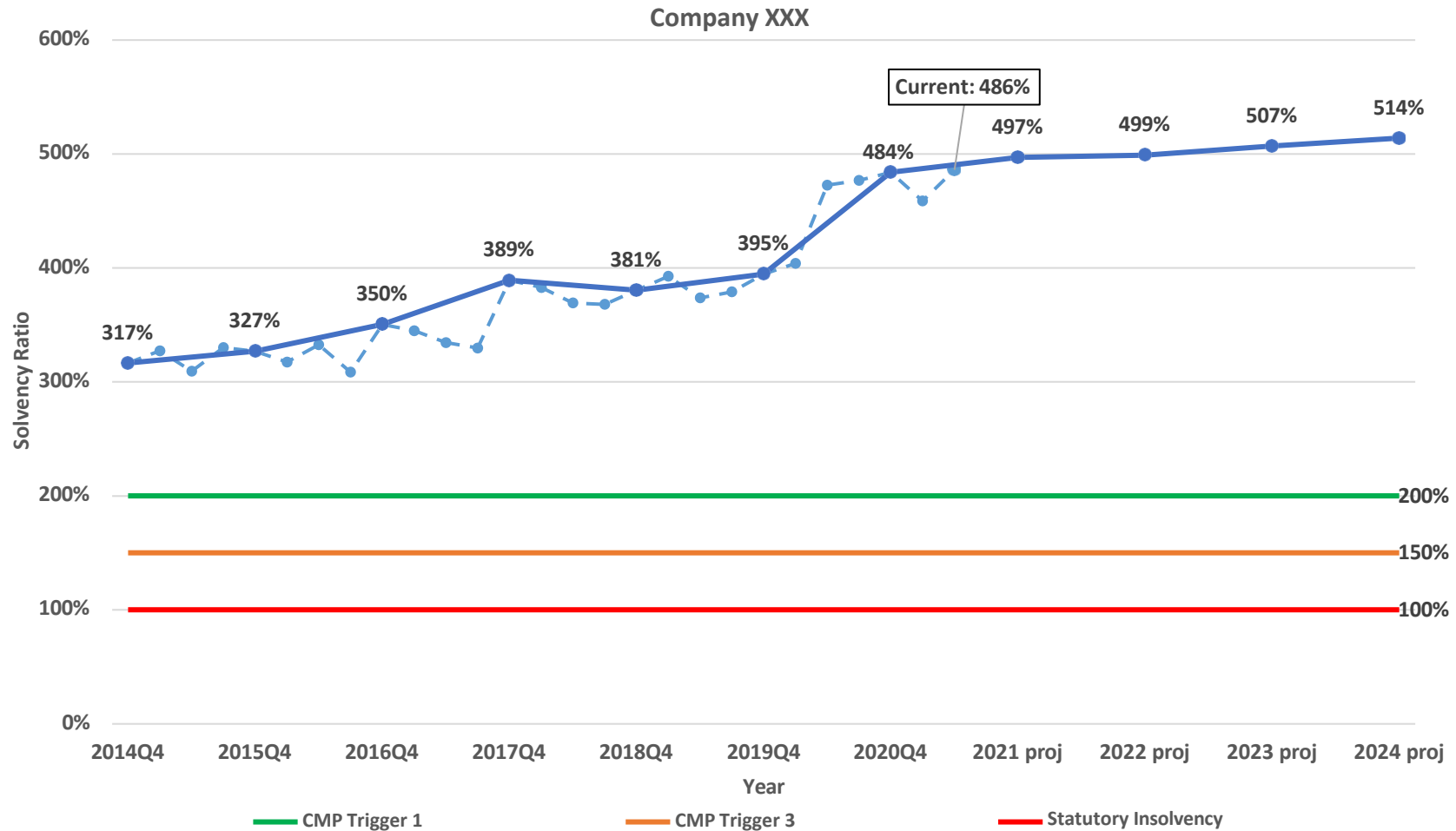
ERM Framework

5. Capital Management Plan (“CMP”) Check



CMP Check

ERM Framework



What actions are in place if there is a potential breach of CMP?

