

Key Risk Area 2 Investment Risks

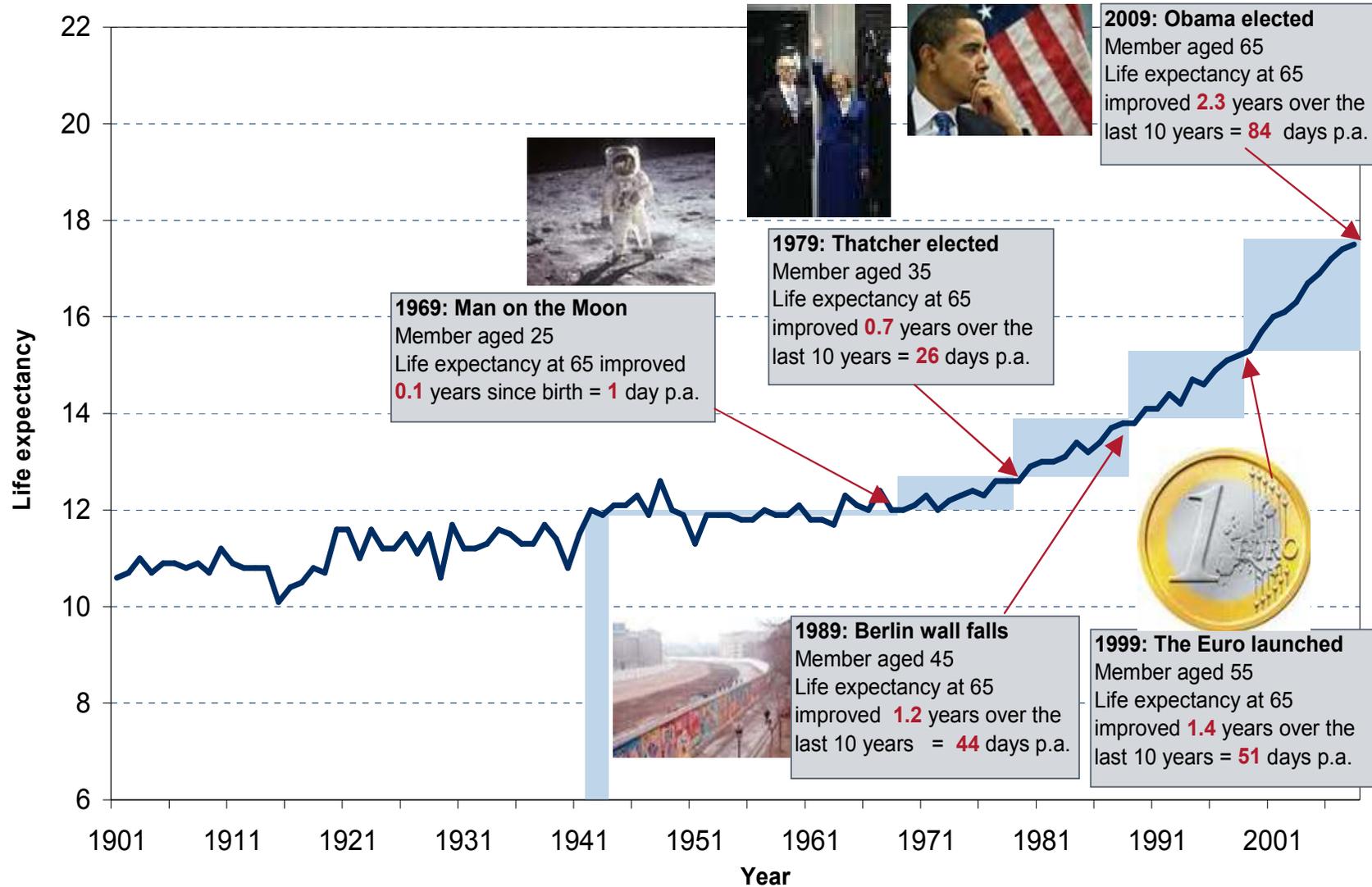


Approaching Investment

- Local Government Pension Scheme (Management & Investment of Funds) Regulations 2009
- Myners Principles (SIP)
- Role of Fund Managers & Investment Advisers (FSA)
- Asset Universe – Traditional and Alternative
- Investment Strategy – Risk and Reward
- Risk Management – active/passive, hedging, insurance

- All driven by Scheme Liabilities...

