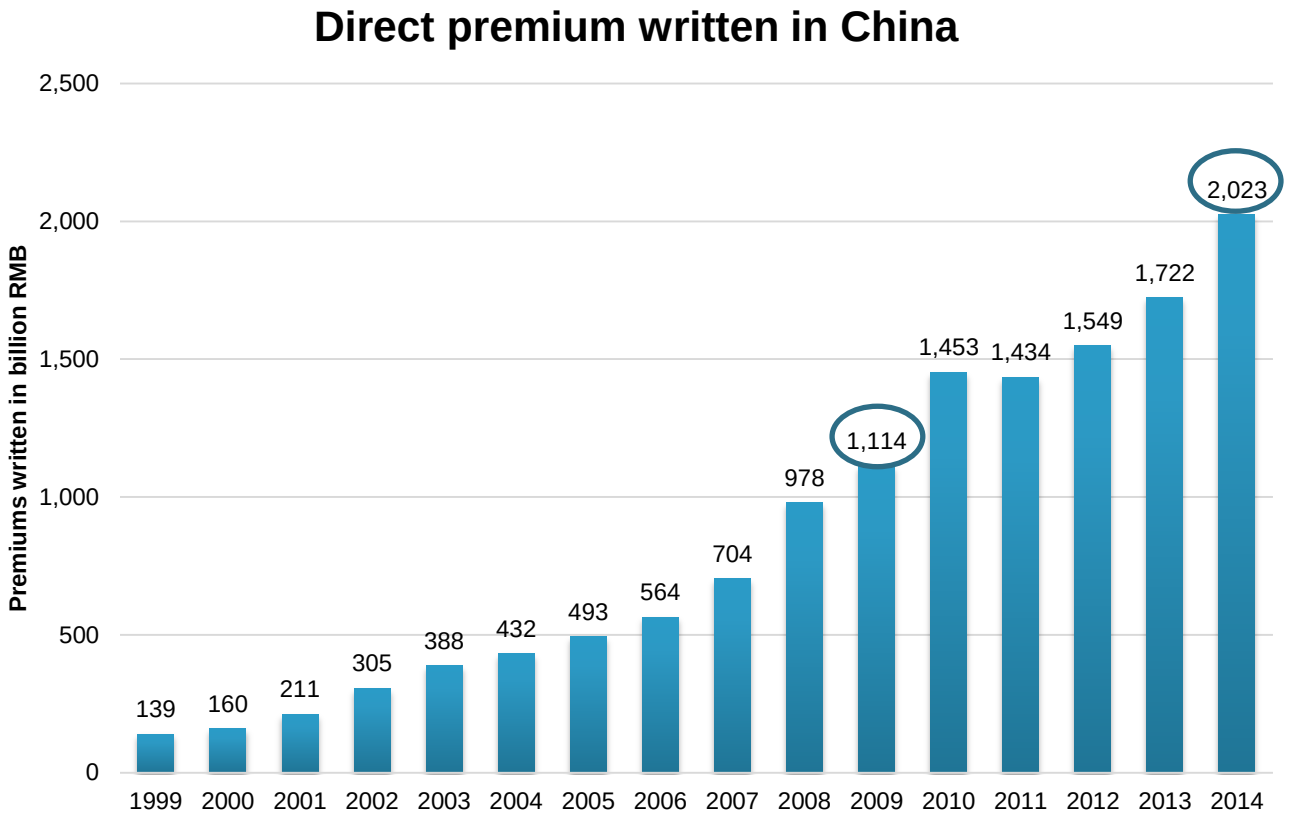
Institute and Faculty of Actuaries

Investment Risk Management Under New Regulatory Framework

Steven Yang Yu
Muqiu Liu
Redington Ltd

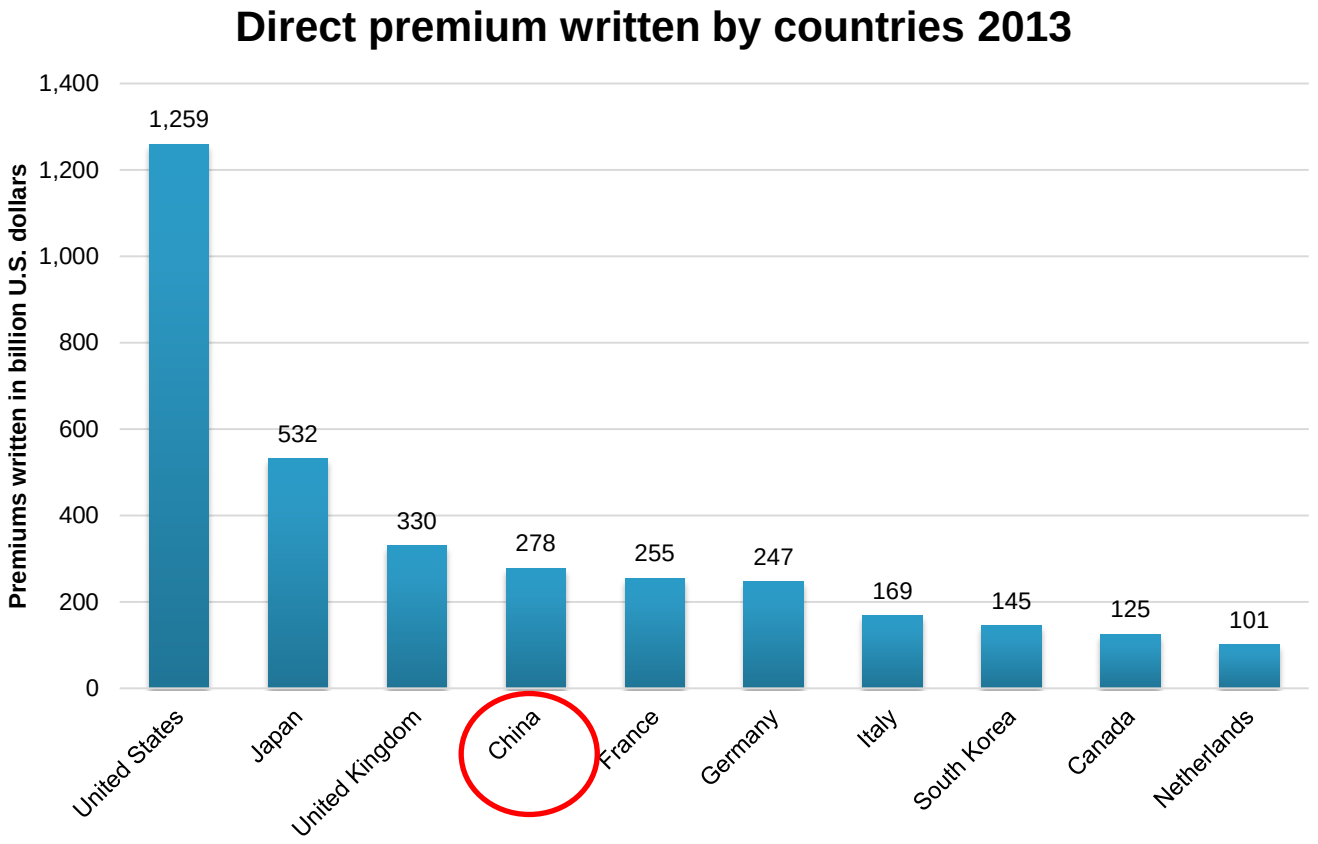
06 May 2015

Dramatic growth of insurance market



Source: CIRC

4th largest globally



Source: Statista

Ping An Insurance is one of the 9 Globally Systematically Important Insurers (G-SIIs) in the world!

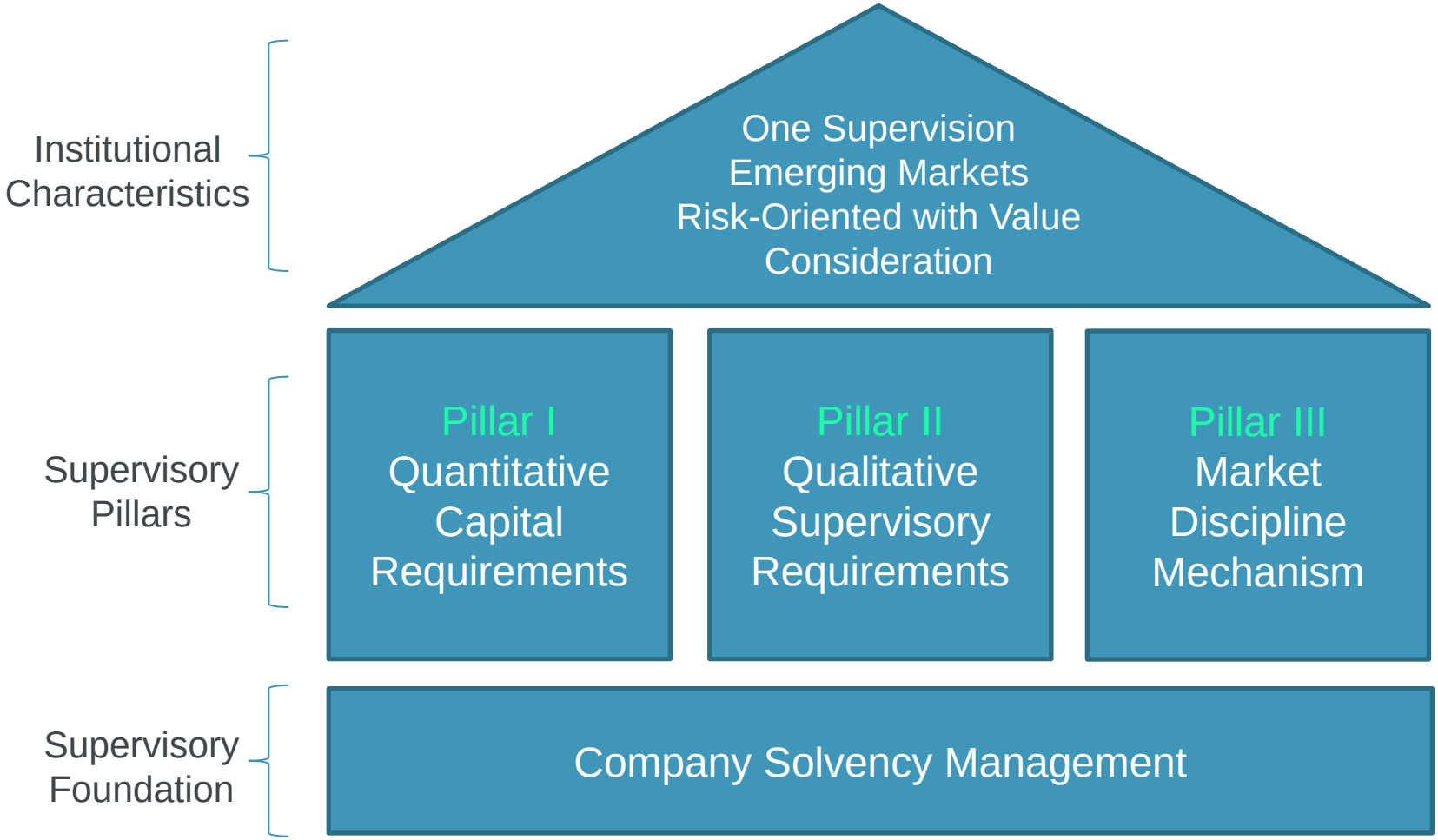
Opportunities but also challenges

- Weak risk management capability
- Low capital efficiency
- Long-term investment not performing well
- Customer complaints, mis-selling
- High expenses

