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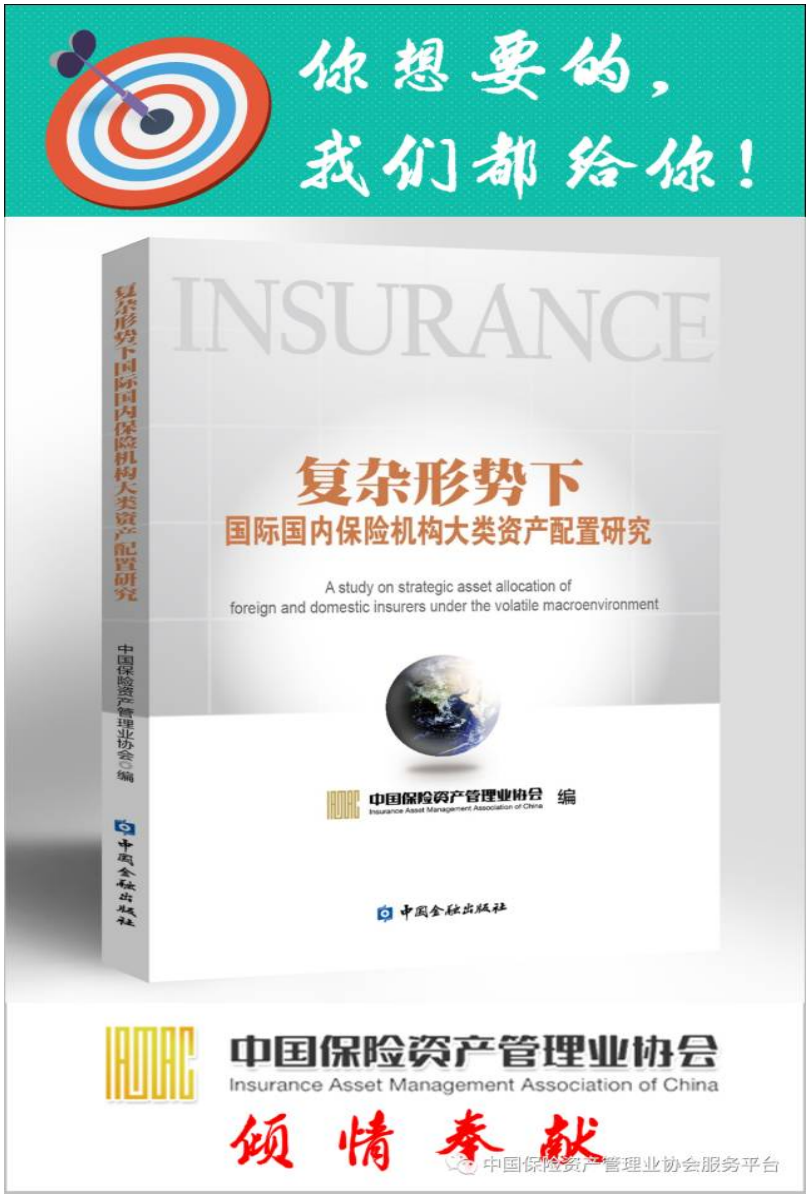
A positive approach to a world of negative rates

Steven Yang Yu
Muqiu Liu
Redington Ltd

23 April 2017



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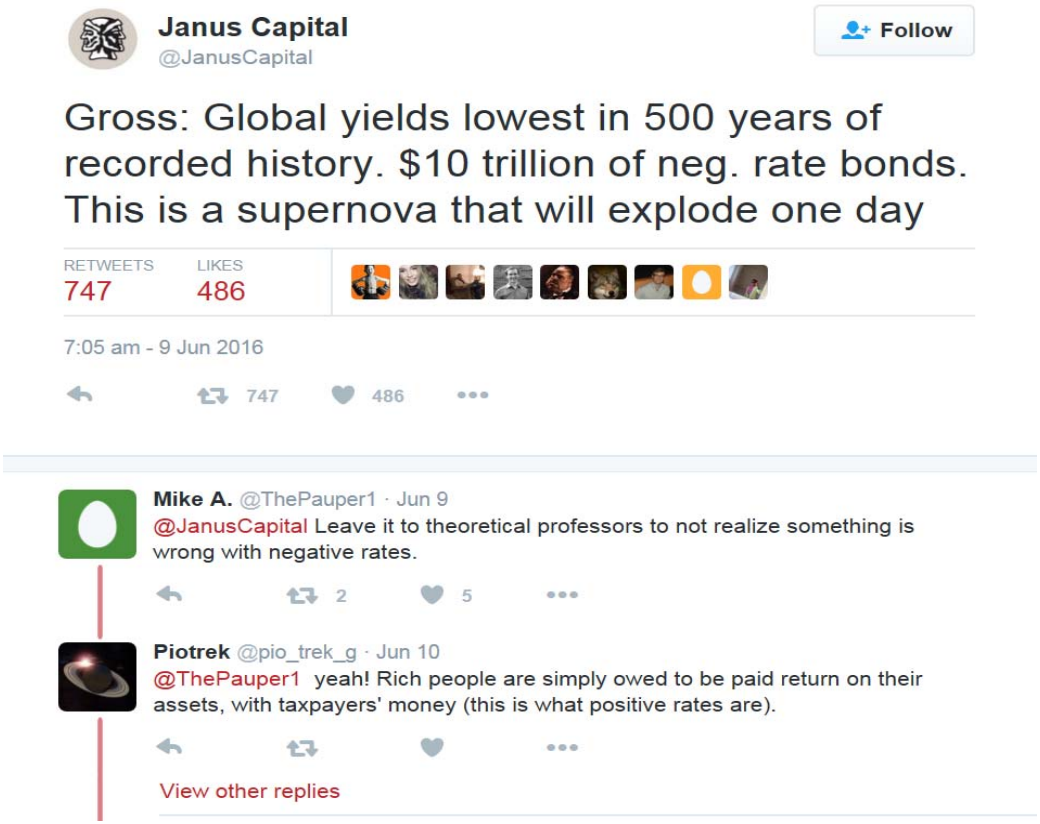
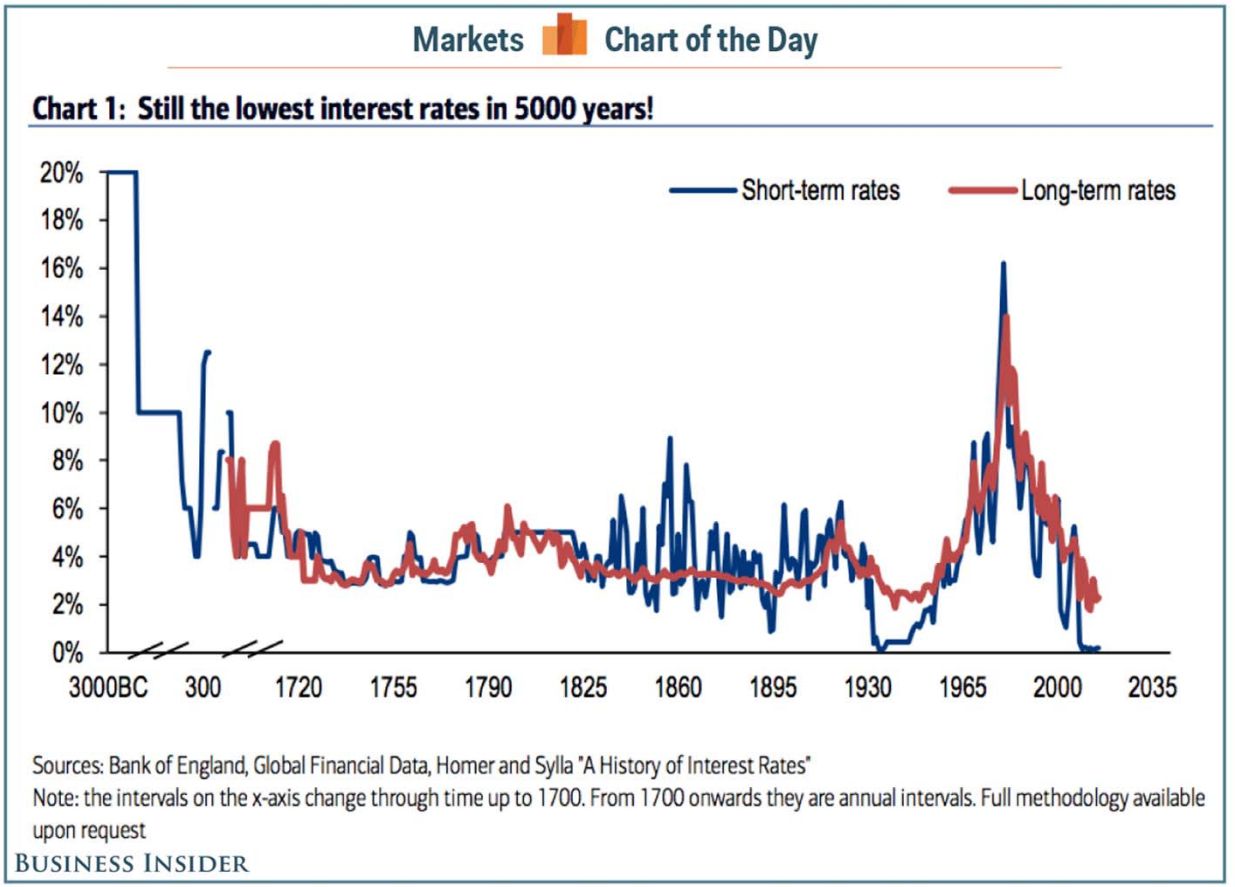
Background

23 April 2017

Record history of negative rates



Lowest level in 5000 years



Is it easy to predict interest rates?

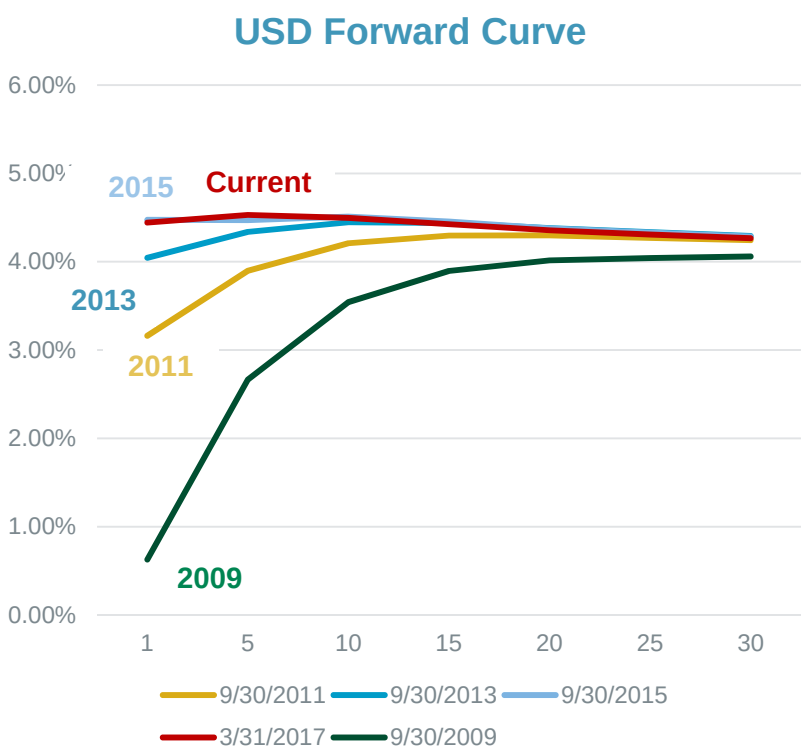
In Aug 2014, 68 economists were asked their forecast of US 10 year yields at the end of Dec 2014.