Future Improvements Male life expectancy since 1901



What risks really matter to the LGPS?

Volatility Risks

- Equity price moves
- Bond price moves
- Interest rate moves
- Currency moves

Short term fluctuation risks

Don't affect benefits paid.
If covenant strong and time horizon long, can ride out volatility risks

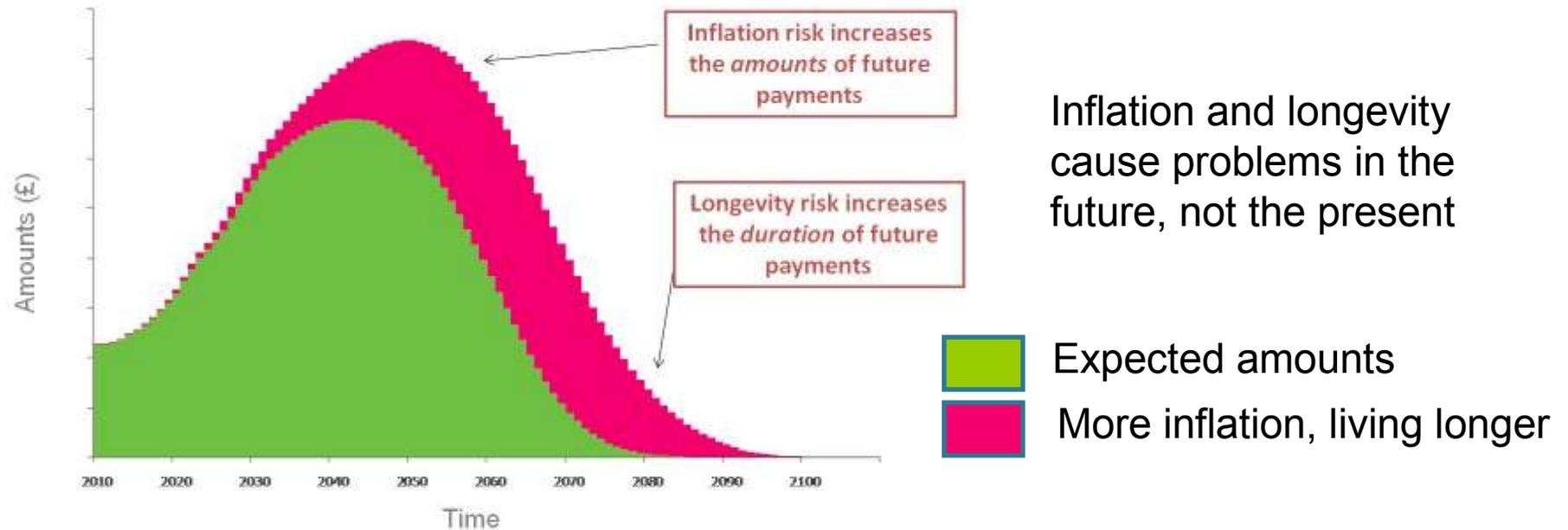
Risks that increase cost

- Higher inflation
- Living longer
- Sustained investment underperformance

Long term tail risks

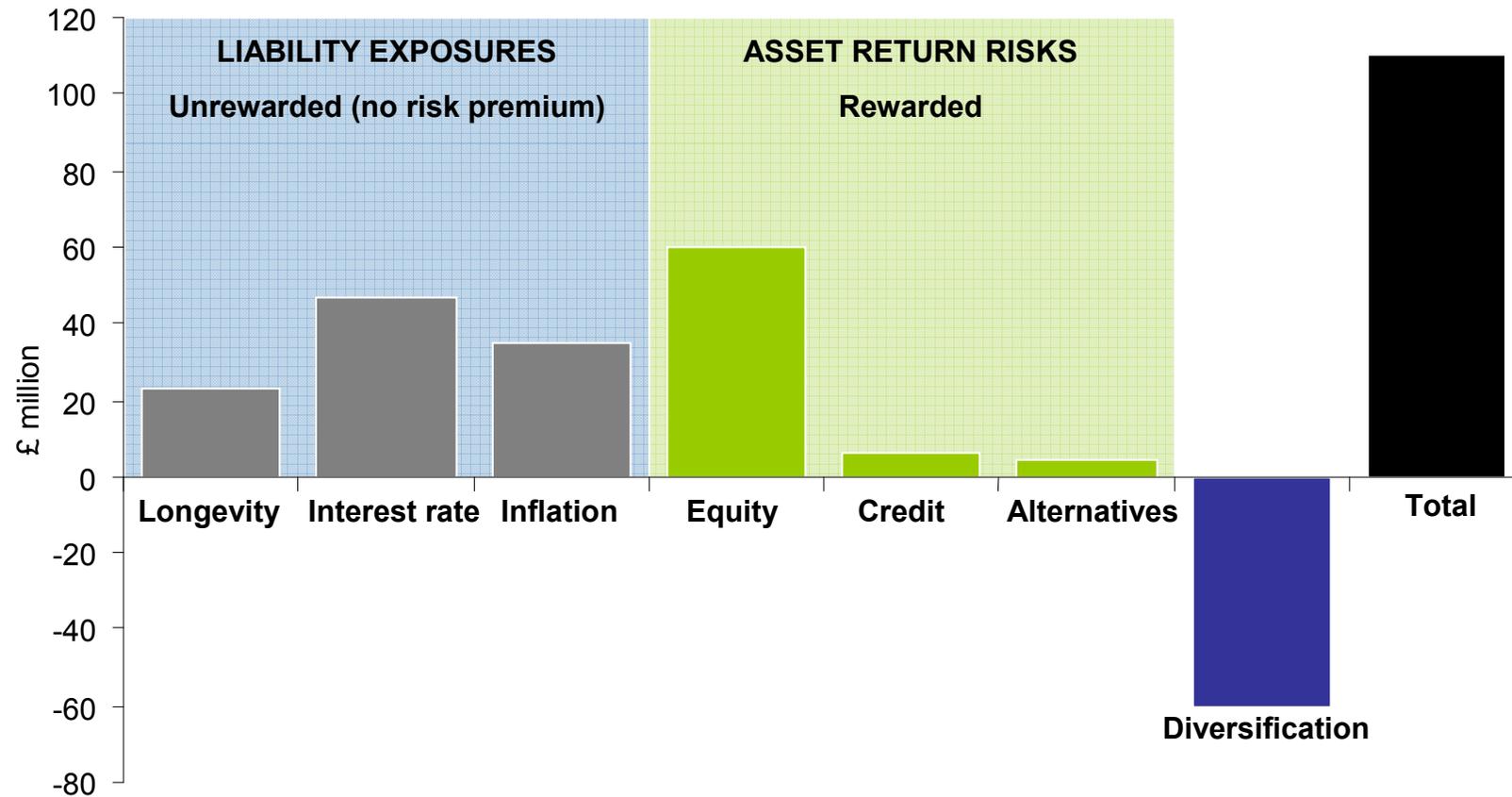
May not see impact in short term. Cumulative effect over time can be damaging

Benefit expenditure: inflation & longevity matter



- Pensions paid do not change with interest rates
- But measured cost of benefit cash flows change
- This “change” affects size of deficit

Quantify risks – example Sources of VaR



Identify and quantify key risk factors

- Equities
- Corporate bonds
- Alternative investments



Take those that are expected to be rewarded

- Inflation risk
- Interest rate risk
- Mortality risk



Mitigate unrewarded risks

- Employer risk
- Demographic risk
- Regulatory risk



Monitor those that cannot be removed

Investment Strategy: Asset allocation

- Consider range of assets:
 - Equities
 - Bonds
 - Property
 - Cash
 - Alternatives
- Determine 'Risk Budget' based on solvency target
- Agree Management approach
- Reflect in Valuation assumptions (FSS)
- Monitor and Review

Investment Strategy: Asset allocation

UK real asset class returns (% per annum)

	2009	10 years	20 years	50 years	110 years
Equities (shares)	25.9	-1.2	4.6	5.2	5.0
Government bonds (Gilts)	-3.3	2.6	5.4	2.3	1.2
Corporate bonds	15.8	2.9			
Index-linked bonds	3.1	1.9	3.8		
Cash	-1.7	1.8	3.1	1.9	1.0

