

Milliman Breakfast Briefing

21st March 2019



Information from 2017 SFCRs

Aisling Barrett

21 MARCH 2019

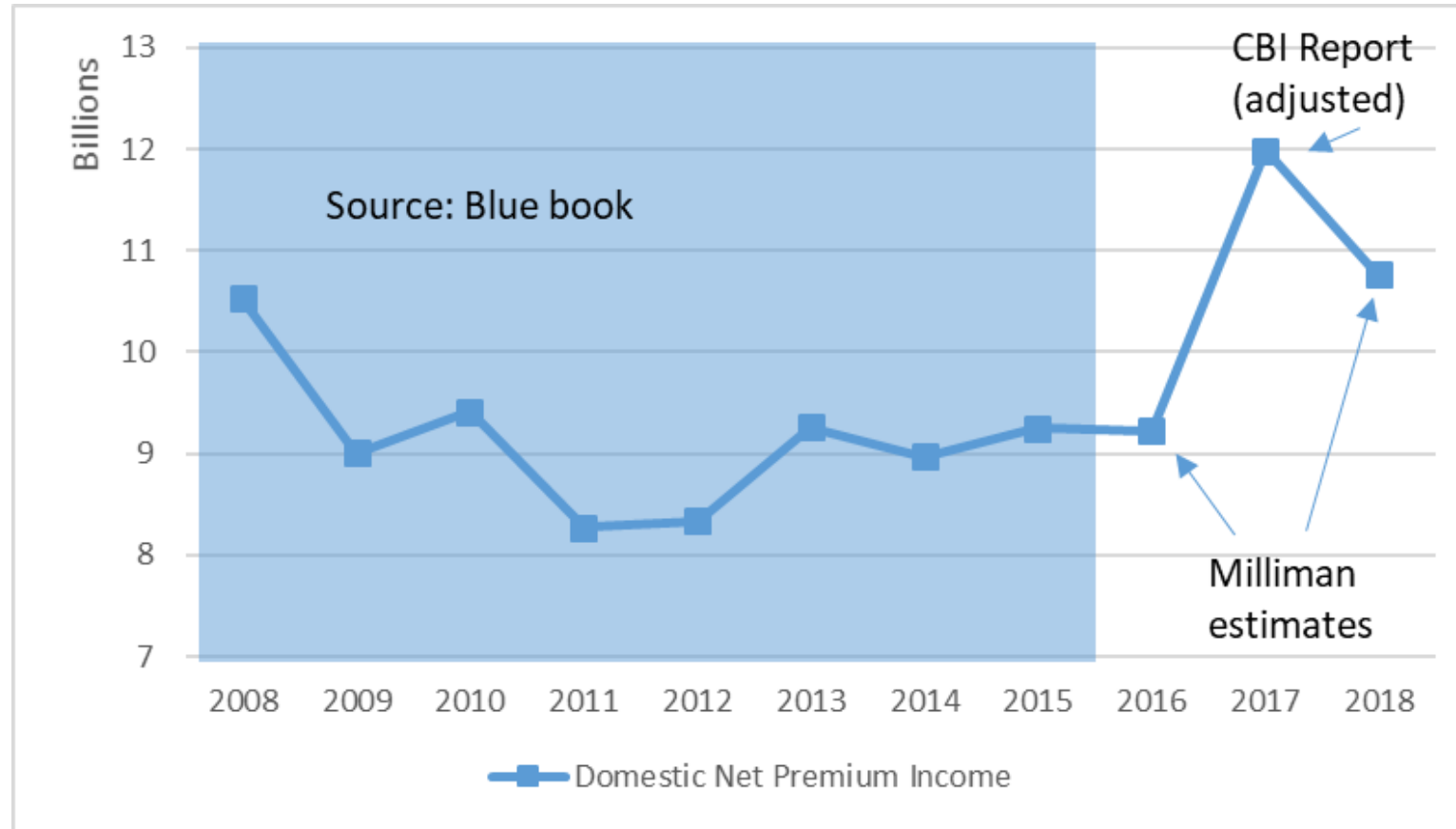


2017 Gross Written Premiums – Top 10 Irish insurers

Total Gross Written Premiums € million	2017	2016	Type
Intesa Sanpaolo Life	7,941	8,986	Life (Cross Border)
Irish Life Assurance	7,268	5,199	Life (Domestic)
SCOR Global Life Re	4,179	4,747	Reinsurance
Zurich Life Assurance	3,233	2,684	Life (Domestic)
Darta Saving Life Assurance	3,075	2,590	Life (Cross Border)
New Ireland Assurance	1,792	1,671	Life (Domestic)
AXA MPS Financial	1,642	1,310	Life (Cross Border)
Hannover Re (Ireland)	1,558	1,712	Reinsurance
AZ Life	1,526	3,533	Life (Cross Border)
MetLife Europe	1,486	828	Life (Cross Border)

Net Premium Income

Domestic Life Insurance Business



- 2016 estimate based on sample companies
- 2017 figure based on CBI report (with some adjustments)
- 2018 estimate based on information provided by sample companies and 2017 figure otherwise

Figures exclude:

- Aviva (2014 – 2017 & estimate for 2018)
- Standard Life
- Royal London

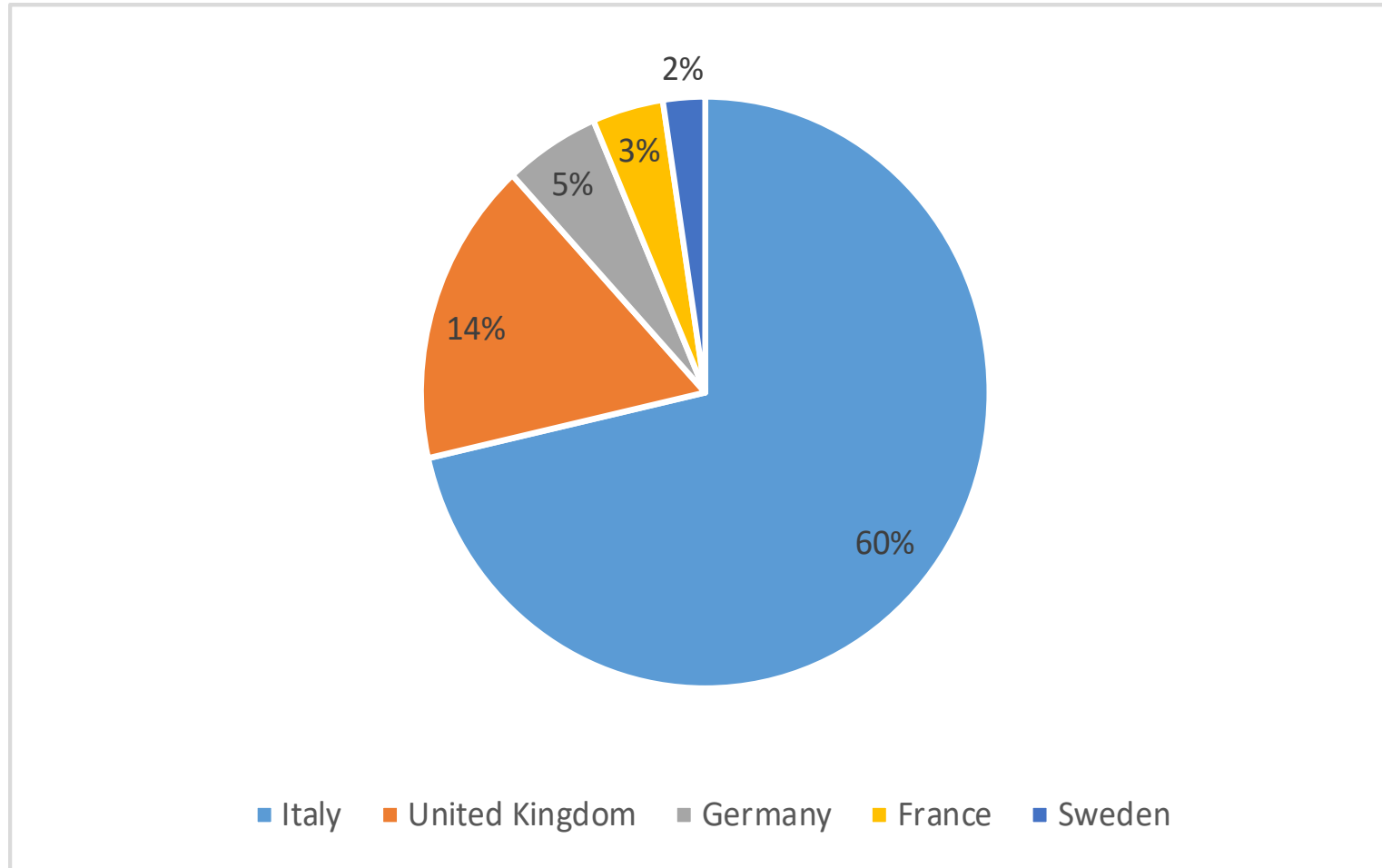
Brexit – Insurance companies



- Aetna
 - Arch
 - Aspen
 - AXA XL
 - Beazley
 - Berkshire Hathaway
 - Chaucer
 - Everest Insurance
 - Fidelis
 - North P&I Club
 - Prudential
 - Standard Club
 - Travelers Europe
- Not confirmed yet:
- Equitable Life
 - Neon Underwriting

2017 Gross Written Premiums by Country (excl Ireland)

Cross Border Life Insurance Business



Italy Top 5:

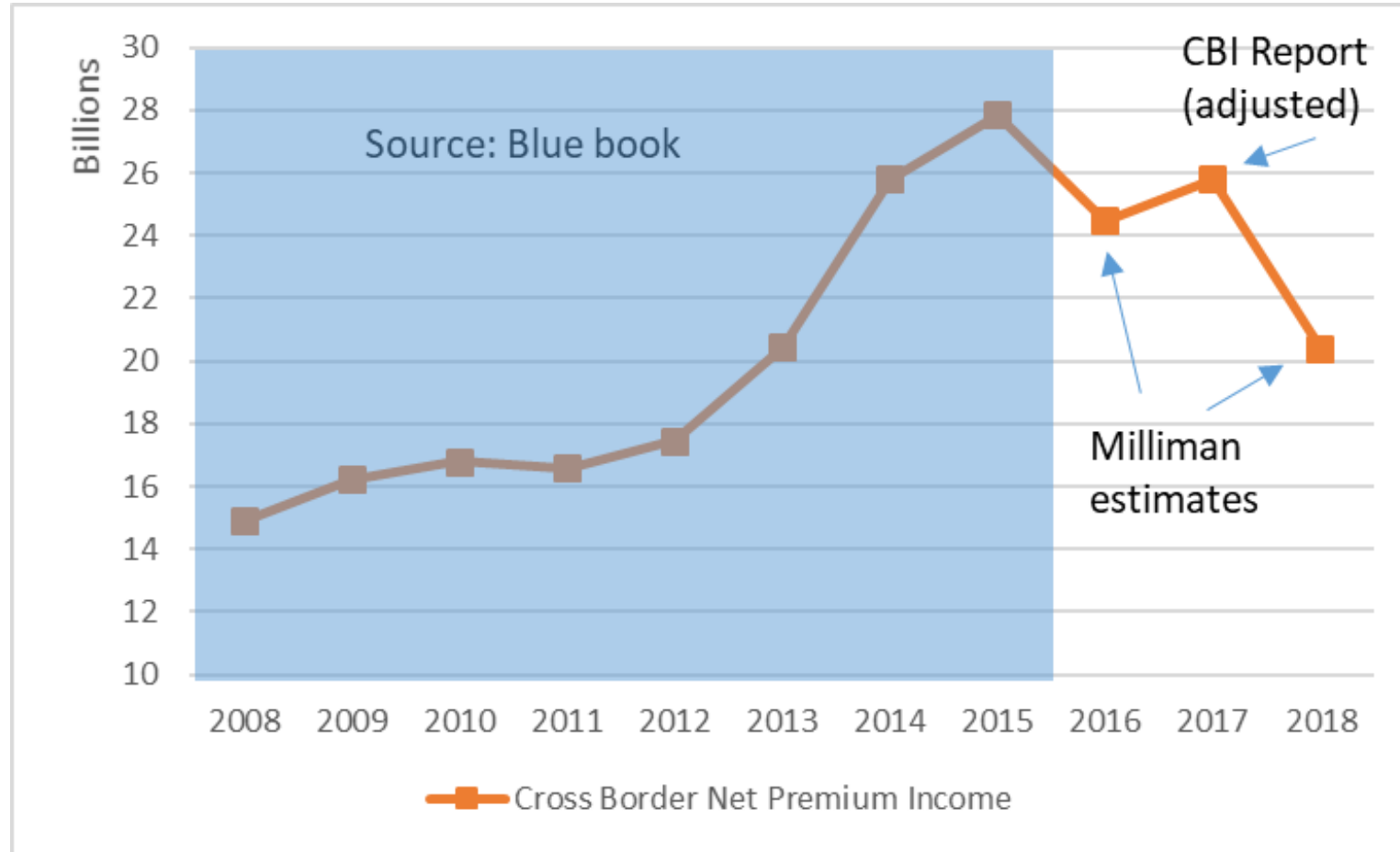
- Intesa San Paolo Life
- Darta
- Axa MPS
- AZ Life
- Utmost Pan Europe