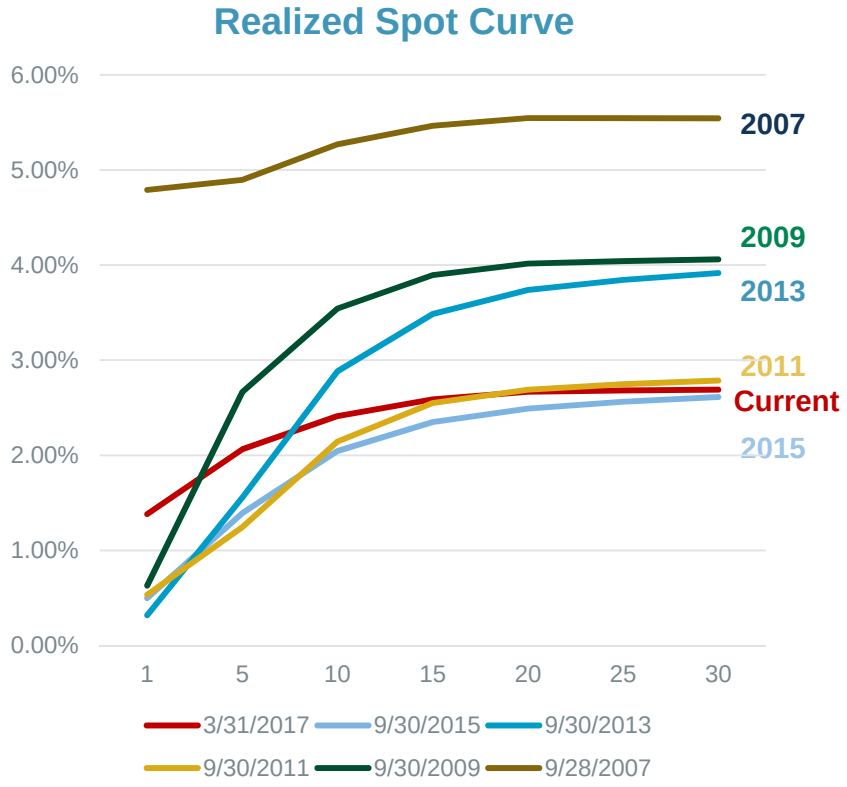
What did they predict?

Every single one predicted that yields would rise from currently level of 2.41%

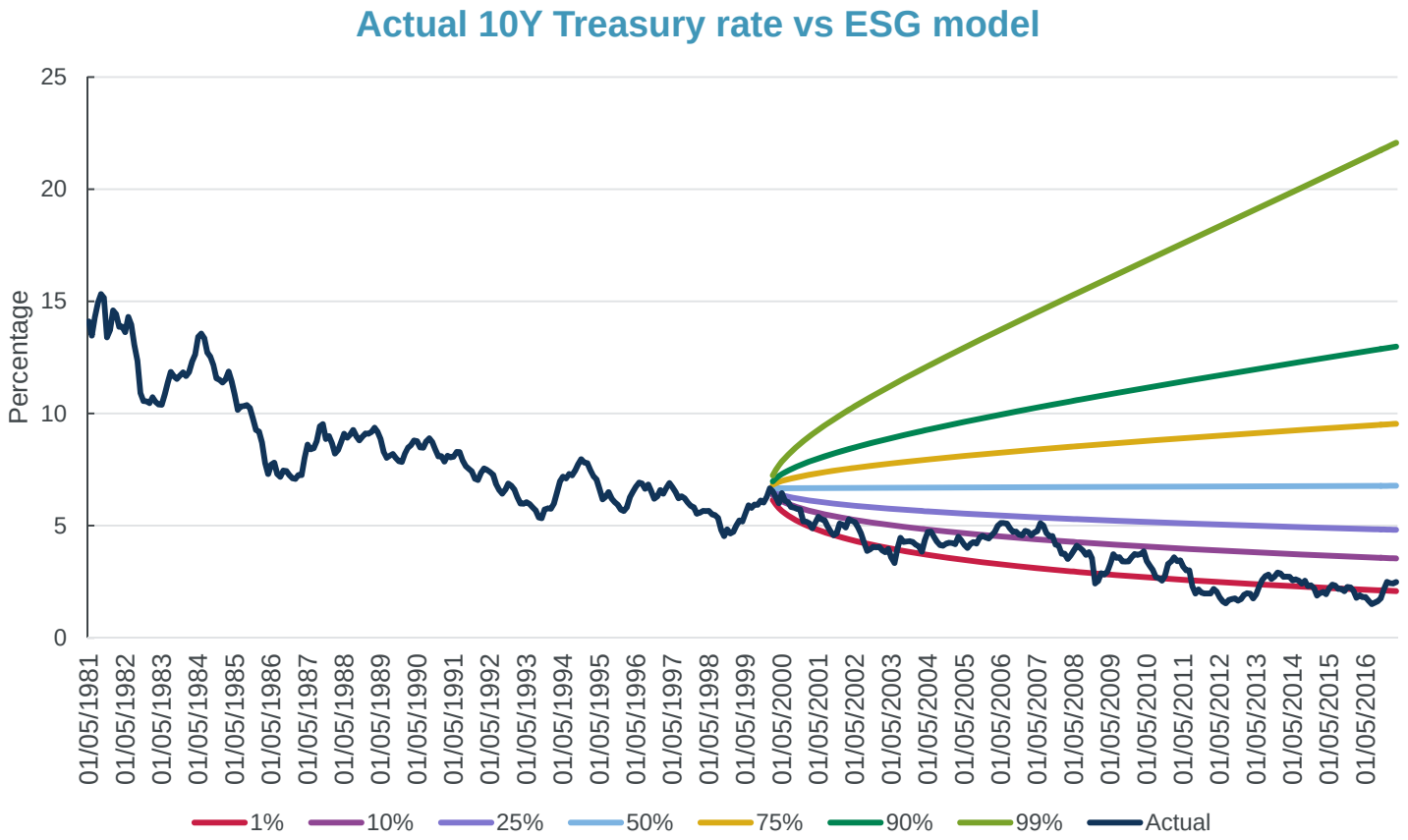
It became 2.21% at the end of 2014 and it fell further in the subsequent two years.

Is it easy to predict interest rates?

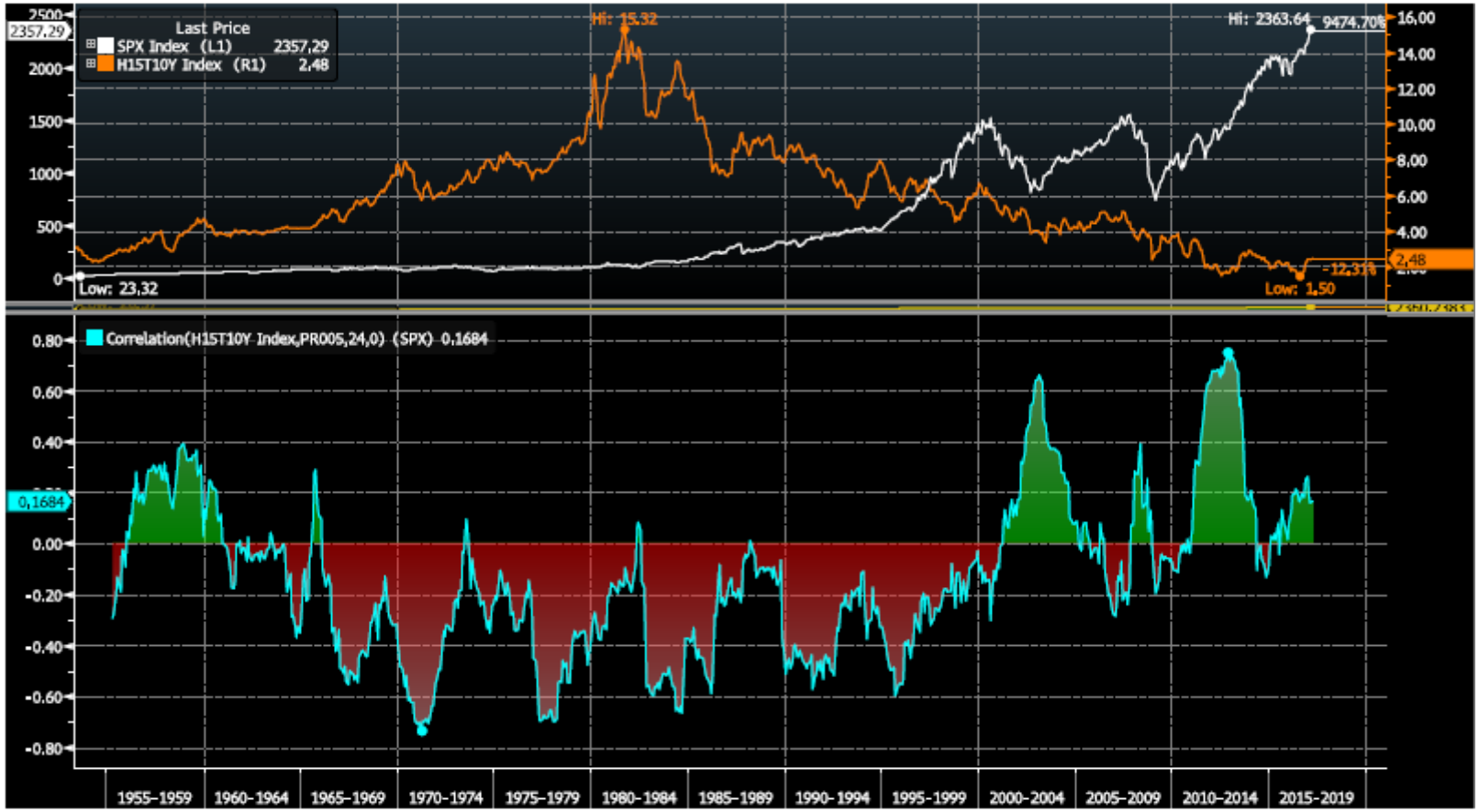




Is it easy to predict interest rates?