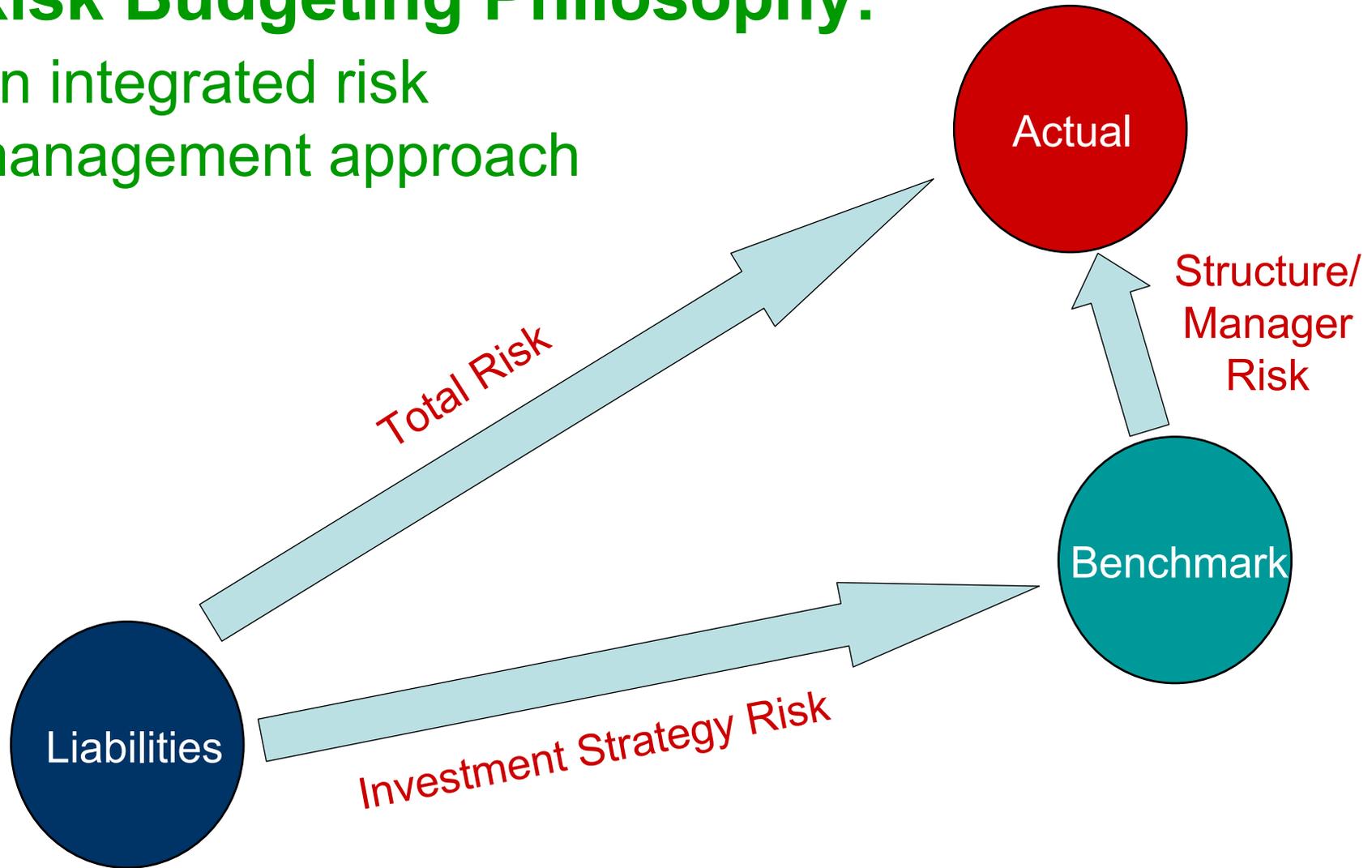
Source: Barclays Capital Equity Gilt Study 2010 (Note: Where data is NOT available, there is a gap).

