




GUY CARPENTER

Lessons learnt from the Ogden Discount Rate changes in 2017 Focus on Reinsurance IAA Lecture

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1 | WHAT HAPPENED IN THE UK?

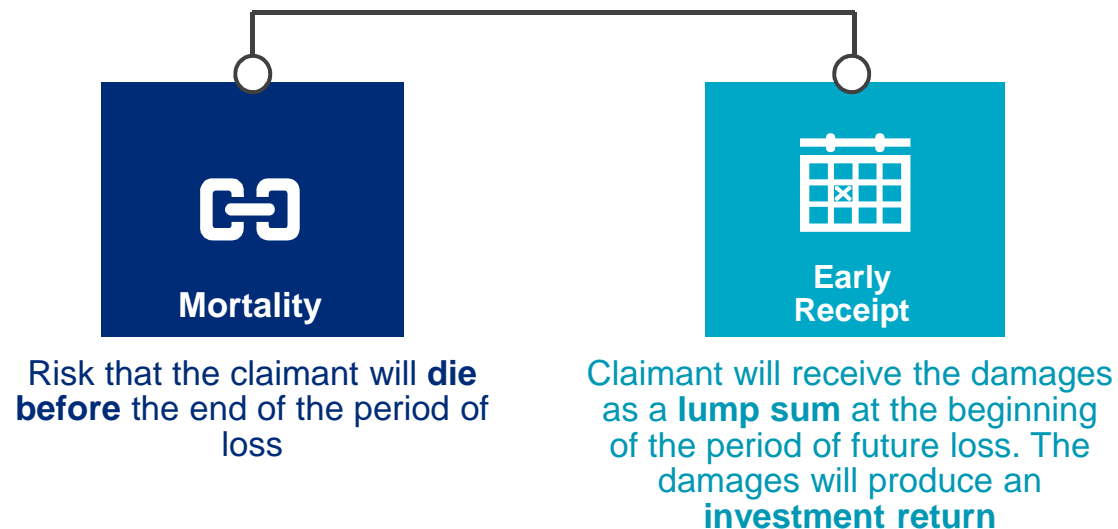
What is the Ogden Discount Rate (ODR)?

Quick Recap

The Ogden Tables: Actuarial tables of multipliers used to calculate future losses in personal injury cases.

The Ogden Working Party: Set up in 1984 by the Lord Chancellor under the chairmanship of the late Sir Michael Ogden QC.

At that time judges assessed future losses by applying common law multipliers..

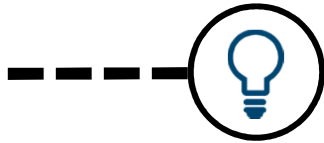


Court Case: Wells v Wells 1999 1 AC 345

What Happened In The UK?

7th December 2016

7th December
2016



7th December 2016 – Statement from the Lord Chancellor:

“The Lord Chancellor is today undertaking to review the discount rate for personal injury damages awards, and to announce the result of the review by 31 January 2017.”

The review was announced following the commencement of legal action from [“The Association of Personal Injury Lawyers”](#)

“People with lifelong injuries are continuing to be undercompensated, in some cases, by hundreds of thousands of pounds, because successive governments have dragged their heels and failed to review the discount rate to reflect changes in the economy,” said the President of APIL, Sugarman.

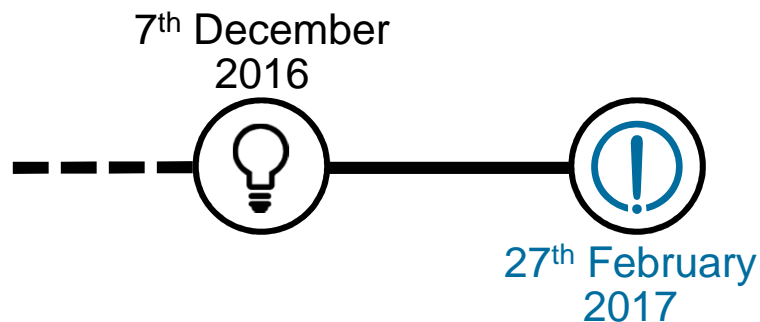


The ABI are pushing for a break from the link to index-linked gilts:

“It is vital that claimants get the compensation they are entitled to, based on a formula that reflects how they are likely to invest it.” - Director General of the ABI, Huw Evans

What Happened In The UK?

1st February 2017



27th February 2017 – Statement from the Lord Chancellor:

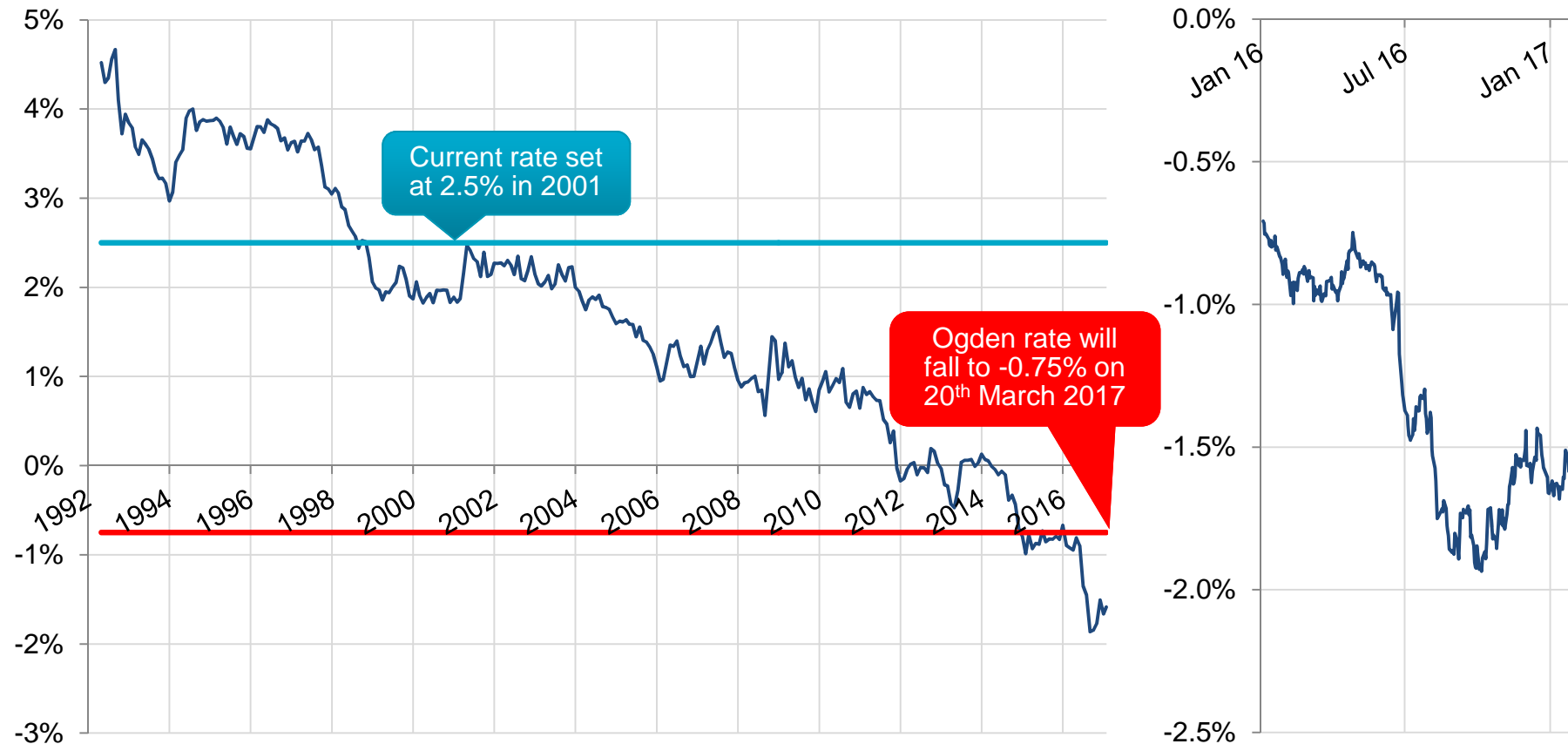
“Having completed the process of statutory consultation, I am satisfied that the rate should be based on a three year average of real returns on index-linked gilts. Therefore I am setting it at minus 0.75%. A full statement of reasons, explaining how I have decided upon this rate, will be placed in the Libraries of both Houses. The Statutory Instrument to effect this change has been laid today, and will become effective on 20 March 2017.”