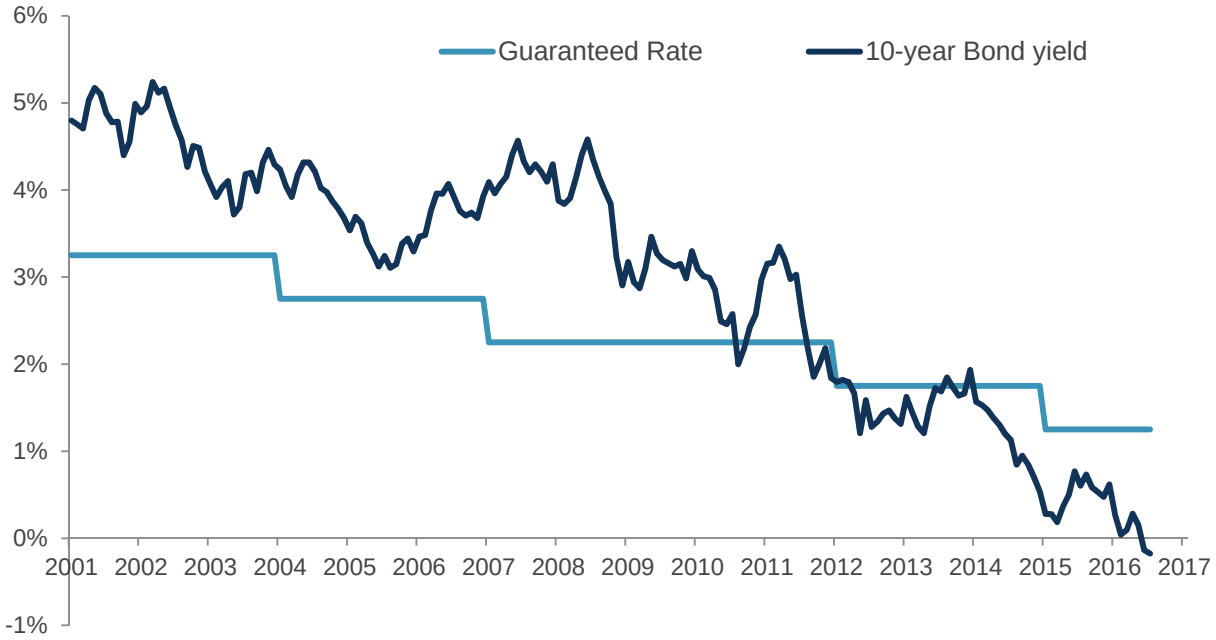


Also unstable relationship

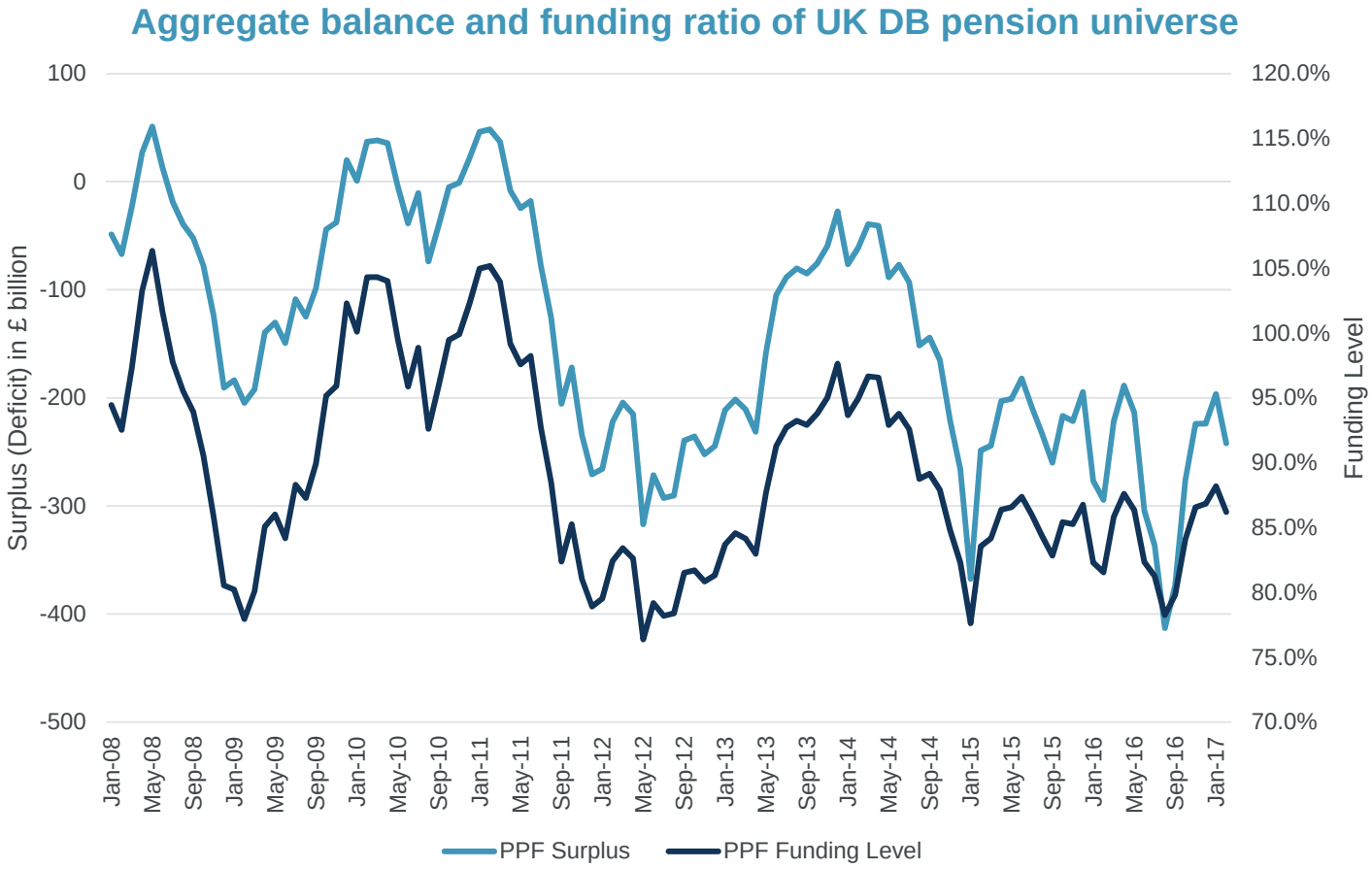


Impact of low rates environment

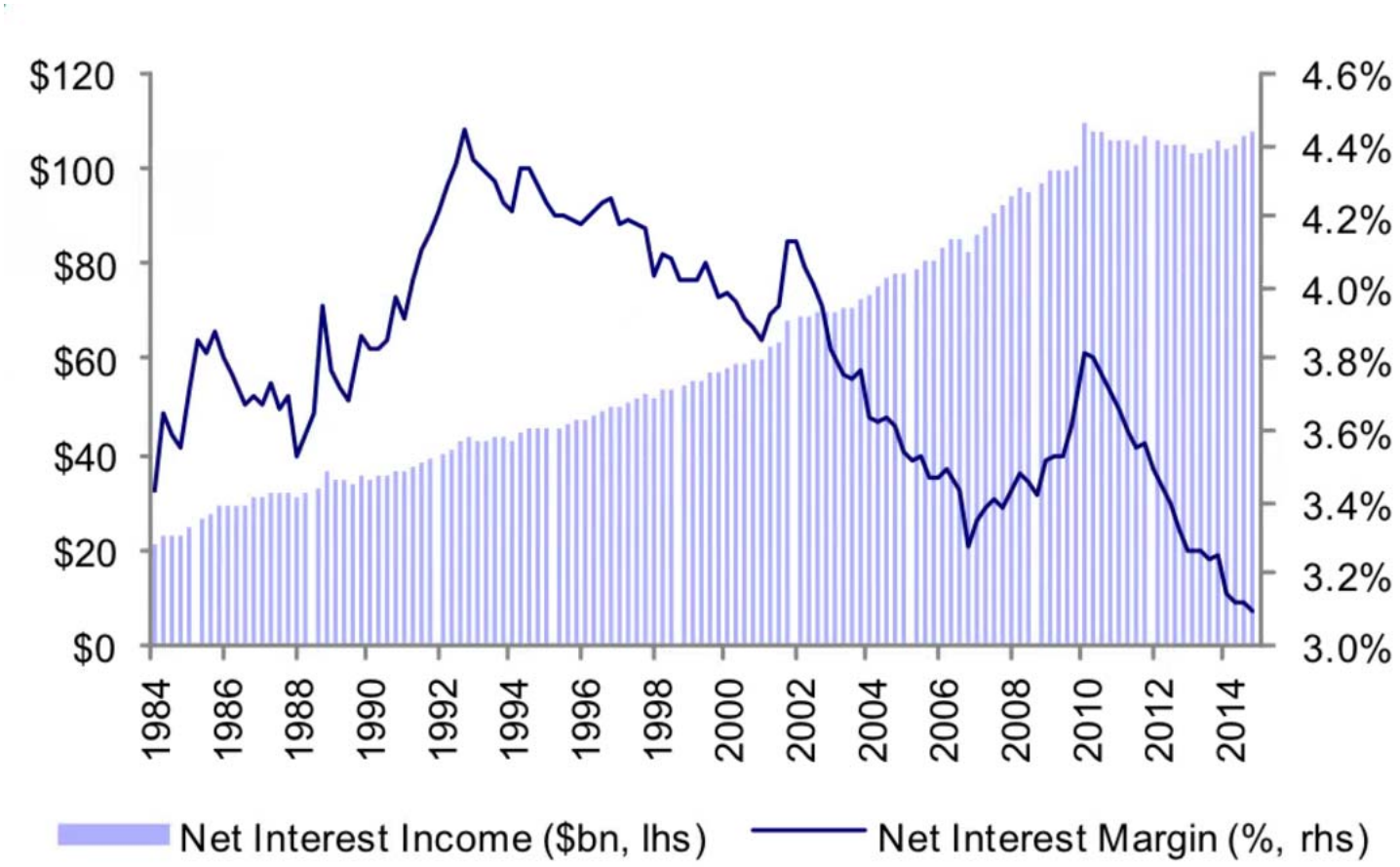
Evolution of market yields and guarantee levels



Impact of low rates environment

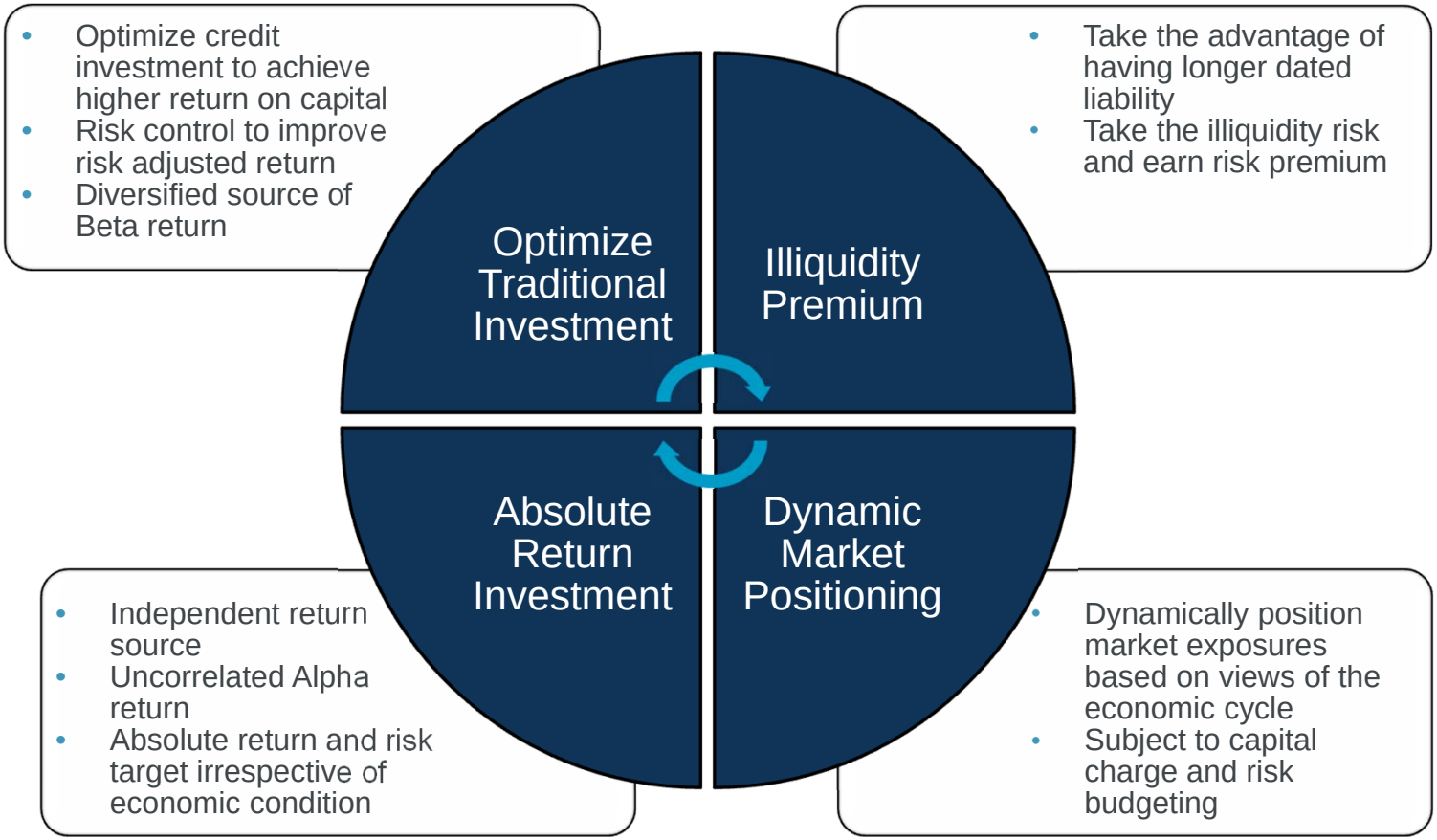


Impact of low rates environment



Source: Bloomberg

How to address the challenge?

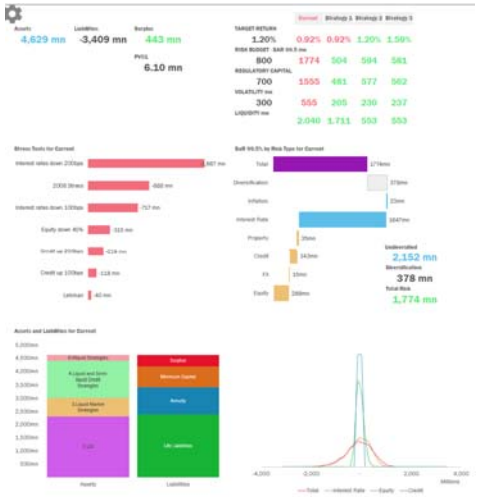


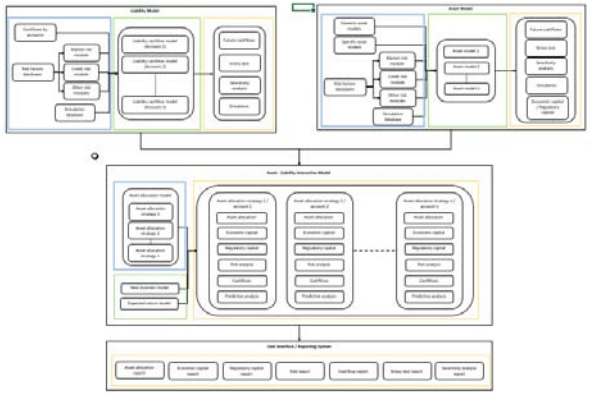
What do you need?