Correlations with UK Equities Annual Returns 1954 - 2004

UK Equities	1.0
US Equities	0.6
German Equities	0.5
Gilts	0.5
Japanese Bonds	0.3
Japanese Equities	0.3
German Bonds	0.3
UK Property	0.2
US\$ Cash	0.2
US Bonds	0.2
Cash	0.1
Commodities	-0.1

Risk Budgeting Philosophy:

An integrated risk management approach

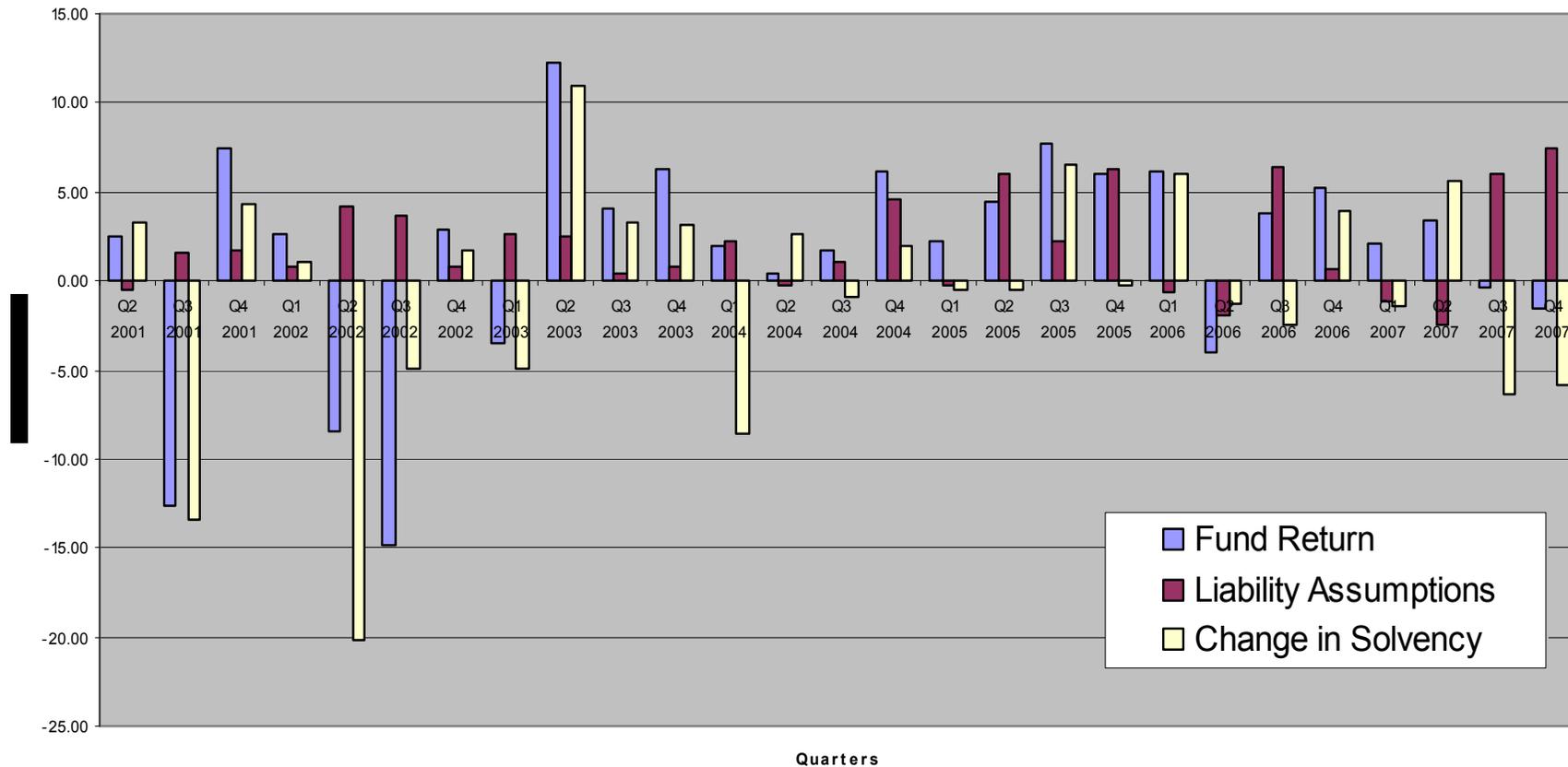


