



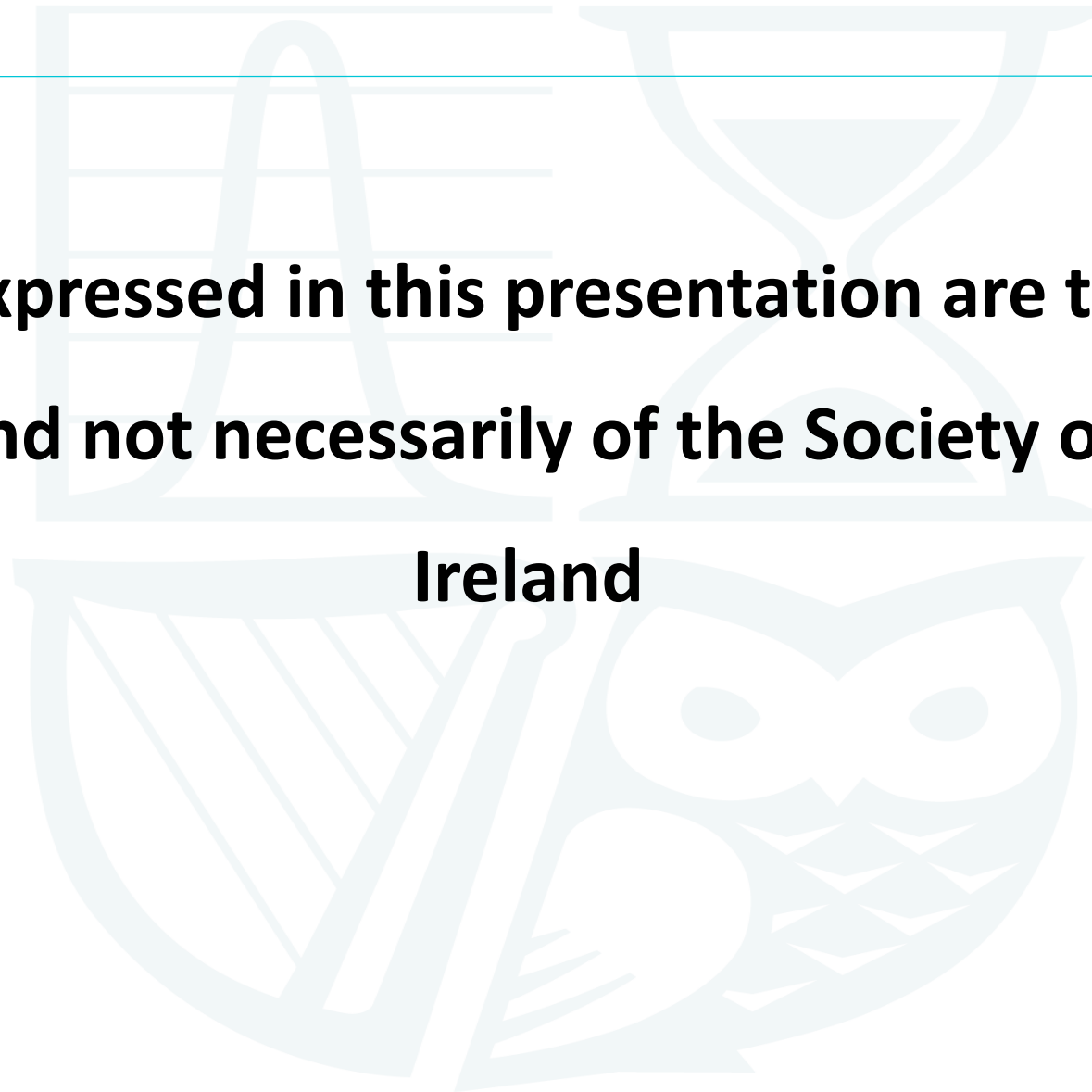
Society of Actuaries in Ireland

Wider Fields Update

Mike Frazer

Disclaimer

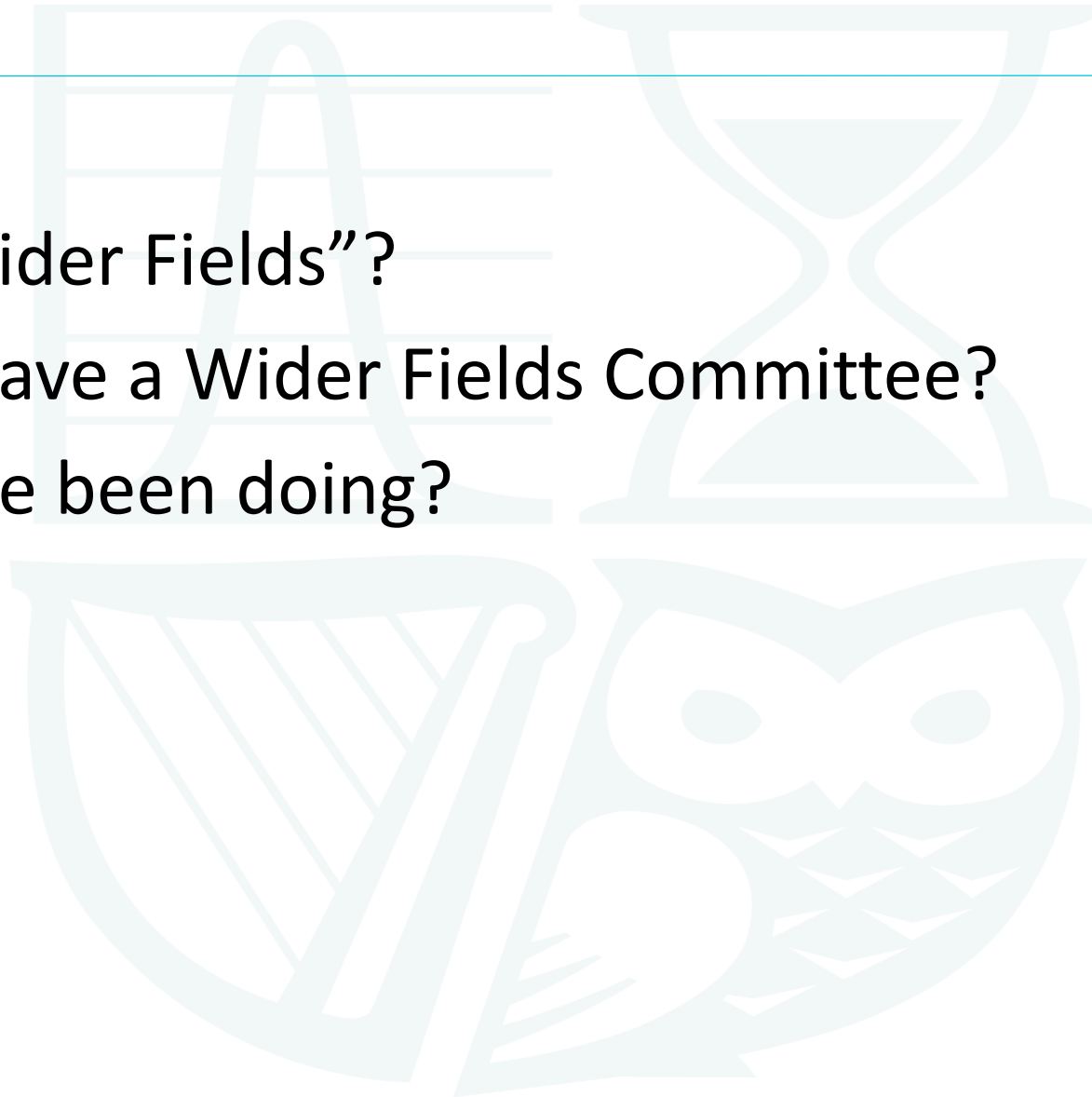
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Introduction

- What are “Wider Fields”?
- Why do we have a Wider Fields Committee?
- What have we been doing?



SAI STRATEGY PLAN 2017 - 2020

- Member Proposition
- Regulation
- Lifelong Learning
- Regulatory Awareness & Support
- Independent Voice
- **Wider Fields**

Wider Fields Objectives

- Support the involvement of actuaries in wider fields by promoting the profession to a wider audience who do not currently consider actuaries.
- Promote and facilitate the engagement with the Society of actuaries working in wider fields.
- Continue to make wider fields an active area of interest in the Society, including exploring ways to encourage actuaries to be broad-based business professionals and to consider wider fields as a viable career option.

Wider Fields Objectives

- Engage with international actuarial bodies on wider fields initiatives.
- Identify how we can develop and maintain mutually beneficial links with graduates from actuarial degree courses who may not go on to pursue the Fellowship qualification.