Motor

Discount rate announcement – Progression of the UK real yield

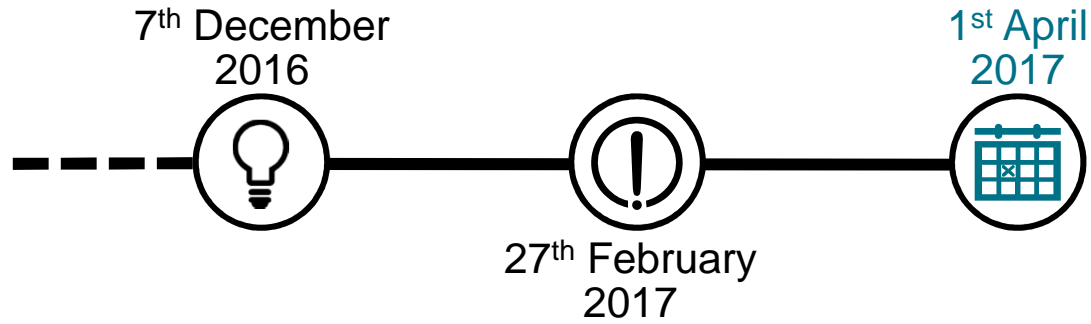
Change in UK Real Yield Curve



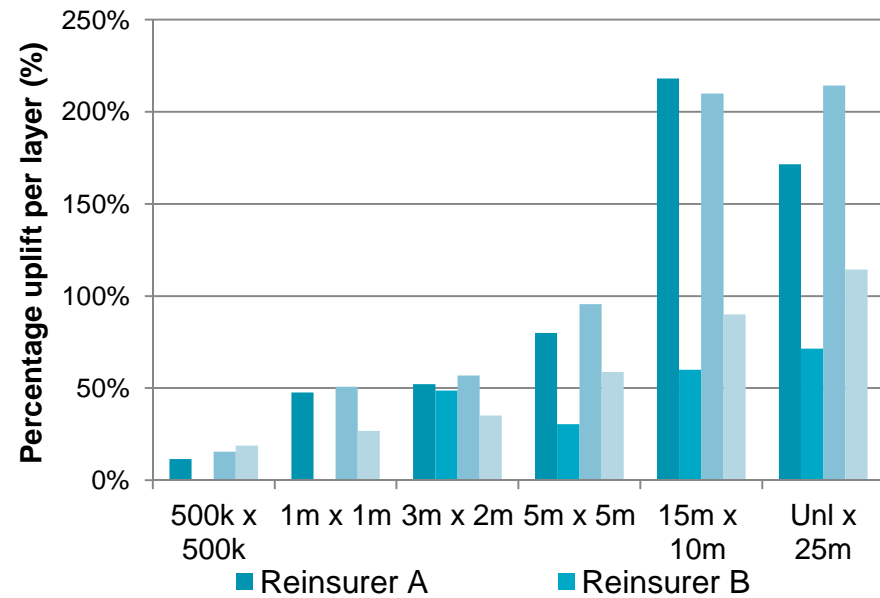
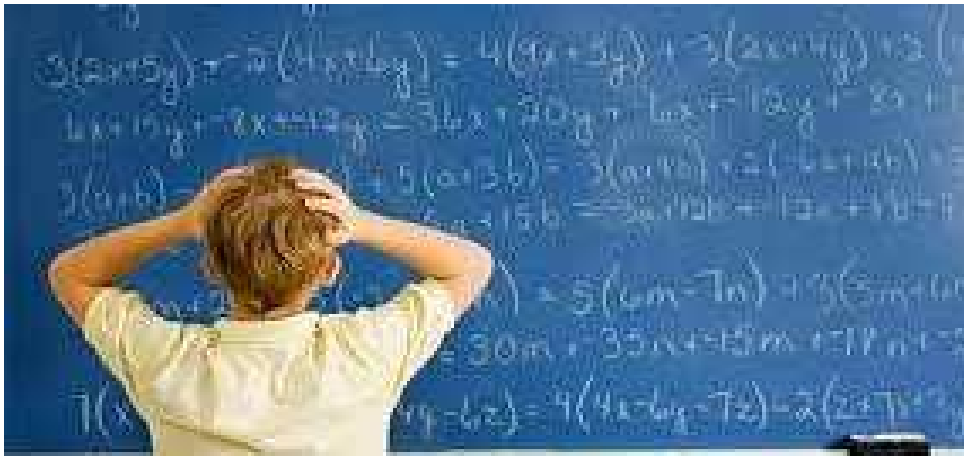
Source: Guy Carpenter analysis of BoE data
Real yields, 20-year duration, spot curve

What Happened In The UK?

1st April 2017

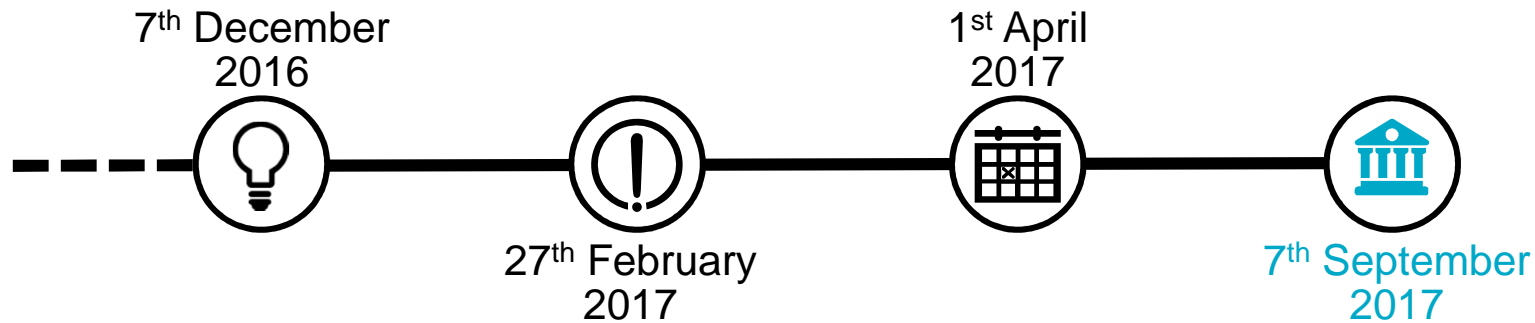


1st April 2017 – Market Quotes Varied



What Happened In The UK?

7th September 2017



7th September 2017 – Statement from the Lord Chancellor:

The draft legislation states that “based on the evidence currently available and without fettering the exercise of the Lord Chancellor’s discretion in the future, the Government would expect that if a single rate were set today under the new approach the real rate might fall within the range of 0% to 1%.”

New Framework - Announced and put before Parliament for setting the Ogden rate.