Components of Solvency Assessment

ERM Framework

6. Stress Test

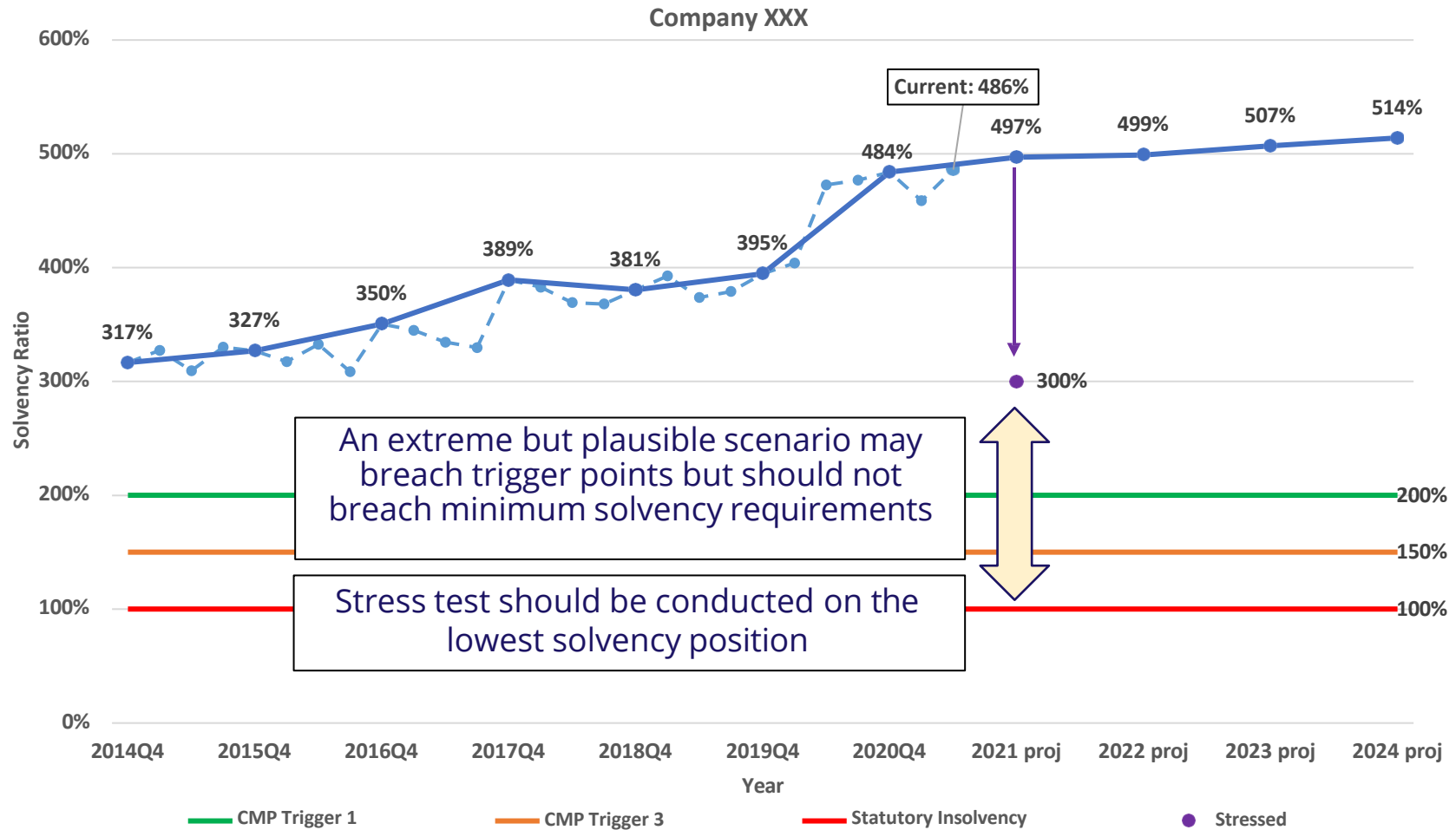
Examples of Stress Scenarios:

- Large Loss & RI Default
- Decline in Property Asset Value
- Natural Catastrophe (Nat Cat) Event
- Liquidity Risk
- Foreign Exchange (FX) Risk
- Macroeconomic Scenario
- Loss Ratio Deterioration
- Loss of Profitable "Segment"
- Cyber Attack