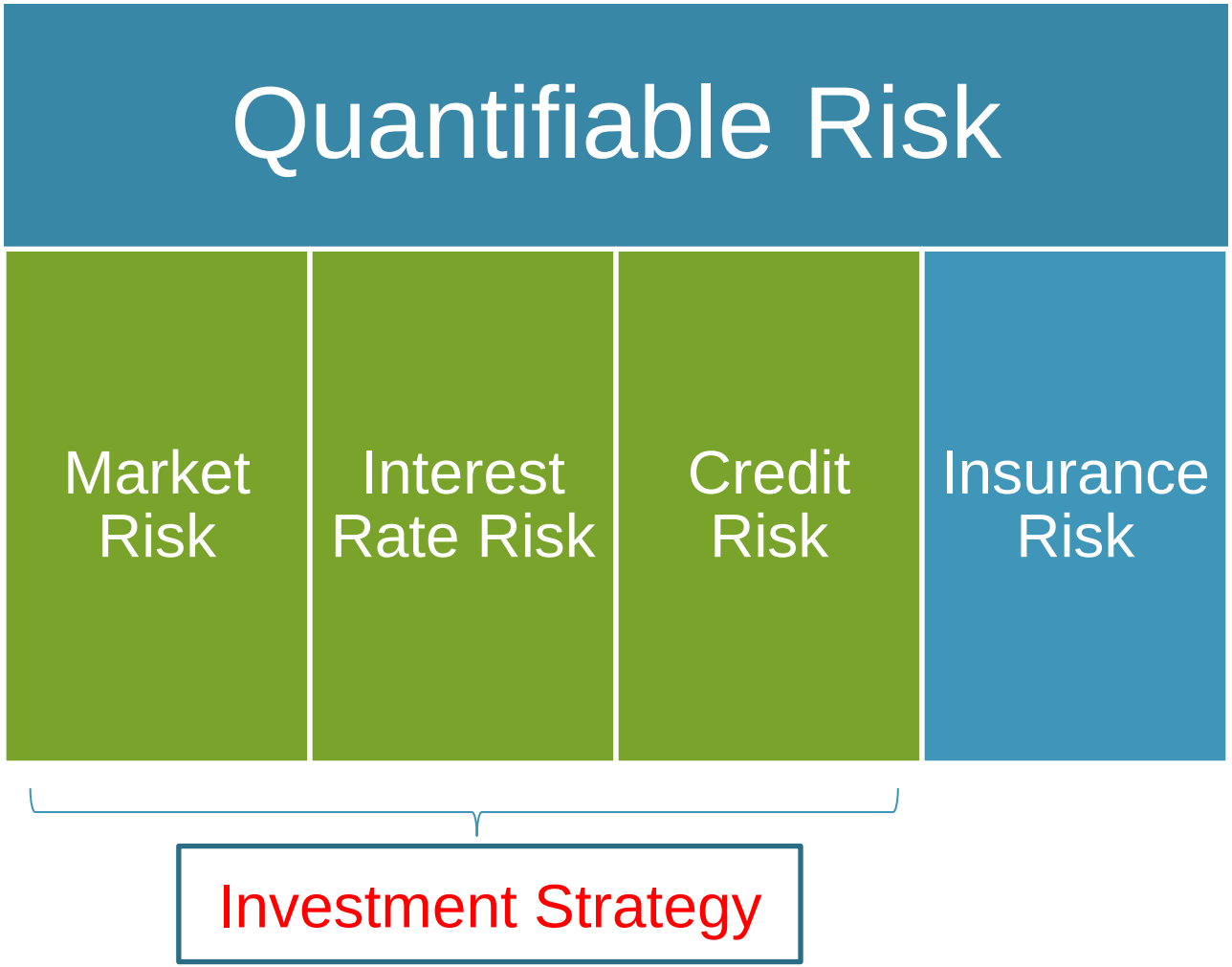
Agenda for this workshop

- Regulations: C-ROSS
- Key investment risks
- Example strategies to manage risk
  - Equities
  - Credit
  - Interest rate
- Conclusion: 4 key takeaways

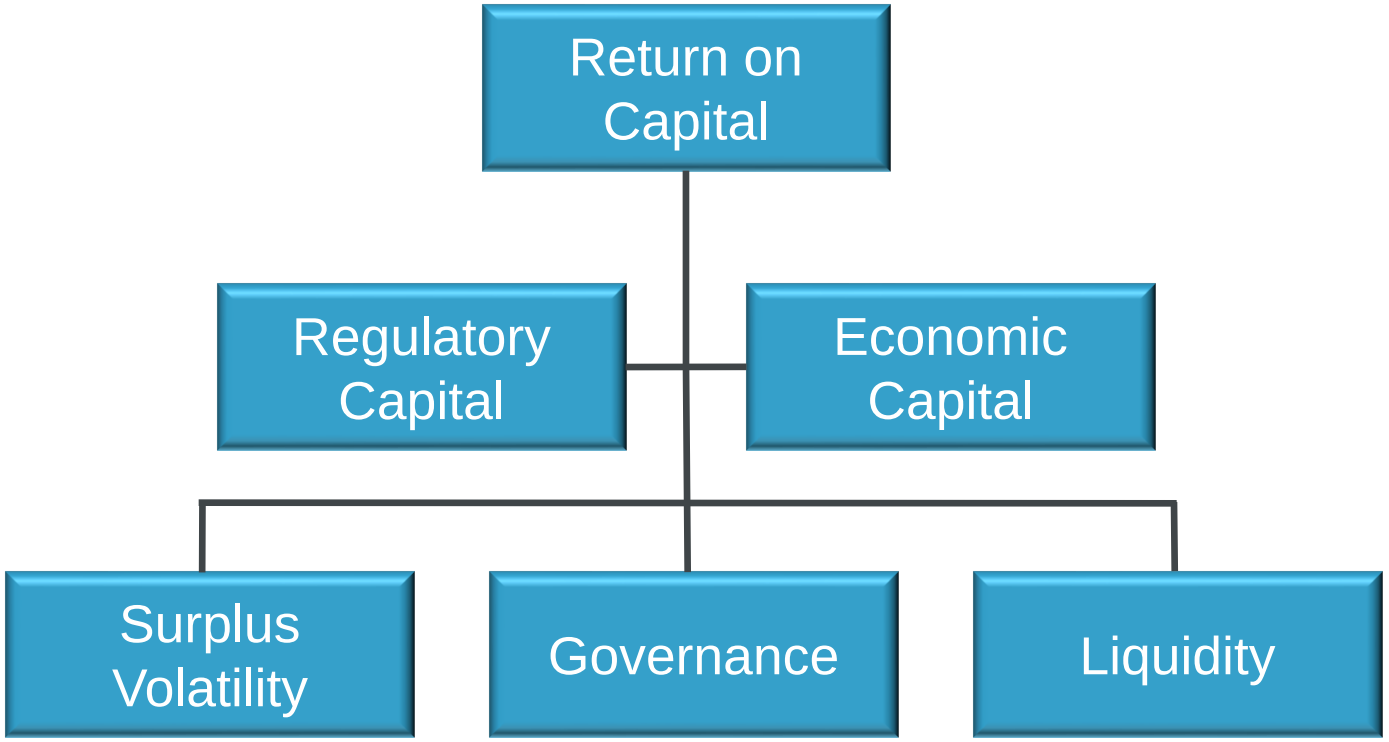
C-ROSS


Institutional Characteristics
One Supervision
Emerging Markets
Risk-Oriented with Value Consideration
Supervisory Pillars
Pillar I
Quantitative Capital Requirements
Pillar II
Qualitative Supervisory Requirements
Pillar III
Market Discipline Mechanism
Supervisory Foundation
Company Solvency Management

C-ROSS


Quantifiable Risk
Market Risk
Interest Rate Risk
Credit Risk
Insurance Risk
Investment Strategy

Multi-Dimensional Challenge



Investment Risk Management Framework

	Objective	Measurement		Quantification	Action
Return	Expected return > Shareholder required return on capital	Expected return on capital		13.5%	-
		Required return on capital		12.0%	
		Margin (Expected return less required return)		1.5%	
Risk / Capital	Current capital > required capital	Economic basis	Current capital budget	£1,150m	-
			Required capital (VaR 99.5%)	£1,020m	
		Regulatory basis	Current capital budget	£1,300	*Bring current capital in line with required capital*
			Required capital (VaR 99.5%)	£1,350	
Liquidity	The company should hold enough eligible assets to cover additional liquidity requirements in an adverse scenario	Available liquid asset		£400m	-
		5 year cashflows if lapse rate increases by 20%		£250m	
Asset allocation target benchmark	The current asset allocation is to be kept within +/- 5% of the target benchmark allocation	Government bonds	20%	36.2%	Allocate out of overweight assets into relatively underweight assets to bring in line with target benchmark allocations
		Corporate bonds	10%	10.5%	
		Equity	35%	27.0%	
		Property	5%	6.3%	
		Other assets	30%	26.0%	