Activities of the Committee

Engage with members working in wider fields / promote wider fields to the general membership

- Identify areas of potential or emerging actuarial employment
- Two sub-committees established since autumn 2017:
 - Data Analytics
 - Banking & Aviation Finance
- Data Analytics:
 - Events: “R for Actuaries”, and more
 - Strategy to promote the profession in the Data Science community

Activities of the Committee

Promote the profession to non-traditional employers

- Articulate the actuarial skill set to the unfamiliar
- Image problem!!!
- Take a different approach
 - Lego Serious Play Workshops January/February
 - 2 groups of 12 volunteers (diverse by practice area, experience, etc)
 - Very interesting outputs
 - Bring in some outside help

Activities of the Committee

- “ ... Broad-based business professionals”
- SAI corporate membership of the IMI
 - Free/discounted places at IMI events
 - Full access to IMI “Knowledge Hub” online management resources (and physical library)
 - Promotional collaboration with IMI since last September
 - IMI presentations / stand at SAI CPD events
 - Promotional flyer

Activities of the Committee

- Liaising with international actuarial bodies
 - to understand their approaches to non-traditional practice areas
 - exploring the potential for collaboration
- Analysing the work done by other professional bodies in Ireland to broaden the areas in which their members work
 - exploring the potential to cooperate with such bodies for mutual benefit
- Liaising with university students (actuarial & related courses)
 - Engage early to maximise likelihood that they become SAI members



Society of Actuaries in Ireland

**Banking & Aviation Finance
Sub Committee**

Bryan O'Connor

Introduction

Members:

Bryan O'Connor

Emily O'Gara

Conor Byrne

John Caslin

Niall Dillon

Jane Gleeson

Paul Walsh

Eoin Connaughton

Donal O'Brien

Darragh Pelly

Yuecong Wang

Siobhan Ryan

Lakshmi Vishnampet

Formed March
2018 as
sub-committee
of wider fields

Always open to
support
and ideas!

Banking & Aviation Finance sub-committee

Why do we need a subcommittee of a wider fields committee?

Banking and aviation apply traditional actuarial skillsets, transferring is easier than to other fields.

What is the scale of the opportunity?

I'll explain, including some technical examples.

What are we doing to move into this space?

Events/speakers/thought leadership.

Banking & Aviation Finance sub-committee

Initial Goals

- Ensure SAI is offering relevant support to actuaries in these fields
- Increase actuarial numbers working in Banking/Aviation
 - Communication/Education/Support
 - Generating “demand pull” from Employers
- Relevant Thought Leadership to help make the jump between traditional and wider fields

Banking & Aviation Finance sub-committee

Target Activities 2018

- Convention – raise awareness
- Events
 - Aengus Kelly (CEO of AerCap) breakfast in June
 - Careers/Networking evening – end September
 - Number of Banking related events – Recovery & Resolution Plans, Banking & Actuaries
- Education Review
- Thought Leadership
 - Exploring Investment and Funding Angles for Aviation Finance
- Increasing aviation community awareness of actuarial skillset
 - 2019..... Secured a high level speaking slot at the 2019 Global Aviation Finance Conference in Dublin

LET'S REMIND OURSELVES OF WHAT WE BRING TO THE PARTY!

- Statistical techniques to solve business problems, particularly those involving risk
- Communication of complexity
- Commercial Acumen
- Understand interaction of Accounting & Risk
- Risk & Capital Management
- Managing in evolving complex regulatory environment
- Pricing, particularly involving risk
- Computer skills / modelling

Aviation Finance



An open door for actuaries.....

Strong Growth Drivers for Aircraft Industry

- Passenger traffic outpaces World GDP growth and traffic is expected to double in the next 15 years
- Middle class expected to double in Emerging Countries over next 20 years
- 41,000 new Aircraft deliveries forecast over the next 20 years, 23,470 of that number represents growth in new aircraft
- Projected market value of new aircraft over the period is \$6.1 Trillion
- Current Aircraft Finance Industry is c. \$130 billion p.a.
- Demand for Financing Aircraft growing at 10% p.a.