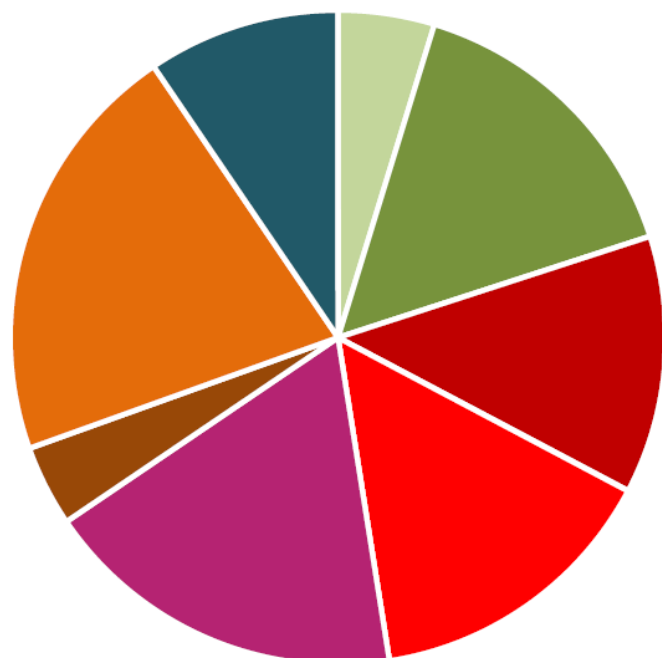
Involves reference to expected rates of return on a low diversified portfolio of investments. The Ogden Rate can be reviewed every 3 years.



What is this New Framework?

GAD Analysis

Portfolio A



- Conventional Fixed Interest Gilts
- Overseas Equities
- Commercial Property
- Cash
- Index Linked Gilts
- UK Equities
- Hedge Funds
- UK Investment Grade Corporate Bonds

Portfolio B

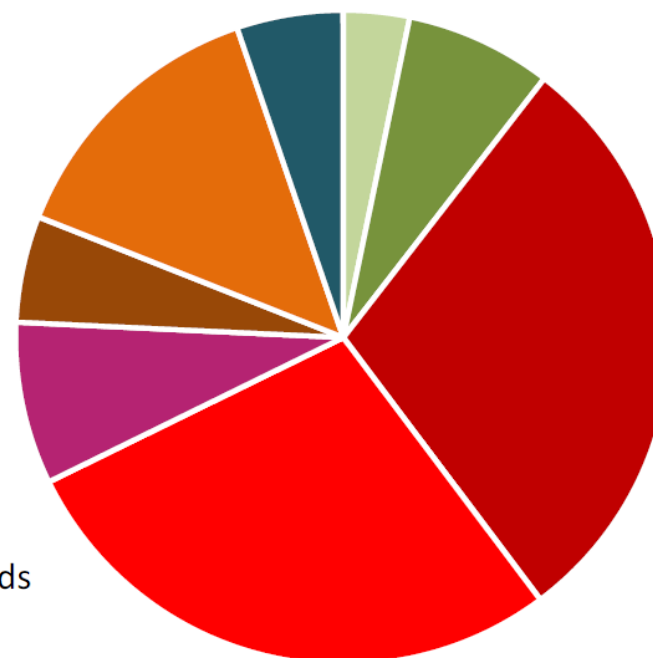


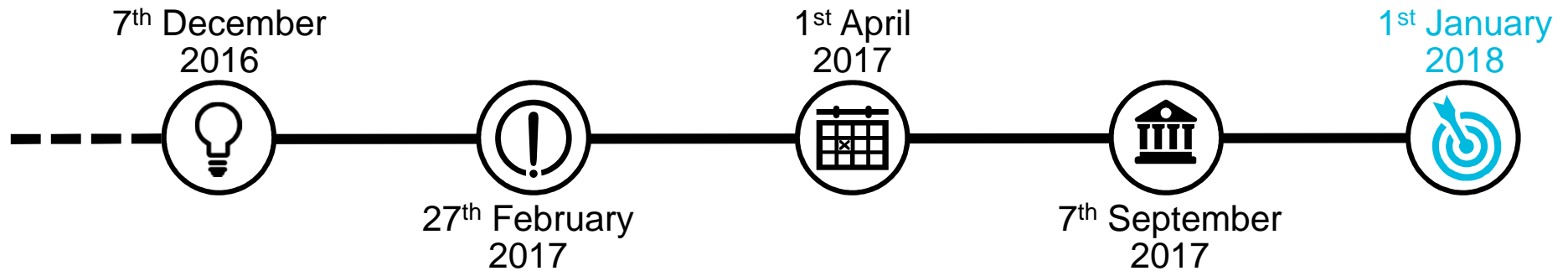
Table 9 – Median assumed portfolio return simulations

Median money weighted real return %pa	Award period / investment horizon					
	5 years	10 years	15 years	20 years	30 years	50 years
Portfolio A	0.0%	0.6%	1.0%	1.2%	1.3%	1.6%
Portfolio B	0.0%	1.3%	1.7%	1.9%	2.0%	2.3%

Note: returns are in excess of RPI

What Happened In The UK?

1st January 2018



Huge amount of deviation – Methodology used differs by insurers and by reinsurers.

Reinsurance – Changes to the way reinsurance was perceived.

Rating Models – Exponentially increased sophistication.

Actuaries – at the forefront.



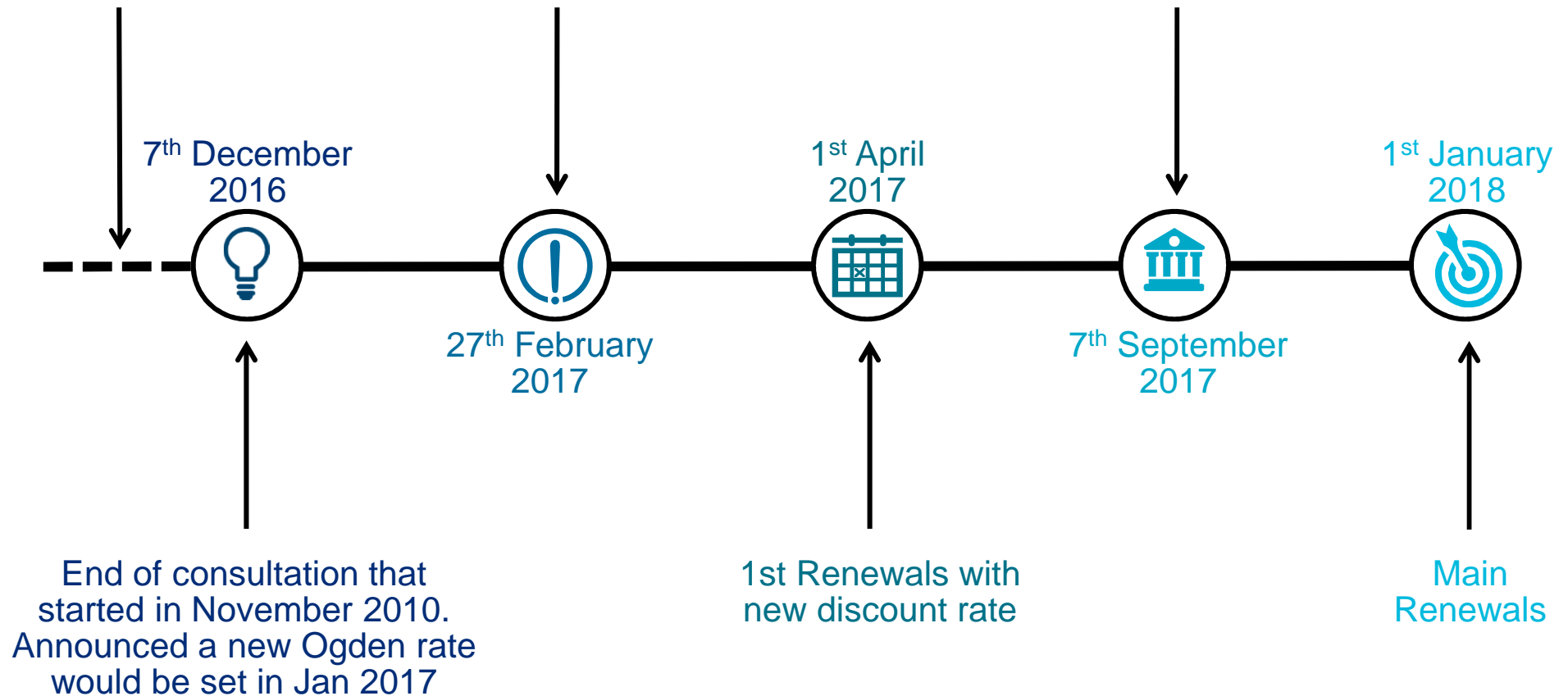
What Happened In The UK?