Investment Strategy: Risk Management

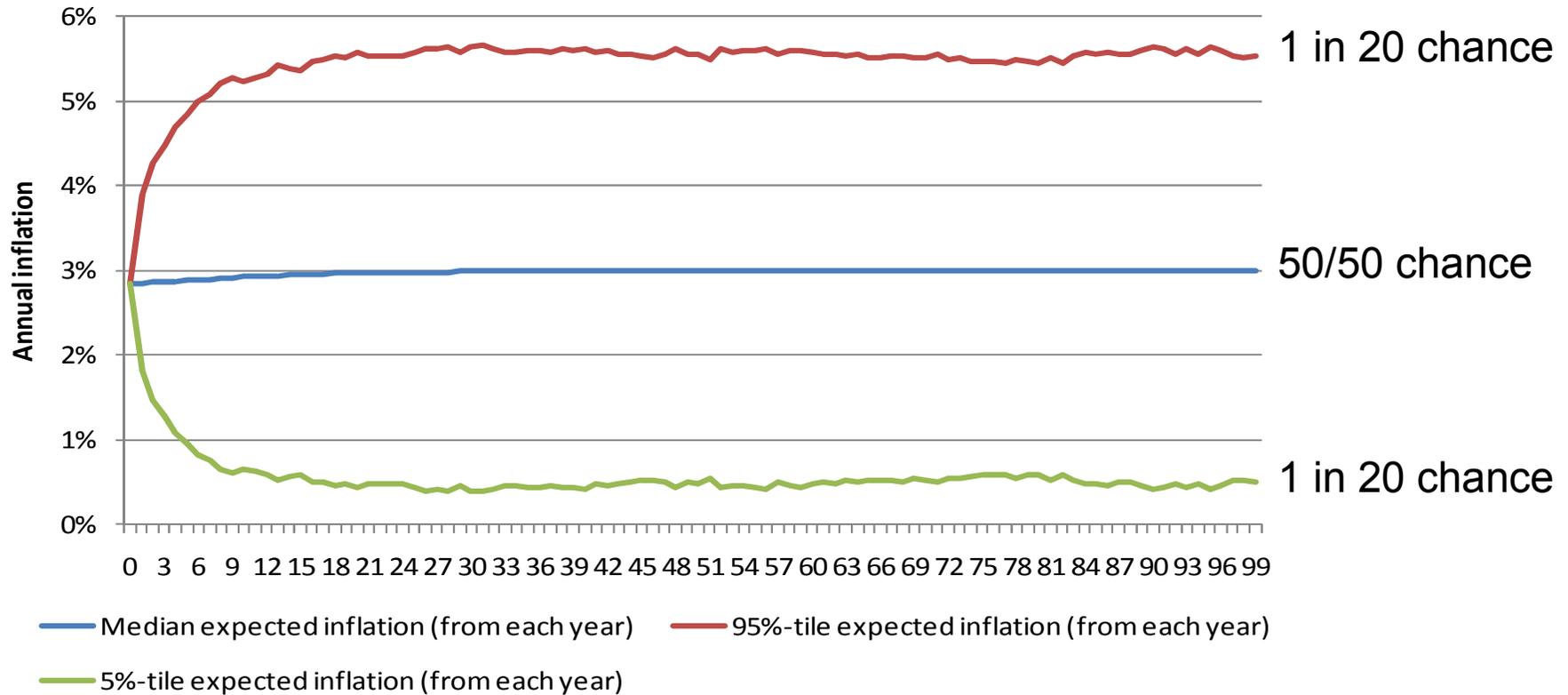
- Use of Benchmarks
 - Investment benchmarks
 - Liability benchmarks
- Hedging Tools
 - Inflation
 - Investment
 - Longevity

Investment Strategy: Risk Management

Comparison of Fund Real Returns against the Liability Growth based upon Valuation Assumptions