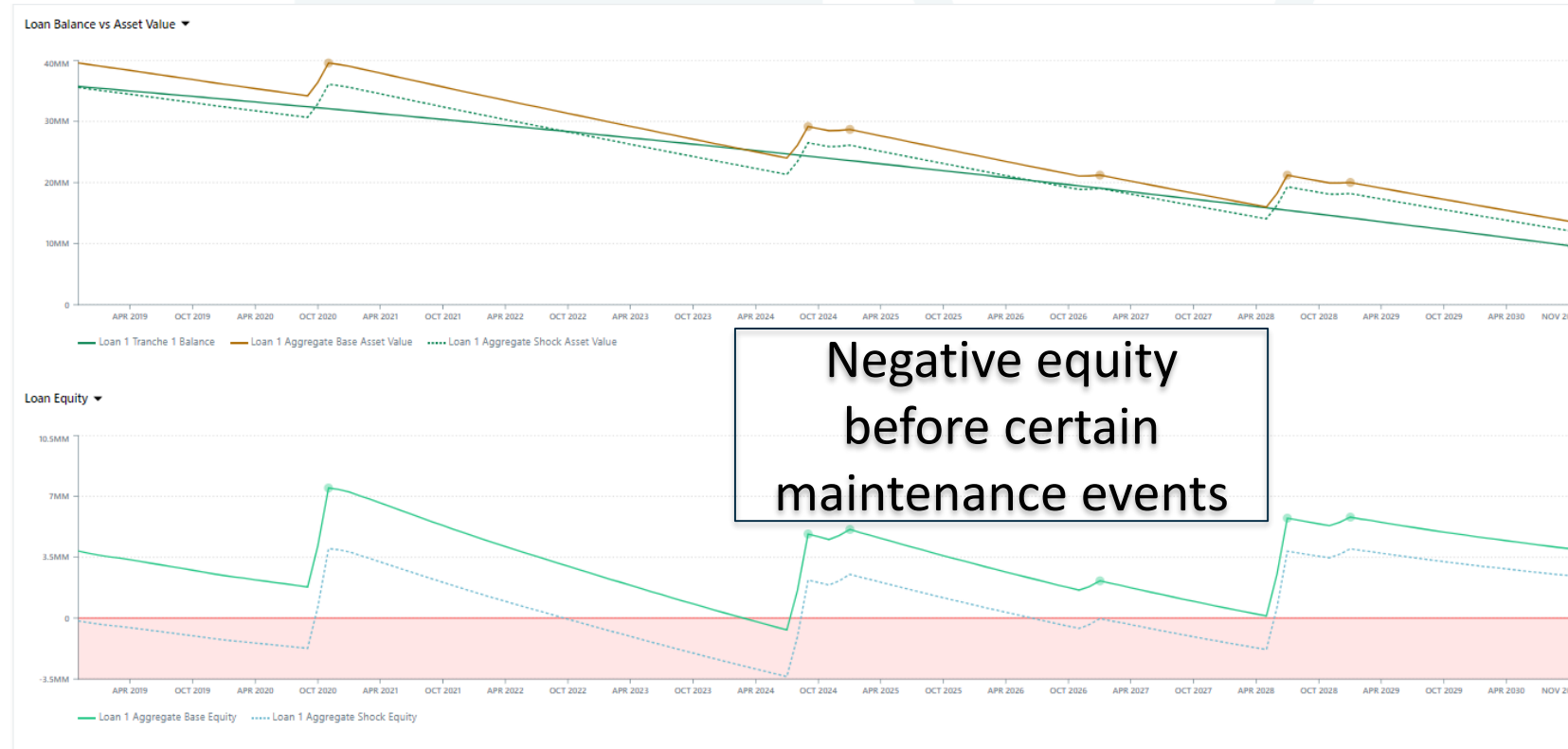
Aviation Finance Industry in Ireland

- c. 40% of global aircraft are leased, over 50% of these are managed in Ireland
- 14 of the top 15 aircraft lessors headquartered in Ireland
- Industry supports up to 5,000 direct and indirect jobs here
- \$581 million annual spend by aircraft leasing companies in Ireland
- €142 billion of assets managed by leasing companies, 2016
- Key drivers of Ireland's success in this industry:
 - Pioneers in the industry, companies such as GPA, giving first mover advantage
 - Established generation of senior management with aircraft leasing expertise
 - Pro-aviation and leasing sector policies (2015 National Aviation Policy)
 - Double taxation treaties, low corporation tax, supportive business environment and common law legal system
 - Skilled specialist English speaking workforce
- Globally competitive industry with increased competition from the Middle East and Asia.