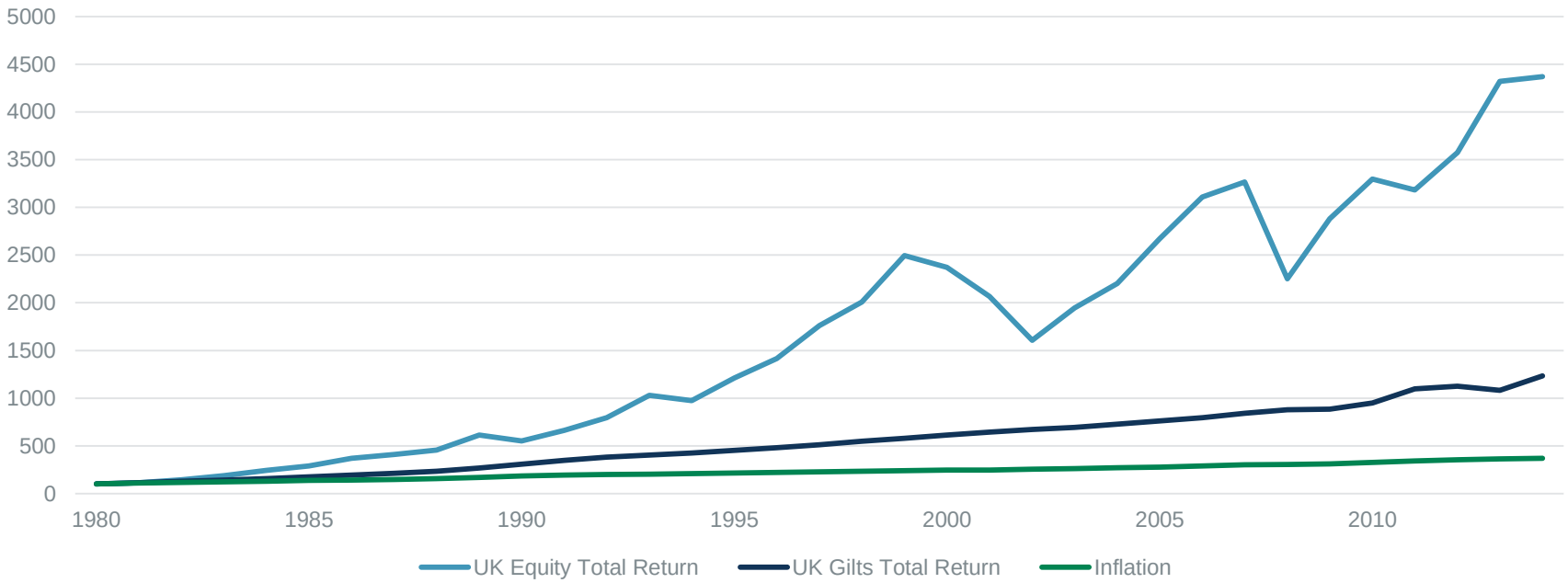
On track Within 10% of target Off track

Institute and Faculty of Actuaries

Equity Risk Management

06 May 2015

Rationale

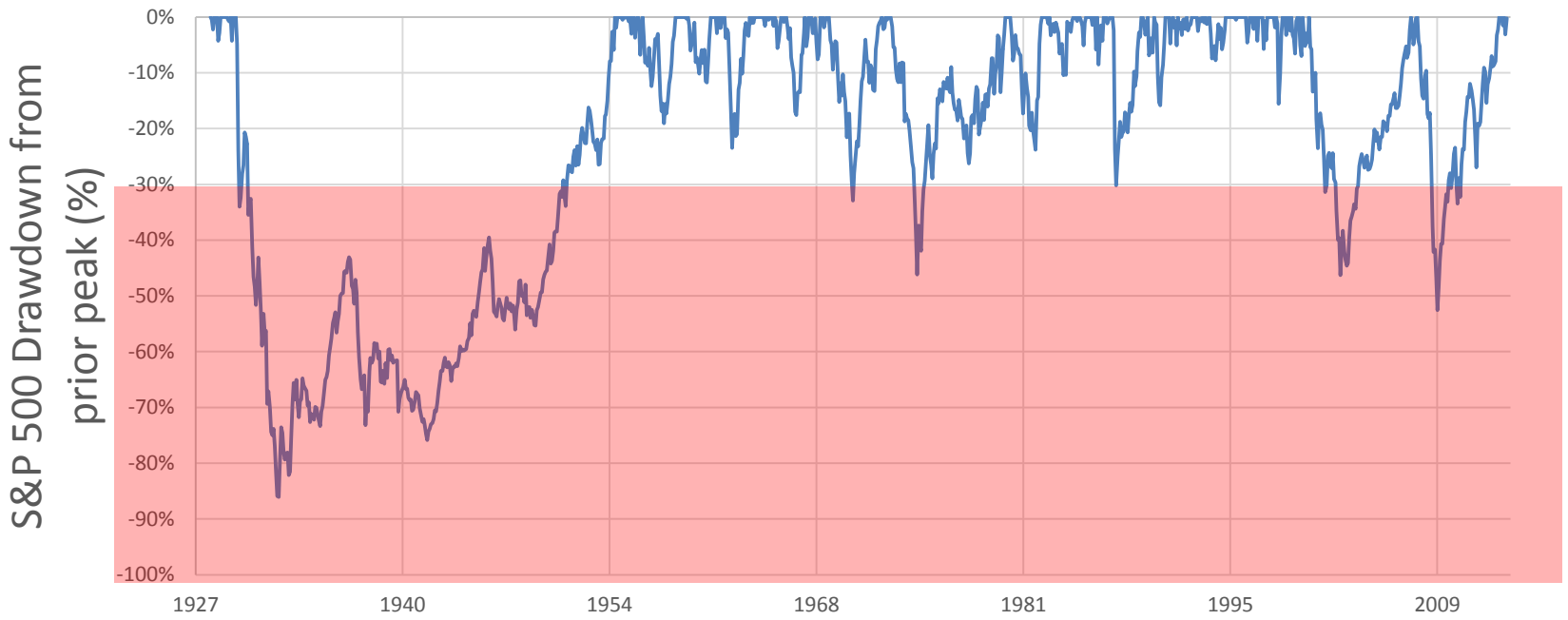


Source: Bloomberg, Redington

Why investing in equities

- Offers a decent level of positive risk premiums over the long term
- Relatively liquid market
- Match certain type of liabilities for institutional investors

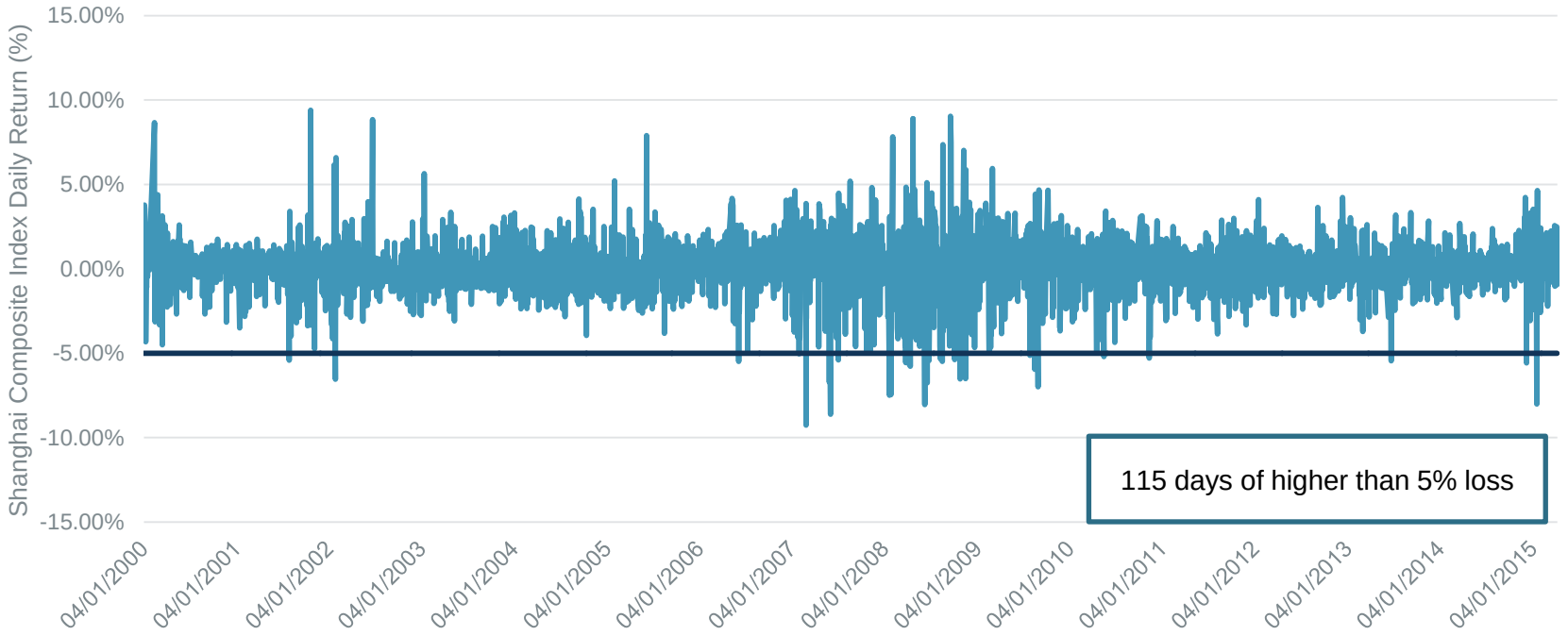
Downside Risk



Source: Bloomberg, Redington

- Infrequent large drawdowns (>30%)
- Frequently enough to be a problem in a portfolio context