UK Top 5:

- Standard Life International
- Prudential International
- Canada Life International
- MetLife Europe
- St James' Place International

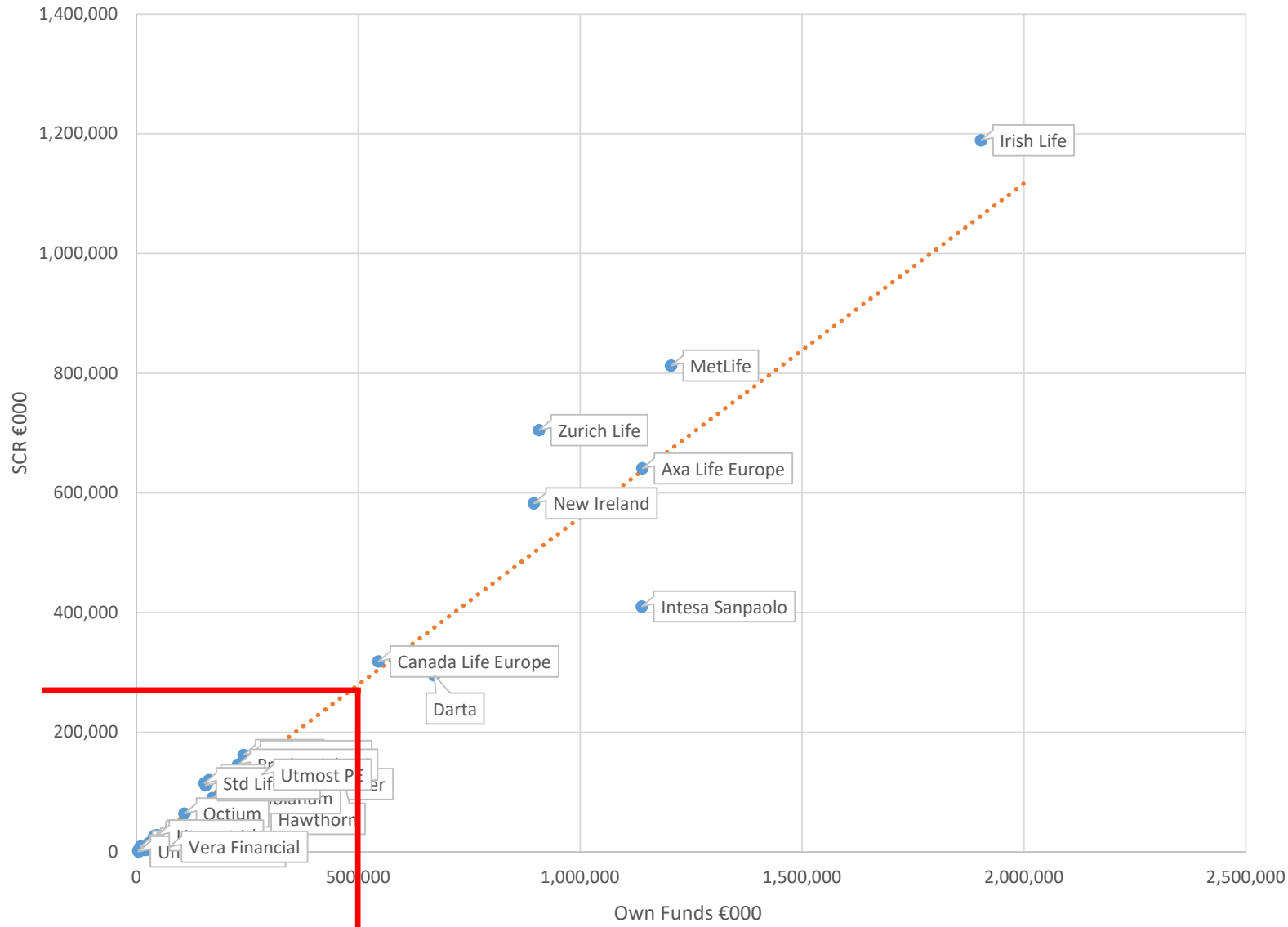
Net Premium Income

Cross Border Life Insurance Business



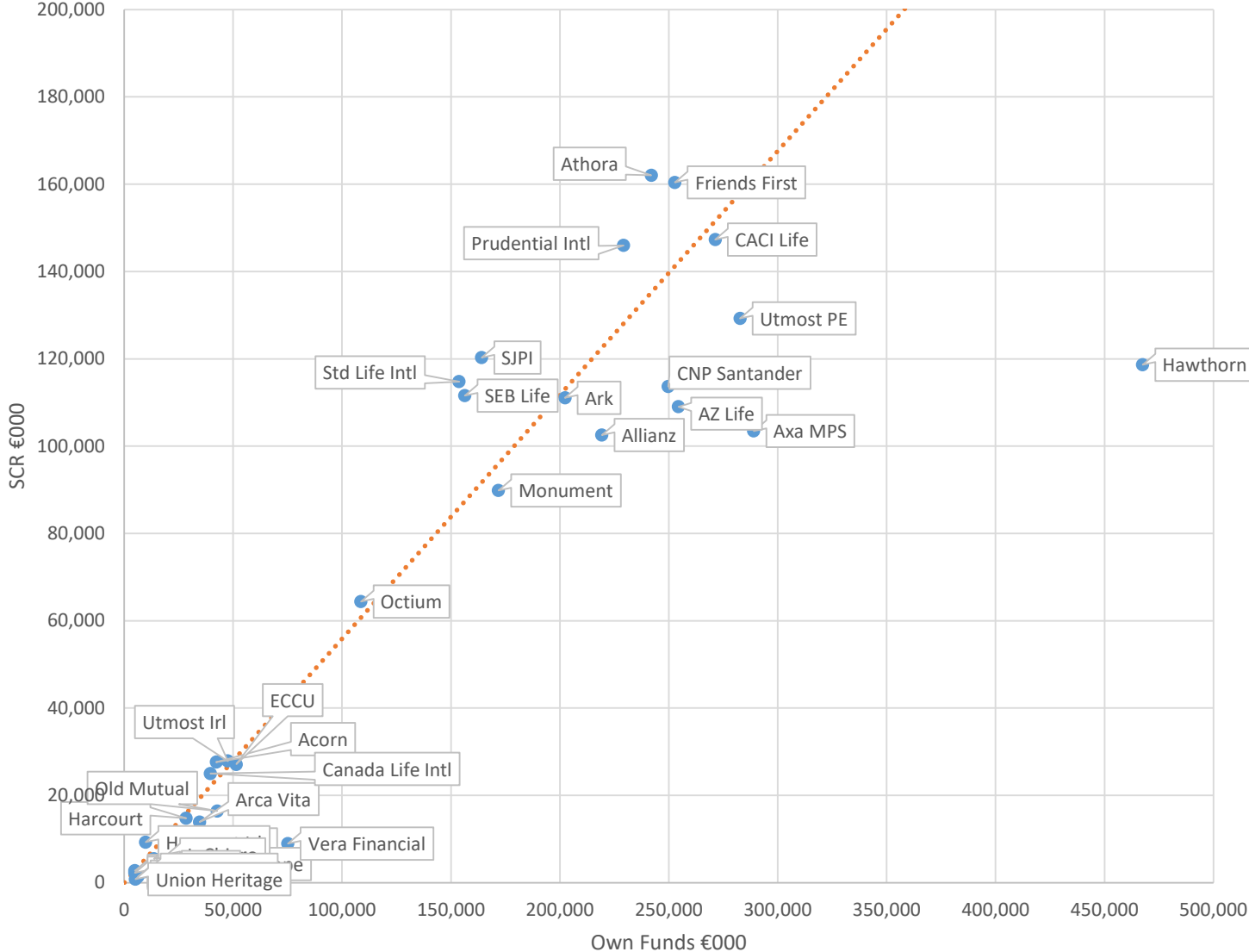
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- 2018 estimate based on information provided by sample companies and 2017 figure otherwise

2017 Distribution of SCR and Own Funds



- Dotted orange line shows average solvency coverage of 179% for Irish life insurers in 2017

2017 Distribution of SCR and Own Funds – Bottom Left Quadrant



- Dotted orange line shows average solvency coverage of 179% for Irish life insurers in 2017

SCR as at 31 December 2017 – Top 10 Irish Companies

	SCR (€m)	SCR Coverage	Type	Internal model?
Zurich Insurance plc	1,933	135%	Non-Life	✓
SCOR Global Life Re	1,653	174%	Life Re	✓
Partner Re SE	1,374	135%	Composite Re	
Irish Life Assurance	1,189	160%	Life	
Hannover Re (Ireland)	940	182%	Composite Re	✓
Canada Life International Re	827	159%	Life Re	
MetLife Europe	813	148%	Life	
Zurich Life Assurance	705	129%	Life	
AXA Life Europe	641	178%	Life	✓
New Ireland Assurance	583	154%	Life	
Top 10	10,658			