People

System

Process





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Case Study 1

UK Annuity Fund

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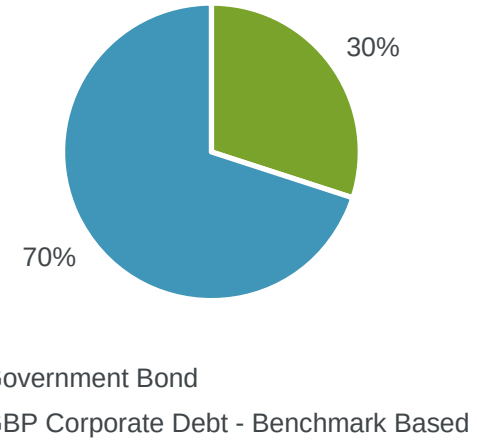
Challenges under low rates environment

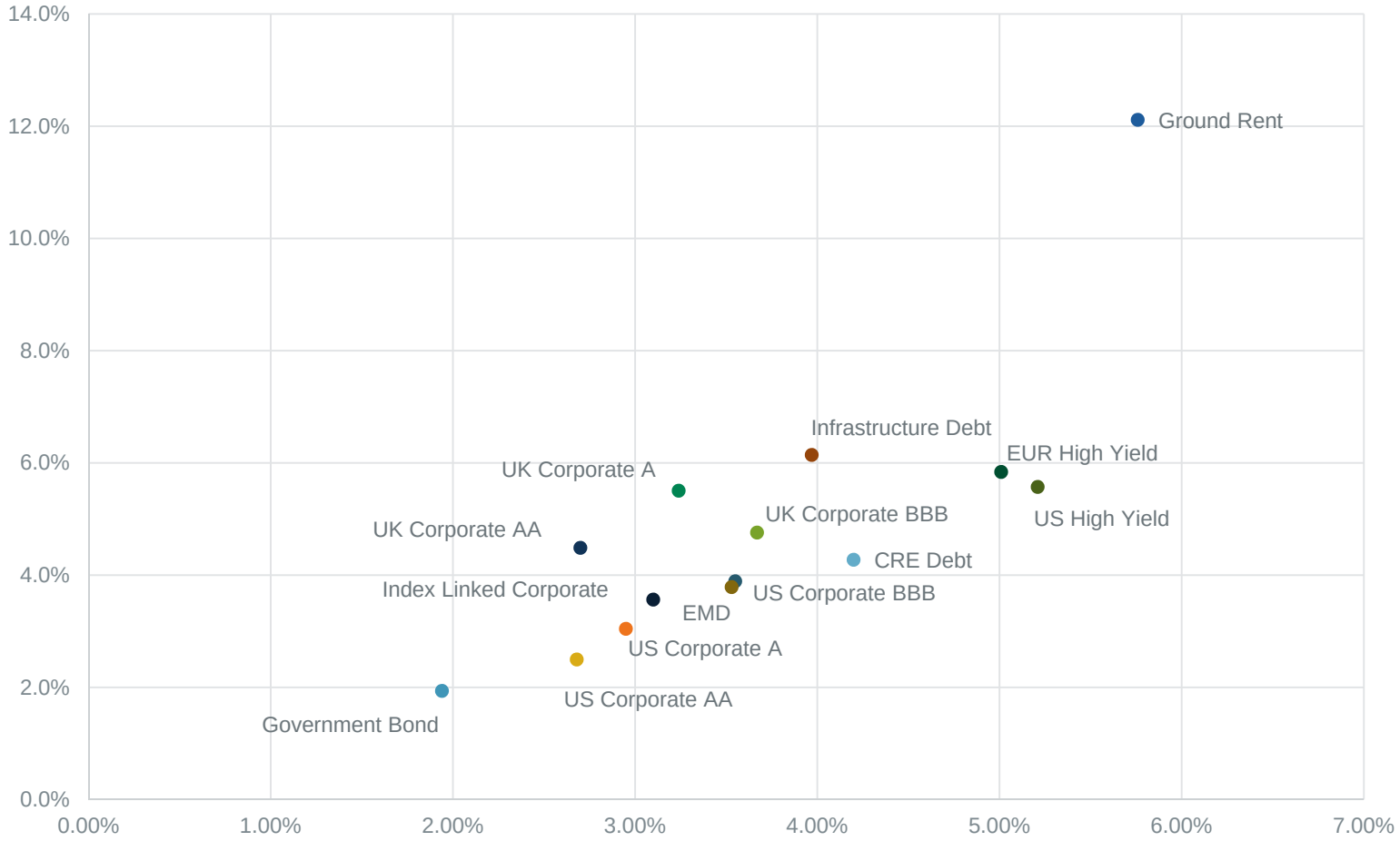
From 2007 to 2011

Dec 2007	
Asset	£1,200m
Liability	£950m
Surplus	£250m



Objective		Measurement	31/12/2007	31/12/2011
Return	Expected return meets long term target return	Expected Return	5.1%	4.2%
		Target Return	5.0%	4.5%
		Difference	0.1%	-0.3%
Risk	Solvency ratio and economic risk in line with risk and capital budgets	Solvency ratio > 150%	276%	124%
		Surplus volatility < £40m	£28m	£38m
Hedging	Interest rate hedge within target	Hedge Ratio (90% - 105%)	90%	90%
Liquidity	Enough cumulative cashflows from assets to cover benefit outgoes	5 year cumulative excess cashflows > £10m	£12m	£13m

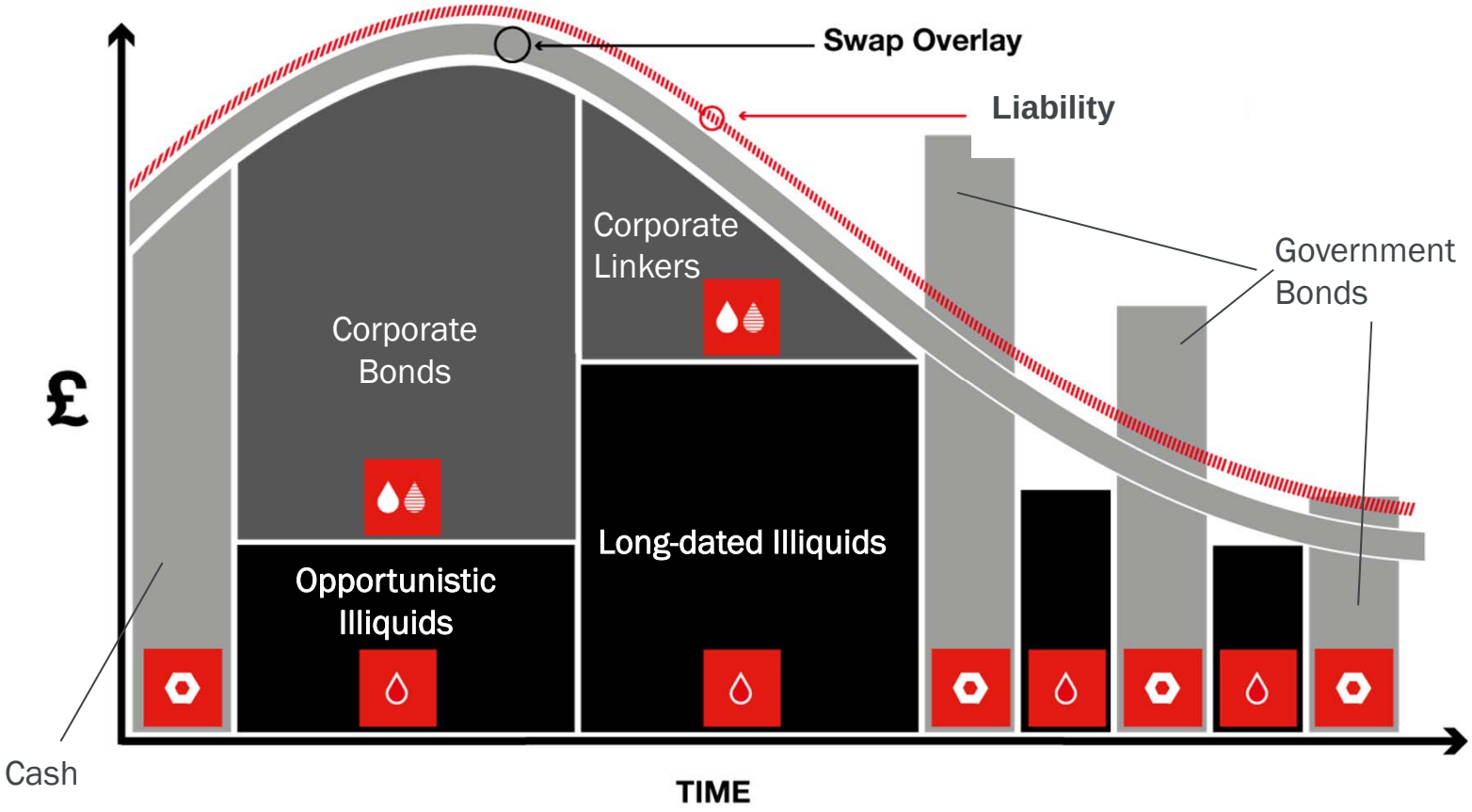
Opportunity set



Types of illiquid credit opportunities

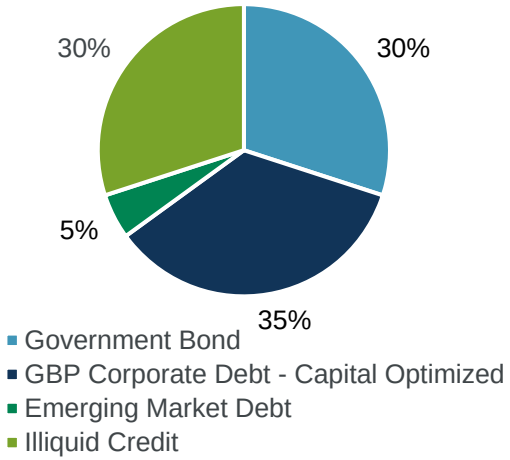
	Infrastructure Debt	Private Placements	Index-Linked Corporate Debt	Commercial Real Estate Debt	Lifetime Mortgages	Secured Credit	Secured Leases
Expected Return (over risk free rate)	1.75%	1.50%	1.50%	2.00%	2.50%	2.2%	3.25%
Illiquidity Premium	0.5%	0.3%	0.3%	1.0%	1.25%	1.2%	N/A
Cash Flows Certainty	✓	✓	✓	✓	✗	✓	✓
Maturity	15Y+	5-15Y (can be customised)	Varies (sample portfolio 5-30Y)	5-10Y (preferred) Up to 20Y	25Y +	4Y (wtd. average life)	25Y +
Indicative Credit Quality	c. A-BBB depending on structure	Investment Grade (varies)	Investment Grade (varies)	c. A-BBB depending on structure	N/A	A+ (sample pooled fund)	N/A (property) – we assume 75% IG
Governance / Complexity	**Medium**	**Medium**	**Medium**	**Medium**	**Very High**	**Low**	**Low**
Speed of Implementation	• 12-18 months (depending on restrictions)	• 12-18 months (depending on restrictions)	• Up to 24 months, depending on required premium over nominal bonds	• 12-18 months	• c. 12 months	• Quarterly liquidity (sample pooled fund) • Seg mandates may vary	• Pooled – 6 months • Seg – 12-18 months

How to optimize your portfolio?