Areas in Aircraft Finance where Actuarial skills required

- High compatibility of actuarial skills from the industry in the following areas of Pricing, Financial Analysis and Credit Risk & interest rate risk.
- Significant analytical skill required for projecting maintenance adjusted values of aircraft for pricing purposes.
- Greater emphasis by industry on developing advanced modelling for projection and pricing purposes
- Corporate & Structured Finance - ABS, private placed loans backed by aircraft, operating lease fund vehicles, cross-border & SPV experience valuable

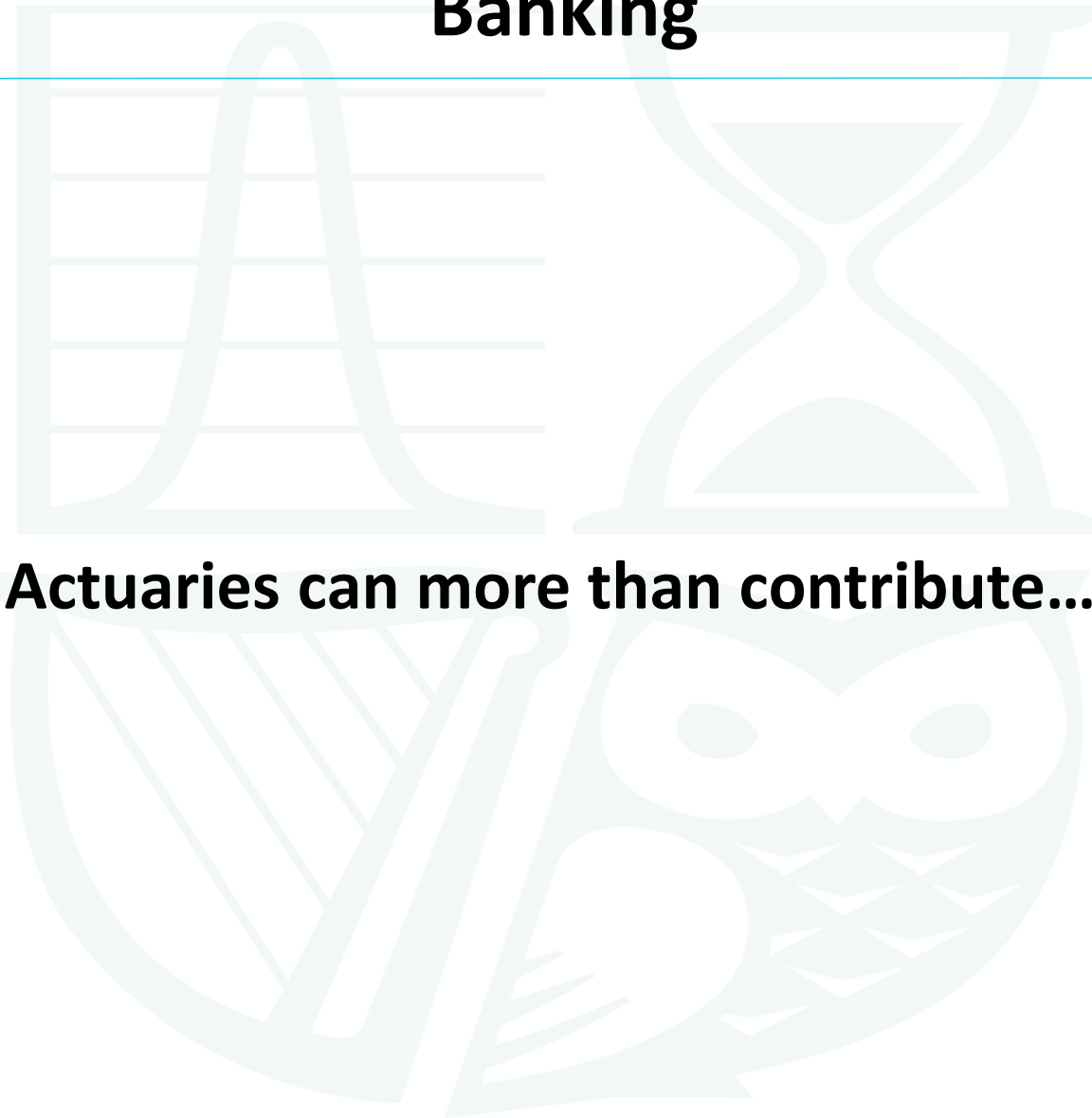
Example of an Aircraft Backed Senior Loan



- Understanding the future value of aircraft, and the associated risk with a loan, is highly dependent on maintenance condition of asset
- Actuaries working on aircraft maintenance and pricing tools to model loan economics and for portfolio management purposes

Banking

Actuaries can more than contribute...