Timeline

Set at 2.5% in 2001. Set as average ILGS over the previous 3 years

Ogden Discount rate unexpectedly set at -0.75%

New framework set. Ogden Discount rate will be changed to between 0% and 1%





2 | IMPLICATIONS FOR INSURANCE COMPANIES

What Happened In The UK? Newspapers and Media Reactions

**Insurance premiums 'set to soar'
after compensation changes**
- BBC News 27th February 2017

**Insurance stocks crash
on Government cut to
Ogden discount rate**
- Aol. 27th February 2017



**UK insurers hit back at 'crazy'
personal injury rate change as
share prices tumble**
- The Telegraph 27th February 2017

UK Car Premiums Rise by 16%
- Insurance Journal - 11th April
2017

What Happened In The UK? Company's Reactions

Ageas announced it will incur a **€55 million** hit in its **fourth-quarter 2016** results

Aviva posted an exceptional charge of approximately **£385 million** as results of the change

QBE took a hit of **£129 million**

Direct line took a hit of **£230 million** to its full year results

Admiral took a hit of **£105 million**



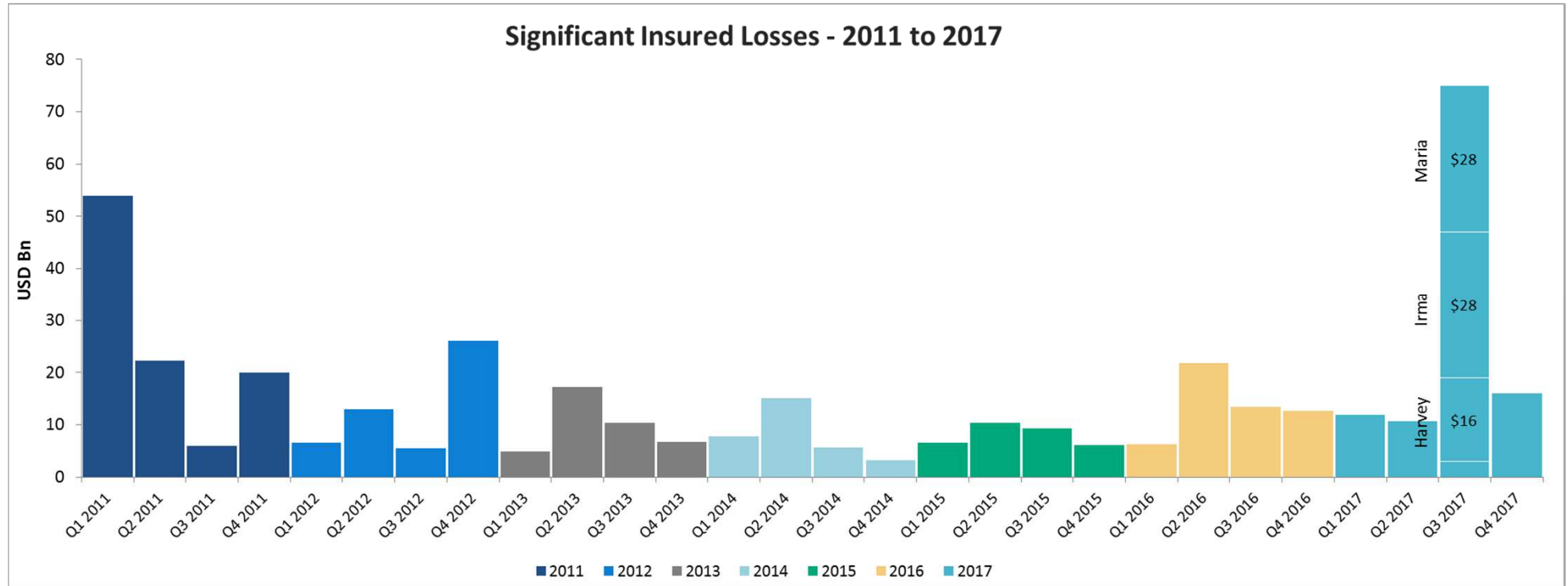
Analysing the public statements made by insurers have estimated a **total market impact** on reported results of **£2 billion** which equates to some **18%** of the motor market **written premium**.

Across the industry, the overall cost across all claims that are effected is estimated at **£7 billion** with ongoing annual costs of **£1.2 billion** thereafter.