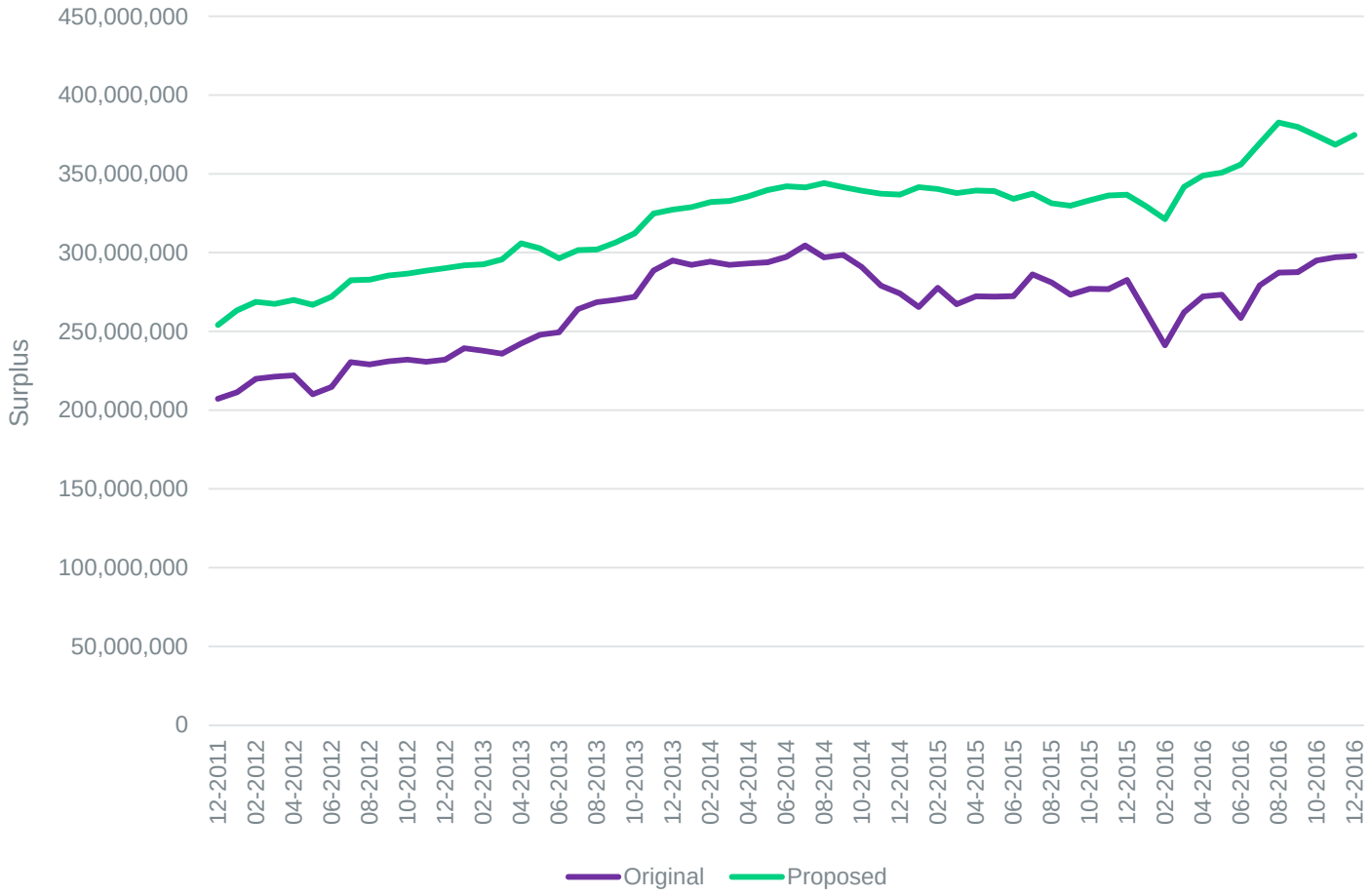
Optimal Strategy

Asset Allocation	Current	Proposed
Total	**100%**	**100%**
Government Bond	30%	30%
GBP Corporate Debt - Benchmark Based	70%	
GBP Corporate Debt – Capital Optimized		35%
USD Corporate Debt		
Emerging Market Debt		5%
Illiquid Credit		30%
Interest Rate Hedge Ratio	90%	100%



Objective		Measurement	Existing Strategy	Proposed Strategy
Return	Expected return meets long term target return	Expected Return	4.2%	4.7%
		Target Return	4.5%	4.5%
		Difference	-0.3%	0.2%
Risk	Solvency ratio and economic risk in line with risk and capital budgets	Solvency ratio > 150%	124%	189%
		Surplus volatility < £40m	£38m	£22m
Hedging	Interest rate hedge within target	Hedge Ratio (90% - 105%)	90%	100%
Liquidity	Enough cumulative cashflows from assets to cover benefit outgoes	5 year cumulative excess cashflows > £10m	£13m	£12m

Back test/performance



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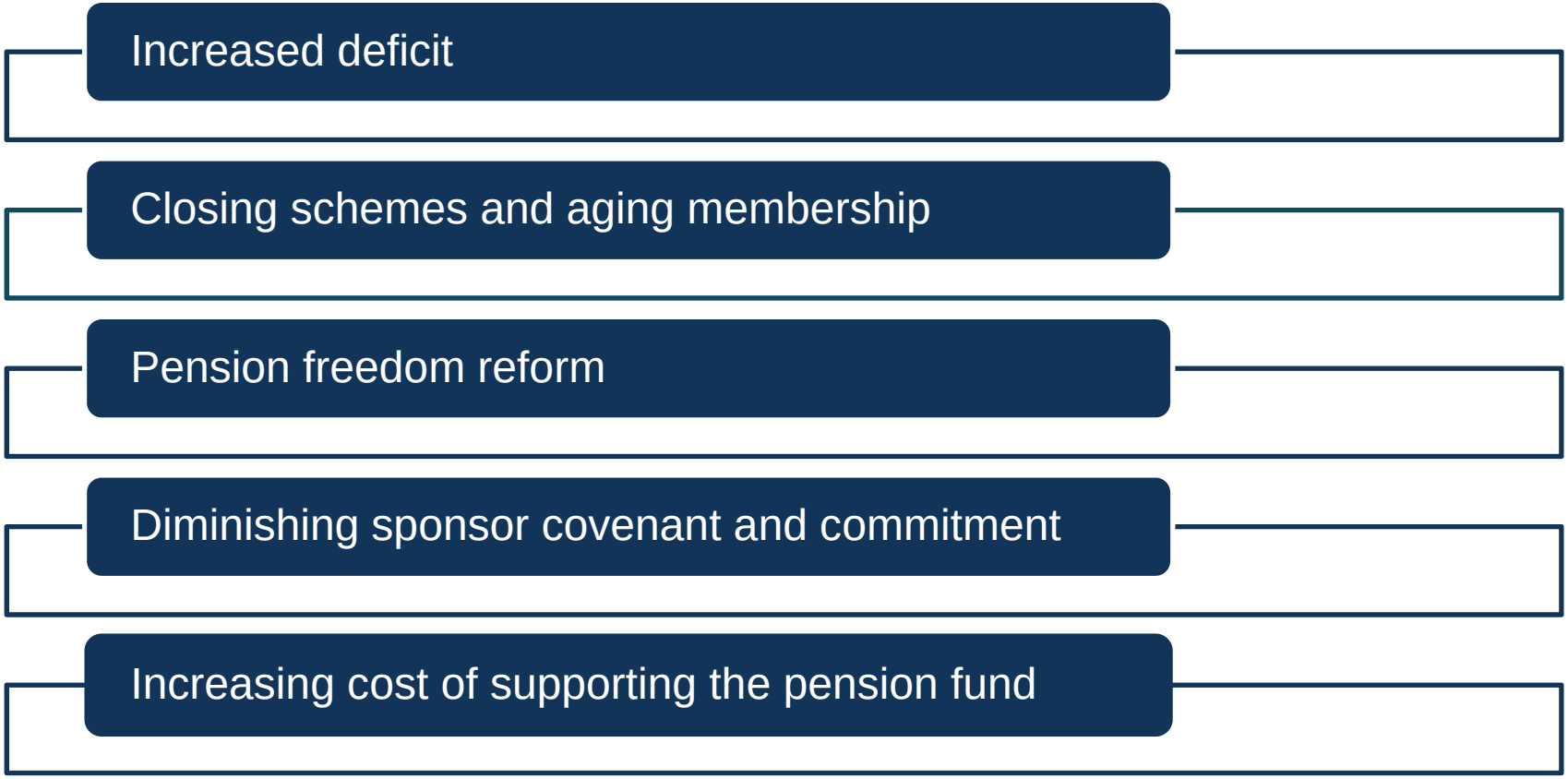
Case Study 2

UK DB Pension Fund

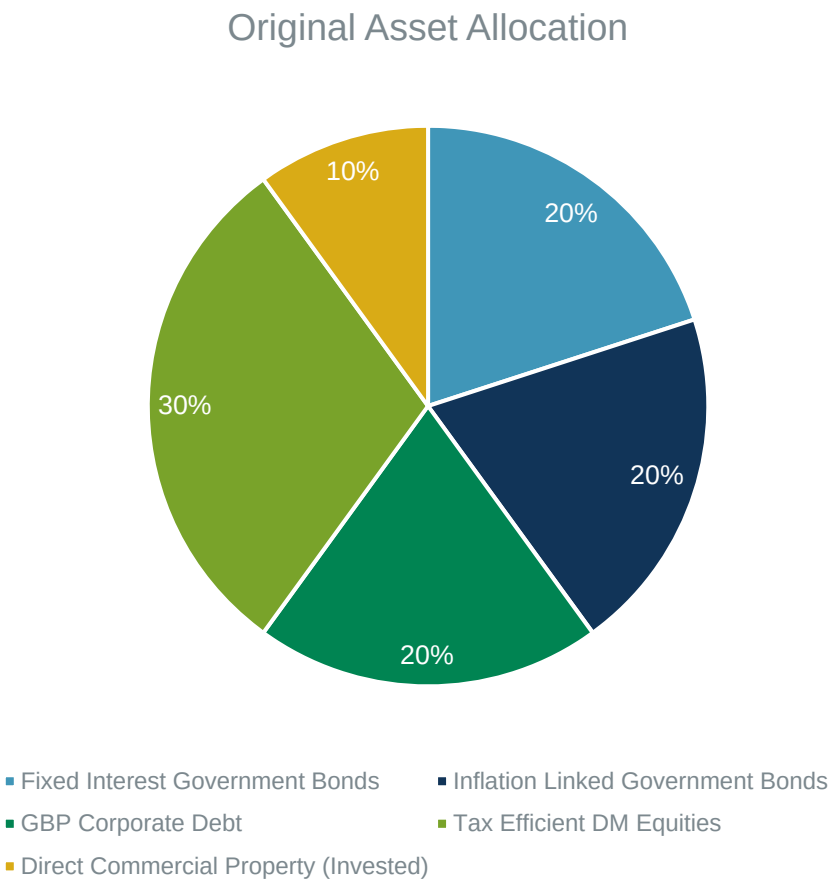
23 April 2017

UK DB pension fund



Investment Risk Management Framework

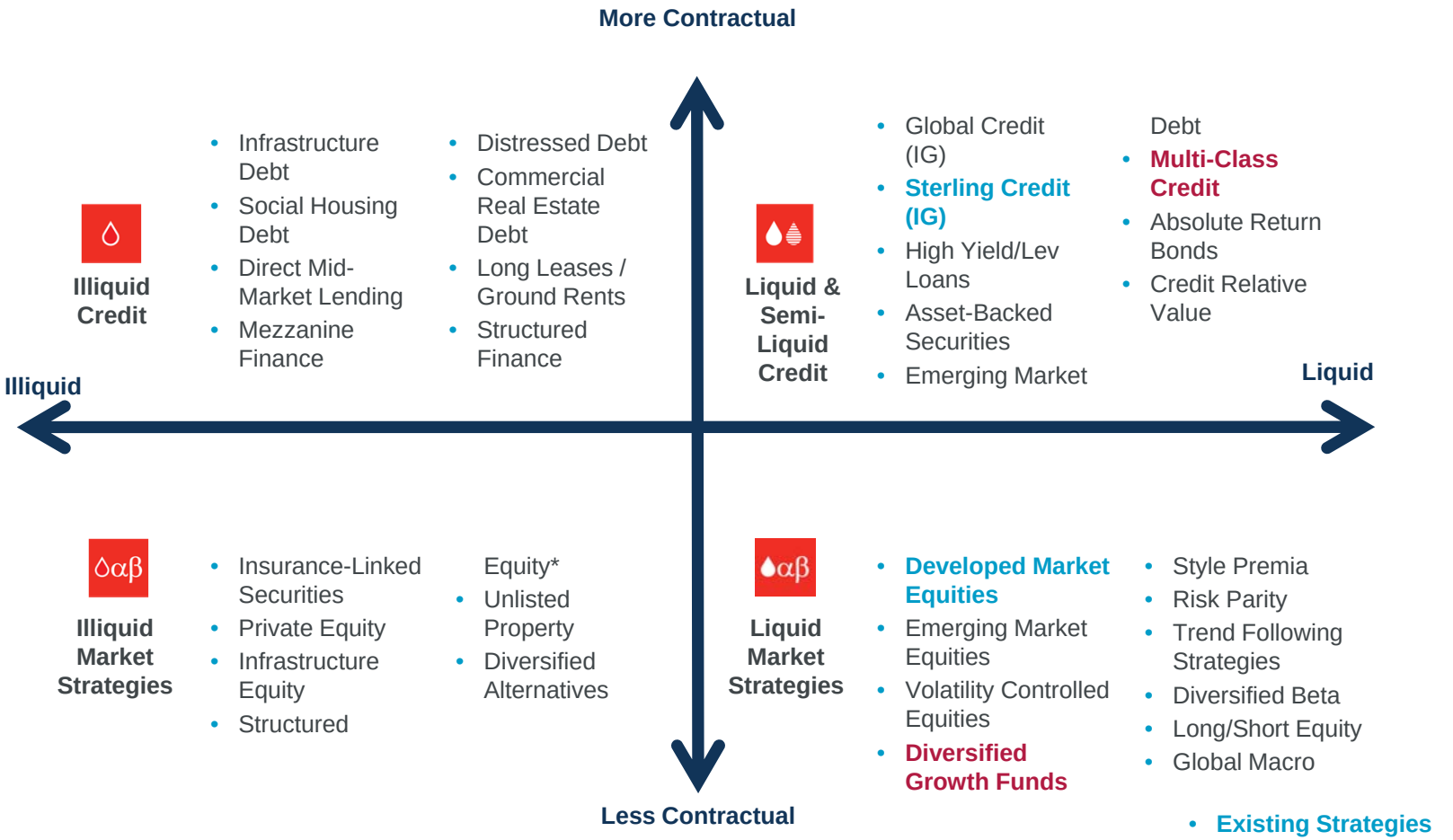
Dec 2007	
Asset	£950m
Liability	£1,000m
Deficit	£50m