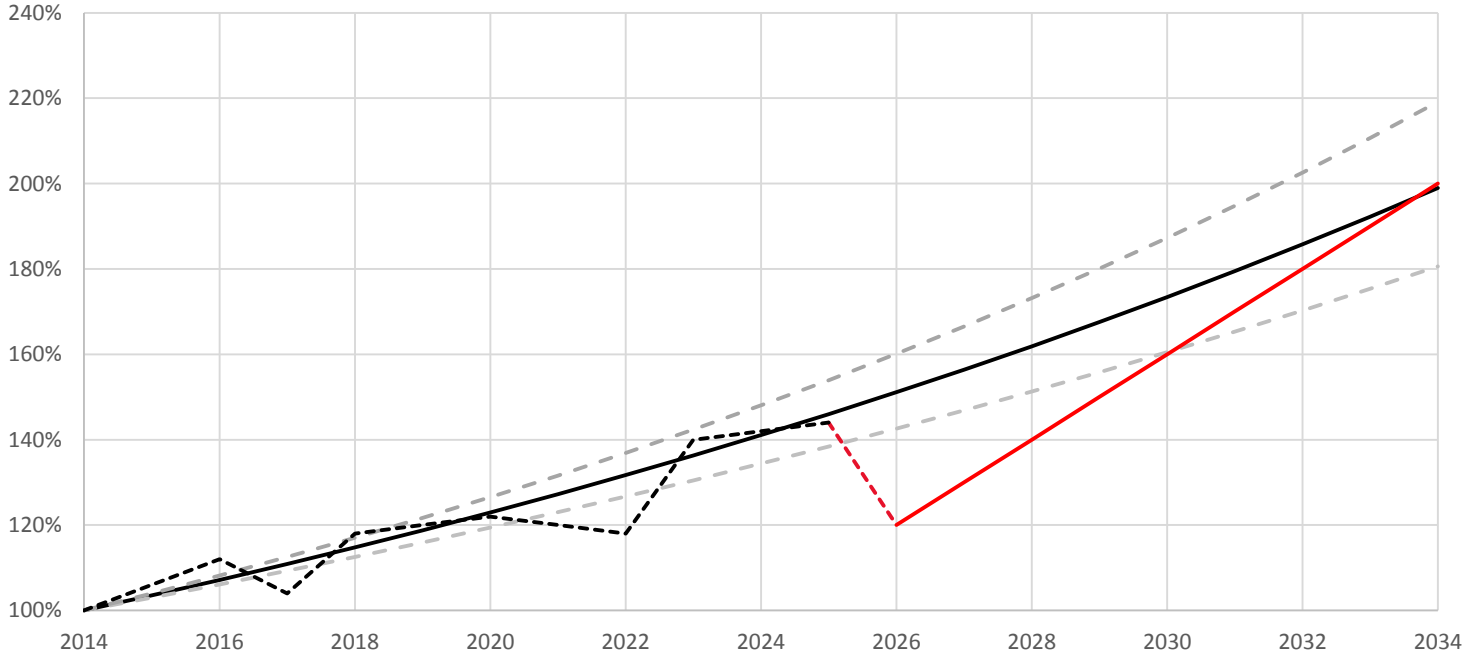
Volatilities



Source: Bloomberg, Redington

- Chinese equity market could also suffer significant volatilities (if not larger than developed market) on a daily basis

Negative impact



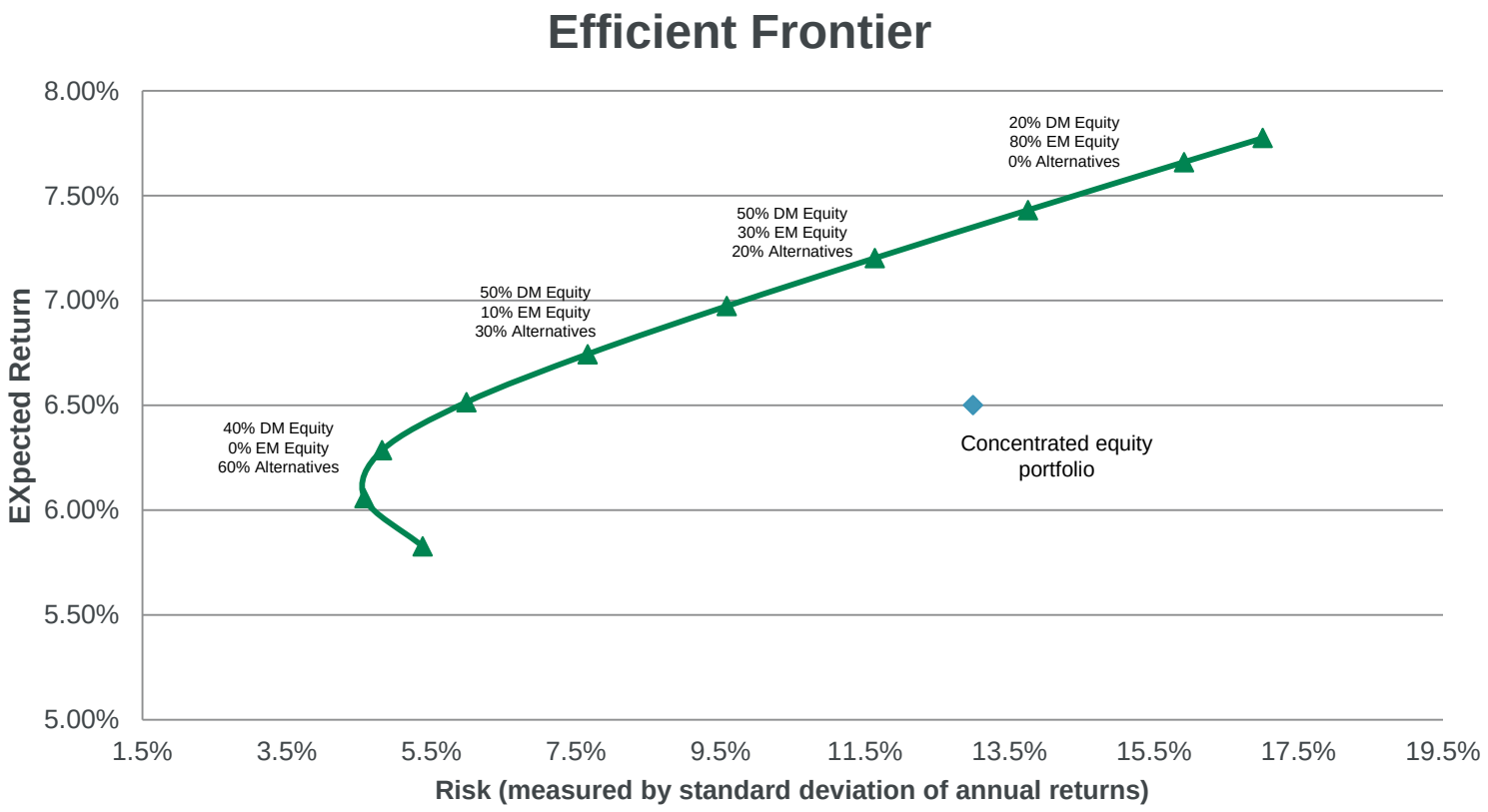
5 year periods	Target Equity Return >>	8.0%	9.0%	10.0%
	-10%	10.3%	11.3%	12.3%
	-15%	11.5%	12.5%	13.6%
Capital Drawdown >>	-20%	12.8%	13.9%	14.9%
	-25%	14.3%	15.3%	16.4%

20 year periods	Target Equity Return >>	8.0%	9.0%	10.0%
	-10%	8.6%	9.6%	10.6%
	-15%	8.9%	9.9%	10.9%
Capital Drawdown >>	-20%	9.2%	10.2%	11.2%
	-25%	9.5%	10.6%	11.6%

Solutions

"Risk Management should be put in place in the good times to have most effect in the bad times"

1. Diversification



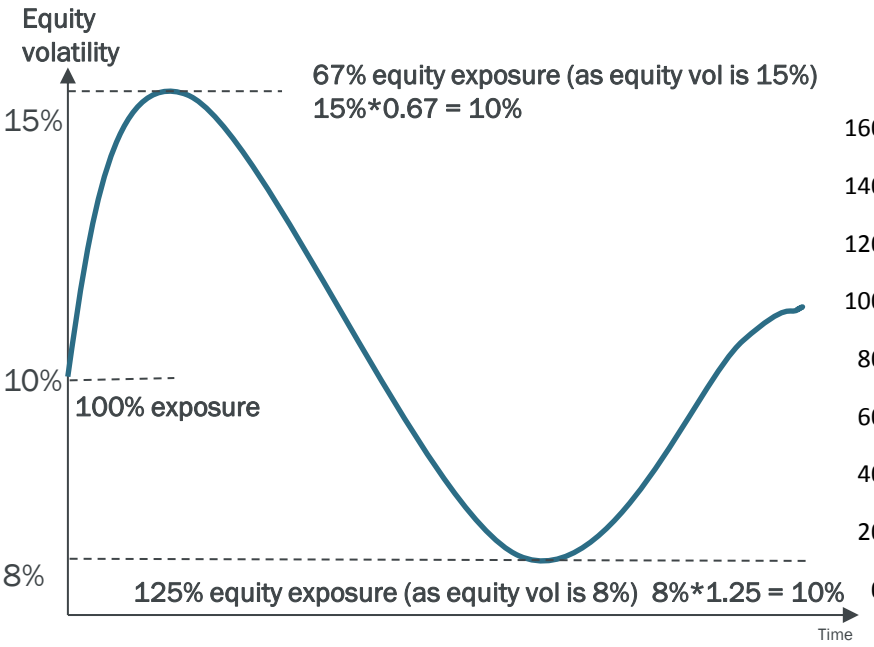
Source: Redington

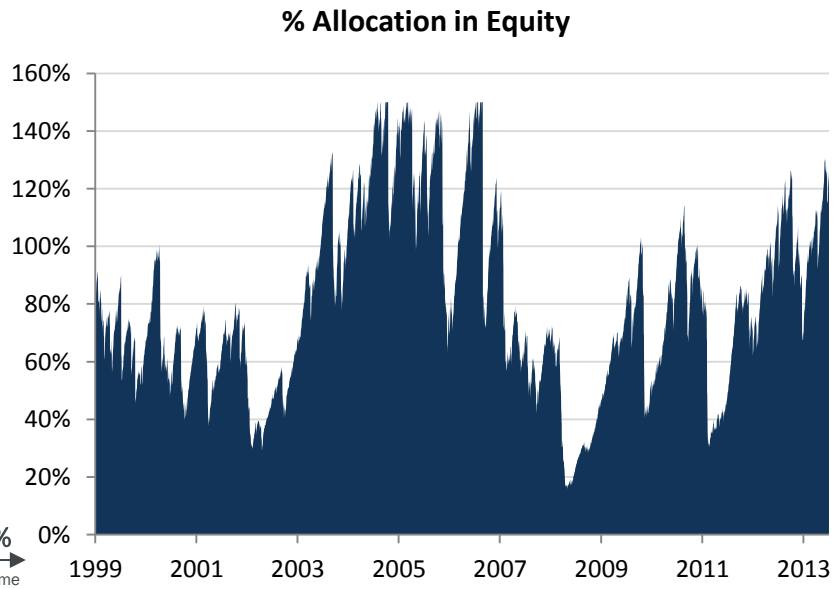
2. Risk Control

Volatility controlled equities provides greater exposure to equity markets at times of low volatility and reduces equity exposure at times when markets have higher volatility and in general:

-Equity **volatility rises** when equities **fall**

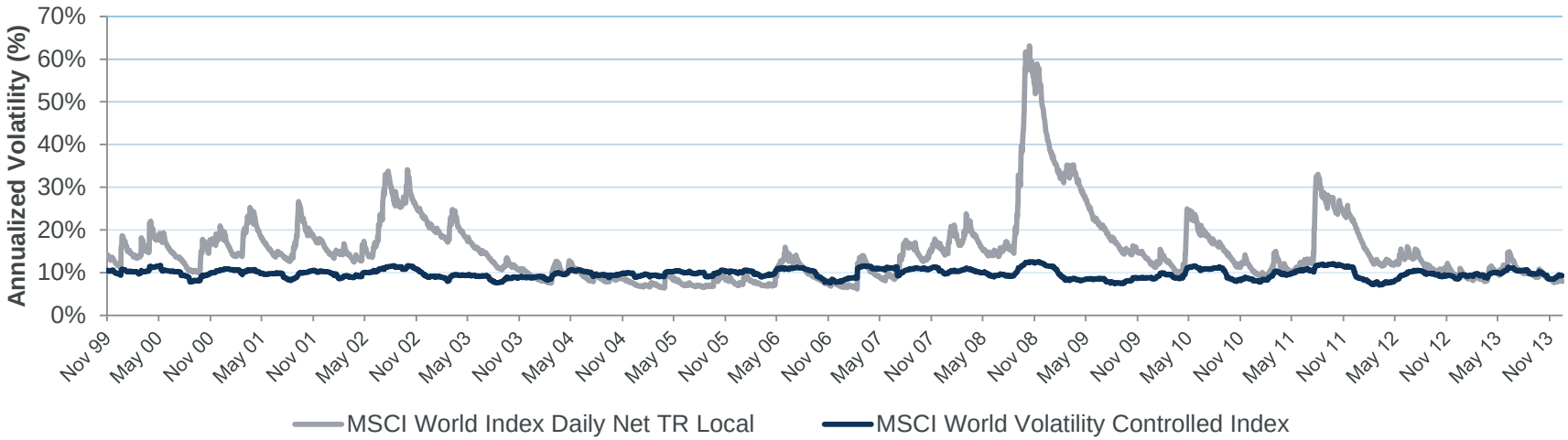
-Equity **volatility falls** when equities **rise**