Reinsurance cost increases are higher for higher layers

Market Drivers

Global Significant Insured Loss Activity: 2011 – 2017

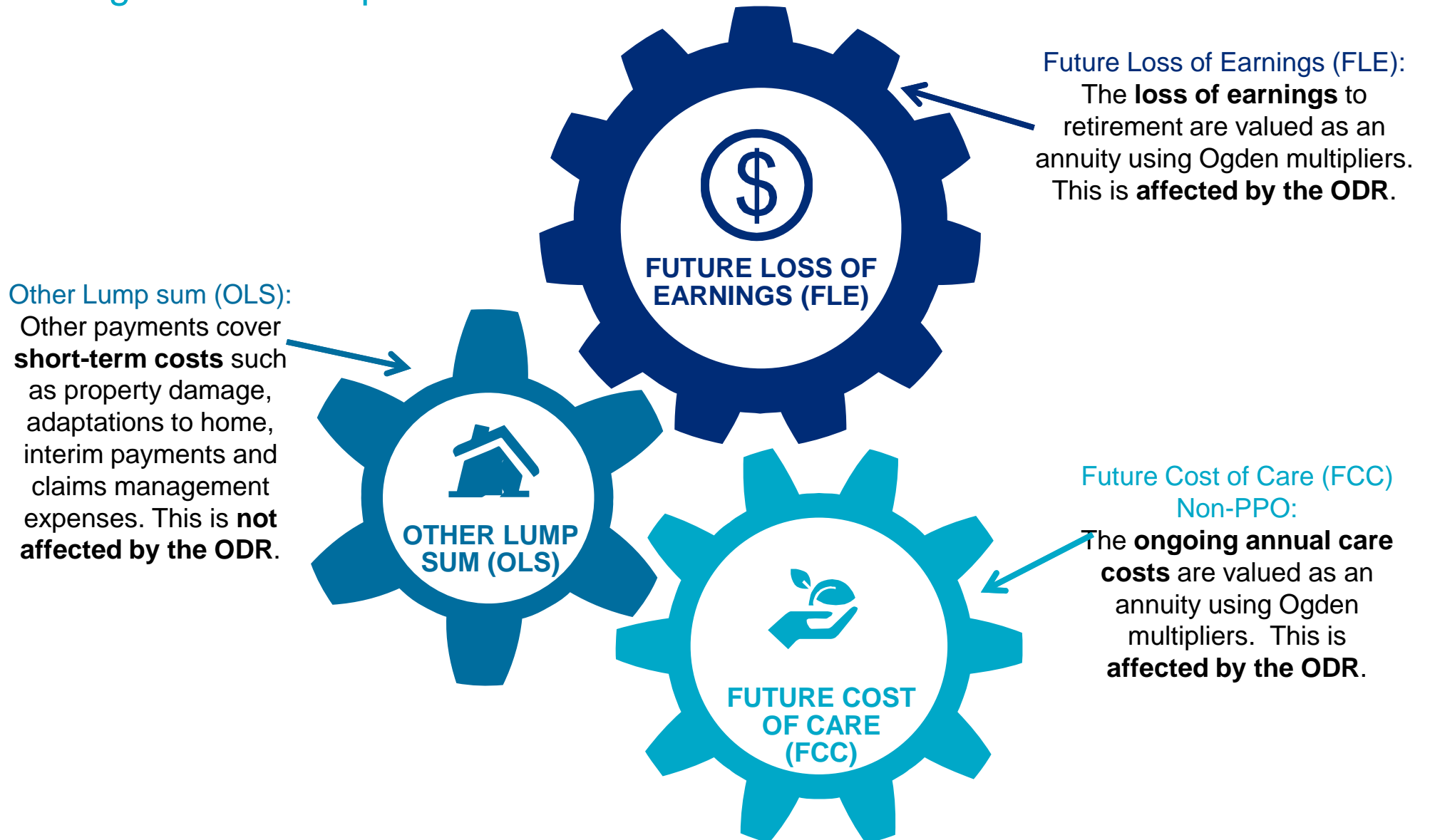


2017 loss estimates currently total USD111 million xNFIP; Q3 and Q4 losses such as Harvey, Irma, Maria, Mexico EQ and CA wildfires are preliminary estimates subject to significant uncertainty

Source: Press releases, PCS, Perils, GC Business Intelligence

After a light first half of the year 2017 is projected to generate over \$100 billion of insured loss based on current estimates. Only two other years, 2005 and 2011, have surpassed this mark.

Implications for Insurance Companies - Pricing Large Claim Components



Implications for Insurance Companies - Pricing Impact on Ogden Multipliers

Sensitivity to Ogden discount rate: For an annual payment of 100k for life, the Ogden Lump Sum amount under different Ogden discount rate assumptions would be:

Age:		16		30		30		55	
Gender:		Male		Male		Female		Female	
		Value	Change	Value	Change	Value	Change	Value	Change
Ogden Rate	2.50%	3.3m	0%	3.0m	0%	3.1m	0%	2.2m	0%
	1.50%	4.3m	32%	3.7m	26%	3.9m	27%	2.6m	17%
	1.00%	5.1m	53%	4.2m	43%	4.5m	46%	2.8m	27%
	0.00%	7.2m	117%	5.6m	90%	6.0m	96%	3.4m	53%
	-1.00%	10.7m	226%	7.8m	162%	8.4m	174%	4.1m	86%
	-2.00%	17.1m	418%	11.2m	277%	12.3m	300%	5.1m	130%

Please note we are only considering the FCC part of the claim here

Implications for Insurance Companies - Pricing Rates

SEGMENTS



Deciding what **segments** to price and how.

- More **competition** in the market for 30-55 year olds
- Pricing **opportunities** for younger and older drivers

OGDEN RATE



Pricing for **future** changes

- Allowing for the announcement on the 7th of September

REINSURANCE



How to factor in **reinsurance** costs in pricing

- What will the impact of Ogden be on reinsurance rates and structures?

CLAIMANTS



Possibility **Claimants** bearing risk

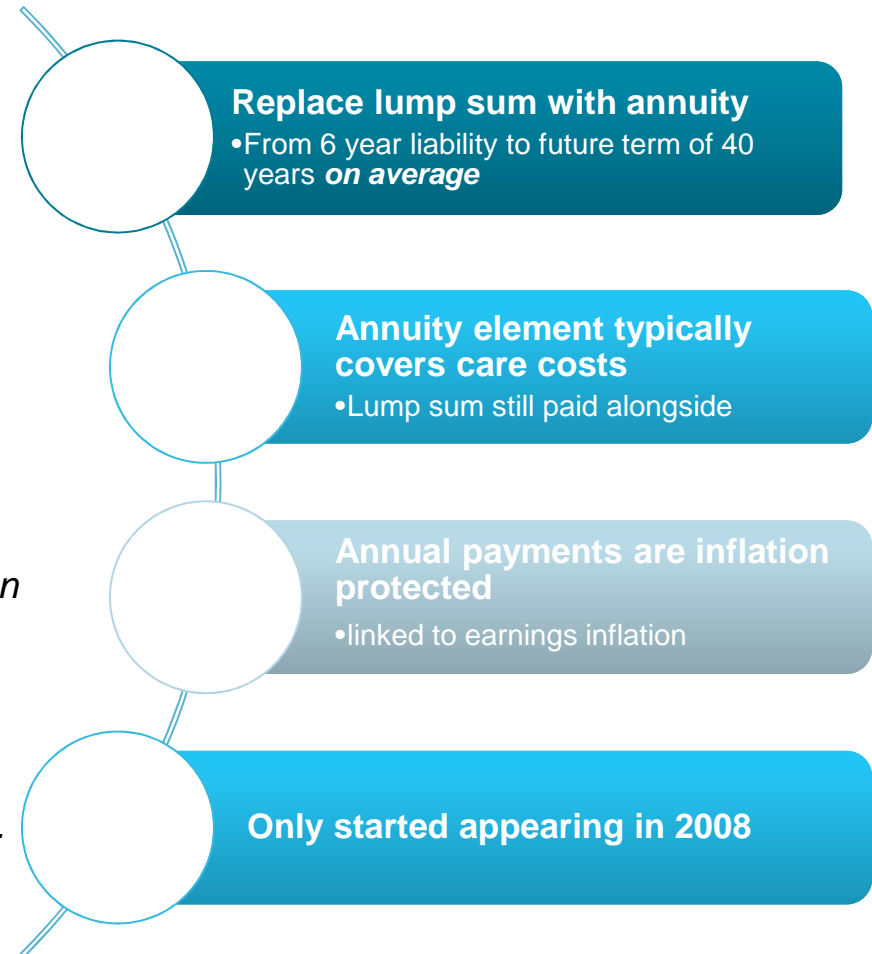
Implications for Insurance Companies - Pricing PPO Propensity

PPO versus non-PPO Loss Costs

Lump sum settlements - valued using the **Ogden discount rate**.