Investment Risk Management Framework

Objective		Measurement	31/12/2007	31/12/2011
Funding	To reach full funding in **20 years**	Funding Level	95%	78%
		Expected Return	6.0%	4.5%
		Required Return	5.6%	5.6%
		Difference	0.4%	-1.1%
Risk	We will also monitor VaR95 – the minimum increase in deficit over 1 year with 95% confidence	Value at Risk (VaR95)	15.0%	14.5%
Hedging	Interest rate and inflation rate hedge should be maintained close to Funding Ratio	Funding Ratio	95%	78%
		Interest Rate Hedge Ratio (range 70% - 100%)	50%	50%
		Inflation Rate Hedge Ratio (range 70% - 100%)	50%	50%
Collateral	The probability of there being insufficient collateral eligible for posting to counterparties under the Plan's swaps over the next year should be less than 5%	Excess Liquidity Fund Available	£304m	£315M

The asset class universe



How does multi-class credit compare to a corporate bond mandate?

	Corporate Bonds	Multi-Class Credit
Universe	• Long-only managers	• Long-only managers & some managers that also enter into long and short positions
Strategy	• Long only	• Long-biased products
Fees	• Base Fee	• Typically higher, may include performance fee
Sources of Return	• Driven primarily by market movements (beta)	• Mixture of market returns and manager skill (beta and alpha)
Asset Class	• Often focus on high-quality (investment grade) corporate bonds	• Mixture of IG/High Yield/Specialist

What benefits can it bring?

Wide Range of Assets

Dynamic Asset Allocation

Benchmark Agnostic Approach

Strategic Efficiency

Access to Specialist Manager Skills

Where is return coming from?

- The range of opportunities within the credit universe can vary from year to year.
- An asset class that is offering the best returns in one year often disappoints afterwards.
- Access to a wide range of opportunities can produce better returns than a mandate that is just focused on a single asset class.
- This requires a skilled manager with deep and broad capabilities.

2007	2008	2009	2010	2011	2012	2013	2014	2015
2.08% US LEV LOANS	-9.44% EUR IG	70.44% EUR HIGH YIELD	10.33% EUR HIGH YIELD	1.51% US LEV LOANS	22.07% EUR HIGH YIELD	9.95% EUR HIGH YIELD	4.47% EUR LEV LOANS	5.50% EUR LEV LOANS
-0.57% EUR LEV LOANS	-21.20% EM CORP	57.77% US HIGH YIELD	10.13% US LEV LOANS	0.72% EUR LEV LOANS	18.07% EM SOV	9.19% US HIGH YIELD	2.12% EUR IG	4.91% EM CORP
-1.44% EUR IG	-24.69% US IG	51.62% US LEV LOANS	9.85% EUR LEV LOANS	-1.67% EM CORP	14.54% EM CORP	8.59% EUR LEV LOANS	1.83% EUR HIGH YIELD	3.17% EM SOV
-3.29% EM SOV	-29.10% US LEV LOANS	43.43% EUR LEV LOANS	9.32% US HIGH YIELD	-2.65% US HIGH YIELD	12.64% US HIGH YIELD	5.29% US LEV LOANS	1.60% US LEV LOANS	0.07% EUR HIGH YIELD
-4.07% EM CORP	-30.01% EUR LEV LOANS	39.04% EM SOV	7.93% EM SOV	-2.66% EUR IG	9.74% EUR LEV LOANS	3.58% EM SOV	0.04% US IG	-0.69% US LEV LOANS
-4.76% US IG	-33.78% EM SOV	25.17% EM CORP	2.68% EM CORP	-3.45% US IG	9.67% US LEV LOANS	2.86% US IG	-1.19% US HIGH YIELD	-1.07% EUR IG
-5.23% EUR HIGH YIELD	-39.99% US HIGH YIELD	22.93% US IG	2.31% US IG	-7.25% EM SOV	7.41% US IG	2.14% EM CORP	-1.35% EM CORP	-3.18% US IG
-6.97% US HIGH YIELD	-44.12% EUR HIGH YIELD	9.43% EUR IG	0.46% EUR IG	-8.27% EUR HIGH YIELD	5.34% EUR IG	2.13% EUR IG	-3.73% EM SOV	-6.70% US HIGH YIELD

What are the main categories of DGF approaches?

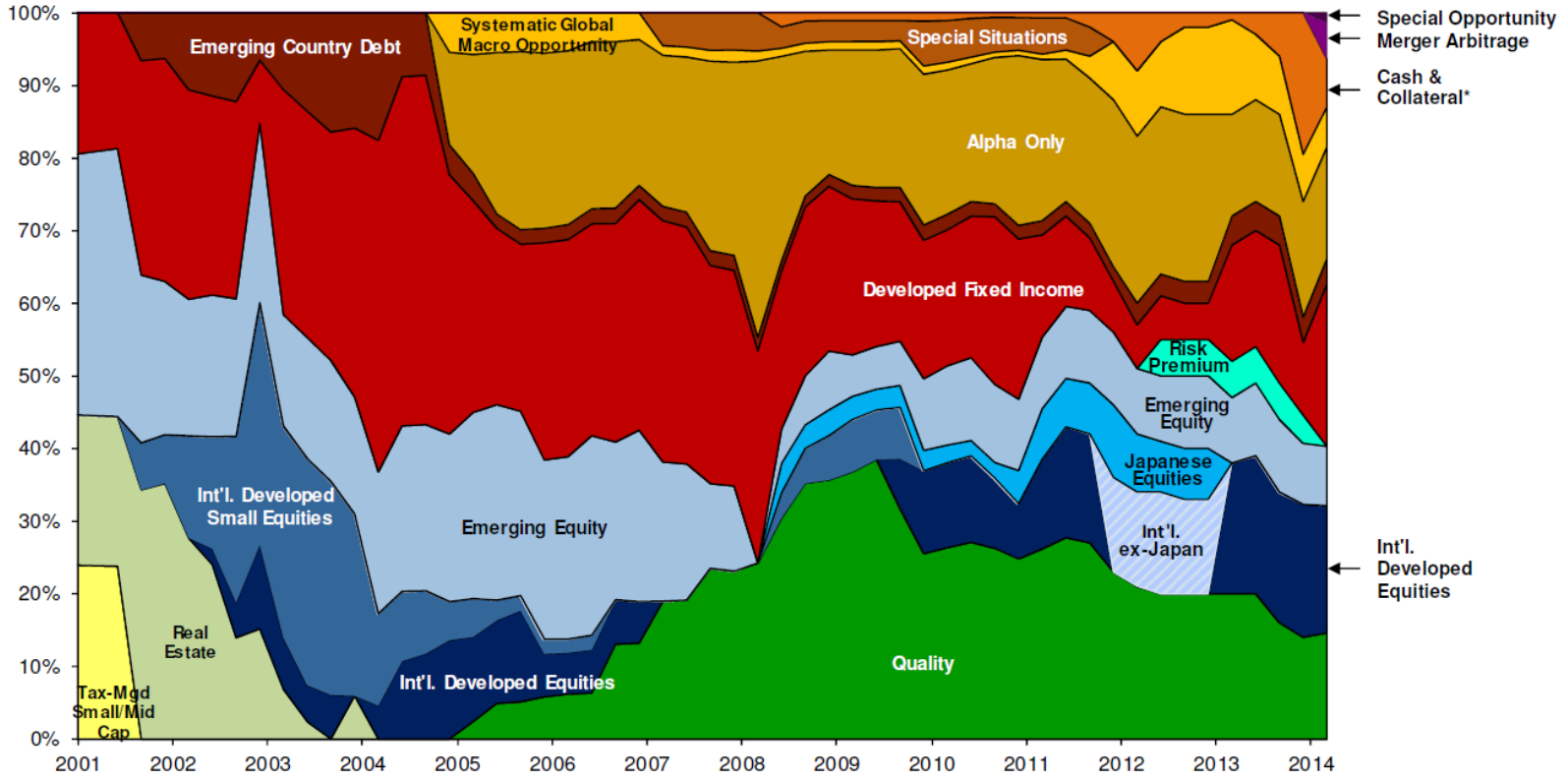
While DGF is often referred to as an “asset class”, it is simply a title given to various forms of multi-asset investment *approaches*. Within the universe of managers that aim to position themselves as a DGF fund, we see four major categories of approaches with the following key characteristics.

Sub Category	Asset Allocation Approach	Long-Only or Long/Short	Equity Weighting	Correlation to Equity Markets	Expected Maximum Drawdowns
Total Return	Highly Dynamic	Mostly Long-Only (can hold some relative value strategies)	High Variability (10-60%) Through the Cycle	Varying Over Time	Small-Medium
Absolute Return Relative Value	Risk-Based Allocation, Not Asset Allocation	Long/Short	N/A (risk-based approach)	Low	Small

Style Category	Total Return	Absolute Return Relative Value
Asset Class Diversification	✓	✓
Risk Diversification	✓	✓
Active Asset Allocation	✓✓	✓
Dynamic Fund Level Risk Management		✓
Downside Risk Management	✓	✓✓
Diversifying Return Source to Equities and Bonds	✓	✓
Focus on Fundamental Valuations	✓✓	

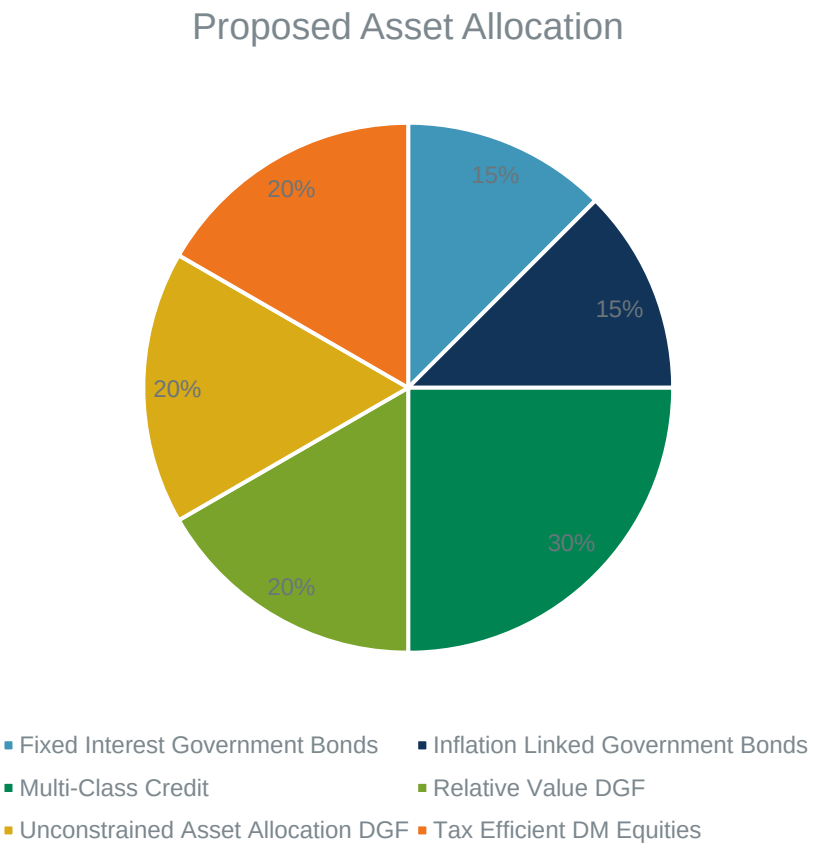
How does a DGF asset allocation change through time?