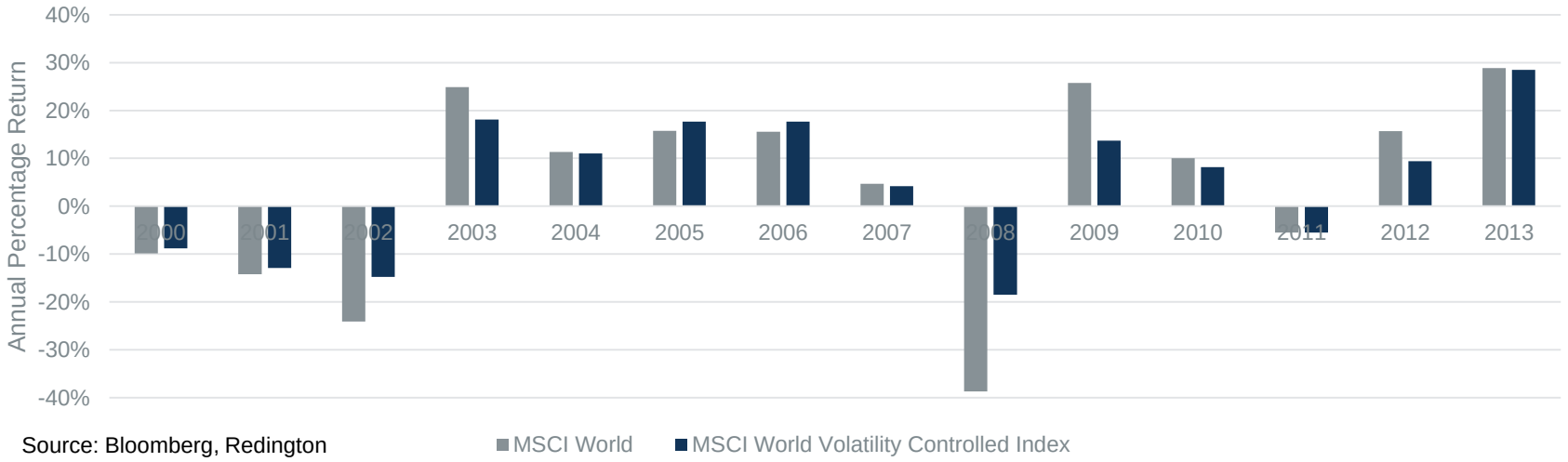




Source: Bloomberg, Redington

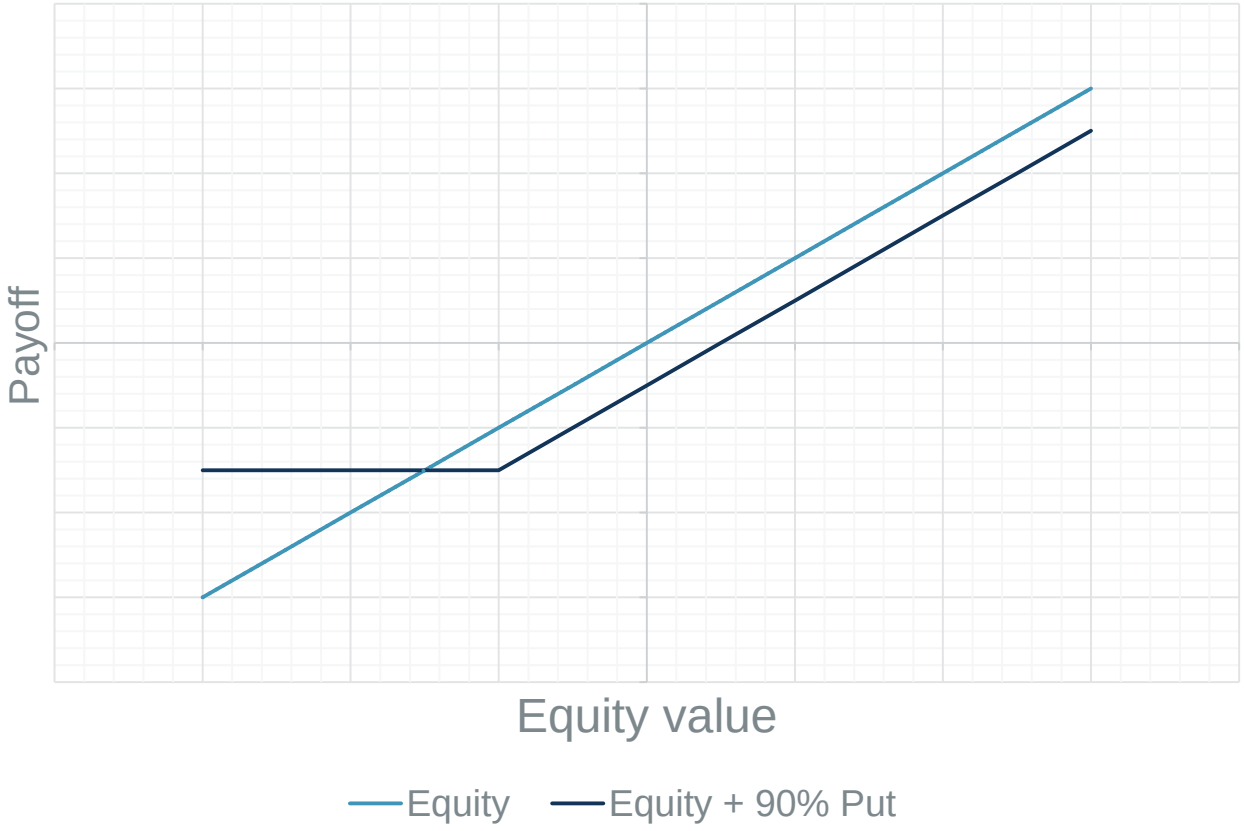
2. Risk Control





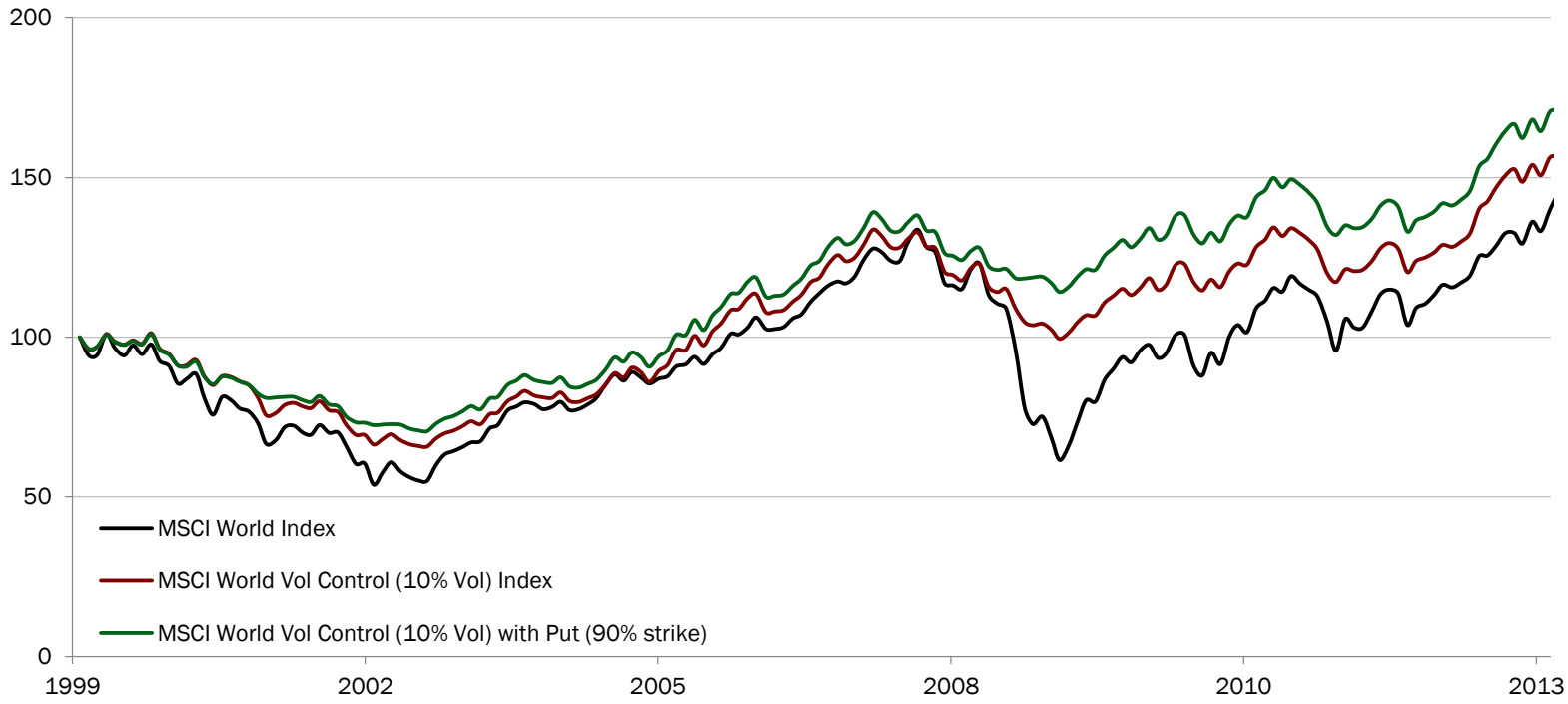
Source: Bloomberg, Redington

3. Downside Protection



Source: Redington

Performance



Source: Bloomberg, Redington

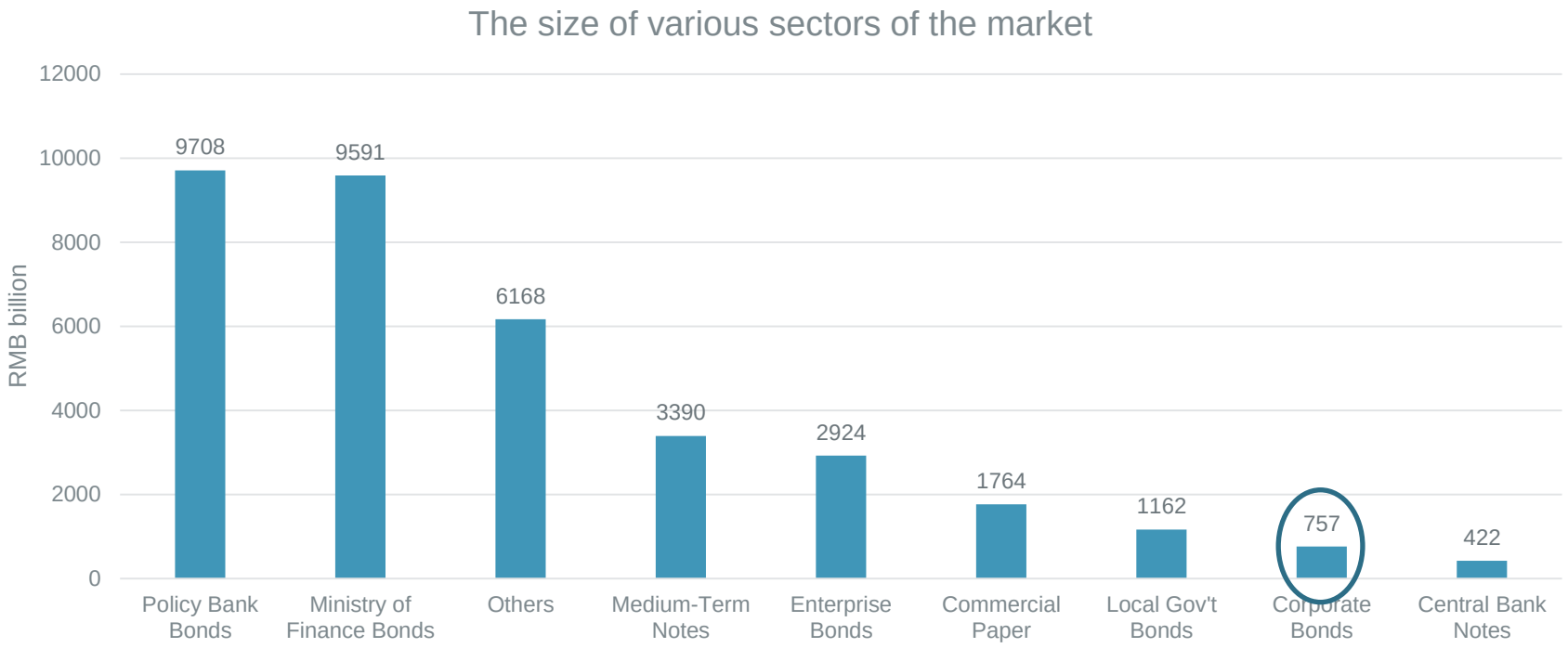
Institute and Faculty of Actuaries

Credit Optimization

06 May 2015

Why credit optimization

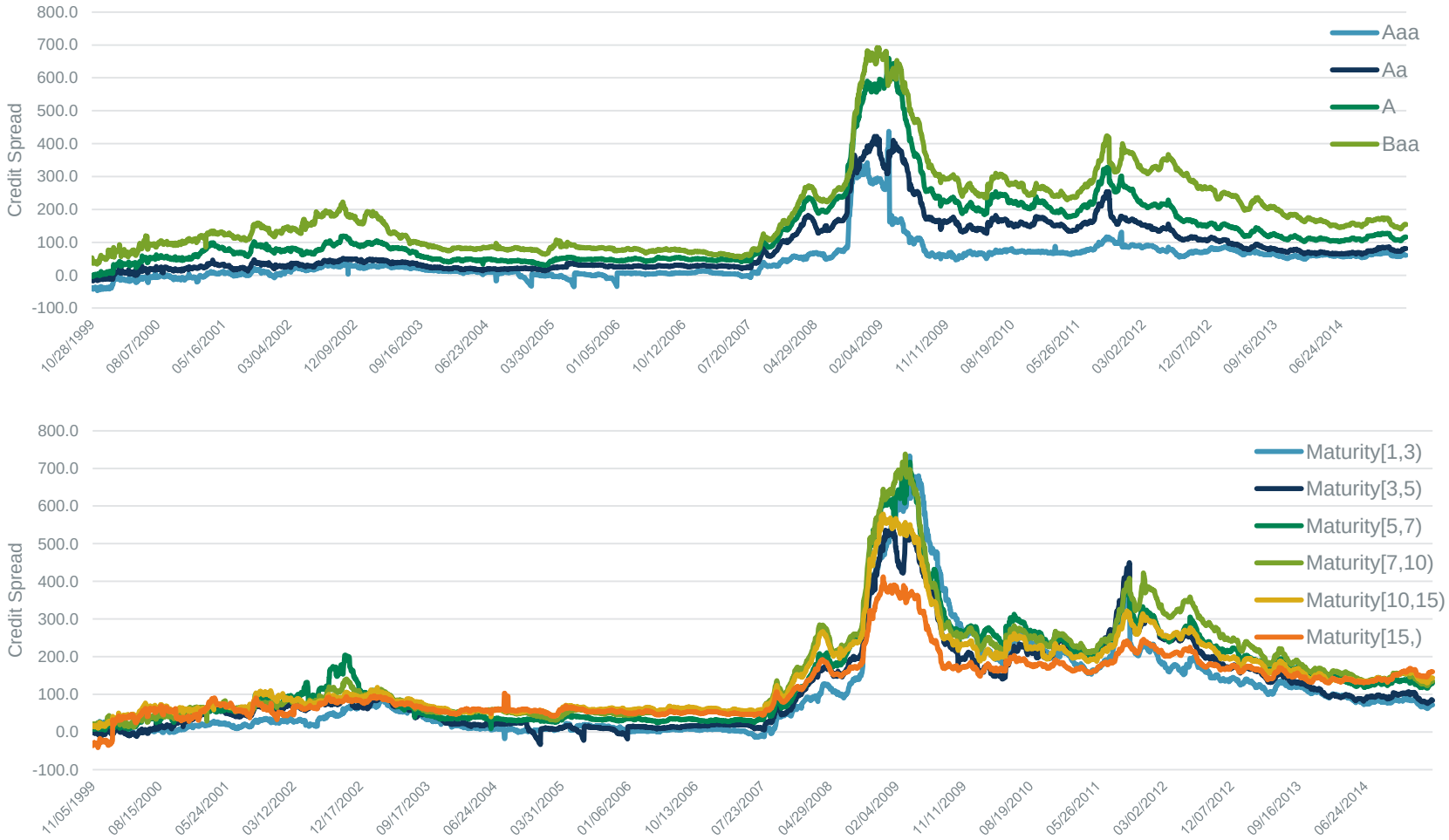
Chinese fixed income market



Source: Wind

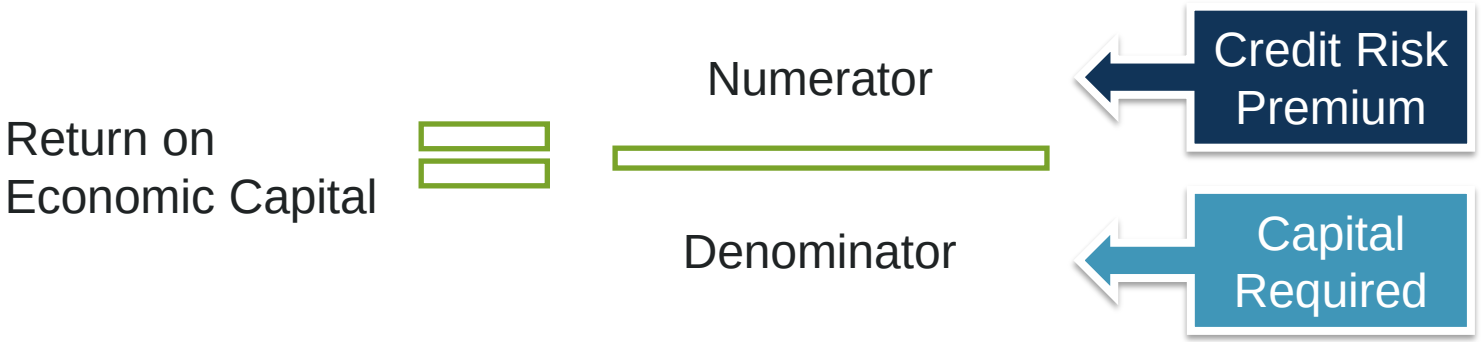
- Primarily driven by government related bonds;
- Growing demand and supply of corporate and SME bonds.
- Diversity of ratings and maturities.