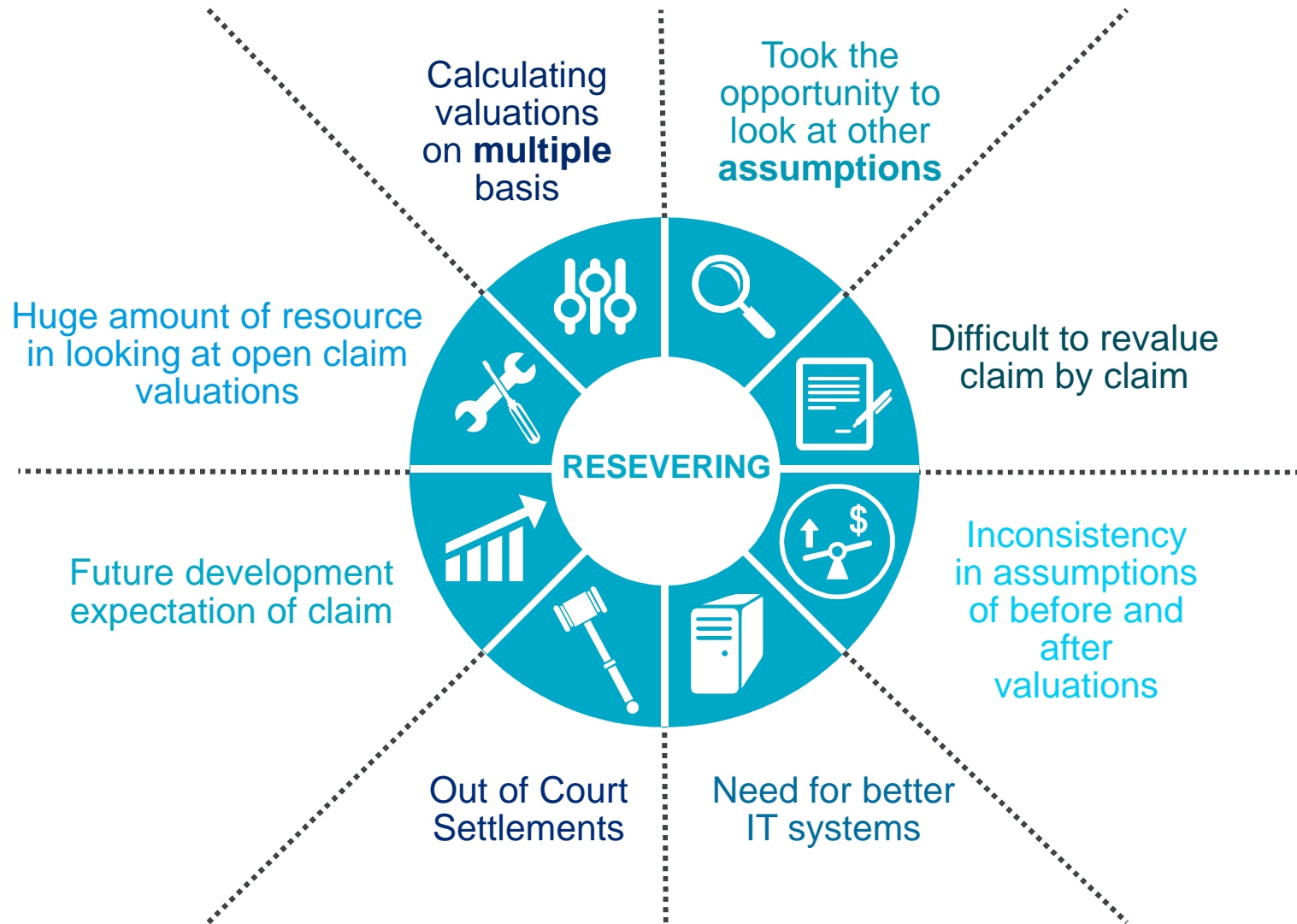
PPOs - valued using the **company's economic view** of the **Real Discount Rate (RDR)**.

- *If the company's **RDR is lower** than the Ogden rate then the PPO should **cost more**.*
- *If the company's **RDR equals** the Ogden rate then the PPO and Lump Sum should have an **equivalent expected loss cost**.*
 - *PPOs are capital intensive*
 - *Difference in the indexation of limits will lead to some difference in reinsurance recoveries.*



PPO Propensity: PPO propensity **reduces** as the Ogden discount rate **reduces**.

Implications for Insurance Companies Reserving Complications



Implications for Insurance Companies

Our Uplifts

	Increase from 2.50% Discount Rate			
	1.00%	0.50%	0.00%	-0.75%
Unl xs 1m	15%	23%	35%	56%
Unl xs 2m	15%	25%	38%	65%
Unl xs 3m	15%	25%	39%	69%
Unl xs 5m	16%	27%	43%	81%
Unl xs 10m	18%	32%	52%	109%

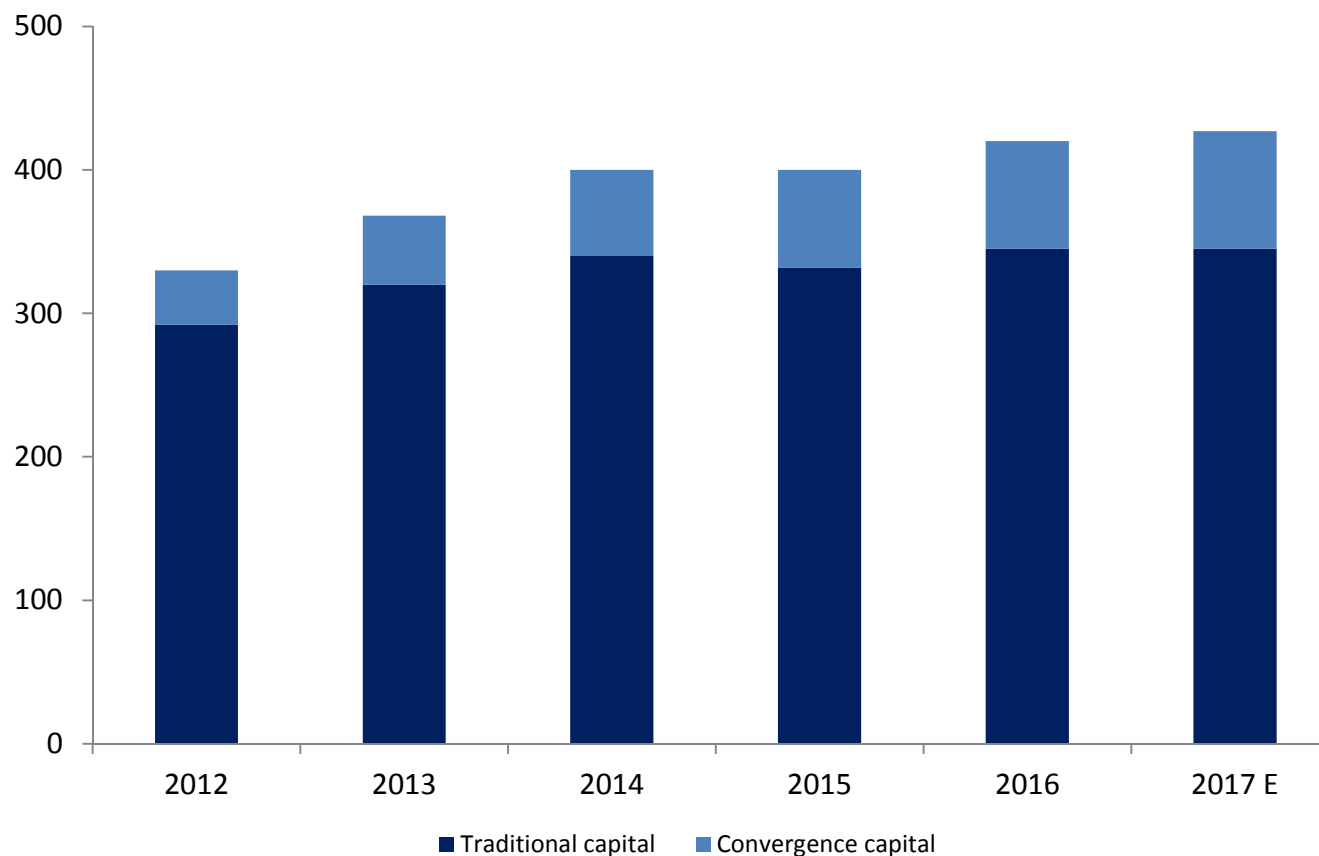
	Increase from 2.50% Discount Rate			
	1.00%	0.50%	0.00%	-0.75%
2m xs 1m	14%	21%	29%	40%
2m xs 3m	14%	21%	31%	45%
5m xs 5m	14%	23%	35%	57%
Unl xs 10m	18%	32%	52%	109%

Assumptions

- Fully indexed, non-capitalised XoL treaty.
- 50% reduction in PPO propensity for Ogden rate of -0.75%; 25% reduction in PPO propensity for other Ogden rates.
- Real Rate of Return of -0.5%.
- Standard personal lines motor portfolio.