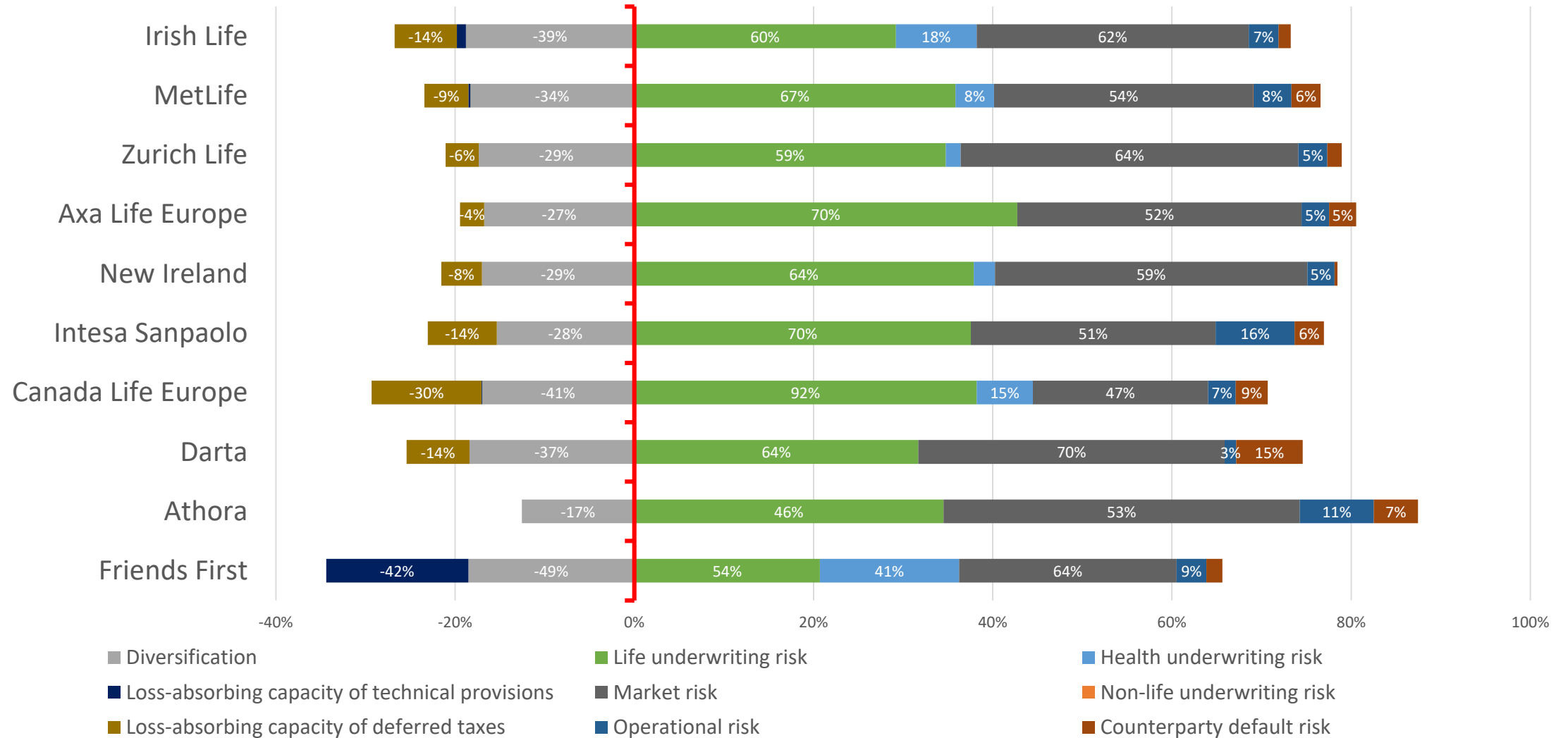
48% of total

SCR as at 31 December 2017 – Top 10 Irish Life Companies

	SCR (€m)	SCR Coverage	Internal model?
Irish Life Assurance	1,189	160%	
Metlife Europe	813	148%	
Zurich Life Assurance	705	129%	
AXA Life Europe	641	178%	✓
New Ireland Assurance	583	154%	
Intesa SanPaolo Life	410	278%	
Canada Life Assurance Europe	318	171%	
Darta Saving Life Assurance	295	227%	
Athora Ireland Plc	162	149%	
Friends First Life Assurance	160	158%	
Top 10	7,081		

75% of total

Life - SCR Coverage



How Milliman can help

- Market research
- Temperature gauge
- Capital optimisation
- Solvency II changes
- Product development (data science)
- Head Office applications and ongoing actuarial support



Thank you

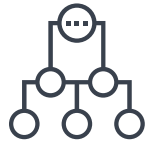
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Data Science in Life Insurance & Reinsurance



What is Data Science?



Machine Learning



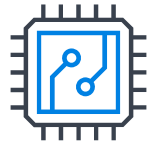
Artificial Intelligence



Data Mining



Data Analytics



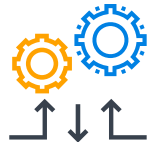
Data Cleaning



Business Intelligence



Data Engineering



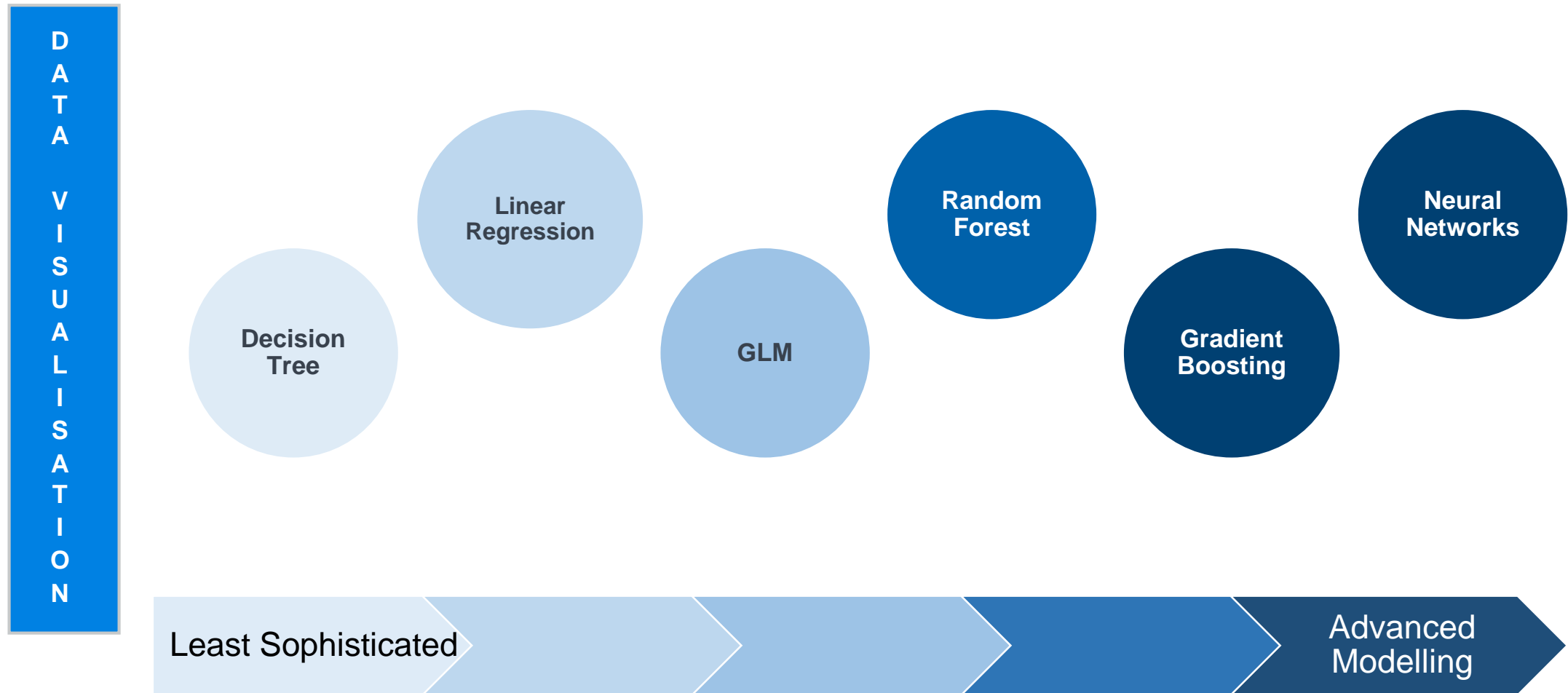
Predictive Analytics



Data Strategy

Data Science Methods

Tools and Techniques used in the application of Data Science



Data Science Applications for Life Insurance

Milliman Case Studies



Data validation and imputation

Dealing with incomplete and dirty data as well as a large number of diverse legacy portfolios