Dynamics within credit market



Source: Barclays POINT, Redington

How to do credit optimization



Credit risk premium	Maximise expected returns. Maximise implied illiquidity premium in bonds.
Required capital	Reduce regulatory capital requirement. Reduce economic risk i.e. Surplus at Risk

How to do credit optimization

Capital Efficiency (Return on Economic Capital)						
	1 - 3 Years	3 - 5 Years	5 - 7 Years	7 - 10 Years	10 - 15 Years	> 15 Years
AAA	0.3%	0.2%	2.1%	1.9%	0.4%	0.3%
AA	3.2%	2.5%	3.6%	2.7%	5.4%	0.7%
A	5.4%	3.6%	7.4%	5.3%	2.4%	0.8%
BBB	5.9%	5.6%	5.5%	3.5%	2.8%	1.9%

Source: Barclays POINT, Redington

How to do credit optimization

	Objective	Before Optimization		After Optimization	
Return	Expected return > Shareholder required return on capital	Credit spread	1.5%	Credit spread	2.2%
		Minimum illiquidity premium required	1.0%	Minimum illiquidity premium required	1.0%
		Credit spread after default allowance	1.1%	Credit spread after default allowance	1.7%
Risk / Capital	Current capital > required capital	Economic basis	£1,050 million	Economic basis	£1,070 million
		Regulatory basis	£1,350 million	Regulatory basis	£1,280 million
Liquidity	Hold enough eligible assets to cover liquidity requirements in an adverse scenario	1 year net cashflow	£80 million	1 year net cashflow	£80 million
		1 year net cashflow under stress	£20 million	1 year net cashflow under stress	£20 million
Asset allocation target benchmark	The current asset allocation is to be kept within +/- 5% of the target benchmark allocation	AAA	5%	AAA	1%
		AA	30%	AA	10%
		A	40%	A	55%
		BBB	25%	BBB	34%
		Non-Investment Grade	0%	Non-Investment Grade	0%

Other fixed income investments

Equity Release Mortgages

- Long dated cashflows
- Diversifier
- Exposure to residential property

Infrastructure debt

- Return pick up
- Well collateralized

Secured leases

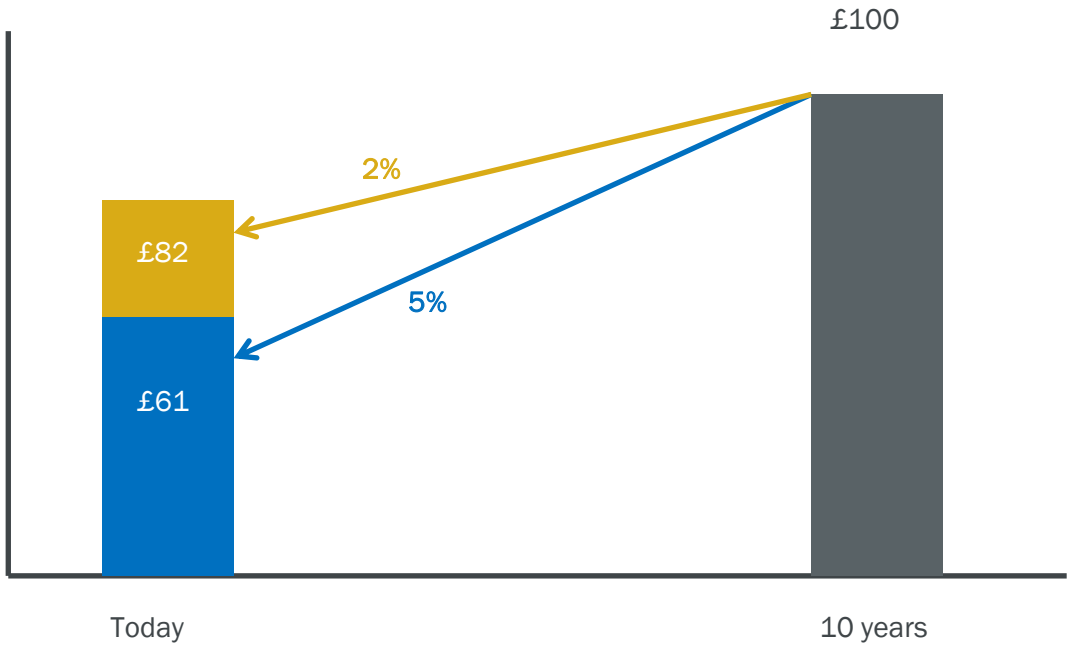
- Inflation protection
- Return pick up
- Exposure to commercial property

Institute and Faculty of Actuaries

Managing Interest Rate Risk

06 May 2015

Why Manage Interest Rate Risk?