Market Environment

Dedicated Reinsurance Capital Continued to Increase



Source: Guy Carpenter, AM Best

Estimated dedicated reinsurance capital grew 2% overall despite over \$100 billion of catastrophe loss; traditional capital was flat with 9% alternative capital growth through year end 2017.



3 | RATING

How to estimate the cost of Motor treaties

Rating Methodology

Difficulties – Previously the data from insurers had been very homogenous. However, every insurer had their own way of presenting the data with the change for Ogden. Sometimes the lead diagonals:

- *On 2.5% basis, with a separate list on -0.75% for open claims.*
- *On -0.75% for open claims*
- *On a mix of different discount rates – (Sometimes PPOs valued at RDR)*
- *With 2 leading diagonals, one on 2.5% and one on -0.75%.*



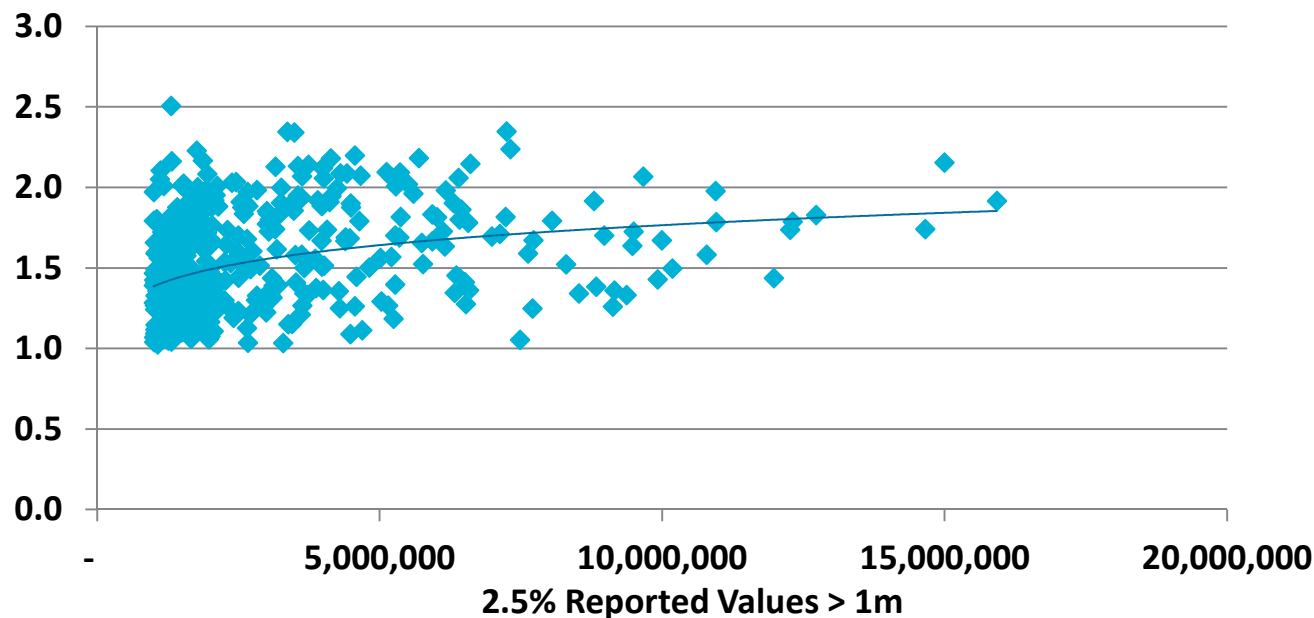
Ogden Revaluations: When receiving the claim data on different valuation basis, we wanted to validate these changes by checking that they were inline with the rest of the market.

- *This involved lots of communication with the insurers.*

Data Preparation - We wanted to give the triangles on a 2.5% basis, with extra information of claims on different discount rates where it was available.

- *This enabled us to separate the Ogden impact from the claim development.*

Ogden Rate Change Market Uplifts



Client Data - We have claim data of “before” and “after” the Ogden rate change impact. The uplift factors are plotted on the graph above.

Validation – All the claim uplifts were validated against the market, and what is possible from the Ogden tables.

- *Some clients use different life expectancy assumptions which can have a significant impact on their average size of uplift.*

Market Curve – To get our market uplifts we fitted a Lognormal curve, by claim size to get a distribution around uplift factors.

How to estimate the cost of MBI programmes

Rating Methodology

Burning cost and Frequency Analysis – On a 2.5% Basis

- *Open Claims – use actual 2.5% valuations provided by clients, if unavailable use market data set to revalue claims to 2.5%.*
- *Settled Claims –*
 - *Pre Ogden Discount Rate change – use previous value as would of settled at 2.5%*
 - *Post Ogden Discount Rate change – use market data set to revalue settled claims to their 2.5% equivalent valuation.*

When using the market data set the calculations are performed stochastically as the variability in Ogden uplift factor is material.

This approach can be used to revalue claims on any discount rate.

Future Projection –

- *2.5% Basis so we have a like for like comparison to 2017 Renewal*
- *0% Basis – Conservative view of reinsurer pricing (lower end of expected 0% - 1% range)*

How to estimate the cost of MBI programmes

Stochastic Uplift Model

Parameterisation – Parameterised on a 2.5% basis

- For each client fit to frequency, severity and payment pattern
- PPO Calibration takes place prior to uplifting the claims (on a 2.5% basis)

UPLIFTED COMPONENTS



NON PPO

Apply a random uplift factor to each claim based on the size of the claim and our market data set



PPO PROPENSITY

Reduced expected PPO Propensity by 50% for -0.75% basis, and by 25% for 0% to 1% basis



PPO LUMP SUM

Uplifted for Ogden using a lighter uplift distribution based on market uplifts excluding FCC component. A lighter distribution is used to reflect Ogden affected heads of damage included in lump sum parts of PPOs. Annual payment stream unchanged.