Potential areas in Banking for actuaries

- Treasury/Investments/Wealth Management arms
- Risk Management
- Capital Management
- Credit Models / Credit Portfolio Management
- Analytics / Data

Question: Bank or Insurer – most Risk?

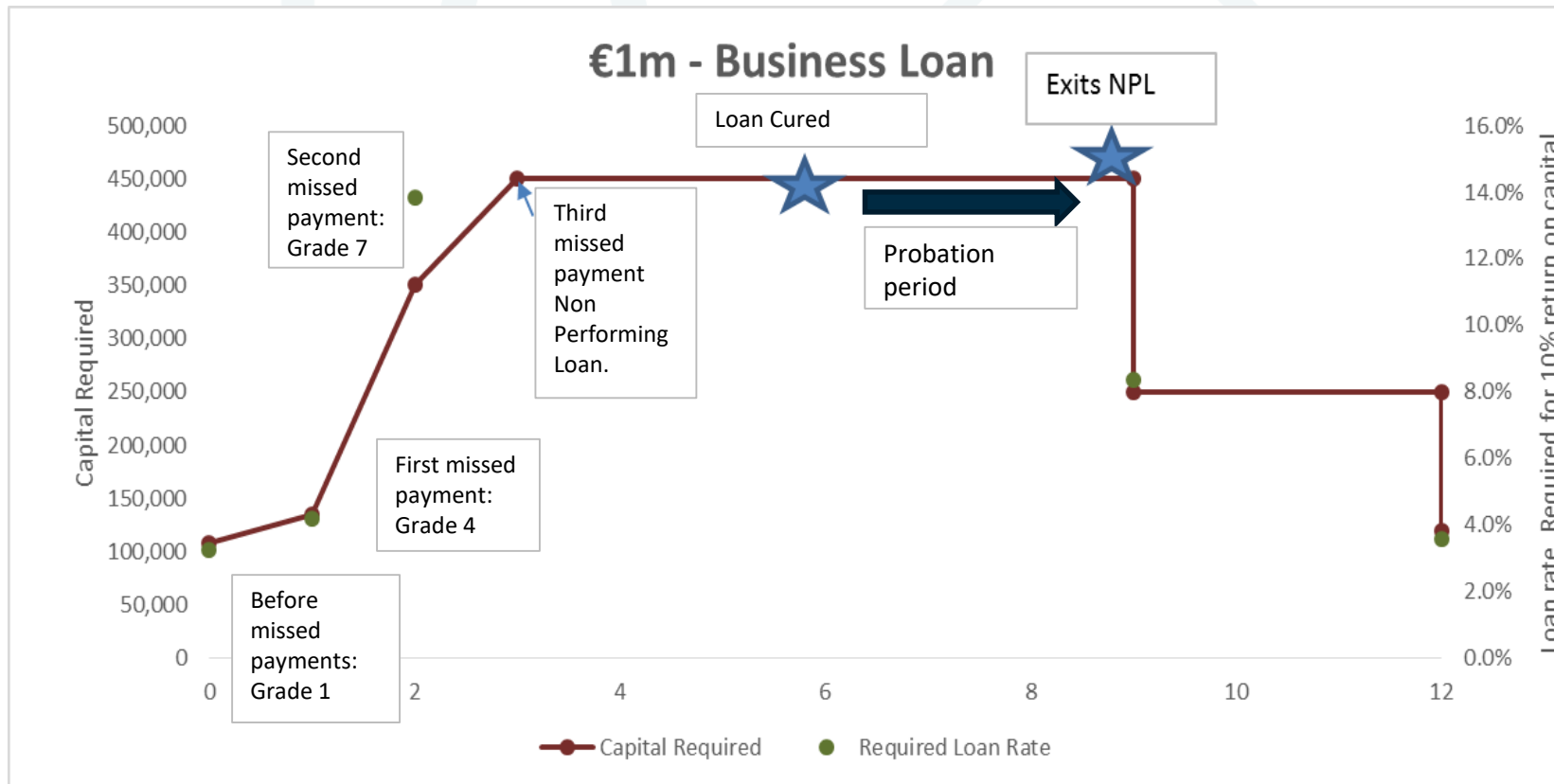
e.g. DC & UL – customer bears investment & mortality risk