$$\frac{£100}{(1 + \text{Rate})^{\text{time}}} = \text{Present Value}$$

Interest rates fall

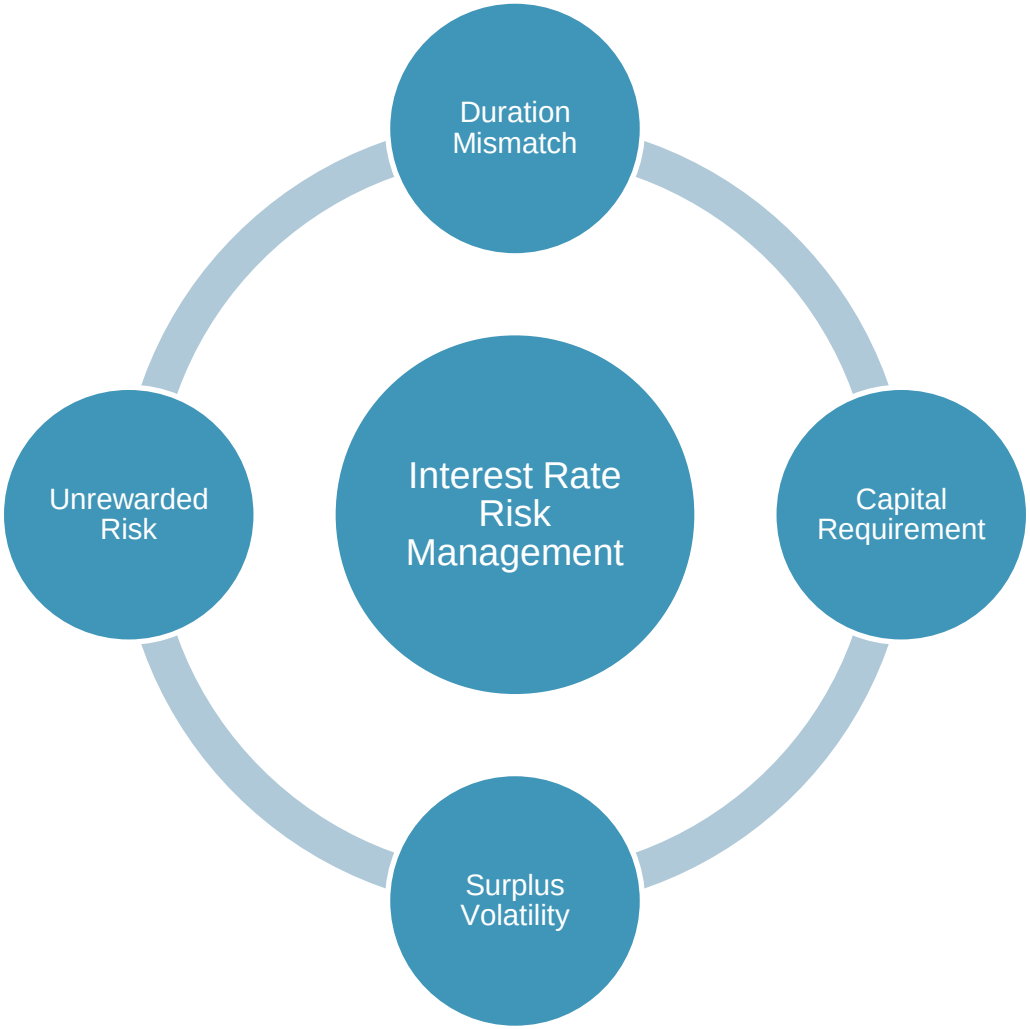
↓

Liabilities PV increases

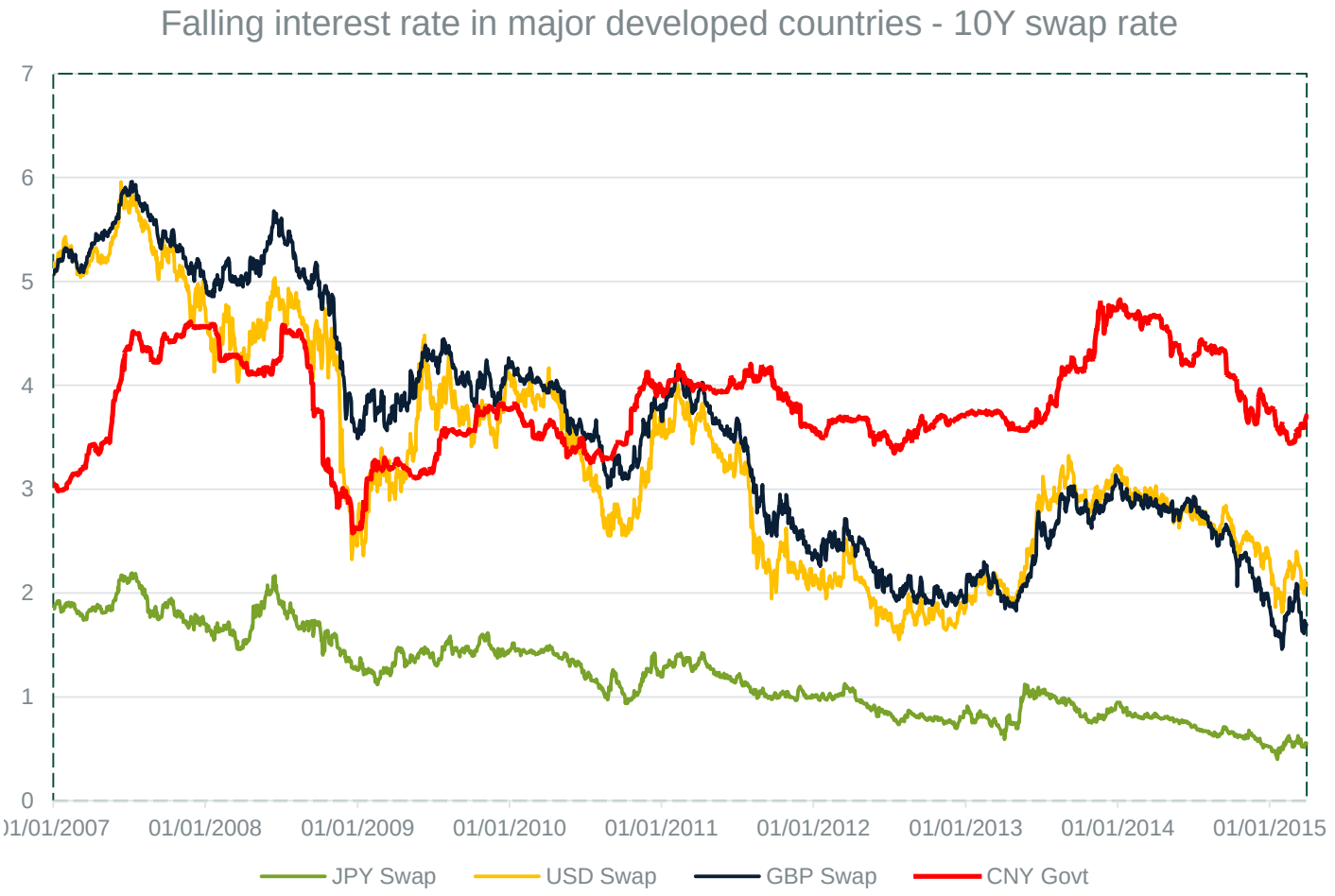
↓

Surplus falls

Why Manage Interest Rate Risk?

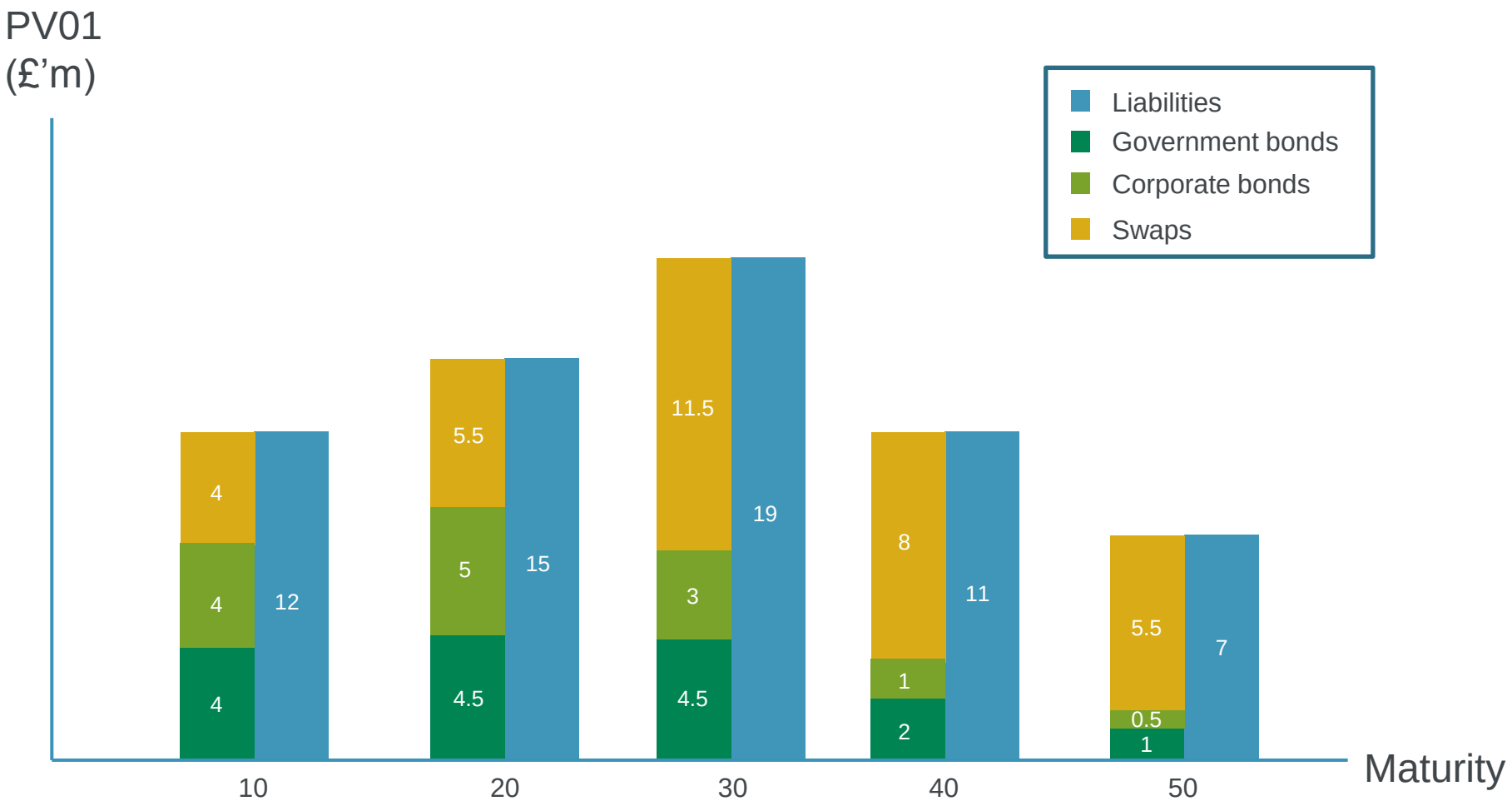


Why Manage Interest Rate Risk?

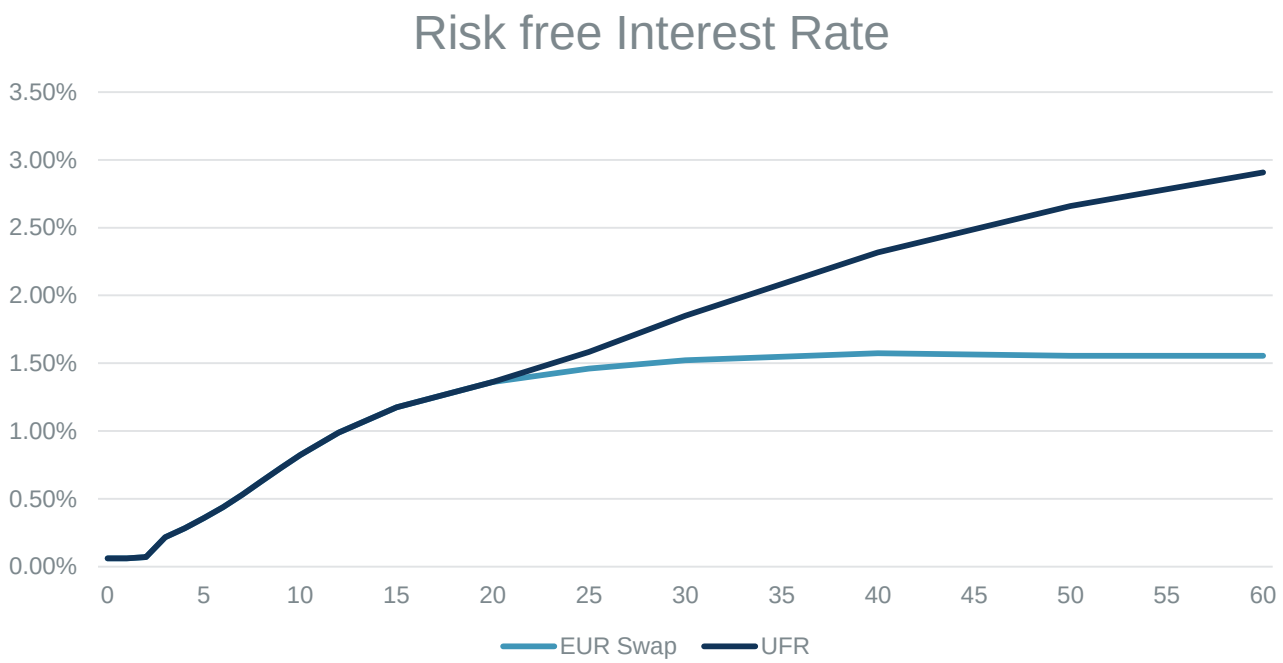


Source: Bloomberg, Redington

How Could You Manage it?



Economic vs. Regulatory



	Economic	Regulatory
Risk (VaR 99.5%)	£70m	£45m
Risk Budget	£75m	£50m

Conclusion: 4 key takeaways

- Strong need of risk/capital management practices
- Investment strategy in the context of ALM
- People, system and process
- Constant learning and dynamically adapt to changes

Questions

Comments

Expressions of individual views by members of the Institute and Faculty of Actuaries and its staff are encouraged.

The views expressed in this presentation are those of the presenter.