- ✓ Use of advanced techniques to identify missing data patterns to develop more credible experience analysis



Model Validation

Validating an internal model that forecasts future risk exposure

- ✓ Develop a transparent and robust validation process

Distributor Oversight

Improving distributor retention and performance

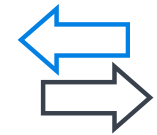
- ✓ Pinpoint underperforming distributors and improve allocation of company's resources



Customer Behaviour

Identifying the key drivers leading to transfers between unit-linked funds and guaranteed funds

- ✓ Understand policyholder behaviour and develop marketing actions to encourage/discourage the propensity to switch



Data Science Applications for Life Insurance

Milliman Case Studies



Cross selling and discounts

Offering customers a discount for purchasing multiple product types

- ✓ Identify best targets, offers and delivery channels for different customer segments



Quotations and pricing

Asking fewer questions when offering an online quotation

- ✓ Improve customer experience and overall efficiency

Customer Engagement

Reducing high rates of policy lapsation



- ✓ Analytics on customer behaviour (e.g. premium payments, queries, complaints) to produce early warning indicators & trigger communications

Targeted Products

Understanding a complex target market with varied customer needs



- ✓ Improved product design and reduced conduct risk

Data Science Applications for Life Insurance


Milliman Case Studies



Data Analysis Architecture

Developing a cohesive data strategy

- ✓ Development of a standardised data science framework across the organisation



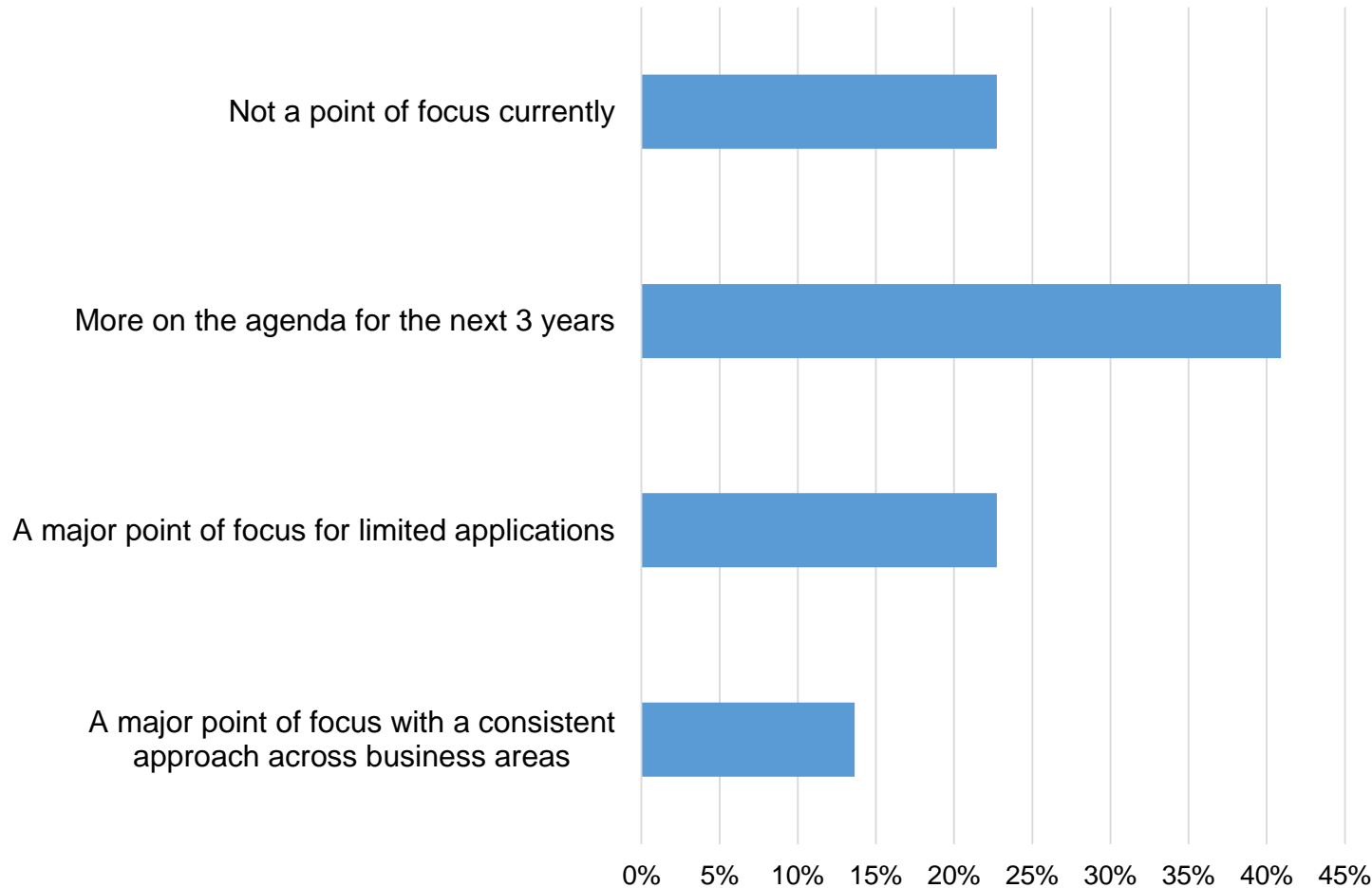
Inforce Management

Understanding customers' use of policy options

- ✓ Identify distinct customer segments and apply predictive modelling to create behavioural profiles for each segment
- ✓ Use insights from behavioural finance, consumer behaviour, family, health, and other facets of the lives of customers