4 | REST OF THE WORLD

Rest of the World Discount Rate Changes

Country developments

Republic of Ireland – expected to confirm a formal change in the discount rate used, subject to a final hearing in the Supreme Court

- *Current rate of 3% will be reduced to:*
 - *1.5% for loss of earnings*
 - *1% for future cost of care*

European parliament review

Israel – Winograd Commission



4B | WINOGRAD

Winograd Uplift Against Discount Rate

Discount Rate Change from 3% to 2%

		Future Earnings Years				
		50	40	30	20	10
Loss of Earnings Exposure	70%	15.5%	12.8%	10.0%	6.9%	3.7%
	60%	13.3%	11.0%	8.6%	5.9%	3.2%
	50%	11.1%	9.2%	7.1%	5.0%	2.7%
	30%	6.6%	5.5%	4.3%	3.0%	1.6%
	20%	4.4%	3.7%	2.9%	2.0%	1.1%

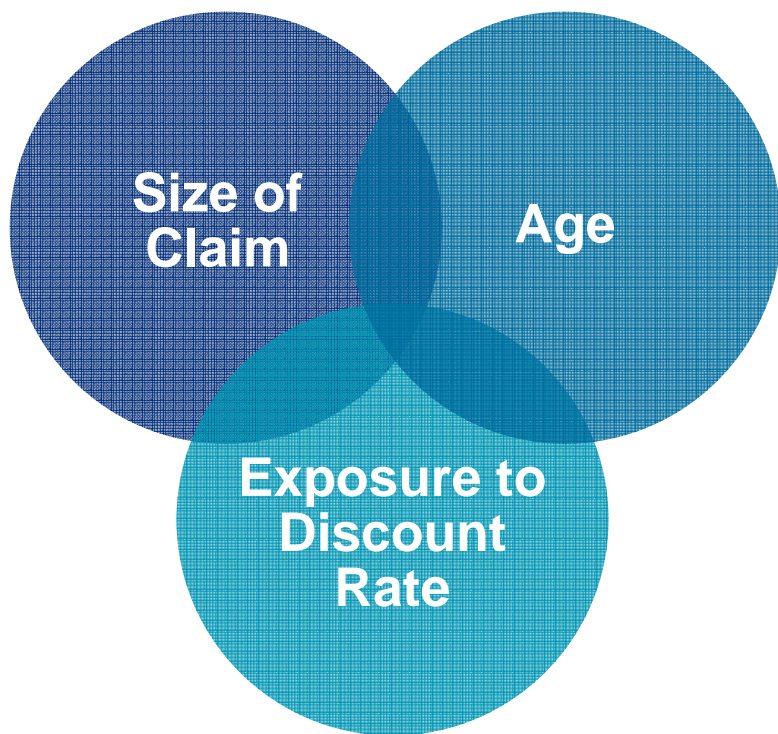
Discount Rate Change from 3% to 1%

		Future Earnings Years				
		50	40	30	20	10
Loss of Earnings Exposure	70%	36.6%	29.4%	22.2%	14.9%	7.7%
	60%	31.4%	25.2%	19.0%	12.8%	6.6%
	50%	26.2%	21.0%	15.8%	10.6%	5.5%
	30%	15.7%	12.6%	9.5%	6.4%	3.3%
	20%	10.5%	8.4%	6.3%	4.3%	2.2%

Winograd

Uplift from 3% to 2%

Key Determinants



MODELLING



Need to build a **curve** for key determinants

- Use in **pricing** and **reserving** models
- Build in **randomness**

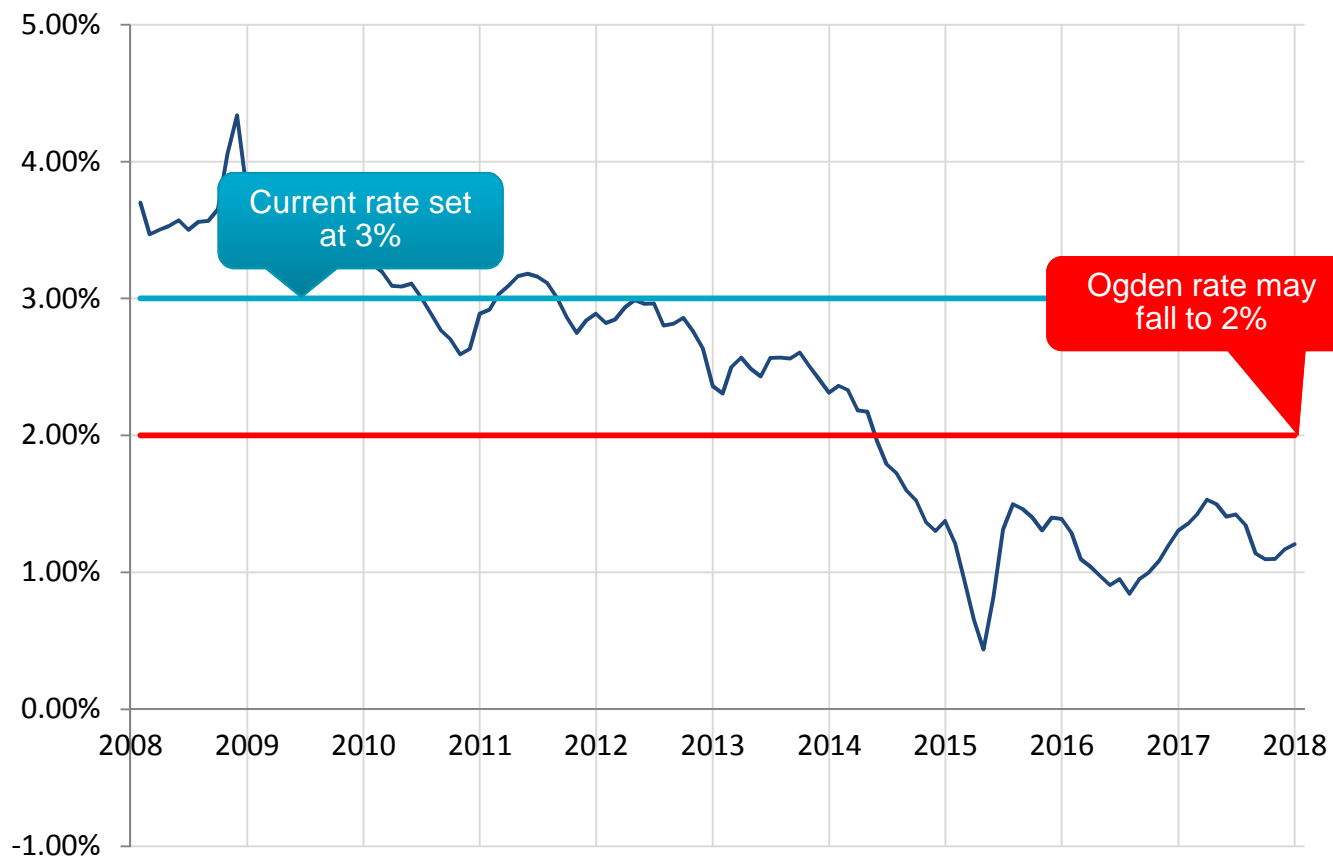
VALIDATE



Scenario test to 1%

Winograd Progression of the Israel Zero Coupon Real Yield

Change in Israel Zero Coupon Real Yield Curve



Source: Guy Carpenter analysis of Bank of Israel Data data
Real yields, 20-year duration, spot curve

Summary

SHOCK



ODR change was a **shock** to the UK **motor** market

COMPLEX



Complex issue with many moving parts

STAKEHOLDERS



Different **stakeholders** have dealt with the issue in different ways

ROLE OF ACTUARY

Greater **demand** for **actuarial** input and understanding

DATA

Greater need for improved **claims** processing and **data systems** flexibility

INFORMATION

Need to push for better **information**

COMMUNICATION

Need to communicate **uncertainties** to **stakeholders**

Good Luck!



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This presentation (report, letter) is not intended to be a complete actuarial communication. Upon request, we can prepare one. We are available to respond to questions regarding our analysis.

There are many limitations on actuarial analyses, including uncertainty in the estimates and reliance on data. We will provide additional information regarding these limitations upon request.

As with any actuarial analysis, the results presented herein are subject to significant variability. While these estimates represent our best professional judgment, it is probable that the actual results will differ from those projected. The degree of such variability could be substantial and could be in either direction from our estimates.

The estimated cash flows may vary significantly from amounts actually collected, particularly in the event that a reinsurer is unwilling or unable to perform in accordance with the terms of the reinsurance contract.