Interest Rate Risk					
Insurance	Banking				
<p>Pension Annuities, Variable Annuities, Unit-linked Matched investment Mortality predicable</p>	<p>Net Interest Income (NII) = Asset income less Liability outgo</p> <table><thead><tr><th>Assets</th><th>Liabilities/Funding</th></tr></thead><tbody><tr><td><ul style="list-style-type: none">Loans (Mortgages, SME etc)NPLsBonds held for liquidityCashDerivatives (A&L)</td><td><ul style="list-style-type: none">DepositsWholesale Funding<ul style="list-style-type: none">SecuredUnsecuredMREL – Bail-in-ableTier 2 capital</td></tr></tbody></table> <p>Numerous mismatches e.g. term, bases, fixed/floating - 1m, 3m, 6m Euribor, Libor, base rates</p> <p>Investors expect stable profits – NII hedging, stability versus competitive if yields change</p> <p>Levers - Product Strategy, use of Derivatives</p>	Assets	Liabilities/Funding	<ul style="list-style-type: none">Loans (Mortgages, SME etc)NPLsBonds held for liquidityCashDerivatives (A&L)	<ul style="list-style-type: none">DepositsWholesale Funding<ul style="list-style-type: none">SecuredUnsecuredMREL – Bail-in-ableTier 2 capital
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Credit Risk Management

Credit Risk – Indicative Grade Scale								
Credit Grade Scale	1	2	3	4	5	6	7	8
Expected Credit Loss (IFRS9)	0.05%	0.75%	1%	1.50%	3%	5%	10%	20%
Capital Requirement	10.00%	10.50%	11.0%	12.00%	15%	20%	25%	40%
Loan Rate Required for 10% RoC*	3.0500%	3.80%	4.10%	4.70%	6.50%	9.00%	14.50%	26.00%

*Assumes 1.5% funding cost, 0.5% expense loading



Credit Risk - Challenges

- **IFRS9** - Recognise Expected Credit Loss (ECL) at all times - including up front
Build IFRS9 Models for all Asset & Loan types - Data challenges, building predictive models that are sensitive to relevant economic indicators
- **RAROC** - Net Income (consider funding costs, ECL) divided by Capital
- **Capital** - Regulatory capital, Economic Capital, Rating Agency Expectations? Allocate these across Portfolios.
- **Portfolios** - granular Resi - PDH/BTL, SME - sector - e.g. agri/healthcare/distribution, CRE
- How should the recent crisis be incorporated in to ECL & Capital Requirements?

Banking Challenges - Actuaries can contribute

ECB Guidance on non-performing loans (NPLs) (includes earlier recognition & write-off)

- Technical Defaults (e.g. collateral but in arrears)
- full coverage for the unsecured portion of new NPLs after 2 years at the latest and for the secured portion after 7 years at the latest

Recovery planning – Banks a little more progressed than insurers

- Credible Detailed Options - Capital Raises, deleverage non-core businesses
- inclusive ready to go due diligence process and internal/external approval process - fire drills/live simulations
- Consistency across RAS, Capital & Liquidity Planning & Recovery
- MREL – Bail-in-able debt requirement – linked to Capital requirement