Results from our Client Survey

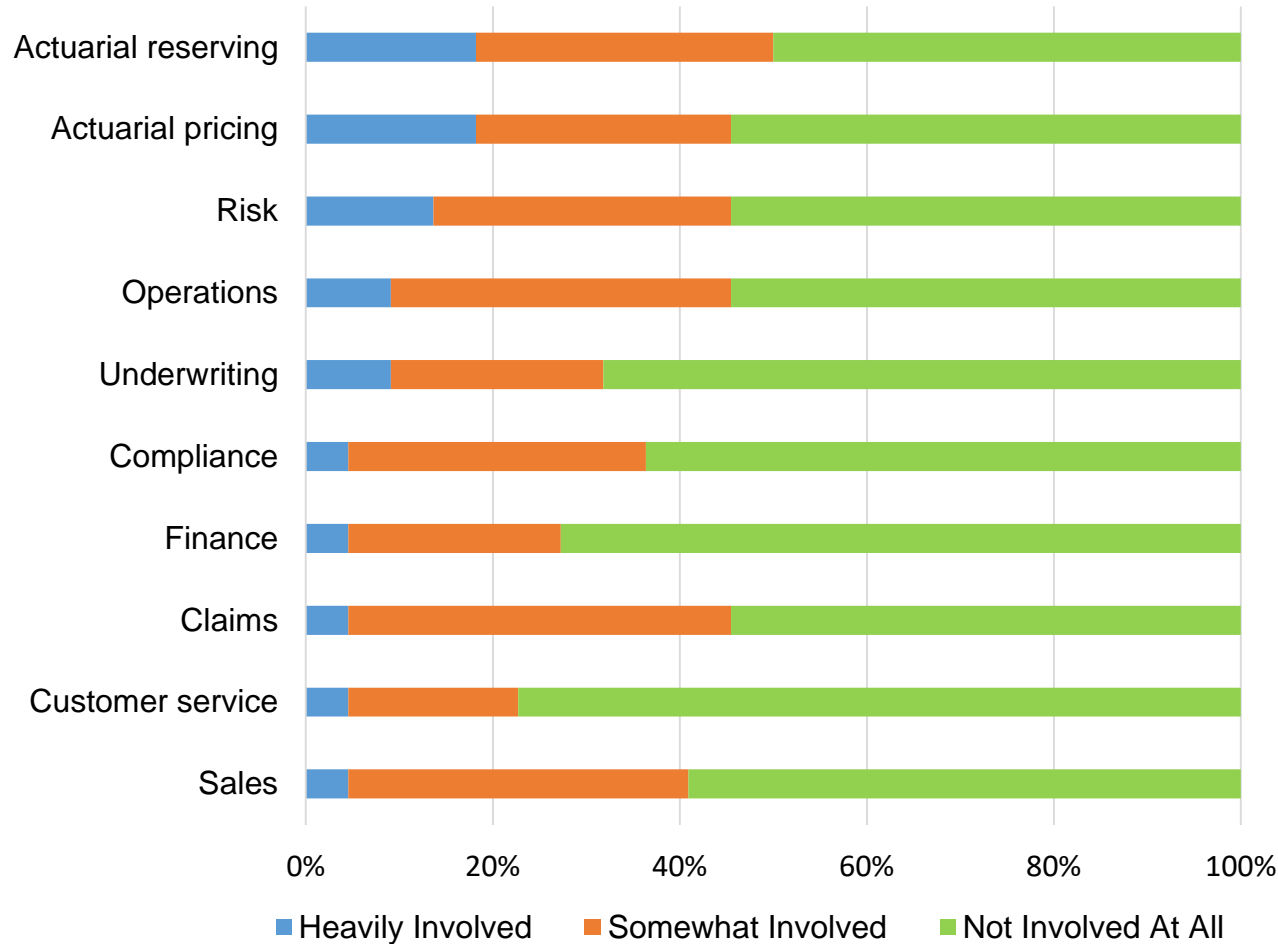
How does data science fit in to your organisation's overall strategy?



✓ Over 75% expect to be using data science within the next 3 years, with over 35% already making it a point of focus.

Results from our Client Survey

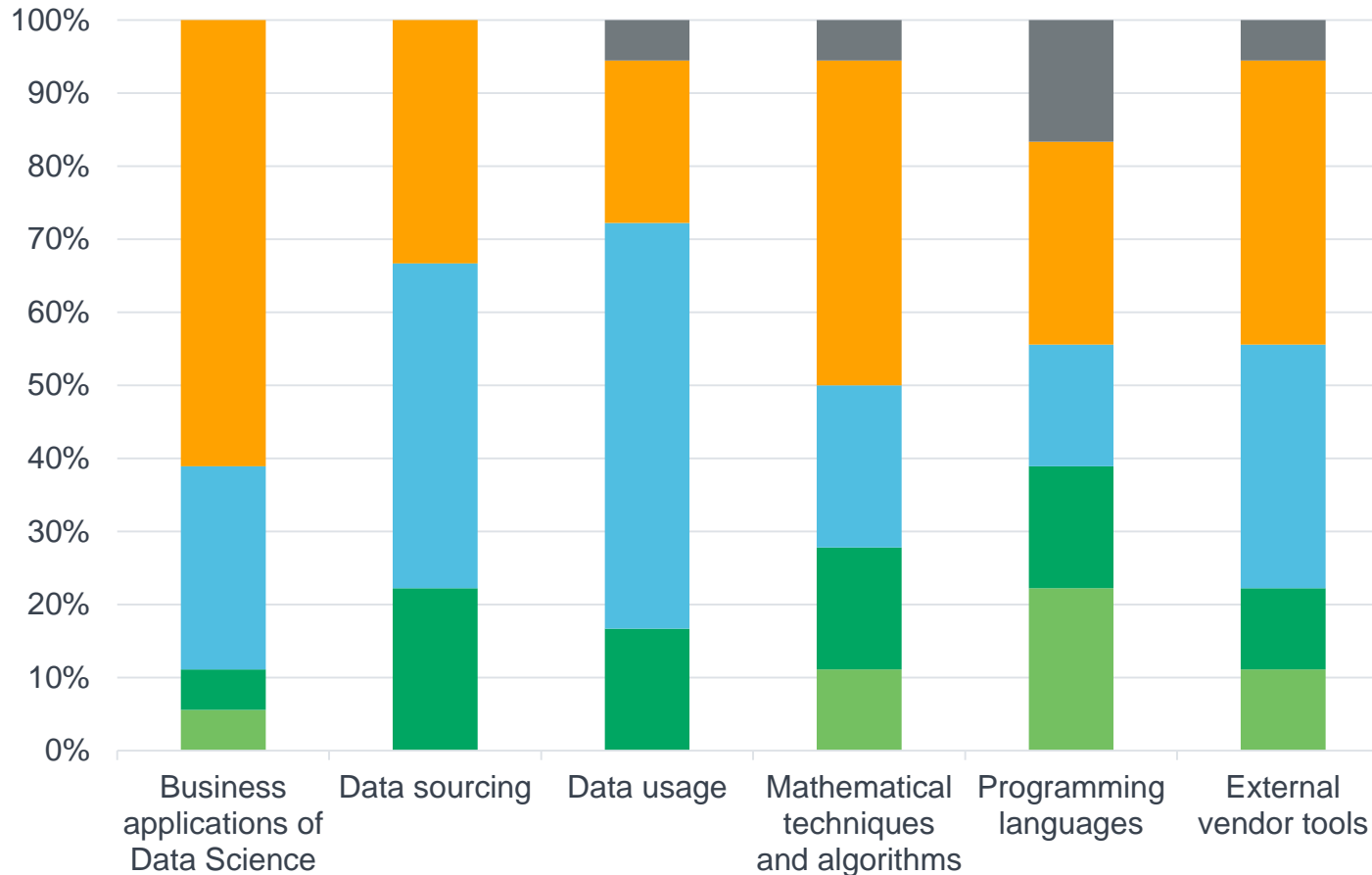
How involved are the business areas with data science applications?