Sample Total Return Manager Asset Allocation since 2001



Investment Risk Management Framework

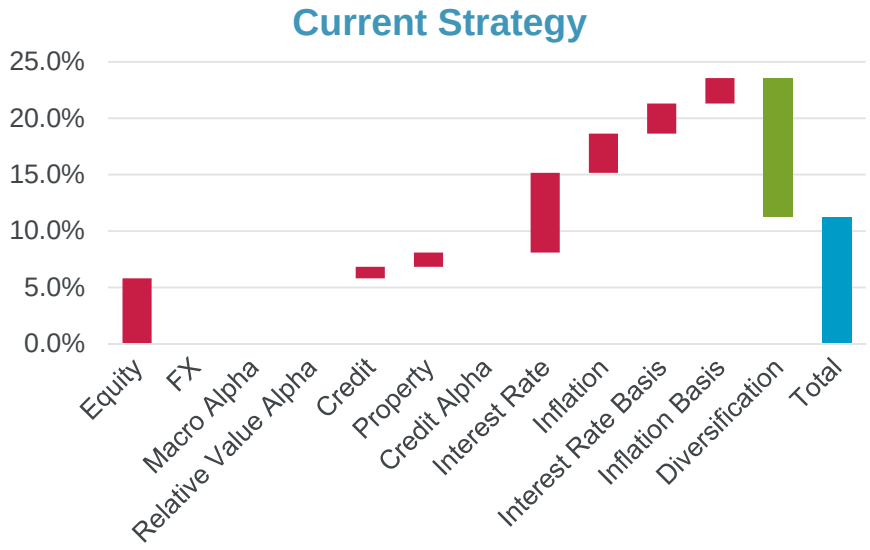
Asset Allocation	Current	Proposed
Total	**100%**	**120%**
Nominal Gilts	20%	15%
Index-Linked Gilts	20%	15%
GBP Corporate Debt	20%	0%
Multi-Class Credit		30%
Relative Value DGF		20%
Unconstrained Asset Allocation DGF		20%
Tax Efficient DM Equities	30%	20%
Direct Commercial Property	10%	



Investment Risk Management Framework

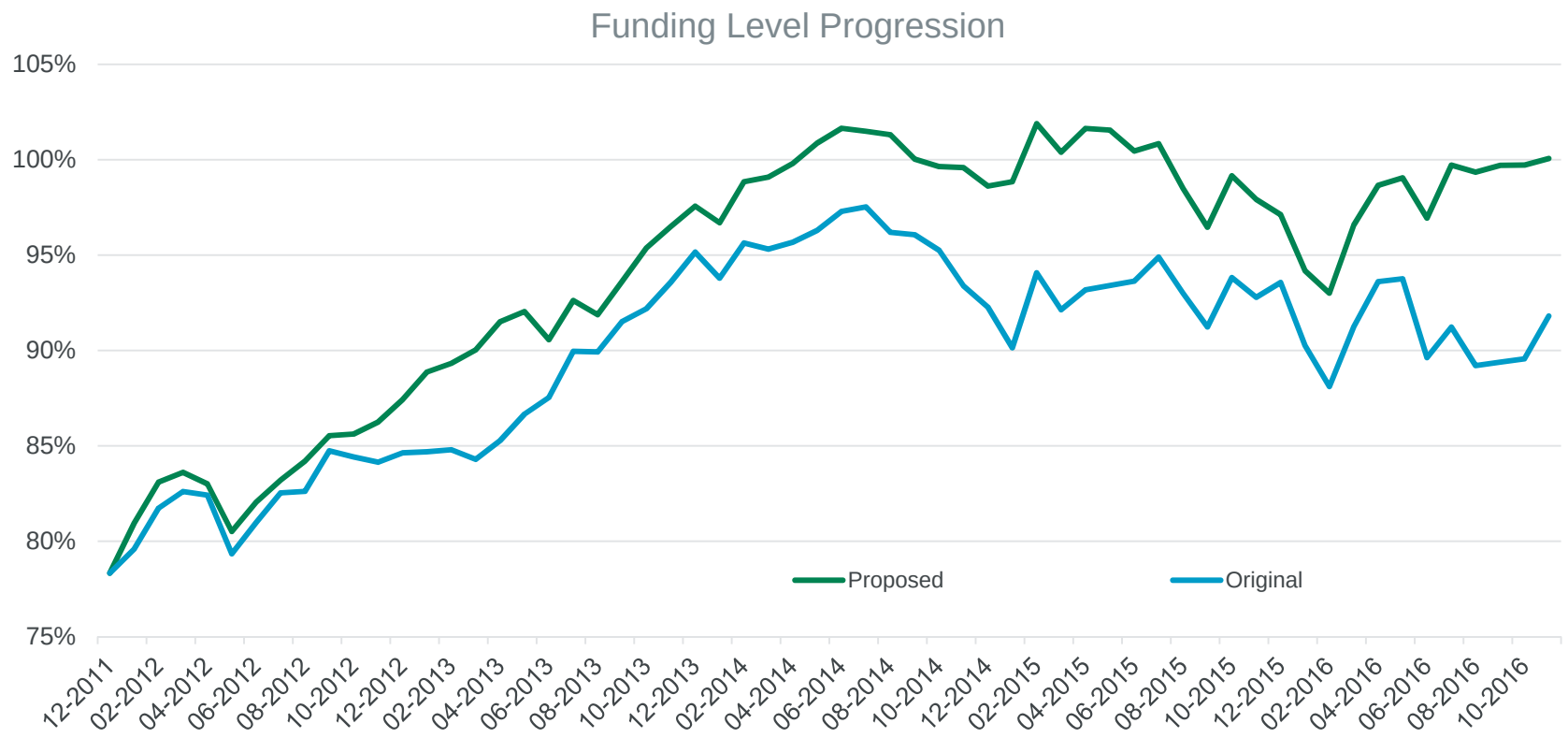
	Objective	Measurement	Current	Proposed
Funding	To reach full funding in **20 years** on a **Gilts + 50 basis** assuming current contribution schedule	Funding Level	78%	78%
		Expected Return	4.5%	5.9%
		Required Return	5.6%	5.6%
		Difference	-1.1%	0.3%
Risk	We will also monitor VaR95 – the minimum increase in deficit over 1 year with 95% confidence	Value at Risk (VaR95)	14.5%	11.8%
Hedging	Interest rate and inflation rate hedge should be maintained within +/-5% of Funding Ratio	Funding Ratio	78%	78%
		Interest Rate Hedge Ratio (range 85% - 95%)	50%	78%
		Inflation Rate Hedge Ratio (range 85% - 95%)	50%	78%
Collateral	The probability of there being insufficient collateral eligible for posting to counterparties under the Plan's swaps over the next year should be less than 5%	Excess Liquidity Fund Available	£315M	£150M

Risk Comparison



	Total Risk	Equity	FX	Macro Alpha	Relative Value Alpha	Credit	Property	Credit Alpha	Interest Rate	Inflation	Interest Rate Basis	Inflation Basis
Proposed Strategy	8.74%	6.83%	1.09%	1.14%	1.51%	2.27%		1.51%	1.62%	1.29%	2.00%	1.69%
Current Strategy	11.24%	5.80%				1.02%	1.26%		7.07%	3.47%	2.67%	2.25%

Performance



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Lessons Learnt

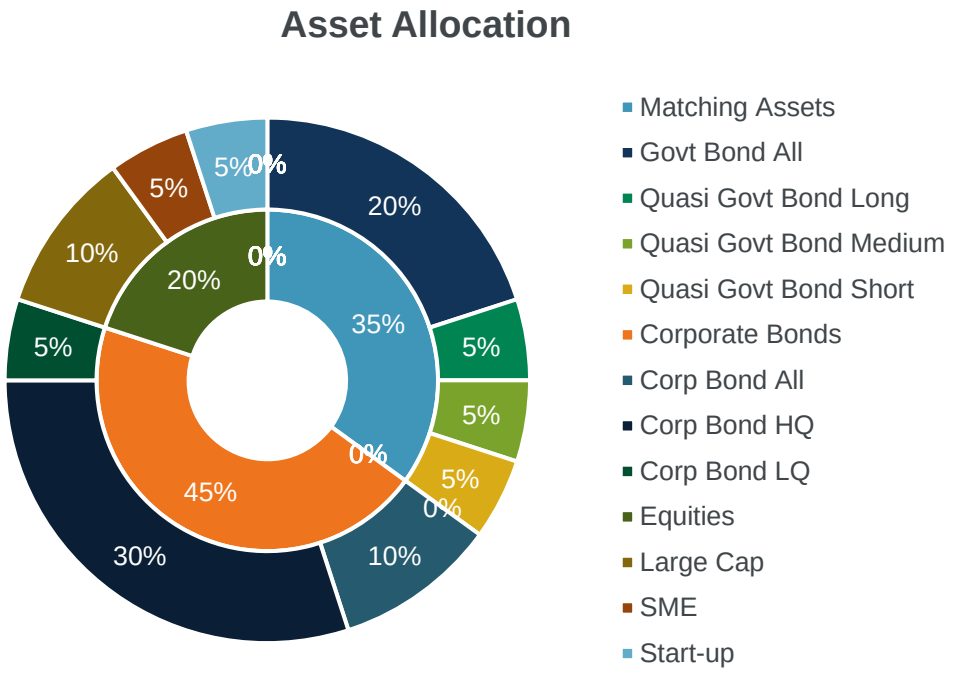
Chinese Insurance

23 April 2017

China Life insurance

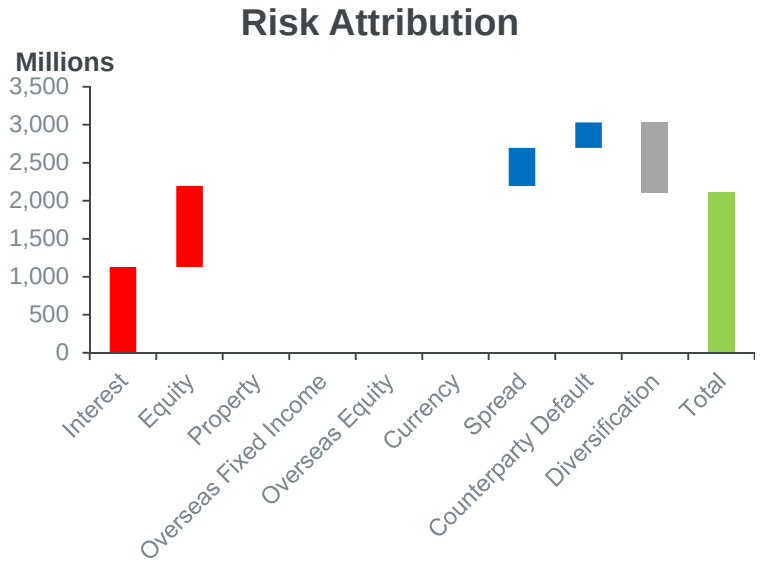
A generic life insurance case

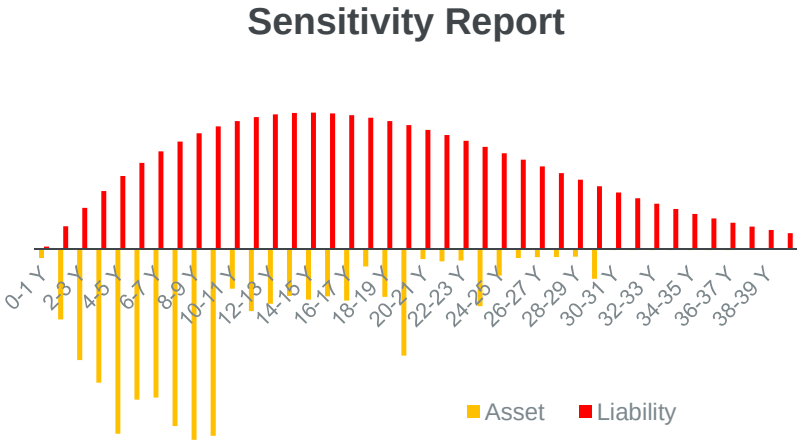
Dec 2007	
Asset	RMB 14.5bn
Liability	RMB 10bn
Surplus	RMB 4.5bn