Stress Test

ERM Framework



Components of Solvency Assessment

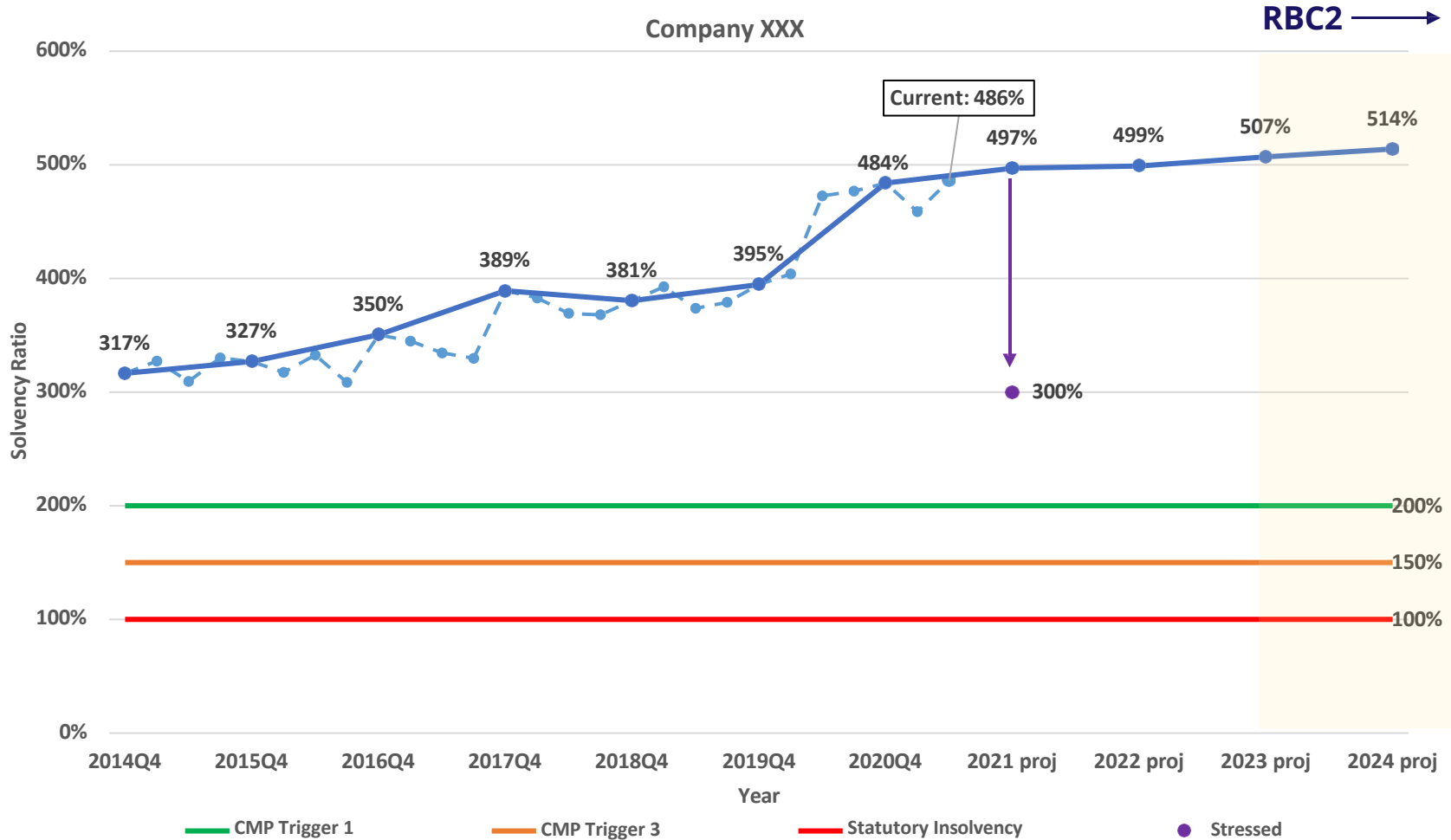
ERM Framework

7. Changing Regulations



Changing Regulations

ERM Framework



Summary

ERM Framework

1. Current solvency position
2. Past trend
3. Future solvency projection
4. Seasonality
5. Checks against Capital Management Plan
6. Stress Testing
7. Changing Regulations