- ✓ Actuarial and risk roles are the most heavily involved in data science applications.
- ✓ We would also expect an increased involvement over time from customer service, underwriting and sales functions.

Results from our Client Survey

What is the level of upskilling required by individuals in your organisation for the following areas?



- ✓ Significant skills gap in business applications of Data Science.
- ✓ All areas would benefit from an increase in the levels of training available to individual
- ❖ Range of 1-5
 - ❖ 1 = No upskilling
 - ❖ 5 = Significant upskilling

Starting a Data Science Initiative

Choosing the right project

Start with a narrowly scope and build on it

Align data science activities with the organisation's overall goals

Ensure adequate funding and access to data

Hiring the right people

Identify tradeoffs between budget and salaries, specialisation and generalisation etc.

Domain knowledge

Start small and grow over time



Key to Success

Creating the team

Encourage cross-functional knowledge sharing

Ensure that project managers have a strong technical understanding in order to have right expectations of their team

Data Governance

Develop an enterprise-wide set of principles around governance of data

Take advantage of emerging data sources such as sales and marketing data, lifestyle data captured by wearable devices, electronic medical records, etc.

The Data Question



- ✓ Data is everywhere
- ✓ First define the problem to be solved
- ✓ Importance of domain expertise
- ✓ Develop a framework for collecting data that is needed for this purpose
- ✓ Pay attention to GDPR and other legislative requirements
- ✓ Put a good data management structure in place



Thank you

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Hot Topics & Regulatory Update

Patrick Meghen

21 MARCH 2019



Presents...

Regulations, Requirements, Legislation & Guidance

1.



2.



3.



4.



5.



Solvency II Review – 2018 (now 2019)

“Interim Review”

- Updated Delegated Regulation text published on 8th March 2019.
- European Parliament and the Council review – 3 months
- Typically enter into force 20 days after the publication in the Official Journal of the European Union

Unrated debt and
unlisted equity

Simplifications on
look-through

Counterparty Default
and risk mitigation
techniques

Loss-absorbing
capacity of deferred
taxes

Own Funds

Calibrations for non-
life premium and
reserve risk, health
and non-life
catastrophe

Simplifications

Presents...

Regulations, Requirements, Legislation & Guidance

1. Solvency II Review

2.



3.



4.



5.



Solvency II Review - 2020

“Full review”

- Commission has issued details on scope of the review and requested advice from EIOPA
- EIOPA must deliver its advice to the Commission by 30 June 2020.
- The Commission is due to finalise its review by the end of that year.
- Evolution, not revolution

SCR standard formula

Long Term Guarantees package

Risk Margin

Recovery & Resolution

Insurance Guarantee schemes

Preventing cross border failures

Investments / Long Term Equities

Proportionality & thresholds

Divergence of Best estimate calculation

Reduce reliance on external ratings

Presents...

Regulations, Requirements, Legislation & Guidance

1. Solvency II
Review 2018

2. Solvency II
Review 2020



IFRS 17

- Industry concerns - timeline and technical issues
 - Proposed 1 year delay to 1 Jan 2022
 - Proposed amendments to IFRS 17
 - IASB criteria for amendments
- 25 points raised by industry
 - 16 no changes implemented
 - 7 where changes made
 - 2 where changes made but not as much as hoped
- Amended exposure draft expected towards end of Q2

Changes

- Accounting for reinsurance of onerous insurance contracts
- Accounting for direct participating contracts when reinsurance contracts held are used to mitigate financial risk
- Accounting for insurance acquisition cash flows that relate to future contract renewals
- Allocating the contractual service margin in the general measurement model to investment return services

No Change

- Level of Aggregation

Presents...

Regulations, Requirements, Legislation & Guidance

1.
Solvency II
Review 2018

2.
Solvency II
Review 2020

3.
IFRS 17



Outsourcing

- On site inspections & cross sector survey
- Discussion Paper – 19th November 2018
 - Part A – minimum expectations – Governance, Risk Management, Business Continuity
 - Part B – key risks
 - Appendix – questions for the test
- Industry Event on Outsourcing on 30 April 2019
- Will continue to be a key area of focus.
 - Expect better monitoring and risk management of outsourcing

Presents...

Regulations, Requirements, Legislation & Guidance

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Solvency II
Review 2018

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IFRS 17

4.
Outsourcing

5.



Other developments

Recovery & Resolution

Area of focus for the CBI, EIOPA also noting it for the 2020 review

Has been requested of some firms in Ireland, and sometimes as part of licence application or change to business plan.

Diversity & Inclusion

Several publications on diversity and inclusion

Will be a focus for the CBI and links in with the work done and ongoing in relation to culture



Other Updates

Operational Risk

Thematic inspections expected (and on-going) in relation to operational risk.

Build upon and includes the outsourcing thematic inspections and recent discussion paper

Regulatory Convergence Agenda

Brexit is a key focus and has created new types of business and risk (e.g. large with profits books, specialist non-life writers)

Also need to keep pace with emerging EIOPA Q&A's



Thank you

Patrick Meghen

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