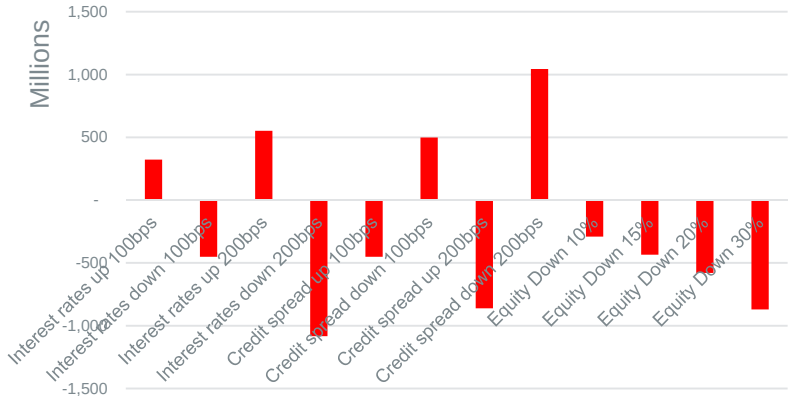


Quantify the problem

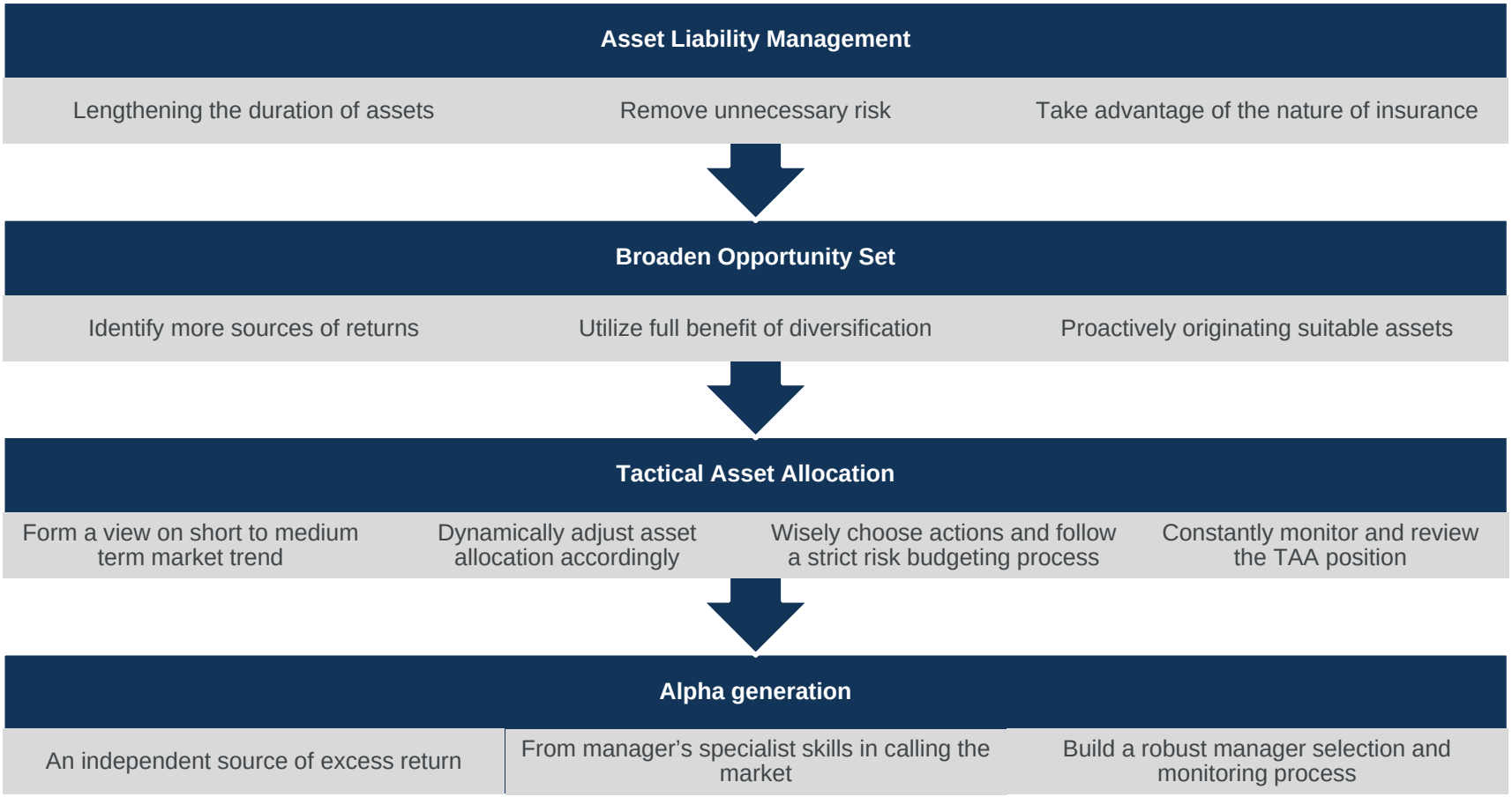
Measurement	
Asset Expected Return	5.0%
Liability Costs	5.0%
Difference	0%
Minimum Capital	2.1bn
Solvency Ratio	214%
Solvency Ratio at Risk (95th Percentile)	90%
Free Cashflow (1st Year)	150m





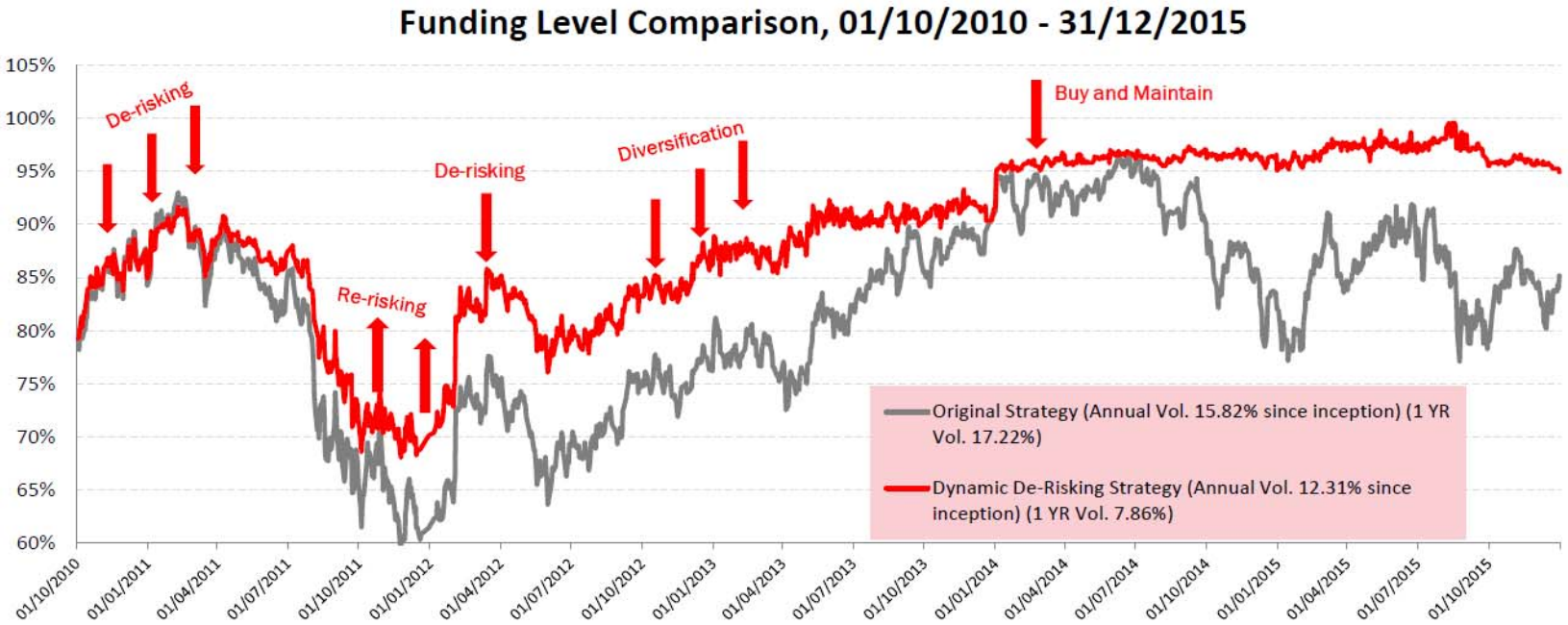


Find the possible solution



Tactical asset allocation

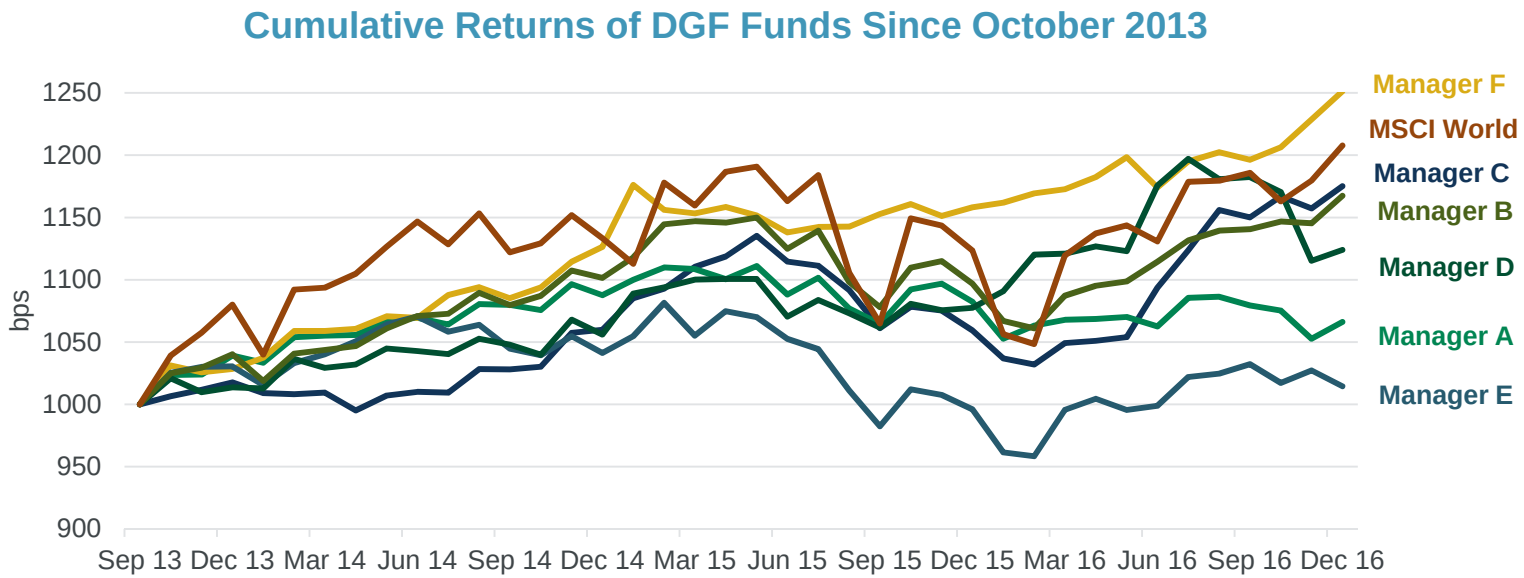
Limited Governance Resources	Dynamic Risk Management Strategy driven by a Framework	Efficient Implementation	Outperformed original strategy by c.15% at significantly lower risk



"Redington helped us to establish a robust pension risk management framework as well as devising and implementing a new investment strategy which enabled us to be nimble and cost effective in making changes to our asset allocation to reduce risk as opportunities arose. ***The strategy has delivered outstanding results allowing us to reduce the Scheme's overall risk while taking us closer to our objective of full funding****."*

– Independent Chairman of Trustees

Alpha generation



	Manager returns						MSCI World
	Manager A	Manager B	Manager C	Manager D	Manager E	Manager F	
Annualised Return (net)	2.0%	4.9%	5.1%	3.7%	0.4%	**7.1%**	6.0%
Annualised Volatility	4.5%	5.9%	5.1%	5.8%	6.0%	**4.3%**	10.9%
Sharpe Ratio	0.44	0.82	1.00	0.63	0.07	**1.68**	0.55
Correlation to Equities	0.73	0.87	0.47	0.23	0.88	**0.11**	1.00

Source: Bloomberg, fund managers (see above)

Questions

Comments