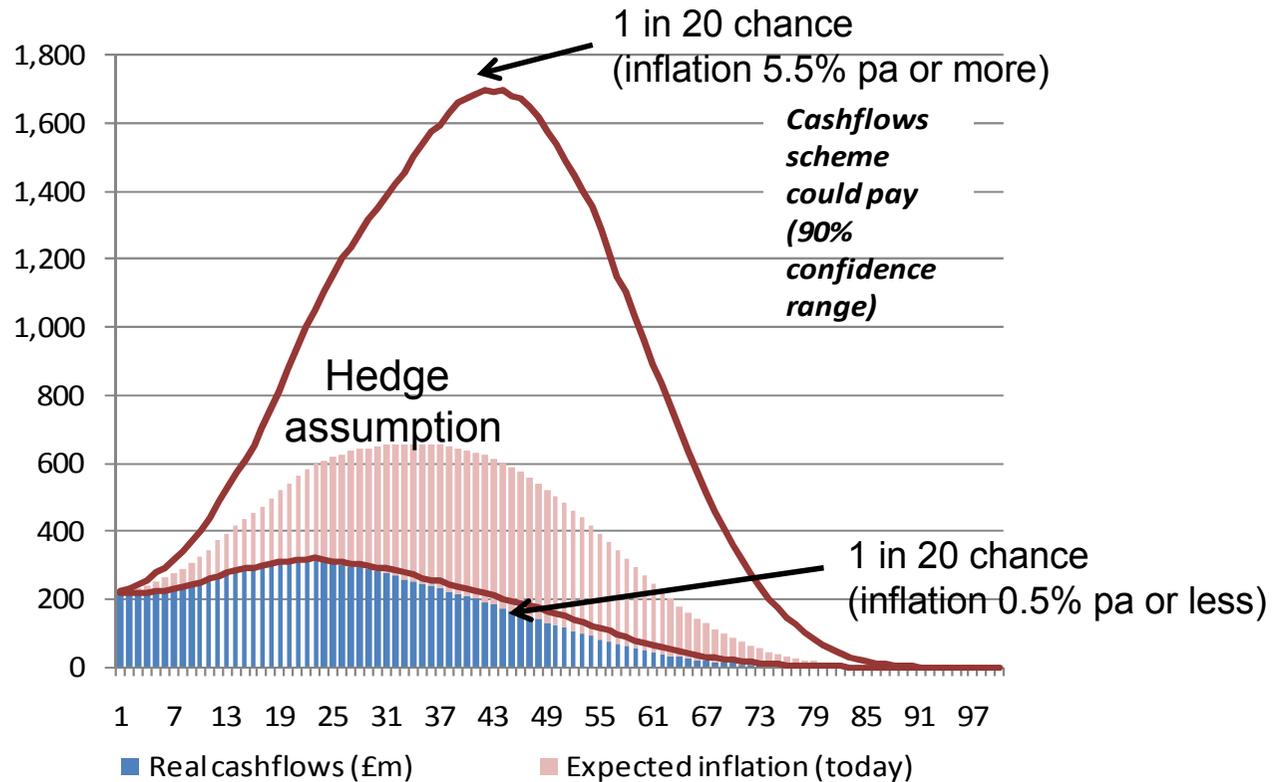
Inflation risk over time



1 in 20 chance 5.5% per year or higher
1 in 20 chance 0.5% per year or less

Uncertain future inflation

Potential range of benefit payments



Illustrative

Fund can win or lose by hedging

Hedging risks

	Buy-out	Liability Driven Investment	Longevity Hedge
How does it work?	Pay one-off premium to insurer and insurer takes on all risks	Investment strategy designed to match benefit payments	Uncertain
Risks covered?	Longevity, investment, inflation	Inflation, investment	Longevity, investment, inflation
Type?	Insurance policy	Investments	Swap contract
Currently used by LGPS?	No	Yes, in a few cases for sub-funds	Yes – just one so far!

There are alternatives for the LGPS

LGPS vs Private Sector DB

Private sector

- Balance sheet emphasis
- Closed / shorter time horizon
- Lower risk investment strategies
- Reducing risk strategies (route to settlement)
- Variable employer covenants

LGPS

- Funding level volatility does not matter
- Emphasis on stability of contributions
- Open / long term time horizon
- Strong employer covenant (although some exceptions)

Different objectives, different approach

Treasury Risk Management Handbook

- New approach for considering treasury risks
- ‘Best Value’ approach
- Identify, benchmark and manage treasury risks
 - Agree Risk Appetite
 - Quantify Risk Benchmarks
 - Manage portfolio relative to benchmarks
 - Review Outcomes and Performance
- Promote use of market data
- Concept of ‘liability benchmark’
- Value of long term planning and objectives

Treasury Risk Management Handbook

- **Liquidity Risks**
 - Unavailable cash
- **Interest Rate Risk**
 - Impact of unexpected rates
- **Credit Risk**
 - Counterparty failure
- **Currency Risk**
 - Impact of unexpected exchange rates
- **Regulatory Risk**
 - Failure to meet regulatory requirements
- **Market Risk**
 - Impact on financial objectives

Questions?



Thank You