Liquidity

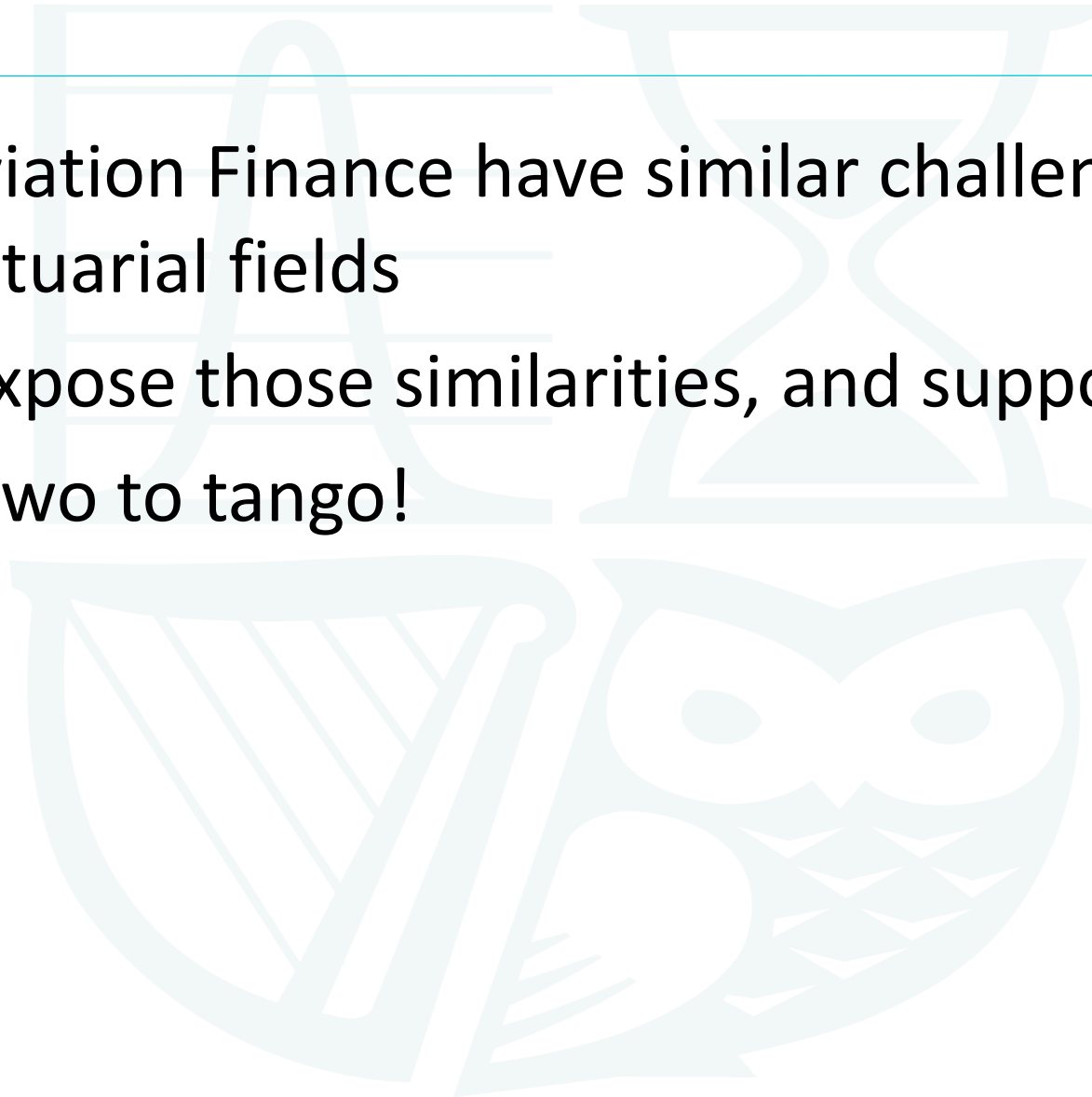
- Maintain Liquid Bond holding - trade off is can hurt NII and Net Interest Margin (NIM)
- Contingency funding - ensure assets can be securitised - trade-off beware of reliance on whole sale funding
- Strong deposit base most weighted towards retail/SME less dependent of large corporates/financials

Capital & Liquidity Adequacy – ICAAP/ILAAP for Banks, ORSA for insurers

- Anchored in stress test outcomes

Finally...

- Banking & Aviation Finance have similar challenges to more traditional actuarial fields
- Working to expose those similarities, and support you
- But, it takes two to tango!



Activities of the Committee

- Your turn!
 - What else should we be doing?
 - Member surveys to be issued shortly
 - Also hoping to engage former members for their input



Members of the Wider Fields Committee

- Giulia Vilone
- Darragh Pelly
- Barry Murphy
- Rafay Khan
- Martin Keane
- Jenny Johnston
- Brendan Guckian
- Svetlana Gatova (secretary)
- Karl Fahy
- Pedro Ecija Serrano (chair of Data Analytics sub-committee)
- Eamon Comerford
- Mike Frazer (Chair)