Stress Testing

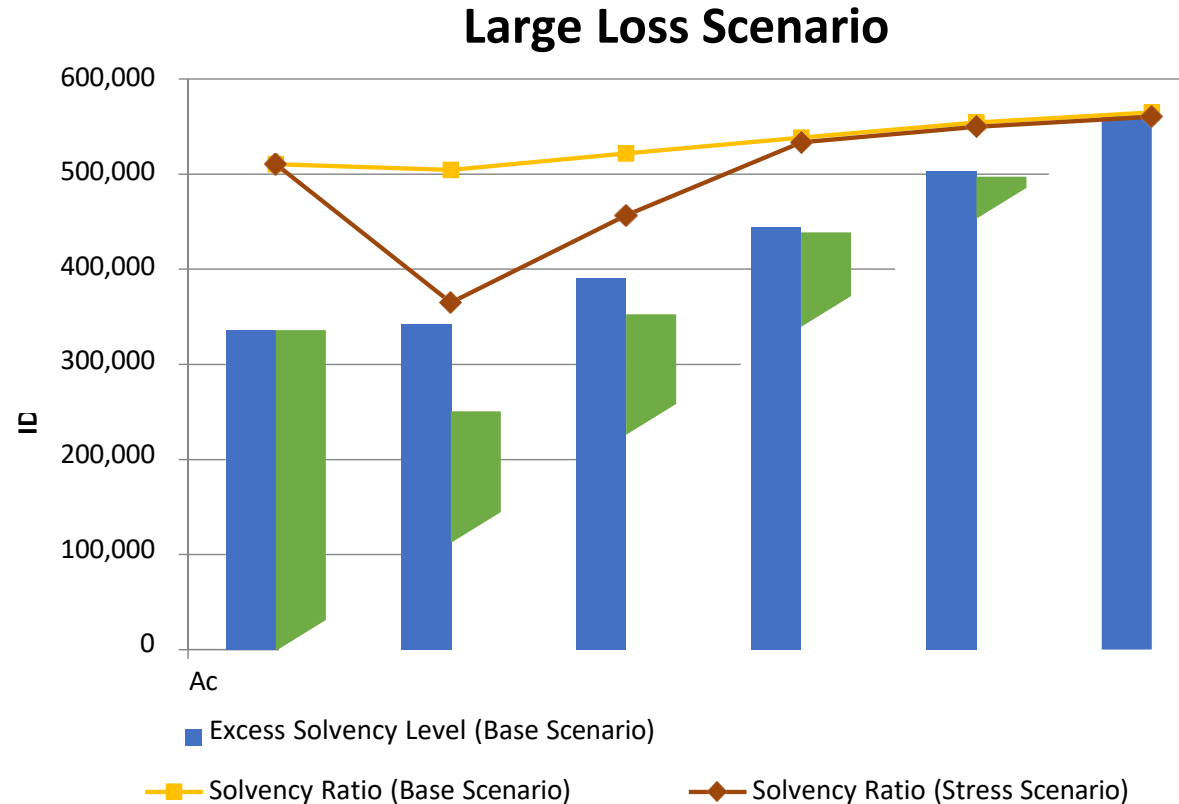
ERM Framework

- Simulating “stressed business plan”
- Considers impact of **extreme but plausible adverse** events.
- Relying on local stress test scenarios and results.
- When constructing stress scenarios, major risk categories to consider include:



Stress Testing Example

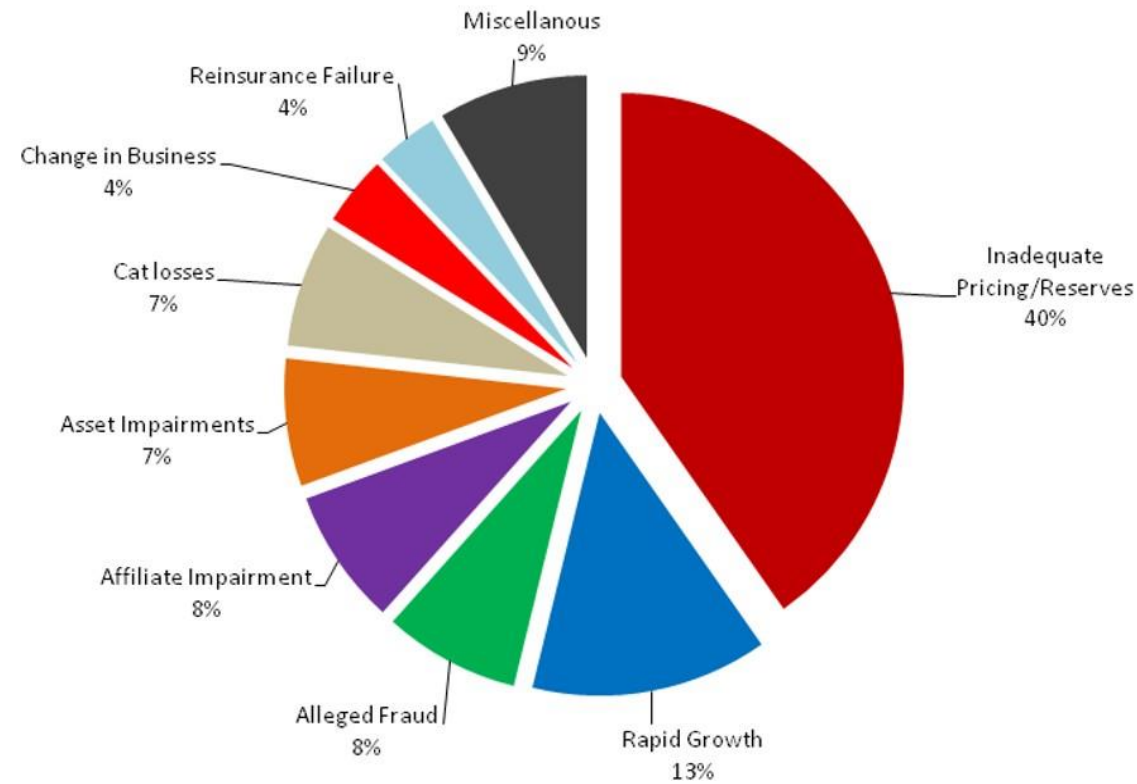
ERM Framework



Stress Testing

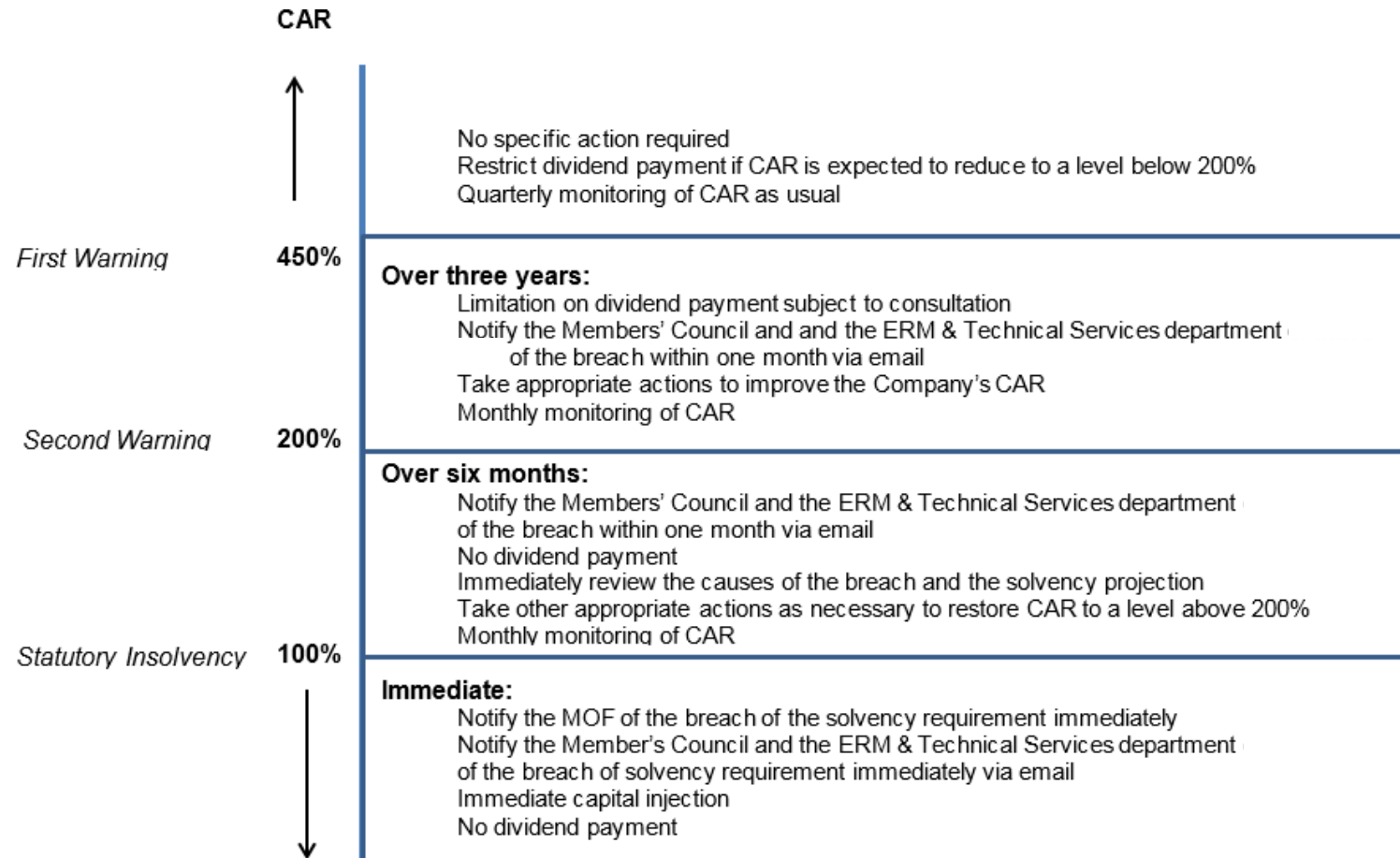
ERM Framework

A.M. Best 1969-2010 US P&C Impairment Study



Capital Management Plan

ERM Framework



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ERM Framework





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Tea Break

10:45 - 11:00 am